Seep Well Field Area Bioremediation Treatability Study
2022 Annual Progress Report
Nevada Environmental Response Trust Site
Henderson, Nevada

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LIST OF ACRONYMS/ABBREVIATIONS

Acronyms/Abbreviations	Definition
AOI	Area of interest
Bgs	Below ground surface
CoH	City of Henderson
DO	Dissolved oxygen
DVSR	Data Validation Summary Report
EVO	Emulsified vegetable oil
FS	Feasibility Study
Ft/ft	Feet per foot
g/kg	Grams per kilogram
HCl	Hydrochloric acid
ISB	In-Situ Bioremediation
MBT	molecular biology tools
mg/kg	milligrams per kilogram
µg/L	Micrograms per liter
mg/L	Milligrams per liter
mV	Millivolts
NDEP	Nevada Division of Environmental Protection
NERT or Trust	Nevada Environmental Response Trust
NMR	Nuclear magnetic resonance
Nsats	Normal saturated groups
O&M	Operation and maintenance
OU	Operable Unit
ORP	Oxidation-reduction potential
PLFA	Phospholipid fatty acids
PRG	Preliminary Remediation Goal
QA/QC	Quality Assurance/Quality Control
Ramboll	Ramboll US Consulting, Inc.
RI	Remedial Investigation
Site	Nevada Environmental Response Trust site, Clark County, Nevada
SRB	Sulfate-reducing bacteria
SWF	Seep Well Field
SU	Standard units
Tetra Tech	Tetra Tech, Inc.

Acronyms/Abbreviations	Definition
TOC	Total organic carbon
UMCf	Upper Muddy Creek formation
VFAs	Volatile fatty acids

CERTIFICATION

Seep Well Field Area Bioremediation Treatability Study 2022 Annual Progress Report
Nevada Environmental Response Trust Site
(Former Tronox LLC Site)
Henderson, Nevada

Nevada Environmental Response Trust (NERT) Representative Certification
I certify that this document and all attachments submitted to the Division were prepared at the request of, or under the direction or supervision of NERT. Based on my own involvement and/or my inquiry of the person or persons who manage the systems(s) or those directly responsible for gathering the information or preparing the document, or the immediate supervisor of such person(s), the information submitted and provided herein is, to the best of my knowledge and belief, true, accurate, and complete in all material respects.

Office of the Nevada Environmental Response Trust

Le Petomane XXVII, not individually, but solely in its representative capacity as the Nevada Environmental Response Trust Trustee

Signature: Jay A Steinberg, President Not Individually, but Solely as President of the Trustee, not individually, but solely in his representative capacity as President of the Nevada Environmental Response Trust Trustee

Name: Jay A. Steinberg, not individually, but solely in his representative capacity as President of the Nevada Environmental Response Trust Trustee

Title: Solely as President and not individually

Company: Le Petomane XXVII, Inc., not individually, but solely in its representative capacity as the Nevada Environmental Response Trust Trustee

Date: 8/15/24

CERTIFICATION

I hereby certify that I am responsible for the services described in this document and for the preparation of this document. The services described in this document have been prepared in a manner consistent with the current standards of the profession, and to the best of my knowledge, comply with all applicable federal, state, and local statutes, regulations, and ordinances. I hereby certify that all laboratory analytical data was generated by a laboratory certified by the NDEP for each constituent and media presented herein.

Description of Services Provided: Prepared Seep Well Field Area Bioremediation Treatability Study, 2022 Annual Progress Report.

August 15, 2024

David S. Wilson, CEM
Principal Engineer
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Date

Nevada CEM Certificate Number: 2385
Nevada CEM Expiration Date: September 19, 2024

1.0 INTRODUCTION

At the direction of the Nevada Environmental Response Trust (NERT or Trust), Tetra Tech, Inc. (Tetra Tech) has prepared this *Seep Well Field Area Bioremediation Treatability Study 2022 Annual Progress Report* to document activities associated with the ongoing Seep Well Field (SWF) Area Bioremediation Treatability Study within the northern portion of the NERT Remedial Investigation (RI) Study Area, located in Clark County, Nevada (**Figure 1**). This report is being submitted to the Nevada Division of Environmental Protection (NDEP) under the Interim Consent Agreement effective February 14, 2011. This Annual Progress Report, which covers the period of January 2022 through December 2022 (referred to herein as the reporting period), provides a summary of the activities performed, presents the data collected, and discusses the results associated with the ongoing extension of the SWF Area Bioremediation Treatability Study. This treatability study extension was implemented consistent with the NDEP-approved *Treatability/Pilot Study Modification No. 6 – Seep Well Field Area Bioremediation Treatability Study* (Tetra Tech, 2018). Subsequent NDEP-approved annual progress reports from previous reporting periods also included recommendations to further optimize implementation of the treatability study extension (*Seep Well Field Area Bioremediation Treatability Study 2019 Annual Progress Repor*t [2019 Annual Progress Report] [Tetra Tech, 2020], *Seep Well Field Area Bioremediation Treatability Study 2020 Annual Progress Report* [2020 Annual Progress Report, Tetra Tech, 2021]), and *Seep Well Field Area Bioremediation Treatability Study 2021 Annual Progress Report* [2021 Annual Progress Report, Tetra Tech, 2022]). These recommendations were subsequently approved by NDEP with comments for the administrative record and incorporated into the treatability study program. Details related to key findings and recommendations are discussed in Section 5.0 of this report.

1.1 BACKGROUND

The SWF Area Bioremediation Treatability Study was implemented beginning in 2017 to evaluate and demonstrate the effectiveness of using in situ bioremediation (ISB) to reduce the flux of perchlorate mass in groundwater that is migrating towards the Las Vegas Wash and was not then being captured by the existing groundwater extraction well network known as the SWF. As part of this treatability study, 25 injection wells were installed in a transect-orientation generally perpendicular to groundwater flow, with monitoring wells installed at varying distances upgradient, between, and downgradient of the injection wells (**Figure 2**). Following well installation, carbon substrate injections performed from 2017 – 2018 provided a sustained reducing environment in the subsurface and created a biologically active zone necessary for effective and continual perchlorate and chlorate biodegradation. Effectiveness monitoring results indicated that groundwater in this area is amenable to biodegradation of perchlorate, chlorate, and nitrate, including a reduction in perchlorate concentrations to less than the perchlorate Preliminary Remediation Goal (PRG) of 15 micrograms per liter (μg/L) in groundwater samples collected from several monitoring wells. Complete results of the treatability study through October 2018 were presented in the *Seep Well Field Area Bioremediation Treatability Study Results Report* (Tetra Tech, 2019).

Because the SWF Area Bioremediation Treatability Study successfully demonstrated that ISB can be effective at reducing perchlorate concentrations in groundwater, NERT recommended that this treatability study be extended to evaluate long-term operation and maintenance requirements. This study extension was detailed in *Treatability/Pilot Study Modification No. 6* (Modification No. 6), which was approved by NDEP on December 14, 2018. Long-term operation and maintenance (O&M) components being evaluated as part of this extension include injection frequency, injection well pressures and flow rates, and injection well maintenance requirements. This information will be used in the remedy alternatives evaluation to be conducted as part of the forthcoming Feasibility Study (FS), as it is not only important to determine if the alternative can be effective at achieving the remedial action objectives, but also equally important to evaluate key components of the remedial alternative that will make it successful with regards to both implementation and long-term operation and maintenance.

The eighth and final injection event was completed in November 2021, followed by effectiveness monitoring through December 2022. Due to ongoing and future development of the Cadence Sports Park and expiration of the access agreement with Basic Environmental Company on March 31, 2023, the eighth injection event was the final injection event completed for the treatability study. Final abandonment of treatability infrastructure completed in February 2023. As a result, there were no injection or well maintenance activities performed this reporting period so that the final year of this treatability study could focus on: 1) continuing groundwater sampling to evaluate long-term concentration trends; 2) monitoring the return of contaminant concentrations and aquifer geochemistry towards baseline conditions following the eighth and final injection event in November 2021; and 3) conducting a soil investigation in the vicinity of treatability study injection wells to document and better understand the phenomena associated with emulsified vegetable oil (EVO) movement and influence in the subsurface.

1.2 OBJECTIVES

Because the original SWF Area Bioremediation Treatability Study demonstrated the effectiveness of the ISB technology at reducing perchlorate and chlorate concentrations in groundwater, the overall purpose of extending the SWF Area Bioremediation Treatability Study is to develop a more thorough understanding of the key design considerations and O&M components as they relate to potential long-term applications of ISB within the NERT RI Study Area. Specifically, the objectives of the study extension are as follows:

- Evaluate the injection frequency and required injectate quantities for long-term ISB operation, with injectate quantities of carbon substrate, nutrients, and distribution water assessed over time to provide optimal dosing to sustain the reducing conditions required for ISB of perchlorate and chlorate in groundwater.
- Develop a more in-depth understanding of long-term O&M requirements of injection well networks associated with ISB systems within the NERT RI Study Area related to evaluation of the following:
    - Impacts of biological activity and biomass accumulation on the injectability of carbon substrate into the injection wells through evaluation of injection pressures and flows.
    - Injection well maintenance requirements, including maintenance frequency and optimal techniques, to maintain long-term injectability.
    - Costs associated with long-term O&M of ISB systems.

Data collected as part of this treatability study extension will be incorporated into the FS to provide information with respect to effectiveness, operational requirements, and associated costs to support the long-term viability of ISB should it be selected as part of the final remedy.

1.3 REPORT ORGANIZATION

This report is organized as follows:

- **Introduction (Section 1.0):** Provides a brief background of the study, primary objectives of this treatability study extension, and organization of this report.
- **Operation and Maintenance (Section 2.0):** Provides an overview of operation and maintenance activities performed within the study area during this reporting period.
- **Effectiveness Monitoring (Section 3.0):** Provides an overview of the effectiveness monitoring program and summarizes the chemical, geochemical, microbial, and hydrogeological data collected during this reporting period.
- **Post-Treatability Study Subsurface Soil Evaluation (Section 4.0):** Provides an overview of the soil sampling results and summarizes geochemical and microbial data collected during this reporting period.

- **Summary of Key Findings and Future Activities (Section 5.0):** Presents the overall findings of data collected during this reporting period and a summary of planned future activities.
- **References (Section 6.0):** Lists the documents referenced in this report.

2.0 SYSTEM OPERATION AND MAINTENANCE

No injections or injection well maintenance activities were performed during the January to December 2022 reporting period. The eighth and final injection event was completed in November 2021 and was summarized in the 2021 Annual Progress Report (Tetra Tech, 2022) and the last injection well maintenance event was performed in February 2021. No maintenance activities were conducted during this reporting period due to the conclusion of injection activities.

3.0 EFFECTIVENESS MONITORING

The effectiveness monitoring program was implemented to observe groundwater contaminant, geochemical, and hydrogeological changes during long-term operations following alterations to a variety of O&M components, such as modifications to the mixing/injection strategies (i.e., batch versus in-line mixing) and performance of different maintenance techniques on injection wells. Because ISB had already demonstrated effectiveness at reducing perchlorate concentrations to below the PRG of 15 μg/L, the sampling program was scaled down in 2019, and subsequently in 2021, through a reduction in sampling frequency and associated analytes in accordance with NDEP-approved Modification No. 6 and the 2020 Annual Progress Report. The quarterly sampling program for the final year of effectiveness monitoring was outlined in the NDEP-approved 2021 Annual Progress Report (Tetra Tech, 2022) and is consistent with the scaled-down sampling program presented in the 2020 Annual Progress Report. This section summarizes the effectiveness monitoring program implemented during this reporting period and presents an analysis of the hydrogeological evaluation and effectiveness monitoring results.

3.1 EFFECTIVENESS MONITORING ACTIVITIES

As part of the effectiveness monitoring program, groundwater samples were periodically collected from both upgradient and downgradient monitoring wells within the treatability study area (as shown on **Figure 2**). Groundwater sampling activities were conducted in accordance with the *Field Sampling Plan, Revision 1* (ENVIRON, 2014). Prior to groundwater sample collection, groundwater levels were gauged in all treatability study monitoring wells to be used in potentiometric contouring. Field low-flow purge logs for all groundwater sampling events are provided in **Appendix A**.

A total of four quarterly groundwater sampling events were conducted during the 2022 reporting period. Per Modification No. 6, groundwater samples were analyzed for key parameters of perchlorate, chlorate, nitrate, total organic carbon (TOC), sulfate, and field parameters (dissolved oxygen [DO], oxidation-reduction potential [ORP], pH, turbidity, temperature, and conductivity). Ferrous iron and sulfide field screening was performed on a semi-annual basis (June and December 2022) while additional parameters of select metals and methane were analyzed on an annual basis (December 2022). Microbial sampling was also included in the effectiveness monitoring program to examine the microbial response to carbon substrate injections. As part of this sampling, Bio-trap® samplers were installed in December 2022 and retrieved approximately 30 days later in January 2023. The Bio-trap® samplers were sent to Microbial Insights for analysis of perchlorate reductase *pcrA* and phospholipid fatty acids (PLFAs).

3.1.1 Data Validation

A Data Validation Summary Report (DVSR) was prepared for the laboratory analytical data collected during the reporting period of January 2022 – December 2022. This report was prepared to assess the validity and usability of laboratory analytical data from groundwater monitoring associated with the ISB of perchlorate in groundwater. Tetra Tech collected additional quality assurance and quality control (QA/QC) samples, which included equipment blanks, field blanks, field duplicates, and matrix spike/matrix spike duplicates, to aid in assessing data quality. These QA/QC samples provided information on the effects of sampling procedures and assessed potential sampling contamination, laboratory performance, and matrix effects.

The DVSR is provided as **Appendix B** to this annual progress report. The laboratory analytical data were verified and validated to Stage 2A for aqueous samples. Ninety percent of the soil samples were validated to Stage 2B and 10 percent were validated to Stage 4. All samples were validated in accordance with procedures described in the *Quality Assurance Project Plan, Revision 5* (Ramboll US Consulting, Inc. [Ramboll], 2020a), *Quality Assurance Project Plan, Revision 6* (Ramboll, 2020b and “NDEP Data Verification and Validation Requirements” (NDEP, 2018), and the references contained therein. The review process also used professional judgment and

guidance from the United States Environmental Protection Agency National Functional Guidelines to determine the final qualifiers, which were added to the database and presented in the DVSR tables included in **Appendix B**.

Results discussed within this report include qualifiers of J-, J, or J+, which are defined as follows:

- A qualifier of J- indicates the result is an estimated quantity, but the result may be biased low.
- A qualifier of J indicates the result is an estimated quantity.
- A qualifier of J+ indicates the result is an estimated quantity, but the result may be biased high.

3.2 HYDROGEOLOGICAL EVALUATION

Changes in hydrogeological conditions over time can affect treatability study results. Therefore, long-term water level monitoring transducers were installed in 2017 and have been recording data since then to monitor hydrogeological conditions over the course of the treatability study. During this treatability study, 10 transducers were installed in monitoring wells located within the immediate treatability study area and two transducers were installed upgradient of the treatability study area near City of Henderson (CoH) Pond 13 to monitor discharges of effluent to Pond 13. A detailed description of the hydrogeological monitoring program and results are provided in **Appendix C**.

Historically, hydraulic rises observed in the transducer data are associated with treatability study injection events and significant storm events. No injection events were performed during this reporting period; however, multiple precipitation events occurring in 2022 resulted in significant water table rise in the treatability study area. These impacts were most noticeable after the largest precipitation event of 1.92 inches on July 27-28, 2022 (**Appendix C, Figure C.3**), when groundwater elevations rose between approximately 0.3 and 2 feet within the treatability study area.

Periodic discharges of water by the CoH to upgradient Pond 13 have also been observed to cause noticeable hydraulic rises downgradient in the treatability study area. In November 2021, the CoH began to utilize some of its ponds in ways inconsistent with the previous decade. Beginning in November 2021 and continuing until February 2022, the CoH filled a number of previously unused infiltration ponds, which allowed millions of gallons of treated water to recharge shallow groundwater upgradient of the treatability study area. This resulted in a significant and widespread increase in groundwater elevation widespread enough to reach the treatability study location. Such water level rises were evident beginning in December 2021 in the vicinity of both Pond 13 and the treatability study area located approximately 2,000 feet downgradient. Near Pond 13, water level rises of up to 17 feet were observed in January and February 2022, with subsequent water level rises of up to 5 feet observed downgradient in the treatability study monitoring wells beginning within two days of the discharge. (**Appendix C, Figures C.3** and **C.4**).

Overall, the CoH effluent release events and major precipitation events resulted in temporary changes to the potentiometric surface upgradient of and within the treatability study area. Such changes in hydraulic gradient have the potential to result in temporary changes to treatment effectiveness because the ISB injection transects were designed to intercept groundwater at the baseline gradient and flow direction within the small treatability study area. Groundwater potentiometric contours from the baseline pre-injection synoptic gauging event in July 2017 and from all four monitoring events during the 2022 reporting period are provided on **Figures 3a** and **3b**. Typically, the hydraulic gradient from the west ranges from approximately 0.007 feet per foot (ft/ft) to 0.008 ft/ft, while the hydraulic gradient from the south is approximately 0.014 ft/ft. The upgradient groundwater flow direction and hydraulic gradients observed in June, September, and December 2022 are generally consistent with these baseline conditions (**Figures 3a** and **3b**). However, the groundwater contours from the March 2022 synoptic gauging event indicate that the hydraulic gradient from the west increased to 0.010 ft/ft compared to a baseline of 0.007 ft/ft, and the hydraulic gradient from the south increased slightly to 0.017 ft/ft compared to a baseline gradient of 0.014 ft/ft (**Figure 3a**). These altered hydraulic gradients observed in March 2022 are expected given the steep water level rise of approximately 17 feet observed in the transducer data from the Pond 13 area in

January/February 2022. Groundwater gradients returned to near baseline conditions by the subsequent monitoring event in June 2022 after the CoH stopped discharging effluent to Pond 13.

These periodic discharges to Pond 13 can also affect perchlorate concentrations migrating into the treatability study area. Increases in groundwater elevation of such unusual magnitude can potentially result in release of highly soluble perchlorate from previously unsaturated vadose zone soils, which could generate an initial increased flux of perchlorate mass in groundwater within and downgradient of areas with significant water level rise. After this initial increased flux of perchlorate mass due to the relatively quick pressure response and water level rise, dilution of incoming groundwater contaminant concentrations by the CoH effluent would potentially be observed as reduced chemical concentrations at monitoring wells within the treatability study area many months after the initial release(s), depending on location-specific groundwater velocity and preferential flow pathways (i.e., paleochannels). The effects on treatment effectiveness of the study from the CoH's use of Pond 13 and the adjacent ponds during the reporting period, along with additional details on how the flooding of the CoH ponds affects the study area and surrounding area in Operable Unit (OU)-3, are discussed in Section 3.3 and the Annual Groundwater Monitoring and GWETS Performance Report (Ramboll, 2023).

3.3 EFFECTIVENESS MONITORING RESULTS

As explained in Section 3.1, groundwater samples were periodically collected and analyzed for a variety of constituents during the treatability study to evaluate the aquifer's response to varying O&M components related to ISB injections. This section provides an overview of the groundwater sampling results, including a discussion of the primary contaminants, additional chemical and geochemical parameters, and relationships among these parameters. Because perchlorate is the primary chemical of concern associated with this treatability study, Section 3.3.1 presents a detailed discussion of the perchlorate degradation response, an estimate of perchlorate distribution, and an estimate of perchlorate mass destroyed during this reporting period. Other significant constituents, including chlorate, nitrate, and TOC, are discussed in Sections 3.3.2 through 3.3.4, respectively. Additional parameters, including DO, ORP, pH, sulfate, sulfide, metals, and methane have also been evaluated and are discussed in Section 3.3.5. Data for all parameters are presented in the comprehensive data tables provided in **Appendix D, Tables D.1 through D.3**. Data for perchlorate, chlorate, nitrate, TOC, arsenic, phosphorus, DO, and ORP are depicted graphically in individual well trend profiles provided in **Appendix E**. Field logs from all groundwater sampling events are provided in **Appendix A**, and the DVSR is provided in **Appendix B**.

3.3.1 Perchlorate

An evaluation of the perchlorate degradation response, perchlorate distribution throughout the treatability study area, and estimates of perchlorate mass removed during the reporting period are presented in the subsections below.

3.3.1.1 Perchlorate Degradation Response

Groundwater perchlorate concentrations have continued to show decreases in 2022 following the eighth injection event in November 2021, when compared to baseline (pre-injection) concentrations. An evaluation of the contaminant concentrations is presented below based on the general location of the monitoring wells with respect to the treatability study area.

Monitoring Wells Located Upgradient of the Injection Well Transects

During the previous 2021 reporting period, increased perchlorate concentrations were observed in groundwater samples collected from upgradient monitoring wells within the western portion of the treatability study area from which groundwater migrates into the area without passing through the treatment zone (such as monitoring well SWFTS-MW04 [trends presented in **Appendix E, Figure E.9**]). During this reporting period, the perchlorate

concentrations in groundwater samples collected at upgradient monitoring well SWFTS-MW04 ranged from 4,000 μg/L to 15,000 μg/L while the average perchlorate concentration was 9,875 μg/L, which was above the average perchlorate concentration of approximately 3,700 μg/L observed in the groundwater sample collected at this monitoring well during the first three years of the treatability study (2017 – 2019). Furthermore, the perchlorate concentration in the groundwater sample collected from SWFTS-MW04 in March 2022 was 15,000 μg/L, which is the highest concentration measured to date at this location during the treatability study. In addition, the groundwater sample collected during the September 2022 sampling event from monitoring well PC-88, which is also located to the west of the treatability study near SWFTS-MW04, measured 22,000 μg/L, which is higher than has ever been measured at this location during the 6-year effectiveness monitoring period (**Appendix E, Figure E.2**). Results from groundwater samples collected from upgradient monitoring wells PC-88 and SWFTS-MW04 indicate that considerable fluctuations in perchlorate concentrations continued to be observed in the western portion of the study area during this reporting period, which may be related to the CoH effluent release events described in Section 3.2. These fluctuating perchlorate concentrations in the western portion of the study area could have an impact on the extent and efficacy of treatment observed at downgradient locations because this untreated groundwater with fluctuating concentrations migrates into the downgradient portions of the study area.

Similarly, and likely related to the CoH effluent release events, unprecedented elevated upgradient perchlorate concentrations were observed in groundwater samples collected from upgradient monitoring wells PC-58, SWFTS-MW07A/B, SWFTS-MW08A, SWFTS-MW11, and SWFTS-MW17 during the November/December 2021 and/or March 2022 sampling events. Trends in the groundwater samples collected from these wells are presented in **Appendix E, Figures E.1, E.14 through E.16, E.20,** and **E.26**, respectively. Upgradient monitoring well SWFTS-MW08A could not be accessed during this reporting period as the well was buried by the property owner's contractors that were constructing a new lift station adjacent to the well location as part of the development of Cadence Sports Park; however, the final sampling event at this well in November/December 2021 indicated that the perchlorate concentration in groundwater at this monitoring well was the highest observed to date (i.e., 21,000 μg/L). Following the record-high perchlorate concentrations observed in groundwater collected from upgradient monitoring wells during the November/December 2021 and March 2022 sampling events, attributed to the CoH effluent release events to the previously unused infiltration ponds, decreasing trends in upgradient perchlorate concentrations were observed throughout the remainder of the 2022 reporting period, with some of the lowest concentrations observed during the 6-year treatability study in the groundwater samples collected from the upgradient monitoring wells SWFTS-MW07B and SWFTS-MW11 in December 2022. The extreme variation in perchlorate concentrations observed during this reporting period are likely related to the hydrogeologic changes associated with the effluent releases by CoH in the Pond 13 area discussed in Section 3.2. The elevated perchlorate concentrations in groundwater observed during the November/December 2021 and March 2022 sampling events likely reflect an initial flux of perchlorate mass from the previously unsaturated vadose zone when groundwater elevations rose to unprecedented levels during the treatability study. The later decreases in perchlorate concentrations in groundwater samples collected from select upgradient locations at historic lows are likely associated with the arrival of Pond 13 effluent to the treatability study area, which caused significant dilution of the perchlorate concentrations.

As discussed in previous annual progress reports, perchlorate concentrations observed in groundwater samples collected from monitoring well SWFTS-MW12 (located approximately 150 feet upgradient of the injection wells and the monitoring well from which most of the distribution water was extracted during the fifth injection event) showed dramatic decreases following the fifth injection event, with perchlorate concentrations reducing from 4,200 μg/L to less than the sample detection limit. It was concluded that a combination of the groundwater extraction from SWFTS-MW12 and an increase in injection rates and pressures during the fifth injection event likely resulted in transport of the injectate to the vicinity of monitoring well SWFTS-MW12, which ultimately reduced perchlorate concentrations in groundwater. During this reporting period, perchlorate concentrations in groundwater samples collected from SFWTS-MW12 fluctuated between 360 μg/L and 2,500 μg/L (**Appendix E, Figure E.21**), indicating that concentrations continue to slowly rebound after the initial arrival of carbon at

SWFTS-MW12 in November 2019. It should be noted that there was not a significant increase in TOC concentrations in groundwater samples collected from SWFTS-MW12 following the sixth, seventh, or eighth injection events.

Monitoring Wells Between Injection Well Transects

Four monitoring wells (namely, SWFTS-MW02, SWFTS-MW14, SWFTS-MW15, and SWFTS-MW16) were installed between the injection well transects to monitor the biologically active zone where injections had previously been performed. The 2022 data from the wells within this zone are discussed below.

Prior to the eighth injection event in November 2021, the groundwater sample collected from monitoring well SWFTS-MW02 (located along the western edge of the treatability study area) had a perchlorate concentration of 9,800 µg/L in September 2021. Following the eighth injection event, the groundwater sample collected from SWFTS-MW02 in March 2022 indicated a reduced perchlorate detection of 600 J µg/L, which represents a reduction of 97 percent compared to the baseline concentration of 25,000 µg/L. The March 2022 result represented the lowest perchlorate concentration detected in groundwater samples collected from this monitoring well since 2017 (**Appendix E, Figure E.7**). By the June 2022 sampling event, approximately seven months after the eighth and final injection event in November 2021, perchlorate concentrations in groundwater collected from this monitoring well began to rebound and increasing perchlorate concentrations ranging from 8,600 µg/L to 15,000 µg/L were observed during the remainder of the reporting period. This rebound represents reductions of 40 percent to 66 percent compared to the baseline concentration. The relatively quick rebound observed in groundwater collected from monitoring well SWFTS-MW02 is likely related to the location of this monitoring well on the western edge of the treatability study area where both treated and untreated groundwater can affect the observed perchlorate concentrations in groundwater samples collected from this monitoring well (**Figures 3a** and **3b**).

Following the eighth and final injection event, perchlorate concentrations in groundwater samples collected from SWFTS-MW14 decreased to 670 µg/L in November 2021, which represents a reduction of 97 percent compared to baseline concentrations. During the 2022 reporting period, the perchlorate concentrations began to slowly rebound. Approximately four months after the eighth/final injection event, the perchlorate concentration in groundwater collected from monitoring well SWFTS-MW14 in March 2022 increased to 4,800 µg/L and further increased to 8,200 µg/L by December 2022. Although perchlorate concentrations slowly increased at SWFTS-MW14 throughout the 2022 reporting period, these concentrations continue to remain significantly below the baseline concentration of 23,000 µg/L, with reductions ranging from 64 to 79 percent (**Appendix E, Figure E.23**). The initial increase in perchlorate concentrations in March 2022 is likely a result of the increased flux of perchlorate upgradient of the injection well transect attributed to the CoH effluent release events to the previously unused infiltration ponds, while the continued concentration rebound through December 2022 is likely due to the time elapsed (approximately 13 months) since the final injection event.

As explained in previous annual progress reports, the groundwater samples collected from monitoring well SWFTS-MW15 have historically indicated a slower degradation response compared to other monitoring wells between the injection well transects, likely due to subsurface lithological and geochemical heterogeneity, potential Upper Muddy Creek formation (UMCf) back diffusion, and/or insufficient injection coverage in this immediate area. Perchlorate concentrations in groundwater samples collected from SWFTS-MW15 during the 2022 reporting period reduced from the highest concentration of 23,000 µg/L in December 2021 to the lowest concentration measured at SWFTS-MW15 to date of 1,400 µg/L in June 2022, which represents a 91 percent reduction compared to baseline conditions (**Appendix E, Figure E.24**). The perchlorate concentrations in groundwater collected from SWFTS-MW15 continued to fluctuate during the remainder of the reporting period, with a concentration of 2,700 µg/L (or 82 percent reduction compared to baseline concentrations) measured in the groundwater sample collected during the final December 2022 sampling event.

Lastly, perchlorate concentrations in groundwater collected from SWFTS-MW16 continued to remain at concentrations significantly below baseline levels during this reporting period (ranging from 79 percent to 99

percent below baseline concentrations [**Appendix E, Figure E. 25**]). Following the eighth injection event, the perchlorate concentrations reduced significantly from 1,900 µg/L in December 2021 to 82 µg/L in December 2022, which represents a reduction of 99 percent compared to the baseline concentration of 8,400 µg/L.

Monitoring Wells Located Downgradient of the Injection Well Transects

Sixteen monitoring wells are located throughout downgradient portions of the treatability study area and were regularly sampled to evaluate the downgradient extent of perchlorate reduction. Monitoring wells SWFTS-MW05A and SWFTS-MW05B were not sampled during this reporting period due to access issues related to development of the Cadence Sports Park. In general, results indicate that groundwater samples collected from eight of the 14 downgradient monitoring wells sampled during this reporting period exhibited perchlorate concentration reductions greater than 60 percent compared to their respective baseline concentrations. Noteworthy results are discussed below.

Groundwater samples collected from monitoring wells located immediately downgradient from the injection well transects (namely, PC-91, PC-92, SWFTS-MW10A, and SWFTS-MW18 located within approximately 50 feet from the transects) provide important data regarding contaminant rebound during the final year of effectiveness monitoring for the treatability study. Results from these groundwater samples are described below.

- A greater than 99 percent decrease in perchlorate concentrations continued to be observed in groundwater samples collected from PC-91, where perchlorate concentrations were below the PRG of 15 µg/L during all four sampling events in 2022 (**Appendix E, Figure E.3**). Perchlorate was not detected above the sample detection limit of 0.63 µg/L in groundwater collected from this well during the final sampling event in December 2022. Groundwater samples from nearby monitoring well PC-92, which is screened deeper than PC-91, has thus far shown marginal decreases and several anomalous increases in groundwater perchlorate concentrations. The March 2022 perchlorate concentration in groundwater collected from PC-92 was at its highest level since inception of the study with a concentration of 15,000 µg/L. The perchlorate concentration reduced throughout the year with a final December 2022 concentration of 5,900 µg/L (**Appendix E, Figure E.4**). As noted in previous annual progress reports, the proximity of the paleochannel in this vicinity likely contributes to the varying effects on perchlorate concentrations in groundwater between monitoring wells PC-91 and PC-92. Based on the groundwater flow patterns, both PC-91 and PC-92 are likely impacted by injections, but PC-91 more so due to its proximity to injection well SWFTS-IW11. Additionally, historical perchlorate concentration trends in groundwater samples collected from both monitoring wells were similar through 2015. However, since 2015 (but prior to injections in August 2017), concentrations in groundwater samples from PC-91 continued to be similar while samples collected from PC-92 began to indicate higher and less stable concentrations, which is similar to the observations at nearby upgradient monitoring well SWFTS-MW04. Groundwater perchlorate concentrations in monitoring well SWFTS-MW04 had a similar trajectory with a concentration of 15,000 µg/L at the beginning of 2022 (the highest concentration since the study inception) but reduced to 4,000 µg/L in the final sampling event in December 2022. As a result, the same upgradient influence that affected groundwater in the vicinity of SWFTS-MW04 is continuing to impact groundwater in the vicinity of PC-92 but not PC-91, likely due to the shallower screened interval of PC-91.
- Groundwater samples collected during this reporting period from SWFTS-MW10A indicated elevated perchlorate concentrations, which is consistent with trends observed during the previous 2021 reporting period. Since late 2019, perchlorate concentrations in groundwater samples collected from SWFTS-MW10A have gradually increased, with concentrations up to 17,000 µg/L during this reporting period. This rise in perchlorate concentrations is accompanied by simultaneous increases in nitrate and chlorate concentrations to greater than baseline concentrations of 16 milligrams per liter (mg/L) and 30,000 µg/L, respectively. These increases may be attributed to a combination of factors, which include lithological characteristics and hydrological fluctuations. Noteworthy observations include:

  - Although upflux of contaminated groundwater will be more thoroughly evaluated in the forthcoming RI Report for OU-3, the paleochannel is incised into the UMCf surface in the vicinity of SWFTS-MW10A, which likely results in upflux of contaminated groundwater from the UMCf. Upflux from the UMCf in this area is supported by the upward vertical gradient observed between alluvial monitoring well SWFTS-MW10A and monitoring well SWFTS-MW10C, which is screened in the UMCf at the same location.
  - The elevated perchlorate concentrations in groundwater samples collected at monitoring well SWFTS-MW10A observed during this reporting period, like those discussed previously at PC-92, may also be related to the increased upgradient concentrations, which occurred during the same sampling events in 2022.

- The perchlorate concentration in the groundwater sample collected from monitoring well SWFTS-MW18 in December 2021 immediately following the eighth/final injection event measured 760 µg/L, which is the lowest concentration observed in groundwater from this location since study inception. Four months following the last injection event, perchlorate concentrations in March 2022 increased to 7,300 µg/L before slowly decreasing to 2,400 µg/L by December 2022, which represents reductions of 44 percent and 82 percent compared to the baseline concentration of 13,000 µg/L, respectively (**Appendix E, Figure E.27**). Monitoring well SWFTS-MW18 is located in the eastern portion of the treatability study area, which means groundwater collected from this area should be representative of groundwater passing through the biologically active zone. During this reporting period, perchlorate concentrations in groundwater collected from SWFTS-MW18 averaged 66 percent below baseline conditions.

Other noteworthy results within portions of the treatability study area farther downgradient from the injection wells are provided below. It should be noted that perchlorate from the neighboring AMPAC plume (generally located west of the NERT OU-3 boundary and north of the SWF) is migrating in the vicinity of the Las Vegas Wash towards the Pabco Road Weir downgradient of the treatability study area (**Figure 1**). Therefore, this plume is likely impacting groundwater quality at the most distant downgradient monitoring wells within the treatability study area. The delineation of the NERT and AMPAC perchlorate plumes will be defined in the forthcoming RI Report for OU-3.

- Perchlorate was detected at a concentration of 1,800 µg/L in the groundwater sample collected from SWFTS-MW01 during the March 2022 sampling event. This concentration represents a reduction of 88 percent compared to baseline conditions. By June 2022, approximately 7 months after the eighth injection event, the perchlorate concentration rebounded to 9,800 µg/L before slowly reducing to 4,900 µg/L in December 2022 (**Appendix E, Figure E.6**). The rebound in perchlorate concentration observed in the June 2022 sampling event is expected because SWFTS-MW01 is located within the paleochannel, where faster groundwater flow rates likely require more frequent addition of carbon substrate to maintain the reducing conditions required for perchlorate degradation. In addition, SWFTS-MW01 is located downgradient of SWFTS-MW10A and therefore, perchlorate concentrations in groundwater at this location are likely associated with the factors discussed previously regarding the increasing trend at SWFTS-MW10A.
- Groundwater perchlorate concentrations in samples collected from monitoring well SWFTS-MW20 during this reporting period were the lowest ever observed at this location since inception of the treatability study, with perchlorate concentrations in the June 2022, September 2022, and December 2022 sampling events measuring below the PRG of 15 µg/L, representing reductions of greater than 99 percent compared to baseline concentrations (**Appendix E, Figure E.29**). Groundwater perchlorate concentrations in samples collected from SWFTS-MW21 during this reporting period showed fluctuations with perchlorate ranging from 920 µg/L to 4,100 µg/L, representing reductions of up to 84 percent compared to baseline concentrations (**Appendix E, Figure E.30**). One of the factors likely contributing to the substantial reduction of perchlorate in groundwater at monitoring wells SWFTS-MW20 and SWFTS-MW21 is the well maintenance performed in injection wells SWFTS-IW13B and SWFTS-IW19, which

resulted in improved injection flow rates and more successful delivery of the designed carbon substrate quantities during the seventh and eighth injection events.

- Groundwater samples collected from the farthest downgradient monitoring wells (i.e., greater than 150 feet downgradient of the injection well transects – PC-94, SWFTS-MW03, SWFTS-MW09A, SWFTS-MW09B, SWFTS-MW24, and SWFTS-MW25; **Appendix E, Figures E.5, E.8, E.17, E.18, E.33,** and **E.34**) generally continued to exhibit perchlorate reductions compared to baseline conditions averaging 30 percent and measuring up to 70 percent during this reporting period. These farther downgradient areas are likely to be more influenced by groundwater migrating into the treatability study area from the west that is not passing through the treatment zone. In addition, these farther downgradient monitoring wells would more readily exhibit the increased flux of perchlorate mass driven by the rise in water level elevations in late 2021 and early 2022 (associated with CoH's use of several previously unused infiltration ponds) because perchlorate flushed from the vadose zone within the treatability study area downgradient of the injection well transects would not pass through the biologically active zone associated with ISB. This phenomenon likely explains the unusually high perchlorate concentrations measured in groundwater samples collected from most of these monitoring wells, namely, PC-94, SWFTS-MW03, SWFTS-MW09A, and SWFTS-MW09B during the March 2022 sampling event. Following the peak in perchlorate concentrations observed in groundwater collected from these four monitoring wells in March 2022, perchlorate concentrations generally showed a decreasing trend for the remainder of the reporting period, with an average percent reduction of approximately 60 percent during the final sampling event in December 2022 compared to baseline conditions.
- Lastly, the perchlorate concentrations in groundwater samples collected from SWFTS-MW22 showed an increase above baseline levels and remained above baseline levels from June through December 2022 (**Appendix E, Figure E.31**). This increase is likely associated with the simultaneously increasing concentrations hydraulically upgradient in areas that are not being actively treated (i.e., groundwater at PC-88 and SWFTS-MW04), as discussed above.

Summary

A biologically active zone continues to be maintained following the eighth injection event in the area between the injection well transects and select areas immediately downgradient of the injection well transects. Groundwater samples collected from several key monitoring wells located immediately downgradient from the second injection well transect, namely PC-91, SWFTS-MW18, SWFTS-MW20, and SWFTS-MW21, indicated a considerable reduction in perchlorate concentration compared to baseline conditions ranging from 69 percent to greater than 99 percent in December 2022, with multiple groundwater samples collected from PC-91 and SWFTS-MW20 indicating perchlorate concentrations below the PRG of 15 μg/L. Perchlorate concentrations in groundwater samples collected from many of the monitoring wells located farther downgradient generally continued to exhibit perchlorate reductions compared to baseline conditions averaging 30 percent and measuring up to 70 percent during this reporting period. In contrast, groundwater samples collected from other downgradient monitoring wells, such as SWFTS-MW22, showed an increase in perchlorate concentrations compared to baseline. These fluctuations in perchlorate concentrations are likely due to a combination of factors including: 1) the length of time (up to 13 months) that has passed since the eighth and final injection event; 2) greater flux of untreated water from the west (associated with CoH's use of several previously unused infiltration ponds) that does not pass through the biologically active zone; 3) unusually high perchlorate concentrations observed in groundwater samples collected from upgradient monitoring wells; 4) preferential flow pathways for carbon substrate migration; 5) presence of paleochannels and potential upflux from the UMCf; and/or 6) varying lithological heterogeneity that was previously noted during drilling activities.

In conclusion, the results from this reporting period illustrate that subsurface geochemistry can remain altered in select areas (such as the vicinity of PC-91 and SWFTS-MW20) so that bioremediation processes may continue beyond the 13 months demonstrated in this treatability study. In contrast, concentration rebound was observed to

occur quickly in areas that are in close proximity to the paleochannel, such as PC-92 and SWFTS-MW01, where the required injection frequency may be closer to 4 to 7 months due to the higher groundwater flow rates present. The data collected in this treatability study related to long-term injection frequency is valuable information for evaluation of a full-scale ISB remedy in the forthcoming FS.

3.3.1.2 Estimate of Perchlorate Distribution

Figure 4a presents perchlorate plume isoconcentration contour interpretations during the reporting period compared to baseline concentrations. Specifically, the baseline event represents pre-injection perchlorate concentrations in groundwater within the vicinity of the treatability study, followed by depictions of subsequent sampling event results post-injection. These comparisons show significant reduction in perchlorate concentrations during the reporting period. As illustrated in the isoconcentration maps on **Figure 4a**, a biologically active treatment zone was sustained following the eighth injection event. As upgradient groundwater flowed through the treatment zone, perchlorate continued to reduce in concentration. In addition, perchlorate concentrations in groundwater downgradient from the treatment zone also reduced in concentration compared to baseline conditions. Of the four isoconcentration maps depicted on **Figure 4a**, the perchlorate concentrations throughout the treatability study area were generally lower in December 2022 compared to other 2022 sampling events. This is likely due to continued ISB combined with dilution related to periodic discharges of water by the CoH to upgradient Pond 13 as described in Section 3.2.

Given the presence of the AMPAC plume migrating in the northern portions of the treatability study area, the downgradient extent of perchlorate concentrations below 15 μg/L is somewhat limited. Groundwater samples in some areas within the treatment zone had slightly less reduction in perchlorate concentrations, which may be due to the hydraulic fluctuations, heterogeneous nature of the subsurface, and localized presence of low permeability within that portion of the injection well transect. If ISB is selected as a component of the NERT final remedy, remedial design could account for situations like this by installing additional injection wells within these low permeability zones to achieve a more uniform biologically active treatment zone.

In addition to the two-dimensional visualizations provided on **Figure 4a**, three-dimensional visualizations are presented on **Figures 4b and 4c**. These figures respond to previous NDEP requests for three-dimensional images of perchlorate concentrations over time, including the differences between the most recent and baseline concentrations. Specifically, **Figure 4b** provides three-dimensional visualization of perchlorate distribution during baseline and select monitoring events following the seventh and eighth injection events with views using a concentration threshold of greater than 5,000 μg/L. **Figure 4c** presents the treated perchlorate from the baseline sampling event through December 2022, again with a concentration threshold of greater than 5,000 μg/L.

3.3.1.3 Estimation of Perchlorate Mass Removal

The objective of the mass removal estimation is to assess the effectiveness of ISB as a field technology to destroy perchlorate mass in the saturated subsurface. For purposes of this treatability study, the mass removal estimation process relies upon the following assumptions:

- Groundwater sampling data from the March and July 2017 sampling events were assumed to represent baseline conditions.
- Saturated thickness was assumed to be constant throughout this study.
- The area of interest (AOI) was defined to include only the areas investigated during this study.

This section presents the methodology and analyses for the estimation of perchlorate mass that was biodegraded during this approximate 12-month treatability study reporting period.

3.3.1.3.1 Data Sources

Data used for mass estimation were obtained from water level measurements and perchlorate concentrations in groundwater samples collected in or near the treatability study area. Some data were collected specifically for this treatability study, while other data were obtained from the NERT database maintained by Ramboll and were collected from monitoring wells near the treatability study area. In addition, Ramboll provided ArcGIS shapefiles and raw data representing groundwater elevations, perchlorate concentrations, and UMCf geologic surface elevations.

3.3.1.3.2 Procedures

As part of the mass removal calculations, a number of grid surfaces were first generated, as described in the prior *Seep Well Field Area Bioremediation Treatability Study Results Report* (Tetra Tech, 2019). These surfaces represented the alluvium/UMCf contact, groundwater elevation, saturated thickness, hydraulic conductivity, and perchlorate concentrations during each groundwater monitoring event following a carbon substrate injection. The UMCf surface, groundwater elevation, saturated thickness, and hydraulic conductivity grids were not modified as part of the updated mass estimate calculations since they did not change significantly over the course of the year. However, new perchlorate concentration grid surfaces were generated for each monitoring event conducted. To generate these grid surfaces, analytical results collected as part of effectiveness monitoring in the AOI were combined with analytical data obtained from the Ramboll database for wells outside the AOI.

The second step was to estimate the amount of mass entering and leaving the AOI during each sampling event. To do this, the saturated thickness, perchlorate concentration, and hydraulic conductivity surfaces were used to develop saturated thickness, perchlorate concentration, and hydraulic conductivity estimates in cross sections through the upgradient and downgradient ends of the AOI. Next, Darcy's Law was used to calculate the volume of water entering and leaving the study area during each sampling event.

The flow area was calculated from the saturated thickness and the distance between the extracted points for each cross section. The volume of water passing through the cross section was calculated from the estimated hydraulic conductivity at each extracted point, the hydraulic gradient, and the effective porosity (estimated from area-specific nuclear magnetic resonance [NMR] data). The volume of water passing through the cross section multiplied by the extracted perchlorate concentrations along the cross-section results in the mass of perchlorate passing through that cross section at each sampling event. However, due to spatial constraints in the data, the upgradient cross section passes through the injection well transects, so only the baseline mass entering could be estimated from the cross section. Therefore, a multiplier was developed to adjust incoming mass by the overall change in concentration in each sampling event observed at the SWF area, which is located just upgradient of the treatability study area.

The third step was to estimate the amount of mass present in the AOI during each monitoring event. The saturated thickness and concentration grids were used to estimate mathematically the mass of perchlorate present in the AOI. The average porosity of 25 percent obtained from NMR logging for the alluvial well screens within the treatability study area was used to estimate the mass present in pore spaces. Next, the net mass change in perchlorate mass between each monitoring event was estimated using the mass that entered the study area during the elapsed time in between events, minus the mass that left the study area during the elapsed time, plus the change in mass present in the study area. It should be noted that this analysis does not account for matrix diffusion of perchlorate from the UMCf. If the calculated net mass change between monitoring events was negative (i.e., the perchlorate increased in the area), then zero mass treatment was assumed for that period. Finally, a time-weighted average was used to estimate the overall mass removal rate.

3.3.1.3.3 Results

During the reporting period January through December 2022, an estimated total of 957 pounds of perchlorate was destroyed in the groundwater in the vicinity of the treatability study area (an approximate average of 2.5 pounds

per day), which is higher than the 712 pounds of perchlorate removed during the 2021 reporting period. The influx of perchlorate to the study area comes from two primary directions: 1) the small east-west oriented paleochannel parallel to the Las Vegas Wash; and 2) the south, outside any paleochannel. The perchlorate mass destroyed was higher during this 2022 reporting period than the 2021 reporting period in part because the upgradient influx was significantly higher in 2022 (likely attributed to the CoH effluent release events to the previously unused infiltration ponds) compared to the upgradient influx during the 2021 reporting period. The continuing effectiveness of the biologically active zone was clearly shown when the concentrations coming in from the south increased up to 100 percent above baseline in late 2021 and early 2022 due to the immense effluent releases to the Pond 13 area by CoH while the concentrations within the study area remained low. Fluctuations in upgradient perchlorate concentrations are commonly observed within the study area and do not impact achieving the goals of the treatability study extension, which is focused on long-term operations and maintenance. However, potential outside influences on hydraulic gradient and contaminant concentrations that may impact the effectiveness of ISB should be considered, if ISB is incorporated into the NERT final remedy.

3.3.2 Chlorate

Chlorate is present in groundwater within the treatability study area at concentrations that are often higher than those of perchlorate. Like perchlorate, chlorate is amenable to anaerobic biodegradation. Chlorate concentrations are summarized in **Appendix D, Table D.1**, and are graphically depicted in **Appendix E**. **Figure 5** presents chlorate plume interpretations, which show significant reductions in chlorate concentrations similar to the perchlorate reductions shown on **Figure 4a**.

In general, chlorate concentration trends followed a reducing pattern similar to the perchlorate concentration trends during this reporting period. However, there are select wells (SWFTS-MW01, SWFTS-MW03, SWFTS-MW14, SWFTS-MW16, and SWFTS-MW21) in which the chlorate reduction is greater than the perchlorate reduction over time. As discussed in previous reports, reasons for this phenomenon could be that the microbial kinetic degradation rate is higher for chlorate compared to perchlorate, and some microorganisms could intermittently prefer chlorate as an electron acceptor compared to perchlorate and nitrate (Liebensteiner et al., 2016).

During this reporting period, chlorate concentrations in groundwater samples collected from monitoring wells between the injection well transects generally exhibited decreases similar to previous reporting periods, with a summary of the 2022 results provided below.

- Chlorate concentrations measured in groundwater samples collected from SWFTS-MW14 remained significantly below the baseline concentration of 54,000 µg/L, with reductions of greater than 94 percent sustained through September 2022 (**Appendix E, Figure E.23**). Approximately 13 months after the final injection event during the December 2022 sampling event, chlorate concentrations increased to 7,800 µg/L, which still represents a reduction of 86 percent compared to baseline concentrations. This rebound in chlorate concentrations is expected given the length of time that had passed since the last injection event, combined with the increased flux of contaminants immediately following the eighth injection event.
- During all four sampling events performed during the 2022 reporting period, chlorate concentrations in groundwater samples collected from SWFTS-MW16 reduced to at or below 11 J µg/L, which represents a greater than 99 percent reduction compared to baseline concentrations (**Appendix E, Figure E.25**).
- Chlorate concentrations in groundwater samples collected from SWFTS-MW02 showed fluctuations similar to perchlorate in 2022. However, the lowest concentration measured at this location since 2019 occurred during the March 2022 sampling event, with a chlorate concentration of 650 µg/L. Chlorate concentrations increased in the latter part of the reporting period, ranging from 9,700 µg/L to 20,000 µg/L (reductions of 83 percent to 66 percent, respectively, when compared to the baseline concentration of 58,000 µg/L).

- Lastly, chlorate concentrations in groundwater samples collected from SWFTS-MW15 increased above baseline concentrations to 58,000 μg/L in late 2021 but reduced to the lowest chlorate concentrations measured to date of 42 J μg/L in March 2022 and below the sample detection limit of 24 μg/L in June 2022. Chlorate concentrations fluctuated dramatically in the latter part of the reporting period, rebounding to 16,000 μg/L in September 2022 and then decreasing to 2,600 μg/L in December 2022, which represents reductions of 63 percent and 94 percent, respectively. These highly variable concentrations are consistent with the highly variable perchlorate concentrations observed in groundwater collected from SWFTS-MW15 and are likely similarly attributed to the continuing influence from the ISB injections and variability observed in groundwater at upgradient wells due to the Pond 13 effects discussed in Section 3.2.

As with the trends in perchlorate, the changes in chlorate concentrations in groundwater samples collected from monitoring wells located within 100 feet downgradient of the second injection well transect (namely, PC-91, PC-92, SWFTS-MW10A, SWFTS-MW18, SWFTS-MW20, and SWFTS-MW21) are also key in evaluating the effectiveness of various O&M components of the study. Noteworthy results are summarized below:

- Chlorate concentrations in groundwater collected from monitoring well PC-91 continued to indicate reductions in chlorate concentrations of greater than 99 percent in this reporting period with no chlorate detected above the sample detection limits of less than 4.9 μg/L or 24 μg/L.
- Chlorate concentrations in groundwater samples collected at monitoring wells PC-92 and SWFTS-MW10A (both of which are screened within the lower alluvium and located in the vicinity of the paleochannel within the western portion of the treatability study area) fluctuated throughout the reporting period. Chlorate concentrations from samples collected from monitoring well PC-92 showed significant increases to above the baseline concentration of 10,000 μg/L during all the sampling events in the reporting period, with chlorate concentrations ranging from 11,000 μg/L in to 37,000 μg/L. Groundwater samples collected from SWFTS-MW10A indicated similar concentrations to the baseline concentration of 27,000 μg/L, with chlorate concentrations fluctuating between 18,000 μg/L and 30,000 μg/L during this reporting period. The fluctuating chlorate concentrations observed in groundwater samples collected at monitoring wells PC-92 and SWFTS-MW10A are likely related to the flux of untreated groundwater into the study area from the west and the length of time since the eighth and final injection event (up to 13 months).
- Chlorate concentrations in groundwater samples collected at monitoring well SWFTS-MW18 fluctuated throughout this reporting period between 10,000 μg/L and 16,000 μg/L, which still represents reductions ranging from 69 percent to 81 percent compared to the baseline concentration of 52,000 μg/L.
- Groundwater samples collected from monitoring well SWFTS-MW20 also continued to indicate chlorate reductions of greater than 99 percent in this reporting period with chlorate concentrations in groundwater collected in March 2022 measuring 790 μg/L before concentrations decreased to below 65 μg/L for the remainder of the reporting period.
- Chlorate concentrations observed in groundwater samples collected from SWFTS-MW21, which is located immediately downgradient of the injection well transects and in the eastern portion of the study area, remained at or below 42 J μg/L throughout the reporting period, which represents reductions of greater than 99 percent compared to baseline conditions.

Groundwater concentrations in samples collected from monitoring wells located farther downgradient of the injection well transects (PC-94, SWFTS-MW01, SWFTS-MW03, SWFTS-MW09A/B, SWFTS-MW22, SWFTS-MW24, and SWFTS-MW25) showed reductions in chlorate concentrations compared to baseline conditions. Because these farther downgradient areas are likely to be more influenced by untreated groundwater migrating into the study area from the west, the concentration reductions are more variable compared to reductions observed in groundwater present in the areas closer to the injection well transects. Specifically, the following results were noted during the 2022 reporting period:

- Groundwater samples collected from monitoring wells SWFTS-MW01, SWFTS-MW03, and SWFTS-MW25 in March 2022 (approximately 4 months after the final injection event) indicated chlorate concentration reductions of greater than 96 percent compared to baseline concentrations, with chlorate concentrations ranging from less than the sample detection limit of 24 µg/L to 1,900 µg/L. By June 2022 and for the remainder of the reporting period, chlorate concentrations rebounded in groundwater collected from these locations, with concentrations ranging from 6,200 µg/L to 17,000 µg/L, which still represents an average percent reduction of 78 percent compared to baseline conditions.
- Groundwater samples collected from downgradient monitoring wells located in the vicinity of the paleochannel (PC-94 and SWFTS-MW09A/B) and in areas receiving untreated groundwater flowing from the western portion of the study area (SWFTS-MW24) indicated chlorate concentration reductions ranging from 20 percent to 79 percent when compared to baseline.
    - Groundwater chlorate concentrations in samples collected from monitoring well PC-94 indicated a decreasing trend during the first half of the reporting period following the eighth and final injection event, with chlorate concentrations as low as 10,000 µg/L observed during the June 2022 sampling event compared to the baseline concentration of 47,000 µg/L. Groundwater samples collected from monitoring well PC-94 during the September and December 2022 sampling events indicated chlorate concentrations had rebounded to 16,000 µg/L and 21,000 µg/L, which still represent reductions of 66 percent and 55 percent compared to baseline, respectively.
    - Chlorate concentrations in groundwater samples collected from monitoring wells SWFTS-MW09A/B exhibited a decreasing trend from March 2022 through September 2022 with reductions of up to 72 percent and 62 percent, respectively. Groundwater samples collected from monitoring wells SWFTS-MW09A/B during the December 2022 sampling event indicated chlorate concentrations had rebounded to 22,000 µg/L and 28,000 µg/L, respectively. Despite the increased concentrations, these results were still significantly reduced when compared to baseline concentrations (i.e., 56 percent and 39 percent reduction, respectively).
    - Groundwater chlorate concentrations in samples collected from monitoring well SWFTS-MW24 fluctuated during this reporting period between 9,000 µg/L and 16,000 µg/L, which represents reductions of 66 percent to 79 percent compared to baseline concentrations.
- Lastly, chlorate concentrations in samples collected from downgradient monitoring well SWFTS-MW22 indicated a significant increase to chlorate concentrations above baseline levels during this reporting period, with a detection of 15,000 µg/L in December 2022 (significantly higher than the baseline concentration of 7,900 µg/L).

3.3.3 Nitrate

Nitrate concentrations continue to be evaluated during the study extension because nitrate is the most likely competing electron acceptor for perchlorate reduction and a consumer of organic carbon substrate. Both perchlorate and chlorate biodegradation generally commence when nitrate biodegradation (denitrification) is substantially complete. However, perchlorate and chlorate biodegradation could also occur concurrently with nitrate biodegradation. Generally, in the presence of a continuing carbon source, and after DO and nitrate have been reduced, both chlorate and perchlorate act as electron acceptors for anaerobic respiration. Nitrate concentrations are summarized in **Appendix D, Table D.1**, and are graphically depicted in **Appendix E**. **Figure 6** presents nitrate plume interpretations, which show continued significant reductions in nitrate concentrations during the treatability study.

During baseline sampling, nitrate concentrations were greater than 10 mg/L in all groundwater samples collected from monitoring wells located between the injection well transects. During the 2022 reporting period, nitrate was detected at concentrations less than 5 mg/L in multiple groundwater samples collected from monitoring wells SWFTS-MW02, SWFTS-MW14, and SWFTS-MW16 (**Appendix E, Figures E.7, E.23,** and **E.25**). With the

exception of SWFTS-MW16, nitrate concentrations increased to greater than 5 mg/L in samples collected from all monitoring wells located between the injection well transects by September 2022, which was approximately 9 months after the final injection event.

As presented on **Figure 6**, nitrate concentrations were reduced after the eighth injection event not only within the biologically active treatment zone but also in much of the downgradient portion of the study area. Nitrate concentrations in groundwater samples collected from four monitoring wells located hydraulically downgradient of the injection well transects reduced by greater than 85 percent when compared to their baseline concentrations during several sampling events from this reporting period. Additionally, groundwater collected from seven of the 14 monitoring wells located downgradient from the second injection well transect indicated nitrate concentrations less than 5 mg/L during at least one sampling event in this reporting period. Groundwater collected from two of those 14 monitoring wells, namely PC-91 and SWFTS-MW20, exhibited nitrate concentrations of less than 1 mg/L for the duration of the reporting period, including in December 2022 approximately 13 months after the eighth injection event.

3.3.4 Total Organic Carbon

Total organic carbon can sometimes be a surrogate parameter for evaluating carbon substrate distribution in the subsurface. As a result, TOC has continued to be analyzed during the reporting period to monitor changes in groundwater concentrations after injections compared to baseline pre-injection concentrations. TOC concentrations are summarized in **Appendix D, Table D.1**, and are graphically depicted in **Appendix E**.

Immediately after the eighth injection event, TOC concentrations from the groundwater sample collected at monitoring well PC-91 measured 210 mg/L during the November/December 2021 sampling event. TOC concentrations in the groundwater sample collected from PC-91 reduced to 11 mg/L in March 2022 and continued to slowly decrease throughout the 2022 reporting period to 4.9 mg/L in December 2022. TOC concentrations in groundwater samples collected from remaining downgradient monitoring wells were either similar to baseline or at concentrations slightly above baseline throughout the 2022 reporting period. Minimal TOC concentration increases are expected because the injectate (measured as TOC) is adsorbed to soil and consumed closer to the injection well transect(s) themselves and does not generally migrate in significant quantities to downgradient locations.

As previously discussed, TOC concentrations in groundwater samples collected from upgradient monitoring well SWFTS-MW12 increased to 560 mg/L in 2019, which was attributed to extraction and injection operations during the fifth injection event. Since the initial arrival of injectate in the vicinity of SWFTS-MW12, TOC concentrations have slowly reduced over time. The TOC concentration in groundwater collected from SWFTS-MW12 was 7.8 mg/L in March 2022, with concentrations continuing to decrease during the remainder of the reporting period to 2.6 mg/L in December 2022. These data indicate the modifications to injection/extraction procedures during the sixth, seventh, and eighth injection events were generally successful at limiting migration of carbon substrate into upgradient locations.

3.3.5 Additional Chemical and Geochemical Evaluation

This section provides a summary of the additional data collected during the reporting period (namely, field parameters [DO, ORP, and pH], methane, phosphorus, sulfate, and sulfide) and their influence on perchlorate biodegradation. A discussion of metals, including arsenic, iron, and manganese, has also been included due to the potential for metals mobilization during implementation of ISB systems. Results for all parameters discussed herein are presented in the comprehensive data tables provided in **Appendix D, Tables D.1 through D.3**. Dissolved arsenic, phosphorus, DO, and ORP readings are graphically depicted in **Appendix E**.

3.3.5.1 Field Parameters

The field parameters DO, ORP, pH, turbidity, temperature, and conductivity are recorded during groundwater sampling events. This section summarizes the results for DO, ORP, and pH and their significance in the ongoing bioremediation processes.

3.3.5.1.1 Dissolved Oxygen and Oxidation-Reduction Potential

DO and ORP measurements are often useful parameters to ascertain geochemical conditions in the groundwater and to confirm that anaerobic conditions have been achieved and sustained during the creation of a biologically reductive groundwater environment, which is essential for perchlorate biodegradation. ORP readings sometimes provide a valuable tool to identify the redox conditions in groundwater and ascertain reducing conditions. At some sites, ORP readings correlate well with DO values and, therefore, provide a means to verify the extent of reduction. However, in aquifers with several electron acceptors and redox pairs (such as iron pairs, nitrogen pairs, perchlorate/chlorate/chloride, and sulfur pairs), redox measurements may not always be accurate and interpretations from these data should be made with a degree of caution. As part of the treatability study extension, both DO and ORP measurements were collected using field equipment as part of low-flow groundwater sampling during all effectiveness monitoring events.

During baseline (pre-injection) activities, the aquifer was generally aerobic with DO concentrations greater than 1.0 mg/L and positive ORP averaging approximately 98 millivolts (mVs). Since injections began, average DO and ORP readings have generally been lower and indicative of sustained anaerobic conditions conducive to perchlorate biodegradation. In general, groundwater from monitoring wells that showed the most significant and consistent perchlorate and chlorate biodegradation appeared to be consistently anaerobic throughout the treatability study, as inferred from DO and ORP readings.

During this reporting period, groundwater samples collected from the four monitoring wells located between the injection well transects, namely SWFTS-MW02, SWFTS-MW14, SWFTS-MW15, and SWFTS-MW16, had average DO concentrations of 0.64 mg/L and 0.69 mg/L in March 2022 and June 2022, respectively. DO concentrations remained below 1 mg/L in groundwater samples collected from three of the four monitoring wells in September 2022; however, DO concentrations increased dramatically to an average of 3.14 mg/L during the December 2022 sampling event. The rise in DO concentrations in the groundwater from the monitoring wells located between the injection well transect in December 2022 is likely due to the relatively long period of time (approximately 13 months) since the final injection event. ORP readings of groundwater samples collected from monitoring wells located between the injection well transects were generally low throughout the reporting period, with groundwater collected from monitoring well SWFTS-MW16 having negative ORP readings as low as -69.6 mV during all four 2022 sampling events.

Groundwater DO and ORP measurements in the monitoring wells located immediately downgradient from the two injection well transects generally indicated anaerobic conditions. Groundwater samples collected from 12 of the 14 downgradient monitoring wells measured less than 1 mg/L DO during the March 2022 and June 2022 sampling events. By December 2022, the average DO concentration at the 14 downgradient monitoring wells increased to 1.10 mg/L, indicating a change to more aerobic conditions in areas downgradient of the injection well transects approximately 13 months after the final injection event. As expected, the most significant groundwater perchlorate, chlorate, and nitrate concentration reductions were observed in the same groundwater samples that also had DO readings in groundwater that generally measured less than 1 mg/L and negative ORP readings. For example, groundwater samples collected from PC-91 during this reporting period regularly indicated perchlorate, chlorate, and nitrite concentrations below the sample detection limits and average DO concentrations and ORP readings of 0.37 mg/L and –318.8 mV, respectively. Overall, DO readings provide a general indication of the reducing conditions in groundwater between the injection well transects and downgradient of the injection well transects during this reporting period, while ORP readings do not always correlate. A change to more aerobic

conditions downgradient of the injection well transects was observed approximately 13 months after the final injection event.

DO concentrations in groundwater samples collected from the majority of upgradient monitoring wells were similar to previous years and generally indicative of slightly aerobic conditions, with average DO concentrations ranging from 1.15 mg/L to 2.25 mg/L during this reporting period. Groundwater samples collected from upgradient monitoring well SWFTS-MW12 indicated DO concentrations generally between 0.5 mg/L and 1 mg/L, with slightly negative ORP readings observed during three of the four sampling events, which indicates more aerobic conditions than the previous 2021 reporting period. This trend towards more aerobic conditions at this upgradient monitoring well is consistent with the gradual consumption of carbon substrate and rebound in perchlorate concentrations observed during the December 2022 sampling event, as previously explained in Sections 3.3.1.1

Overall, DO readings provide a general indication of the reducing conditions in groundwater following carbon substrate injections, with groundwater from monitoring wells that showed the most significant and consistent perchlorate biodegradation also appearing to be consistently reducing throughout the treatability study. ORP readings fluctuated and did not always correlate well with DO measurements.

3.3.5.1.2 pH

In general, pH values observed in groundwater samples collected from monitoring wells located between and downgradient from the injection well transects ranged from 6.34 to 7.39 standard units (SU) and averaged 6.91 SU, which is conducive to most microorganisms. Biological activity often results in a reduction in pH in groundwater. However, the presence of natural caliche (calcium carbonate) and gypsum (calcium sulfate) in the aquifer likely serves as a pH buffer. The buffering capacity of the aquifer minimizes pH changes during biological activity, thereby making this groundwater a favorable candidate for long-term carbon substrate injections for ISB.

3.3.5.2 Sulfate and Sulfide

Sulfate and sulfide are secondary parameters that are generally monitored during ISB applications to evaluate sulfate as an electron acceptor and potential carbon substrate consumer. Commonly, sulfate reduction occurs only under very reducing conditions and after nitrate, chlorate, and perchlorate biodegradation has occurred. Sulfate biodegradation is not desirable for various reasons, primarily because it results in: 1) unnecessary consumption of carbon substrate; 2) overproduction of sulfate-reducing microorganisms that could overtake perchlorate-reducing microorganisms and cause microbial toxicity under certain conditions; 3) the formation of hydrogen sulfide; and 4) loss of hydraulic permeability.

Sulfate reductions appear to have stabilized in groundwater samples collected from monitoring wells located between the injection well transects and farther downgradient. During this reporting period, sulfate concentrations in groundwater samples collected from the four monitoring wells located in between the injection well transects reduced by an average of 10 percent, which is less than the overall average reduction of 29 percent observed in 2021 for groundwater samples collected from the same set of monitoring wells. Sulfate concentrations detected in groundwater samples collected from downgradient monitoring wells indicate an overall average decrease of approximately 5 percent when compared to baseline, which again is less than the average decrease of 20 percent observed during the previous 2021 reporting period. Although significant sulfate reductions were observed in 2021 following the seventh and eighth injection events in groundwater samples collected from monitoring well PC-91, sulfate concentrations increased during the 2022 reporting period from 1.8 mg/L in November/December 2021 to 540 mg/L in December 2022. The increase in sulfate concentration in 2022 coincides with the decrease in TOC concentrations and increase in DO concentrations.

In general, sulfide was not detected in groundwater samples collected during this reporting period within the treatability study area. Sulfide was detected at low concentrations (less than 1 mg/L) in groundwater samples collected from monitoring well PC-91, which is also the only location where groundwater sample results indicated notable sulfate reduction.

In conclusion, the limited sulfate reduction and sulfide production observed in this treatability study are consistent with the results from previous years and suggest the potential negative impacts of sulfate biodegradation in this high sulfate environment can be minimized and/or controlled during implementation of perchlorate bioremediation. As stated in previous reports, the employment of the slow-release carbon substrate, EVO, is likely to be one reason for the limited sulfate reduction, because EVO comprises long-chain fatty acids that adsorb to the soil grains and gradually hydrolyze to provide the type of organic carbon (such as triglycerides followed by acetate and hydrogen) that is then used by microorganisms in their growth and respiration process. This gradual hydrolytic process does not appear to produce strongly reducing conditions and therefore limits sulfate degradation. Secondly, the groundwater flow rates in this setting are relatively high, a hydraulic phenomenon that may not provide sufficient residence time for sulfate biodegradation to prosper.

3.3.5.3 Metals and Inorganic Data Analyses

Under anaerobic conditions, metals such as arsenic, iron, and manganese can be reduced, mobilized, and precipitated out into the aquifer, a phenomenon that can sometimes increase metals concentrations and/or decrease hydraulic permeability in the aquifer. Accordingly, dissolved metals and ferrous iron were analyzed during baseline sampling and periodically during the treatability study to monitor metals mobilization. Because the study extension is focused on long-term O&M components to an ISB system, the frequency of metals analysis was reduced to annual following recommendations in the 2021 Annual Progress Report. As a result, only the December 2022 sampling event included metals analysis during this reporting period. The bulleted summary below provides an overview of key observations related to dissolved metals and ferrous iron.

- Arsenic is sometimes released from minerals in the saturated subsurface when reducing conditions are created following the injection of a carbon substrate. However, in many cases, these transient increases of arsenic ultimately precipitate out as arsenic sulfide over time. Groundwater samples collected from the four monitoring wells located between the injection well transects continue to indicate arsenic concentrations less than or near baseline concentrations and ranged from 7.7 μg/L to 62 μg/L. Laboratory results from groundwater samples collected from the 14 monitoring wells located downgradient from the injection well transects indicated arsenic concentrations ranging from 4.1 μg/L to 72 μg/L, which are below the baseline arsenic concentrations and below the maximum upgradient arsenic concentration of 130 μg/L from the groundwater sample collected at monitoring well PC-58. This favorable data indicates that arsenic is not mobilizing in significant quantities to farther downgradient locations or migrating outside of the treatability study area.
- Dissolved iron concentrations in groundwater were evaluated due to the potential for iron to undergo reduction and mobilization under anaerobic conditions and precipitate out in the subsurface, which could decrease the hydraulic permeability in the aquifer. Pre-injection baseline dissolved iron concentrations ranged from less than 0.050 mg/L to 15 mg/L, but were typically less than 1.5 mg/L. During this reporting period, dissolved iron concentrations in groundwater generally continued to be below the sample detection limit. One exception is the groundwater sample collected from monitoring well SWFTS-MW16, where dissolved iron was detected at 2.0 mg/L. However, all dissolved iron concentrations measured during this reporting period were below the maximum concentration of 15 mg/L observed during the baseline sampling event. In general, iron precipitation has not been an issue during implementation of the treatability study because of relatively low baseline iron concentrations in both soil and groundwater.
- Manganese can also undergo reduction and mobilization under anaerobic conditions and precipitate out in the subsurface, potentially decreasing the hydraulic permeability in the aquifer. During this reporting period, dissolved manganese concentrations in groundwater remained quite low, measuring below 5.5 mg/L throughout the study area. Therefore, this favorable data indicates that significant mobilization of manganese is not occurring.
- Dissolved phosphorus concentrations in groundwater were generally below the sample detection limit, with the exception of the groundwater collected from monitoring wells PC-58, PC-88, and PC-91, where

phosphorus ranged from 0.016 to 0.077 J mg/L in December 2022. These low dissolved phosphorus concentrations indicate that the phosphorus injected as part of the carbon substrate solution was likely used as a nutrient, adsorbed to the soil, and/or combined with cations such as calcium rather than increasing its concentration in groundwater. It should be noted that baseline phosphorus concentrations ranged from less than 0.10 to 0.77 mg/L.

3.3.5.4 Methane

Methanogenic conditions (signified by biological methane production) require highly reducing conditions that are generally not warranted for perchlorate biodegradation. However, methane concentrations often increase in groundwater following the injection of a carbon substrate, particularly in groundwater at monitoring locations close to injection locations. It should be noted that any methane that is biologically generated should be rapidly oxidized to carbon dioxide in the sandy vadose zone overlying the saturated alluvium.

Methane was analyzed during the December 2022 sampling event, with results indicating detections of methane at 10 of the monitoring wells located between or downgradient from the injection well transects. The highest methane concentration of 6,400 μg/L was detected in the groundwater sample collected from PC-91. This result indicates that the methane concentrations has reduced from the 2021 concentration of 12,000 μg/L. As discussed in Sections 3.3.1, 3.3.2, and 3.3.5.2, groundwater samples collected from PC-91 exhibited significant decreases in perchlorate, chlorate, and sulfate during this reporting period. Groundwater from monitoring well PC-91 also indicated extremely low ORP measurements during this reporting period as low as –340.1 mV, which is indicative of methanogenic conditions. Methane concentrations also reduced in several other monitoring wells (including SWFTS-MW16, SWFTS-MW18, SWFTS-MW20, and SWFTS-MW21) during the 2022 reporting period compared to the previous 2021 results. Although methane concentrations in groundwater samples collected at monitoring wells SWFTS-MW16 and SWFTS-MW20 showed a reduction compared to the previous reporting period, concentrations remained elevated at 5,100 μg/L and 680 J- μg/L, respectively, in December 2022. Lastly, the methane concentration in the groundwater sample collected from upgradient monitoring well SWFTS-MW12 increased from 1,300 μg/L in November/December 2021 to 2,600 μg/L in December 2022. However, this result remains below the highest methane concentration of 4,900 μg/L, which was detected in the groundwater sample collected from this location in October 2020 after the initial arrival of injectate solution (previously discussed in Section 3.3.1.1).

3.4 MICROBIAL EVALUATION

Microbial sampling was included in the effectiveness monitoring program to continue examination of the microbial response to carbon substrate injections. In December 2022, Bio-Traps® were deployed at four locations, namely SWFTS-MW07A (upgradient monitoring well), SWFTS-IW02A (injection well), SWFTS-MW14 (monitoring well between the injection well transects), and SWFTS-MW09B (downgradient monitoring well). The Bio-Traps® were left in-place for approximately 30 days and then retrieved and shipped to Microbial Insights for analyses of PLFAs and the perchlorate reductase enzyme. This section presents a summary of the groundwater microbial evaluation for the 2022 reporting period. Analytical results for the microbial analyses performed on the Bio-Trap® samplers installed and retrieved during the 2022 reporting period are presented in **Appendix D, Table D.4**. Microbial laboratory data reports are provided in **Appendix F**.

3.4.1.1 Overview of Microbial Analysis

A brief description of the microbial analysis and its importance to perchlorate biodegradation is provided below.

- **PLFA Analysis** – PLFAs are a main component of the membrane (essentially the “skin”) of microbes and provide a powerful tool for assessing microbial responses to changes in their environment. Analysis of the types and amount of PLFAs provides a broad-based understanding of the entire microbial community with information obtained in the key areas of viable biomass, community structure, and metabolic activity.

- Viable Biomass – PLFA analysis is a reliable and accurate method for the determination of viable microbial biomass. Although phospholipids break down rapidly upon cell death, the biomass calculations based on PLFA content do not measure dead cells, but only the active and viable microbial population. Biomass levels are typically reported as cells per bead.
- Community Structure – PLFAs can be separated into specific types and profiles that reflect the proportions of the categories of organisms present in a sample. Determining which bacterial groups are present and their relative distributions within the community can provide information on what metabolic processes are occurring at that location. Community structure is presented as a percentage (%) of the total amount of PLFAs and is translated to the related bacterial classification within the overall community structure. The main bacterial groups that are presented via PLFA analyses are:
  - Proteobacteria – One of the largest groups of bacteria that represents a wide variety of both aerobe and anaerobes. Proteobacteria are generally capable of adapting quickly to changes in the environment and grow opportunistically when food (a carbon source) is available.
  - Firmicutes – Anaerobic fermenting bacteria that use carbon (such as EVO) to produce hydrogen that is then consumed by perchlorate reducing microorganisms.
  - Actinomycetes/sulfate reducers and anaerobic metal reducers – Group of bacteria that are used to gauge the presence and strength of the reducing conditions present in the aquifer.
  - Eukaryotes – Include fungi and protozoa and their abundance indicates that groundwater is relatively contaminant free as these organisms generally prefer smaller microorganisms.
  - Normal saturated groups (Nsats) – Generally present in all microorganisms and provides information on the diversity of the microbial community.
- Physiological status – The membranes of microorganisms adapt to the changing conditions of its environment that are reflected in the PLFAs. Toxic compounds could disrupt the membrane and some bacteria respond by producing trans fatty acids instead of the usual cis fatty acids to strengthen the cell. The physiological status ratios are reported as Decreased Permeability (ratio of trans/cis) and Slowed Growth (ratio of cy/cis ratio), both of which are based on dividing the amount of the fatty acid induced by environmental conditions by the amount of its precursor. A marked increase in either of these ratios suggests a change in environment, which is less favorable to the gram negative proteobacteria population. The ratio for slowed growth is a relative measure that is suggestive of reduced available substrate (food). A larger ratio for decreased permeability suggests that the environment has become more toxic to the microbial populations, requiring energy expenditure to produce trans fatty acids in order to make the membrane more rigid.

- **Perchlorate Reductase *pcrA* –** The perchlorate reductase enzyme mediates the initial breakdown of perchlorate to chlorate and chlorite. Perchlorate reductase is encoded as a combination of four genes, subunits *pcr*A through D. *Pcr*A is the most valuable of these subunits that is identifiable by advanced molecular biological methods and can often be a good indicator of perchlorate biodegradation in groundwater.

3.4.1.2 Analysis of Microbial Results

The PLFA analysis is generally consistent with 2021 results. The PLFA analysis indicated that the Bio-Trap® from upgradient monitoring well SWFTS-MW07A had higher total biomass of $4.12x10^4$ bacterial cells per bead compared to $2.74x10^4$ bacterial cells per bead observed the previous year, which in relative exponential terms is a

very similar microbial population. As expected, the Bio-Trap® from the injection well SWFTS-IW02A had the highest total biomass at 8.98 x 10^5 bacterial cells per bead. These results are indicative of heightened microbial response in the vicinity of the injection wells due to the addition of carbon substrate. The total biomass numbers were also elevated in the Bio-Trap® collected from SWFTS-MW14, which is located between the injection well transects, with a detection of 1.06 x 10^5 bacterial cells per bead. Lastly, microbial cell numbers in the Bio-Trap® from SWFTS-MW09B were not detected above the detection limit of 1.66 x 10^4 bacterial cells per bead. As previously noted, the screened interval for monitoring SWFTS-MW09B is only 5 feet and extends below the maximum depth treated within the upgradient injection well transect. Therefore, the lower microbial cell numbers at this downgradient monitoring location are not unexpected.

PLFA analysis of the microbial community structure indicated the following:

- More than 45 percent of the bacterial population belonged to the Proteobacteria structural group in the Bio-Traps® collected from SWFTS-IW02A, SWFTS-MW07A, and SWFTS-MW14. The Bio-Trap® collected from SWFTS-MW09B could not be analyzed for this group and other bacterial community groups because the overall biomass count was below detection limits. Bio-Traps® collected from SWFTS-IW02A and SWFTS-MW14 had detectable Firmicutes at 17 percent and 9 percent, respectively. This indicates microorganism populations that have the ability to ferment complex organic compounds such as EVO and its immediate by-products. This microbial shift in some vicinities between Proteobacteria and Firmicutes is expected in active groundwater remedial environments and is indicative of the combined ability to ferment and make available simple carbon compounds that are then utilized by other communities for the direct respiration of perchlorate and other electron acceptors that reside in the system.
- The percentage of general normal saturated groups (Nsats) was below 43 percent in all Biotraps®, which indicates a diverse microbial population.
- Bio-Traps® from all wells indicated a very low presence or absence of sulfate-reducing bacteria (SRB)/Actinomycetes, with the highest result of 4.96 percent observed in the Bio-Trap® from injection well SWFTS-IW02A. The lack of sulfate-reducing bacteria indicates that although anaerobic conditions have been established, overproduction of sulfate-reducing bacteria that could overtake perchlorate-reduction processes and result in the unnecessary consumption of carbon substrate has not occurred in the treatability study area.
- Eukaryotes and metal reducing microorganisms were also present at negligible proportions (less than 9 percent) in the Bio-Trap® from injection well SWFTS-IW02A. Low levels of Eukaryotes were present at 2.28 percent in the Bio-Trap® from monitoring well SWFTS-MW14 but were not detected in the Bio-Trap® from upgradient monitoring well SWFTS-MW07A.

The ratio of slowed growth increased slightly in the Bio-Traps® collected from injection well SWFTS-IW02A from 0.30 during the 2021 reporting period to 0.79 in December 2022 reporting period, an increase indicating a reduced abundance of carbon substrate. This is expected due to the extended length of time (more than 13 months) between the 2022 Bio-Trap® sampling event and the eighth/final injection event. During the 2022 reporting period, the ratios of decreased permeability ranged from 0.0 to 0.9, which indicates a low toxicity for native microorganisms.

Lastly, *pcrA* (the gene encoding the perchlorate reductase enzyme) was not detected at a count greater than 250 cells per bead in all four Bio-Traps® collected during the reporting period. In general, groundwater in the vicinity of the injection wells or monitoring wells that have indicated decreases in perchlorate and chlorate concentrations often have very low or negligible detects of *pcrA* over time because the gene is not as easily identifiable when the contamination is at low concentrations. Under these conditions, perchlorate reducing microorganisms, as identified by the presence of the *pcrA* gene, are generally present at numbers below Microbial Insight's method detection level. Another factor that needs to be considered is that the *pcrA* gene codes for a single perchlorate reductase enzyme that mediates the breakdown of perchlorate to chlorate and chlorite and is the common standard and default analyses currently available as far as molecular biology tools (MBTs) are concerned. However, there could also

be other enzymes that perform microbial-mediated degradation of perchlorate that are not easily identifiable with MBTs.

4.0 POST-TREATABILITY STUDY SUBSURFACE SOIL EVALUATION

The 2019 NDEP-approved *Seep Well Field Area Bioremediation Treatability Study Results Report* recommended soil sampling prior to conclusion of the treatability study to evaluate and understand the transport phenomena associated with EVO movement and influence in the subsurface. Periodic injections of EVO and distribution water into injection wells were expected to result in a gradual and more complete coating of the oil to the soil grains between the injection wells and in the immediate vicinity of the injection well transects. To evaluate the movement and influence of the injected EVO surrounding the injection well network, it was recommended that in addition to traditional groundwater sampling and analyses, soil borings be advanced throughout the study area (both upgradient of, within, and downgradient of the injection well transects) with soil samples being collected and analyzed for calcium, TOC, volatile fatty acids (VFAs), and soil microbial composition.

4.1 SOIL BORING INSTALLATION AND SOIL SAMPLE COLLECTION

Field work associated with the installation of soil borings and soil sample collection was conducted from August 10 through August 17, 2022. A total of twenty soil borings were installed upgradient of, between, and downgradient of the injection well transects, as shown on **Figure 7**. Soil boring locations were strategically selected to evaluate significant hydrogeologic features (such as the paleochannel) and assess the aquifer in the vicinity of key injection wells.

Prior to drilling activities, Tetra Tech contacted USA North Utility Locating Services and reviewed available utility maps to check for underground utility lines. Each drilling location was cleared to a depth of 5 feet below ground surface (bgs) by air knife operations. Drilling activities were conducted by BC2 Environmental, LLC using sonic drilling methods. Ten soil borings were advanced to the alluvium-UMCf contact (approximately 40 feet bgs within the treatability study area) and 10 soil borings were advanced beyond the alluvium-UMCf contact approximately 5 feet into the UMCf. The continuous soil cores were logged from ground surface to total depth using the Unified Soil Classification System. Visual and olfactory observations for the presence of biomass with an organic/musty odor were noted in each boring log in the same depth interval that was targeted for carbon substrate injections during the treatability study. Photographs of soil cores were also obtained during drilling activities. Copies of the soil boring logs and core photographs are provided in **Appendix G**. Five soil samples were collected from each boring and analyzed for calcium, TOC, VFAs, and/or microbial assays (perchlorate reductase and phospholipid fatty acids).

4.2 RESULTS

This section discusses the visual and olfactory observations during the August 2022 drilling activities as well as the chemical and microbial analytical results from the soil samples. Data for all parameters are presented in the comprehensive data tables provided in **Appendix D, Tables D.5** and **D.6**.

4.2.1 Visual and Olfactory Observations

Inorganic precipitates can sometimes form within the injection well casings and surrounding filter pack during bioremediation processes following ISB injections (van Beek, K. et al, 2009). Precipitate formation results from natural groundwater cationic constituents, such as calcium, magnesium, and iron, that combine with carbonates resulting from the biological activity and an increase in alkalinity. Because this aquifer has relatively low concentrations of iron, typical scaling and iron fouling issues in injection wells have not been observed during previous or on-going bioremediation treatability and pilot studies performed for NERT. However, there are relatively high concentrations of calcium (as high as 820 mg/L) in groundwater within the treatability study area, which could result in the formation of calcium carbonate or calcium oleate precipitates. Calcium carbonate may develop due to the on-going biological activity and an increase in alkalinity, while calcium oleate may develop

because oleate is a significant constituent of EVO. Precipitation of calcium minerals can potentially result in reduced aquifer porosity in the subsurface and reduced injection well performance.

To evaluate the presence and type of precipitates, field tests were conducted on the soil cores collected from below the water table. Dilute hydrochloric acid (HCl) was added to the soil cores during soil logging and observations regarding its effervescence (when in contact with the soil sample) were recorded in the soil boring logs in **Appendix G**. Moderate to strong HCl reactions were observed in soil cores collected from all 20 soil borings, including upgradient soil borings, indicating the presence of calcium carbonate throughout the subsurface, which is consistent with previous observations within and surrounding the study area. Therefore, the favorable results of this qualitative field test did not indicate the presence of more abundant calcium carbonates within the treatability study area associated with ISB.

In addition to the testing performed for calcium carbonate, trace inorganic precipitates were also visually observed in soil from a depth of 17.8 to 26 feet bgs at SWFTS-BH12 and from 31.2 to 33.3 feet bgs at SWFTS-BH20, which are both located within the soil boring transect across the paleochannel and downgradient of the injection well transect. Notably, only weak reactions with HCl were observed at these depth intervals, indicating the observed inorganic precipitates are unlikely to be calcium carbonate. Rather, these precipitates are more likely to be calcium oleate (a by-product of EVO). Injection well SWFTS-IW15, which is in the immediate vicinity of soil boring SWFTS-BH20, required only minimal well maintenance to improve injectability during the treatability study (one maintenance event using surge and bail after the sixth injection event). In addition, effectiveness monitoring results for monitoring well SWFTS-MW20, which is immediately downgradient of soil boring SWFTS-BH12, indicated perchlorate concentrations consistently measuring below the PRG of 15 μg/L during most of the 2022 reporting period, as discussed in Section 3.3.1.1. Therefore, the presence of calcium oleate in soil, as observed at SWFTS-BH12 and SWFTS-BH20 (both located near injection wells and the paleochannel), did not appear to negatively impact the effectiveness or implementability of ISB within this vicinity of the treatability study area.

Biomass and organic odors were noted in soil cores collected from 17 of the 20 soil borings. As expected, the soil borings with the most visible biomass were located immediately adjacent to the injection wells, including soil borings SWFTS-BH13, SWFTS-BH15, SWFTS-BH20, and SWFTS-BH24. One notable observation is that biomass was only observed in the shallow alluvium in soil borings SWFTS-BH26 and SWFTS-BH27, which are located near injection well pair SWFTS-IW06A/B. These results suggest that the radius of influence of the deeper injection well SWFTS-IW06B may not have been sufficient to generate a complete biologically active zone upgradient of SWFTS-MW15, which may in part explain the relatively slow response to ISB observed in groundwater at this location.

Soil borings where visible biomass and organic odors were not observed included SWFTS-BH11 and SWFTS-BH25, which were the farthest downgradient soil borings from the injection well transects and likely outside of the biologically active zone. Lastly, biomass and organic odors were also not observed in soil boring SWFTS-BH30, which was located between injection wells SWFTS-IW08 and SWFTS-IW09. The lack of visible biomass at this location may indicate a complete biologically active zone was not achieved between injection wells SWFTS-IW08 and SWFTS-IW09. However, groundwater samples collected from monitoring well SWFTS-MW16, which is located immediately downgradient of soil boring SWFTS-BH30, indicated continued successful degradation of perchlorate at this location, with reductions of 99 percent compared to baseline concentrations measured during the final December 2022 sampling event.

4.2.2 Soil Analytical Results

As previously explained, five soil samples were collected from each soil boring for analysis of calcium, TOC, VFAs. Select soil samples were also analyzed for soil microbial composition. Data for all parameters are presented in the comprehensive data tables provided in **Appendix D, Tables D.5** and **D.6**. This section presents an evaluation of these results.

4.2.2.1 Calcium

Calcium in groundwater within the treatability study area originates from calcium minerals (i.e., calcite, gypsum) prevalent in the subsurface. The presence of these minerals can be an advantage to on-going ISB processes due to its pH buffering capacity, which can help counter the acids present in the injected carbon substrate and those produced by microorganisms. However, calcium can also precipitate with oleate (a by-product of EVO) and other groundwater anions which could decrease the permeability/porosity of the subsurface. This precipitation of calcium minerals at locations with higher calcium content can increase the need for periodic injection well maintenance.

Calcium concentrations in soil ranged from 3,900 milligrams per kilogram (mg/kg) to 170,000 mg/kg. Background calcium concentrations in the alluvium in soil samples collected from upgradient soil borings SWFTS-BH21 and SWFTS-BH22 ranged from 4,300 mg/kg to 68,000 mg/kg. In general, calcium concentrations increased with increasing depth, and all calcium concentrations in soil greater than 100,000 mg/kg were measured in samples collected from the underlying UMCf, where the average calcium concentration measured approximately 84,000 mg/kg. The highest calcium concentration of 170,000 mg/kg was measured in soil collected from the UMCf at 49 feet bgs within soil boring SWFTS-BH22, which is located upgradient of the injection well transect and therefore is likely representative of background calcium concentrations in the UMCf.

Three of the four highest calcium detections above 70,000 mg/kg were measured in alluvial soil samples collected from two soil borings near injection wells SWFTS-IW03 and SWFTS-IW13B, namely SWFTS-BH19 and SWFTS-BH13, respectively. As discussed in previous annual progress reports, injection well SWFTS-IW13B was the deeper injection well in an injection well pair where injections became challenging following the first three injection events due to a build-up of injection pressures and a decrease in injection rates. Periodic well maintenance by hydrojetting and chemical treatment with acidic agents AQUA-CLEAR® MGA and AQUA-CLEAR® AE to injection well SWFTS-IW13B gradually improved injectability at this location, and injectability into SWFTS-IW13B during the seventh injection event was restored to baseline conditions observed during the first injection event as a result of the February 2021 maintenance (Tetra Tech, 2022). The relatively frequent well maintenance with acidic agents required to combat chemical precipitates at SWFTS-IW13B is consistent with the elevated levels of soil calcium in the vicinity of this injection well. Specifically, the following were noted in soil borings SWFTS-BH13 and SWFTS-BH19:

- Calcium was detected at concentrations of up to 89,000 mg/kg in the samples collected from the deep alluvial soils in soil boring SWFTS-BH13, which was located approximately 5 feet from injection well SWFTS-IW13B. In addition, calcium was detected at lower concentrations in samples collected from the deep alluvium from soil borings SWFTS-BH15 or SWFTS-BH16, which are located approximately 10- and 25-feet cross gradient of injection well SWFTS-IW13B, respectively. Therefore, calcium precipitation within the alluvial treatment interval due to ISB appears to have been localized to the immediate vicinity of the injection well (i.e., within approximately 5 feet) at select depth intervals. This localized precipitation has been shown to be amenable to well maintenance via chemical addition through restoration of injectability into injection well SWFTS-IW13B (Tetra Tech, 2022).
- Soil samples collected from soil boring SWFTS-BH19, which was located immediately downgradient of injection well SWFTS-IW03, also indicated an elevated calcium concentration of 98,000 mg/kg in the deep alluvium. Although calcium concentrations were elevated in this vicinity, injection well SWFTS-IW03 did not require any well maintenance during the treatability study.

The remaining calcium detection in the alluvium above background concentrations was measured in soil collected from SWFTS-BH27, which was located between injection wells SWFTS-IW06A/B and SWFTS-IW07 and upgradient of monitoring well SWFTS-MW15. Calcium was detected at 83,000 mg/kg in the soil sample collected from 28 feet bgs, which is likely due to the lithology in this area as strongly cemented caliche nodules (i.e., calcium carbonate) were observed between 28 and 33 feet bgs during drilling activities for nearby injection wells SWFTS-IW06B, SWFTS-IW07, and monitoring well SWFTS-MW15 (**Appendix C**; Tetra Tech, 2019). Therefore,

this elevated calcium concentration in this soil sample is likely due to the preexisting soil conditions in this area rather than a response to implementation of ISB.

4.2.2.2 Total Organic Carbon

The addition of an organic substrate like EVO causes a rapid increase in TOC within the injection area. TOC concentrations often remain high in the injection area due to use of slow-release electron donors (EVO) and/or repeated injection events. TOC is also rapidly consumed due to reactions with other competing electron acceptors like oxygen, nitrate, and sulfate. TOC concentrations are often a good indicator of injectate distribution in the treatability study area. Soil samples collected from upgradient soil borings SWFTS-BH21 and SWFTS-BH22 indicated background TOC concentrations ranged from less than the sample detection limit of 0.9 grams per kilogram (g/kg) to 1.4 J g/kg. Soil samples collected from the alluvium within and immediately downgradient of the injection well transects generally contained low concentrations of TOC ranging from less than the sample detection limit of 0.9 g/kg to 5.2 g/kg. These TOC concentrations were similar to or less than the background concentrations, which suggests that the injected carbon substrate was utilized by native microorganisms during the 9 months that elapsed between the final injection event in November 2021 and soil sample collection in August 2022. As expected, the highest soil TOC concentrations in the alluvium of 3.1 g/kg to 5.2 g/kg were observed in samples collected from soil borings SWFTS-BH13 and SWFTS-BH24, which are located approximately 5 feet away from injection wells SWFTS-IW13B and SWFTS-IW17, respectively. In addition, soil TOC concentrations in the UMCf samples collected from soil borings SWFTS-BH11, SWFTS-BH13 and SWFTS-BH20 ranged from 4.2 J+ g/kg and 8.4 g/kg. These three soil borings are near injection well SWFTS-IW13B, and it is possible some of the injectate near injection well SWFTS-IW13B may have been distributed into this deeper zone due to higher pressures that were required to inject at this location, combined with the proximity to the paleochannel where groundwater within the alluvium and UMCf can mix at the erosional contact between these units.

4.2.2.3 Volatile Fatty Acids

Although the presence of TOC is an indication of the presence of slow-release organic carbon substrate EVO, the presence of VFAs confirms the fermentation of the EVO. These acids are produced continually during hydrolysis of the long-chain fatty acids of EVO and are more readily available substrates for hydrogen production and perchlorate biodegradation. VFAs (acetic acid, formic acid, lactic acid, and/or propionic acid) were detected in soil samples collected from 8 of the 20 soil borings including SWFTS-BH11, SWFTS-BH12, SWFTS-BH13, SWFTS-BH15, SWFTS-BH16, SWFTS-BH18, SWFTS-BH19, and SWFTS-BH24. The bulk of the VFA detections were in soil samples collected from the soil borings installed immediately adjacent to injection wells. Near injection well pair SWFTS-IW13A/B, VFAs were detected throughout the shallow and deep alluvium from 11 feet bgs to 39 feet bgs, which suggests that this paired injection well approach was effective at distributing EVO throughout the saturated thickness of the alluvial treatment interval. In addition, the highest concentrations of remnant VFAs were measured in the shallow UMCf soil sample collected from soil boring SWFTS-BH13, which is located in the vicinity of injection well SWFTS-IW13B. Results from this soil sample indicated a total detected concentration of 95 mg/kg for acetic, formic, lactic, and propionic acids, which are common hydrolytic and fermented breakdown products of EVO and part of the microbially-mediated metabolic pathway during ISB. This soil sample also had a TOC concentration of 8.4 J g/kg, which is the highest TOC concentration detected in any soil sample collected throughout the treatability study area. Because EVO and its by-products (i.e., VFAs) are more persistent in the subsurface in fine-grained materials, the elevated concentrations of TOC and VFAs measured in the UMCf in the vicinity of injection well SWFTS-IW13B are indicative of some vertical migration of injectate into the fine-grained UMCf located immediately underlying the targeted alluvium.

Lower concentrations of lactic acid and propionic acid ranging from 3.1 mg/kg to 8.8 mg/kg were detected in soil samples collected from the shallow alluvium in soil borings SWFTS-BH11, SWFTS-BH12, SWFTS-BH18, and SWFTS-BH19. SWFTS-BH11 and SWFTS-BH12 were located downgradient of shallow monitoring well PC-91,

where perchlorate concentrations were below the PRG of 15 μg/L during all the four sampling events in 2022 (discussed in Section 3.3.1.1). Together these data suggest that 9 months after the final injection event, the by-products of EVO persisted in the shallow alluvium in the vicinity of the paleochannel immediately downgradient of the injection well transects, and perchlorate continued to be degraded at this location. In contrast, VFAs were not detected in the coarser-grained, deeper alluvial sediments within the paleochannel where effectiveness monitoring results suggest quicker rebound occurred (as discussed in Section 3.3.1.1).

4.2.2.4 Microbial Analyses

Both PLFAs and perchlorate reductase *pcrA* were analyzed for a subset of the soil samples collected during the August 2022 soil sampling event. Descriptions of each microbial parameter were provided in Section 3.4.1.1 and discussion of the soil sampling results are provided below.

Visible Biomass

Biomass was detected above sample detection limits in 30 of the 38 samples analyzed, with total viable biomass detections ranging from 1.11 $x10^6$ to 1.75 $x10^8$ cells per gram of soil and numbers typically increasing by an order of magnitude with depth. The majority of the soil samples with biomass results below the sample detection limits were collected from upgradient soil boring SWFTS-BH22. The highest total viable biomass of 1.75 $x10^8$ cells per gram of soil was detected in the soil sample collected from the deep alluvium at soil boring SWFTS-BH13, which is located approximately 5 feet from injection well SWFTS-IW13B. These results indicate that repeated well maintenance at injection well SWFTS-IW13B utilizing acidic agents, including a biocide, did not negatively impact the robust microbial community at this location. Many of the soil samples collected from other soil borings located in close proximately to injection wells (i.e., soil borings SWFTS-BH24 and SWFTS-BH28 located next to injection wells SWFTS-IW17 and SWFTS-IW19, respectively) contained similarly elevated biomass up to 3.49 x 10^7 cells per gram of soil. An additional noteworthy observation is the elevated biomass in the shallow alluvium upgradient of monitoring well SWFTS-MW15, where soil samples collected from soil borings SWFTS-BH26 and SWFTS-BH27 measured 1.26 x 10^7 cells per gram of soil and 1.27 x 10^7 cells per gram of soil, respectively. These results further support that a complete biologically active zone was in place in the shallow alluvium upgradient of SWFTS-MW15, as discussed previously in Sections 3.3.1.1 and 4.2.1.

As a point of comparison, the Bio-Trap® samples collected from the injection and monitoring wells to assess the microbial community in groundwater showed a total biomass range of less than 1.66 x 10^4 bacterial cells per bead to 8.98 x 10^5 bacterial cells per bead, which is generally two to three orders of magnitude lower than the total biomass observed in the soil samples. The highest total biomass of 8.98 x 10^5 bacterial cells per bead was detected in the Bio-Trap® installed in injection well SWFTS-IW02A, located upgradient of soil boring SWFTS-BH13, where the highest total viable biomass of 1.75 $x10^8$ cells per gram of soil was measured. Generally, the increased microbial concentration in soil is expected when compared to groundwater due to the higher adhesive surface area provided by soil and the localized nature of soil compared to moving groundwater.

Community Structure

Notable results of the PLFA analysis on soil are summarized below.

- Proteobacteria was detected in 30 of the 38 samples collected, with detections ranging from 22 to 91 percent. Three of the four soil samples collected at soil boring SWFTS-BH28, which was located immediately adjacent to injection well SWFTS-IW19, indicated proteobacteria ranging from 72 to 91 percent. Proteobacteria in large proportions is a strong sign of a microbial community that generally adapts very well to the environment and should possess the ability to biodegrade perchlorate in groundwater. These data indicate the presence of a microbial population that does not appear to be deprived of available carbon substrate.
- The proportion of Firmicutes in soil ranged from 0 to 19 percent. The highest proportions of Firmicutes of greater than 15 percent were detected in the soil samples collected in the immediate vicinity of injection

wells. The presence of Firmicutes indicates continued and sustained fermentation of EVO to hydrogen for perchlorate degradation.

- Actinomycetes/SRB and anaerobic metal reducers were generally less than 10 percent with a few isolated exceptions. These results indicate that groundwater redox conditions were not overly reducing and were unlikely to encourage excessive sulfate biodegradation, which is a positive sign for ISB processes as sulfate is unlikely to out-compete perchlorate-reducing bacteria for available hydrogen. These data are consistent with the minimal sulfate reduction observed in the groundwater samples collected from monitoring wells during the treatability study, as discussed in Section 3.3.5.2.
- General Nsats ranged from approximately 5 to 62 percent, with nine soil samples indicating a population of greater than 20 percent. Populations of Nsats at these levels indicate the presence of a diverse microbial community in soil. The highest percentage of 62 percent was detected in soil samples collected from soil boring SWFTS-BH13, which is immediately adjacent to injection well pair SWFTS-IW13A/B.

Physiological Status

The physiological status ratio of a microbial community is typically expressed in terms of whether it has slowed growth and decreased permeability. Majority of the soil samples indicated low slowed growth and decreased permeability ratios of less than 1.0, which indicate the presence of favorable conditions for a thriving microbial community that can biologically degrade perchlorate. Results from three shallow alluvium soil samples collected from 17 to 20 feet bgs indicated higher values of slowed growth ratios ranging from 1.08 to 5.52, which indicate an environment that is not as favorable for the microbial population. Despite these elevated slowed growth ratios, samples collected from other intervals at these same soil boring locations indicated slowed growth ratios less than 1.0 and very low decreased permeability ratios less than 0.42, indicating there was no apparent toxicity to microorganisms.

Perchlorate Reductase pcrA

Perchlorate reductase pcrA was not detected in any soil samples above the sample detection limits (ranging from $1x10^4$ to $2x10^4$ cells per gram of soil). As a comparison, the Bio-Traps® samples collected from the injection and monitoring wells to assess the microbial community in groundwater also did not detect perchlorate reductase at concentrations above the detection limit of 250 cells/bead. As previously stated in Section 3.4.1.2, groundwater in the vicinity of monitoring wells that have indicated decreases of perchlorate and chlorate concentrations often have low or negligible detects of perchlorate reductase over time because the gene is not as easily identifiable when degradation occurs rapidly. However, perchlorate reducing microorganisms as identified by the perchlorate reductase gene are generally present at numbers below Microbial Insight's method detection level. Additionally, there could be other enzymes that perform the microbial-mediated degradation of perchlorate that are not easily identifiable with MBTs.

4.3 SUMMARY OF SUBSURFACE SOIL EVALUATION

Soil sampling was conducted prior to conclusion of the treatability study to understand EVO movement and influence in the subsurface. Residual organic carbon in various forms, including observable biomass, perchlorate reducing microbes, and by-products of EVO fermentation (VFAs such as acetic acid, formic acid, propionic acid, and lactic acid) were present in soil samples collected at several soil boring locations, indicating successful coating of the soil grains with the EVO and the presence of a more biologically active zone within the injection well transects long after the injections were complete. The presence of biomass along with VFAs is indicative of a remnant organic carbon that plays an active role in creating a biologically active zone needed for perchlorate degradation.

As expected, the highest soil TOC and VFA concentrations found in the alluvium were in soil samples collected from soil borings located the closest to the injection wells. In addition, the highest soil TOC and VFA concentrations measured were in samples collected from the UMCf at soil boring SWFTS-BH13, near injection

well SWFTS-IW13B. This finding suggests injectate near injection well SWFTS-IW13B may have been distributed into this deeper zone due to the higher pressures that were required to inject at this location, combined with the proximity to the paleochannel, where groundwater within the alluvium and UMCf can mix at the erosional contact between these units.

In general, calcium concentrations increased with increasing depth, and all calcium concentrations in soil greater than 100,000 mg/kg were measured in samples collected from the underlying UMCf. Several of the highest calcium concentrations within alluvial soil samples were measured in samples collected from soil borings near (i.e., within approximately 5 feet of) injection well SWFTS-IW13B, where relatively frequent well maintenance with acidic agents was required to combat chemical precipitates. The potential for the formation of calcium oleate and other minerals like calcium carbonate at locations with high calcium content, particularly in the UMCf, can lead to the need for more frequent well maintenance to maintain desired injectability for periodic carbon substrate replenishment during full-scale operations. A lack of biomass and an elevated concentration of calcium in soil were observed in the deep alluvium adjacent to injection wells SWFTS-IW06A/B and upgradient of monitoring well SWFTS-MW15. The high calcium concentration in this soil sample is likely due to the preexisting soil conditions in this area (i.e., presence of strongly cemented caliche nodules). These results suggest that the pre-existing soil conditions may have impacted the radius of influence of the deeper injection well SWFTS-IW06B resulting in an insufficient radius of influence to generate a complete biologically active zone upgradient of SWFTS-MW15, which may in part explain the relatively slow response to ISB observed in groundwater at this location.

Total biomass measured in the soil samples was generally two to three orders of magnitude higher than the total biomass observed in the Bio-Trap® samples installed to evaluate groundwater. This increased microbial concentration in soil is expected when compared to groundwater due to the higher adhesive surface area provided by soil and the localized nature of soil when compared to moving groundwater. The presence of Proteobacteria in large proportions is a strong sign of a microbial community that generally adapts well to the environment and should possess the ability to biodegrade perchlorate in groundwater. The presence of Firmicutes suggests continued and sustained fermentation of EVO to hydrogen for perchlorate degradation while the lower percentages of SRB/Actinomycetes and Anaerobic Metal Reducers indicate that groundwater redox conditions were not overly reducing and were unlikely to encourage excessive sulfate biodegradation. Therefore, sulfate is unlikely to out-compete perchlorate reducing bacteria for available hydrogen, thereby eliminating inhibitory effects it may have on perchlorate degradation. Lastly, soil samples analyzed for microbial parameters indicated a robust, diverse microbial community with low slowed growth ratios and decreased permeability ratios, which demonstrates there was no apparent toxicity to microorganisms.

In conclusion, the formation of calcium precipitates and biomass may have reduced the permeability in the immediate vicinity of the injection wells, thereby reducing the injectability of EVO particularly in deeper treatment intervals. However, periodic well maintenance using physical/chemical processes restored and maintained injectability, leading to effective EVO distribution (evidenced by TOC and VFA concentrations), and decreases in contaminant concentrations in the vicinity and downgradient of injection wells. Additionally, the presence of residual organic carbon (in the form of biomass, TOC, and VFA) in several soil samples demonstrates effective distribution of EVO and the continuing presence of a biologically active zone nine months after the eighth injection event.

5.0 SUMMARY OF KEY FINDINGS AND FUTURE ACTIVITIES

This section presents the overall findings of the treatability study activities associated with Modification No. 6 (Tetra Tech, 2018) and results from the reporting period (January 2022 through December 2022).

5.1 SUMMARY OF KEY FINDINGS

Expanding on the information presented in Sections 2 through 4, this section presents a summary of the overall results and conclusions from the activities and data collected during the 2022 reporting period. Performance criteria tables were generated to evaluate the study results and include a summary of the performance criteria, metrics, confirmation methods, and study demonstration. These tables are presented in **Appendix H**.

As explained in Section 1.0, because the original study objectives showed that ISB was effective at remediating perchlorate- and chlorate-contaminated groundwater, the focus of this study extension is evaluation of long-term O&M of an ISB remedy. Despite the variety of O&M components implemented during previous reporting periods, such as modifying the mixing/injection strategies (i.e., batch versus in-line mixing) and performing different maintenance techniques on injection wells, groundwater in this area continued to be amenable to biodegradation of perchlorate and chlorate. As demonstrated, the periodic injections of EVO and amendments continued to provide a sustained biologically active treatment zone with the reducing conditions required for effective and continual perchlorate and chlorate biodegradation in the groundwater.

Despite injections being discontinued due to completion of the treatability study, groundwater sampling continued to be performed through December 2022 (approximately 13 months after the last injection event) to evaluate long-term concentration trends and monitor the return of contaminant concentrations and aquifer geochemistry towards baseline conditions. This information is key to understanding the minimum long-term operational requirements for an ISB approach and can be used in the forthcoming FS to consider appropriate injection event frequencies for a full-scale ISB remedy at the NERT site in a similar hydrogeologic setting. In addition, soil sampling was conducted prior to conclusion of the treatability study to evaluate and understand the transport phenomena associated with EVO movement and influence in the aquifer. The main findings and conclusions below draw upon the monitoring and soil sampling tasks performed during this reporting period as part of the study extension.

Effectiveness Monitoring

- Nitrate, chlorate, and perchlorate continued to be degraded in groundwater throughout the study area during this reporting period.
- Reductions of perchlorate were sustained to below the PRG of 15 μg/L in groundwater samples collected from multiple downgradient monitoring wells approximately 13 months after the final injection event, despite the unprecedented flux of perchlorate mass into the treatability study area due to effluent releases by CoH (discussed in Section 3.2). These reductions illustrate that in select portions of the treatment area, the biologically active zone can be maintained for a longer period of time than the most recent injection frequency of 8 months. In contrast, concentration rebound was observed more quickly in the groundwater samples collected from monitoring wells screened in the paleochannel, where the required injection frequency may be closer to 4 to 7 months. Due to the highly heterogenous nature of the subsurface, injection frequency during implementation of long-term ISB in the alluvium within the northern portion of the NERT RI Study Area should be adapted/varied based on location-specific hydrogeology due to the highly heterogenous nature of the subsurface geology. These data will be valuable for evaluation of a potential full-scale ISB remedy in the forthcoming FS.
- DO concentrations and ORP readings provide some indication of sustained reducing conditions in groundwater. Groundwater that showed the most significant and consistent perchlorate biodegradation is located where reducing conditions exist, as inferred from DO measurements and ORP readings (although ORP fluctuations have been observed in groundwater at many wells).

- As with previous reporting periods, limited sulfate reduction continues to be observed in groundwater during the treatability study. The use of the slow-release carbon substrate, EVO, helps to prevent widespread sulfate reduction because it consists of long-chain fatty acids that gradually hydrolyze and limit the amount of usable carbon for native microorganisms to use for biological deoxygenation, denitrification, and perchlorate/chlorate biodegradation. Secondly, as stated in previous reports, the groundwater flow rates in this setting are relatively high and may not provide sufficient residence time for sulfate biodegradation to occur. Limited sulfide production was also observed, indicating that microbial-based sulfate reduction was minimal.
- Secondary groundwater geochemical impacts, including arsenic, iron, manganese, and phosphorus mobilization, were either limited or transient and did not create a downgradient footprint of elevated concentrations in groundwater.
- During each effectiveness monitoring event, water levels were measured prior to sampling and used to construct potentiometric surface maps. These maps indicate a significant change to the groundwater elevation that occurred during this reporting period primarily due to water releases to upgradient CoH ponds, as described in Section 3.2. Groundwater elevation increases of this magnitude have the potential to result in temporary changes to treatment effectiveness because the ISB injection transects were designed to intercept groundwater at the baseline gradient and flow direction within the small treatability study area.
- Significant increases in upgradient perchlorate concentrations and hydrological changes primarily associated with water releases to upgradient CoH ponds resulted in noticeable effects to concentrations in downgradient portions of the study area, including increased concentrations at some locations and decreased concentrations at other locations.

Soil Sampling

- Residual organic carbon in various forms including observable biomass and by-products of EVO fermentation (VFAs such as acetic acid, formic acid, propionic acid, and lactic acid) were present in soil samples collected at several soil boring locations, indicating successful coating of the soil grains with the EVO and presence of a biologically active zone within the injection well transects long after the injections were complete.
- Precipitation of calcium minerals within the alluvial treatment interval as a result of ISB was localized to the immediate vicinity of the injection well (i.e., within approximately 5 feet) at select depth intervals. This localized precipitation has been shown to be amenable to well maintenance via chemical addition.
- Soil samples analyzed for microbial parameters indicated a robust, diverse microbial community with low slowed growth ratios and decreased permeability ratios, indicating there was no apparent toxicity to microorganisms.
- Total biomass measured in soil samples was two to three orders of magnitude higher than the total biomass observed in the Bio-Traps® installed to evaluate groundwater. Generally, the increased microbial concentration in soil is expected when compared to groundwater due to the higher adhesive surface area provided by soil and the localized nature of soil when compared to moving groundwater.

5.2 FUTURE ACTIVITIES

Given that the objectives of the treatability study have been achieved and due to ongoing development within the treatability study area associated with the Cadence Sports Park, this treatability study concluded in December 2022. Since 2017, eight injection events and 40 groundwater sampling events have been conducted, which has resulted in a substantial dataset that meets both the original treatability study objectives as well as the objectives of Modification No. 6. Due to ongoing property development and completion of the treatability study, all 25

injection wells and 31 monitoring wells installed as part of this treatability study were abandoned in February 2023.

Per NDEP request, a comprehensive report will be prepared and submitted to NDEP in 2024 following receipt of comments on this annual progress report. The comprehensive report will summarize all data collected since treatability study inception and evaluate the overall study results with respect to perchlorate and chlorate biodegradation, injection frequency, injectate quantities and concentration, and injection well maintenance.

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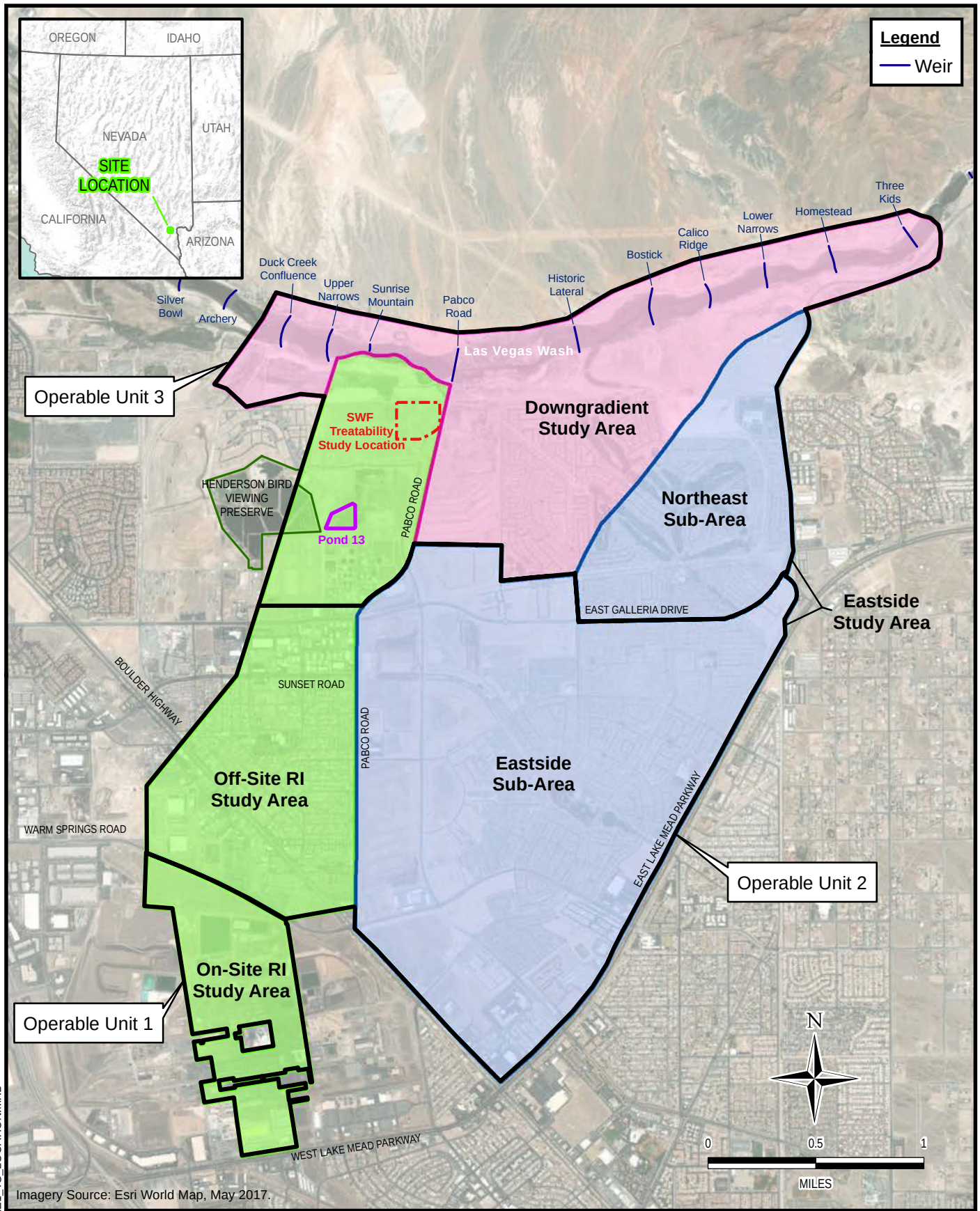
Figures



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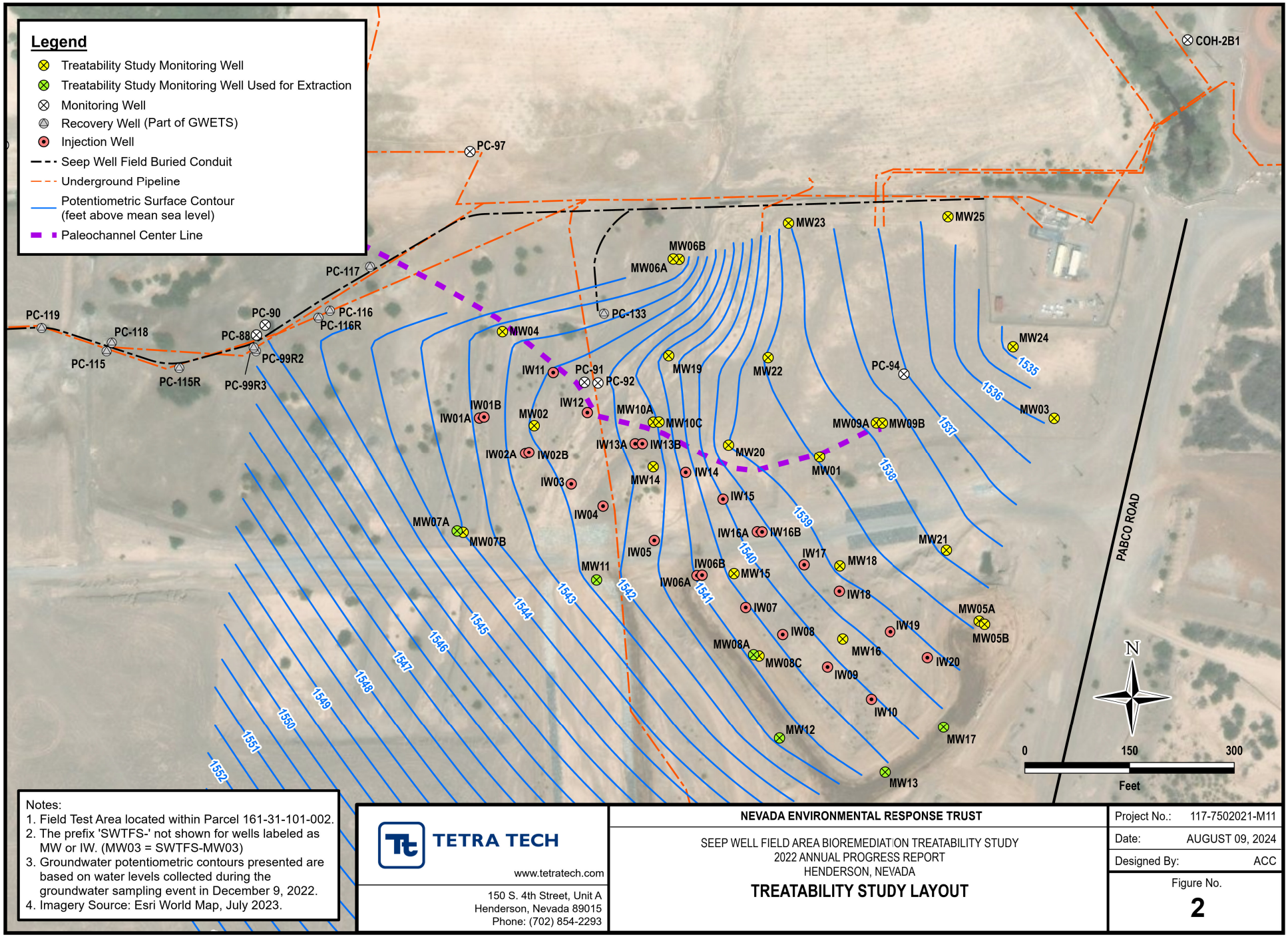
NEVADA ENVIRONMENTAL RESPONSE TRUST

SEEP WELL FIELD AREA BIOREMEDIATION TREATABILITY STUDY
2022 ANNUAL PROGRESS REPORT
HENDERSON, NEVADA

TREATABILITY STUDY LOCATION

PROJECT NO.:	117-7502018
DATE:	AUGUST 08, 2024
DESIGNED BY:	AAM

Figure No.
1



Notes:
1. Field Test Area located within Parcel 161-31-101-002.
2. The prefix 'SWTFS-' not shown for wells labeled as MW or IW. (MW03 = SWTFS-MW03)
3. Groundwater potentiometric contours presented are based on water levels collected during the groundwater sampling event in December 9, 2022.
4. Imagery Source: Esri World Map, July 2023.

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NEVADA ENVIRONMENTAL RESPONSE TRUST

SEEP WELL FIELD AREA BIOREMEDIATION TREATABILITY STUDY
2022 ANNUAL PROGRESS REPORT
HENDERSON, NEVADA

TREATABILITY STUDY LAYOUT

Project No.:	117-7502021-M11
Date:	AUGUST 09, 2024
Designed By:	ACC

Figure No.
2

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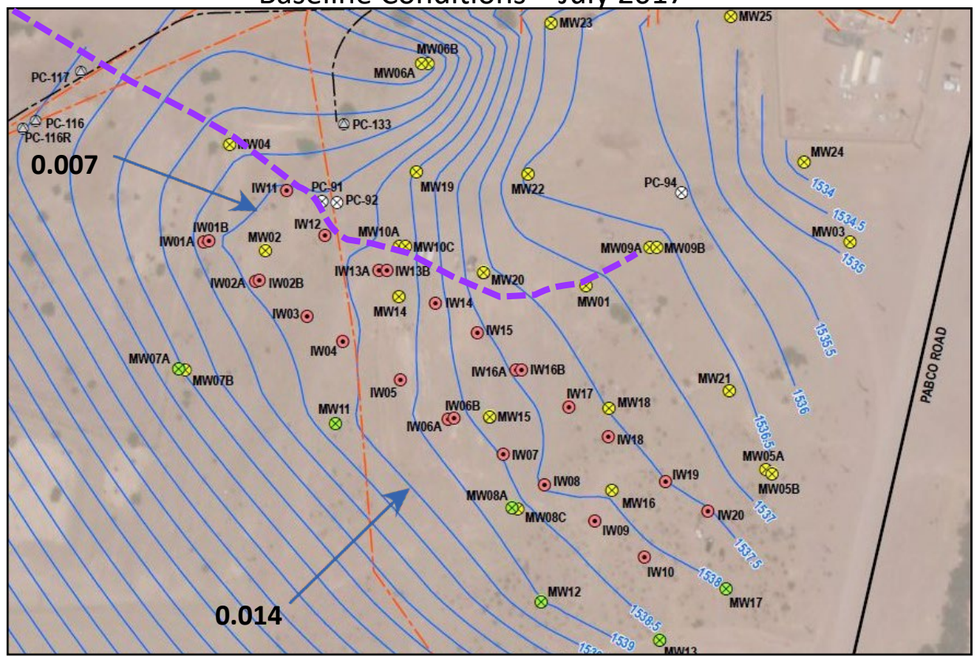
Baseline Conditions – July 2017



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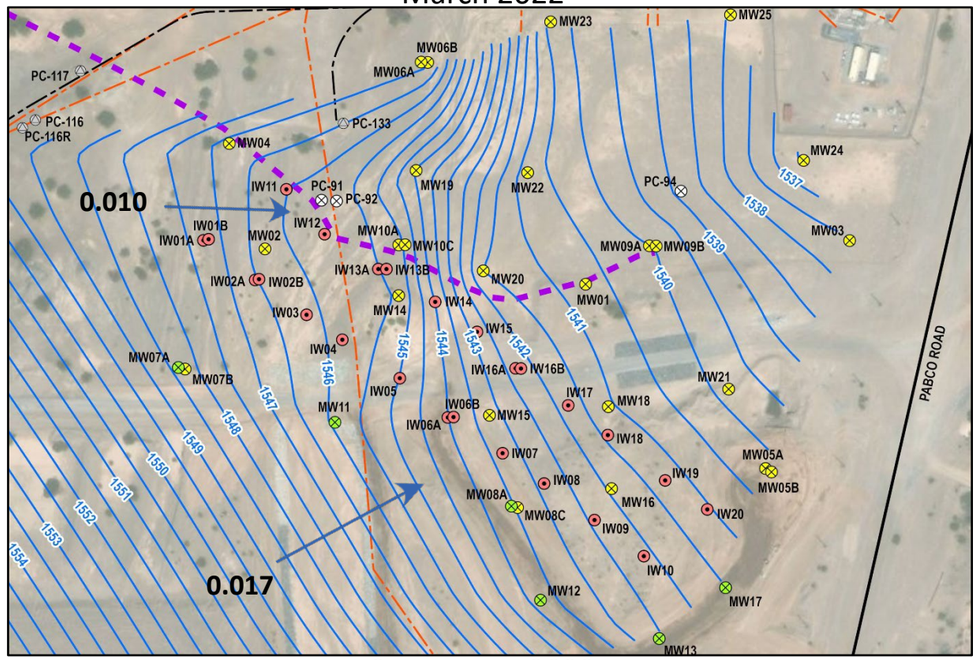

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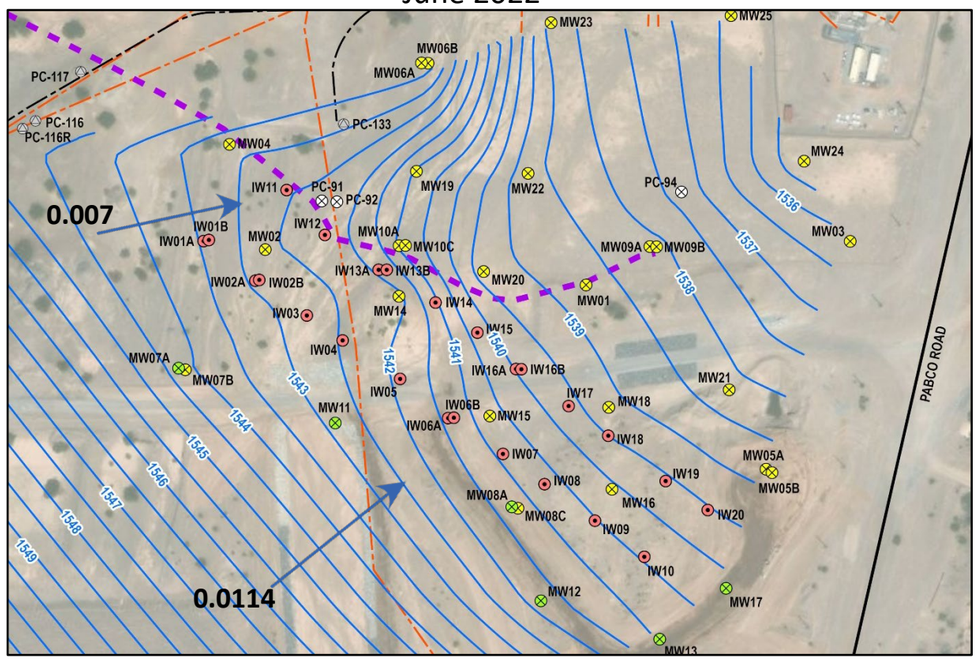
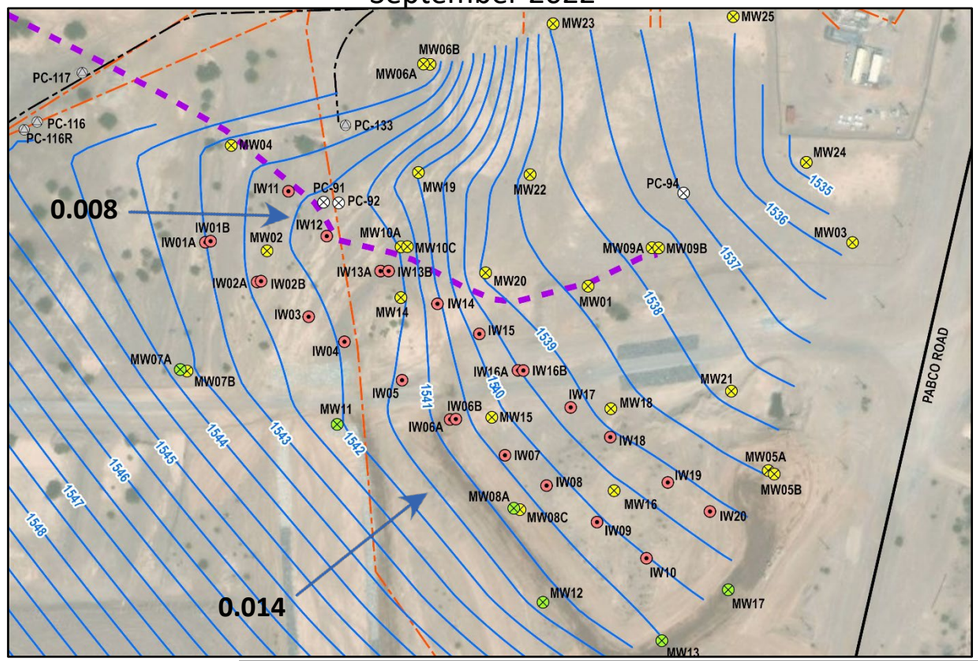


September 2022



Legend

- Treatability Study Monitoring Well
- Treatability Study Monitoring Well Used for Extraction
- Monitoring Well
- Recovery Well (Part of GWETS)
- Injection Well
- Seep Well Field Buried Conduit
- Underground Pipeline
- Potentiometric Surface Contour (feet above mean sea level)
- Paleochannel Center Line
- 0.008 Hydraulic Gradient (feet per foot)

N

0 150 300

Feet

Notes:

1. Baseline conditions presented from July 2017 are representative of pre-injection conditions.
2. Injection events have occurred periodically from 2017 to 2021. Images presented in this figure represent groundwater sampling events that have occurred during the 2022 reporting period following the eighth and final injection event performed in November 2021.

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NEVADA ENVIRONMENTAL RESPONSE TRUST SITE

SEEP WELL FIELD AREA BIOREMEDIATION TREATABILITY STUDY
2022 ANNUAL PROGRESS REPORT
HENDERSON, NEVADA

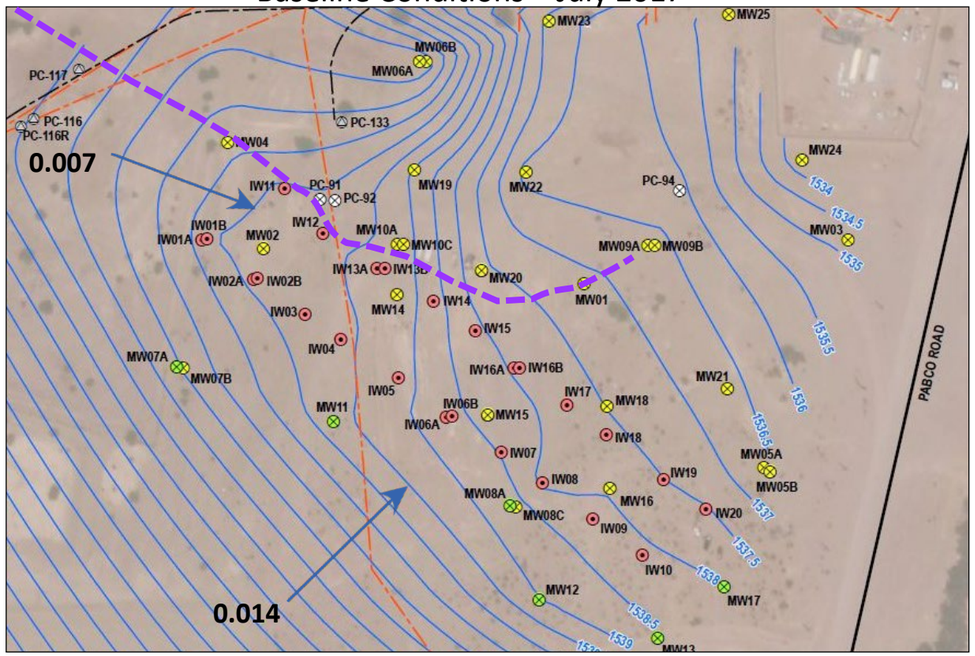
GROUNDWATER POTENTIOMETRIC SURFACE – MARCH 2022 TO SEPTEMBER 2022

Project No.:	117-7502021-M11
Date:	August 9, 2024
Designed By:	JD

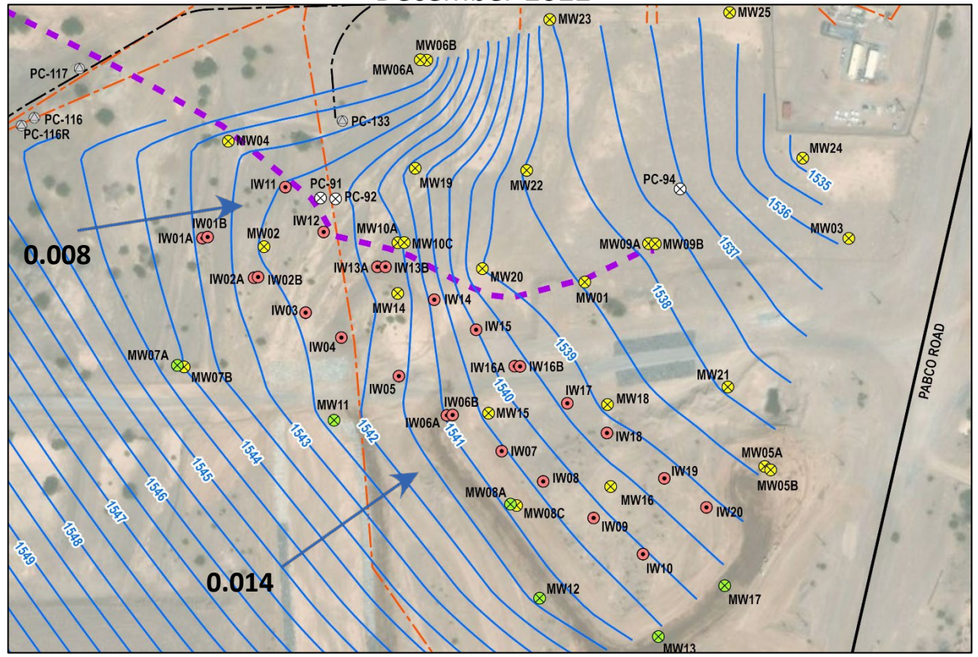
Figure No. **3A**

\\tts134fs1\GEOSUPVOL1\PROJECTS\DATA\NERT\M11\ppt Figs\2020\Annual Report EVS Figures 2020 v1.pptx

Baseline Conditions – July 2017

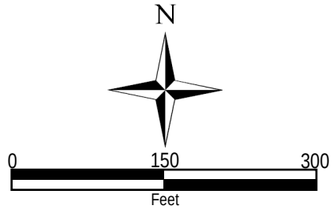


December 2022



Legend

- Treatability Study Monitoring Well
- Treatability Study Monitoring Well Used for Extraction
- Monitoring Well
- Recovery Well (Part of GWETS)
- Injection Well
- Seep Well Field Buried Conduit
- Underground Pipeline
- Potentiometric Surface Contour (feet above mean sea level)
- Paleochannel Center Line
- **0.008** Hydraulic Gradient (feet per foot)



Notes:
1. Baseline conditions presented from July 2017 are representative of pre-injection conditions.
2. Injection events have occurred periodically from 2017 to 2021. Images presented in this figure represent groundwater sampling events that have occurred during the 2022 reporting period following the eighth and final injection event performed in November 2021.

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SEEP WELL FIELD AREA BIOREMEDIATION TREATABILITY STUDY
2022 ANNUAL PROGRESS REPORT
HENDERSON, NEVADA

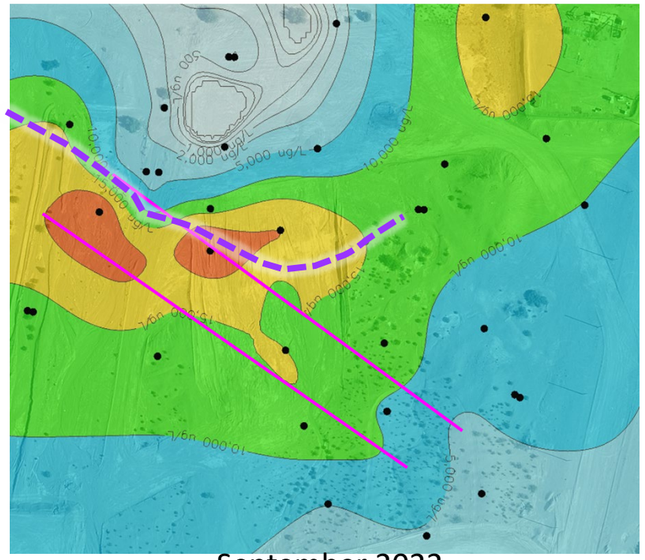
GROUNDWATER POTENTIOMETRIC SURFACE – DECEMBER 2022

Project No.:	117-7502021-M11
Date:	August 9, 2024
Designed By:	JD

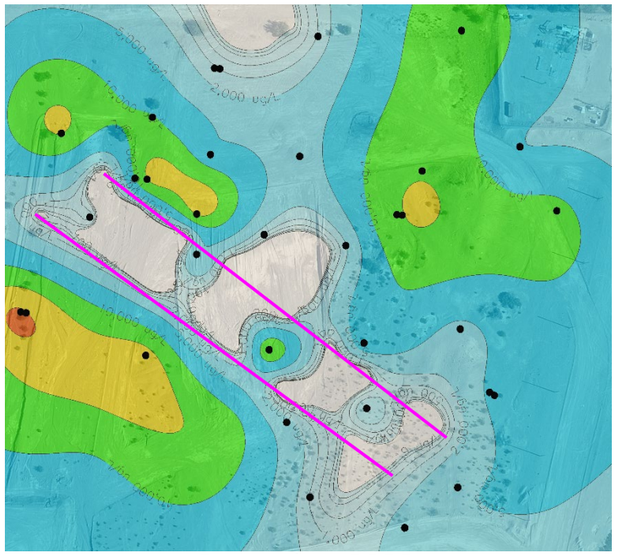
Figure No.
3B

\\tts134fs1\GEOSUPVOL1\PROJECTS\DATA\NERT\M11\ppt Figs\2020Annual Report EVS Figures 2020_v1.pptx

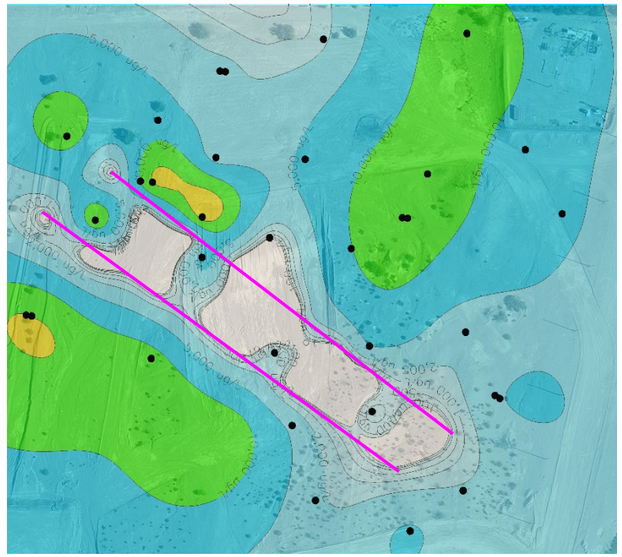
Baseline Conditions



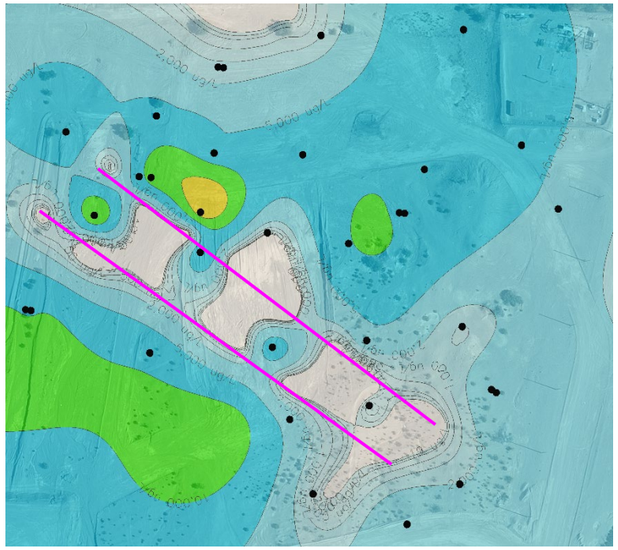
March 2022
Four Months After Injection Event 8



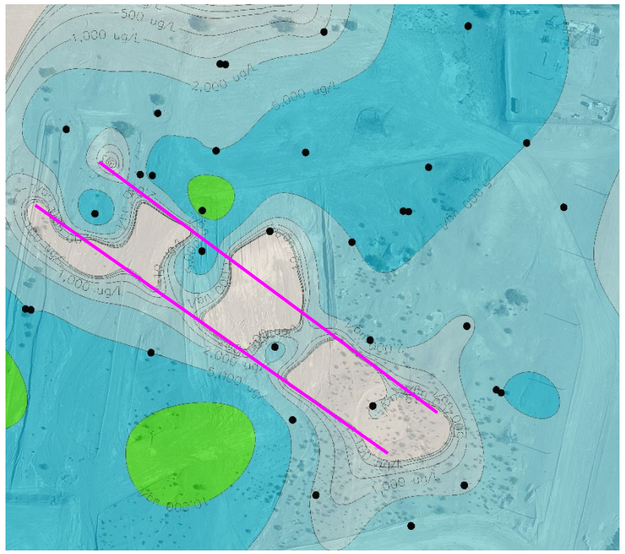
June 2022
Seven Months After Injection Event 8



September 2022
Ten Months After Injection Event 8



December 2022
Thirteen Months After Injection Event 8



Perchlorate in groundwater (µg/L)

27,000
25,000
20,000
15,000
10,000
5,000
2,000
1,000
500
100
15

- Sample locations
- Injection Well Transect Lines
- Approximate Paleochannel Centerline

N

0 200 400
Feet

Notes:

1. Each image represents a horizontal slice at 1522 feet amsl (above mean sea level) through the interpolated perchlorate concentration plume. Concentrations represented at monitoring well clusters may vary from reported concentrations based on screen elevations.
2. Baseline concentrations presented from July 2017 are representative of pre-injection conditions.
3. Injection events have occurred periodically from 2017-2021. Images presented in this figure represent groundwater sampling events that have occurred during the 2022 reporting period following the eighth injection event performed in November 2021.
4. Due to the length of time between the final injection event in November 2021 and the September and December 2022 sampling events, some rebound in perchlorate concentration may have occurred in groundwater at the injection well transects. As a result, the depictions of perchlorate concentrations in the immediate vicinity of the injection well transects may be biased low.

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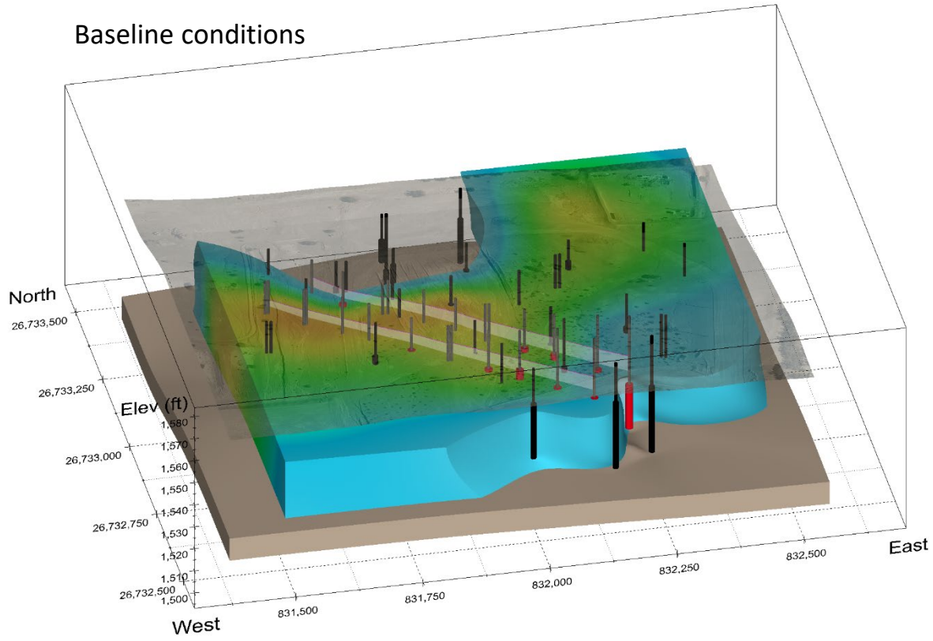
NEVADA ENVIRONMENTAL RESPONSE TRUST SITE
SEEP WELL FIELD AREA BIOREMEDIATION TREATABILITY STUDY
2022 ANNUAL PROGRESS REPORT
HENDERSON, NEVADA

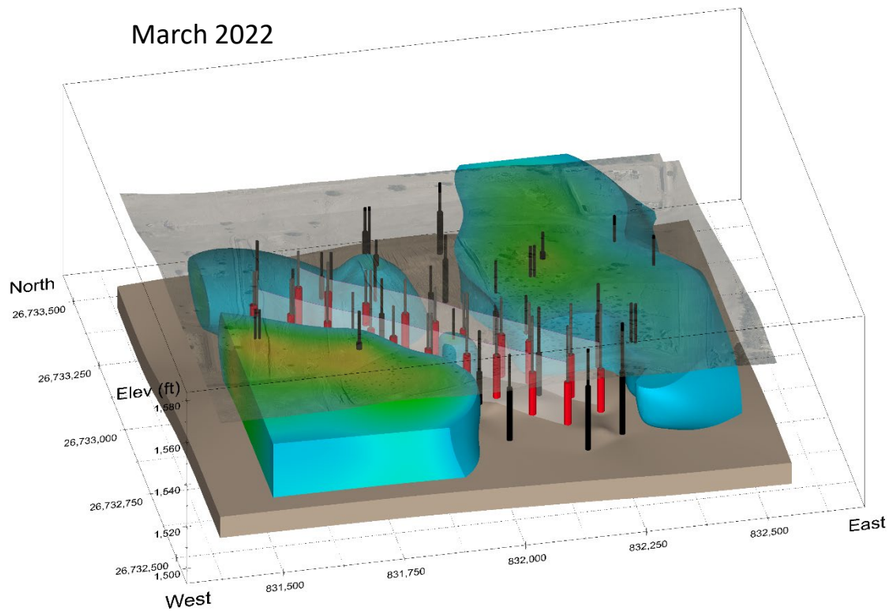
PERCHLORATE DISTRIBUTION IN GROUNDWATER – MARCH 2022 TO DECEMBER 2022

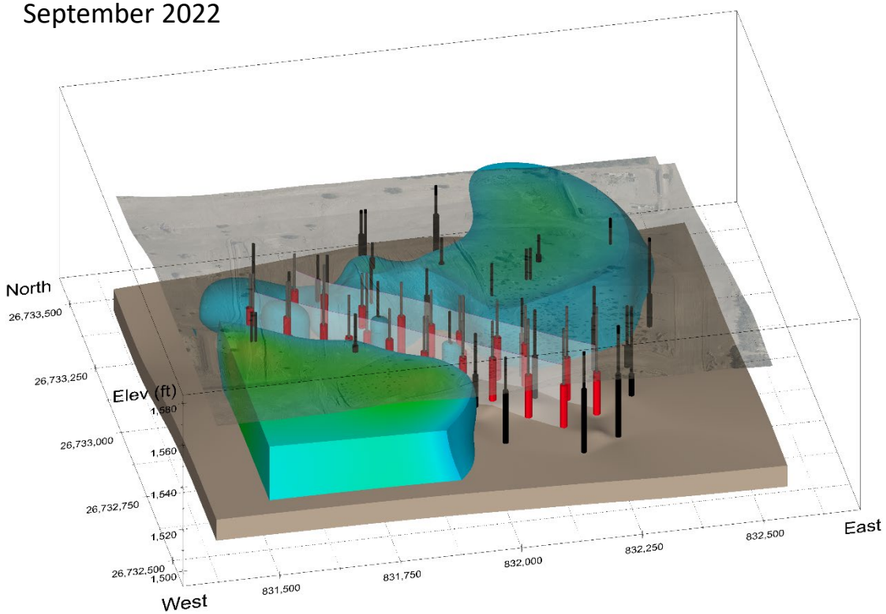
Project No.:	117-7502021-M11
Date:	December 15, 2023
Designed By:	CKG

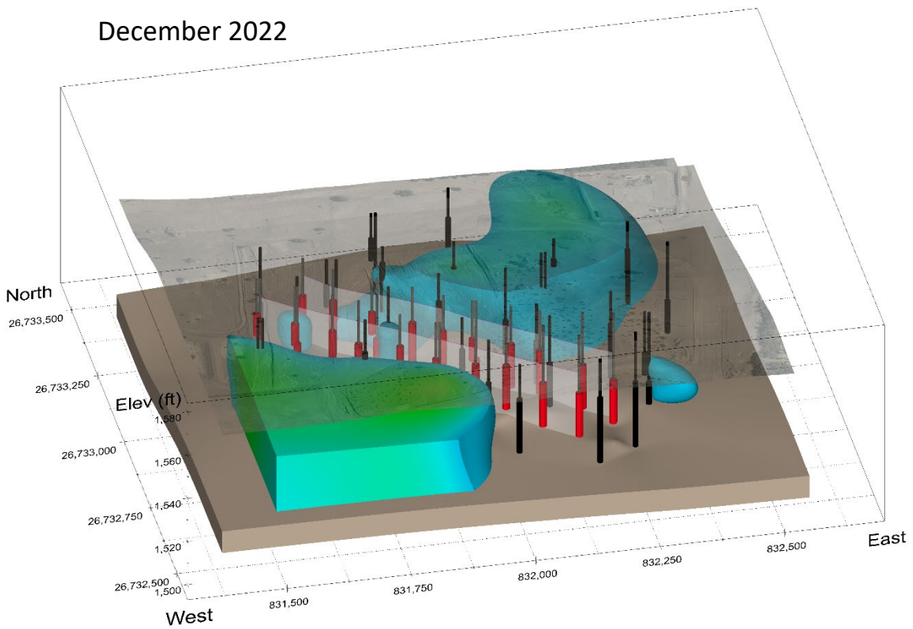
Figure No.
4A

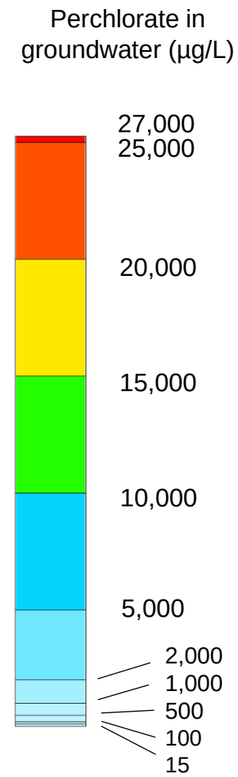
\\tts134fs1\GEOSUPVOL1\PROJECTS\DATAINERT\M11\ppt Figs\2020\Annual Report EVS Figures 2020 v1.5.pptx





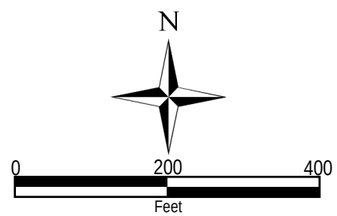






Sample locations are shown in black.

Injection wells are Shown in red.



Notes:

1. Each image represents the interpolated perchlorate concentration plume where concentrations exceed 5,000 µg/L.
2. Baseline concentrations presented from July 2017 are representative of pre-injection conditions.
3. Injection events have occurred periodically from 2017-2021. Images presented in this figure represent groundwater sampling events that have occurred during the 2022 reporting period following the eighth injection event performed in November 2021.
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NEVADA ENVIRONMENTAL RESPONSE TRUST SITE

SEEP WELL FIELD AREA BIOREMEDIATION TREATABILITY STUDY
2022 ANNUAL PROGRESS REPORT
HENDERSON, NEVADA

3D VISUALIZATION OF PERCHLORATE DISTRIBUTION IN GROUNDWATER FOR CONCENTRATIONS GREATER THAN 5,000 µg/L

Project No.:	117-7502019-M11
Date:	December 15, 2023
Designed By:	CKG

Figure No.
4B

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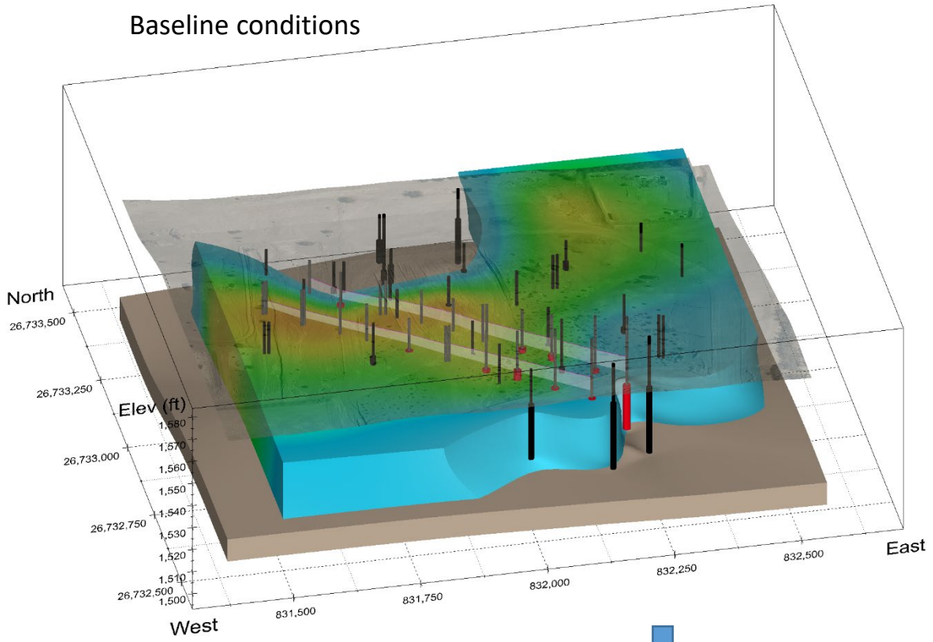
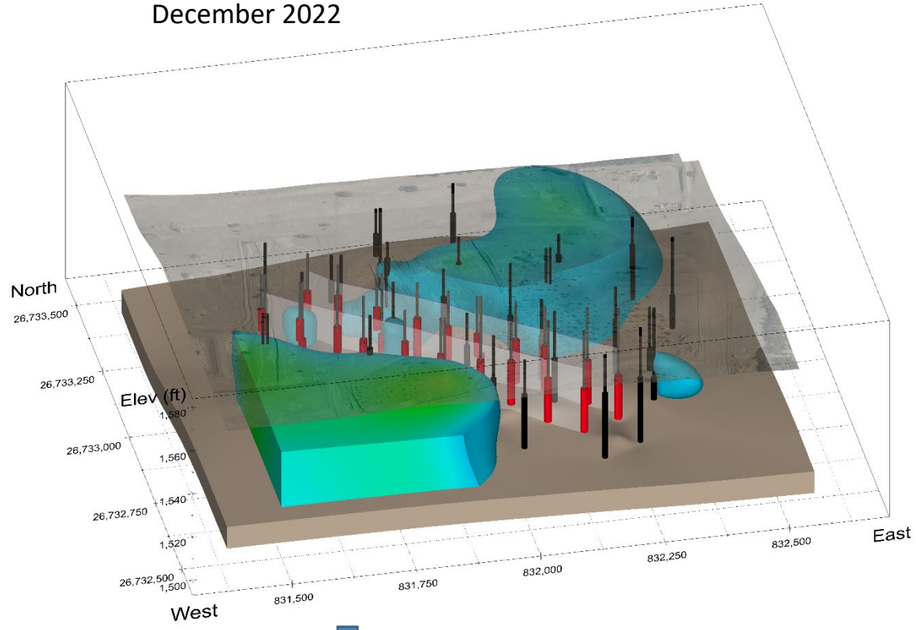
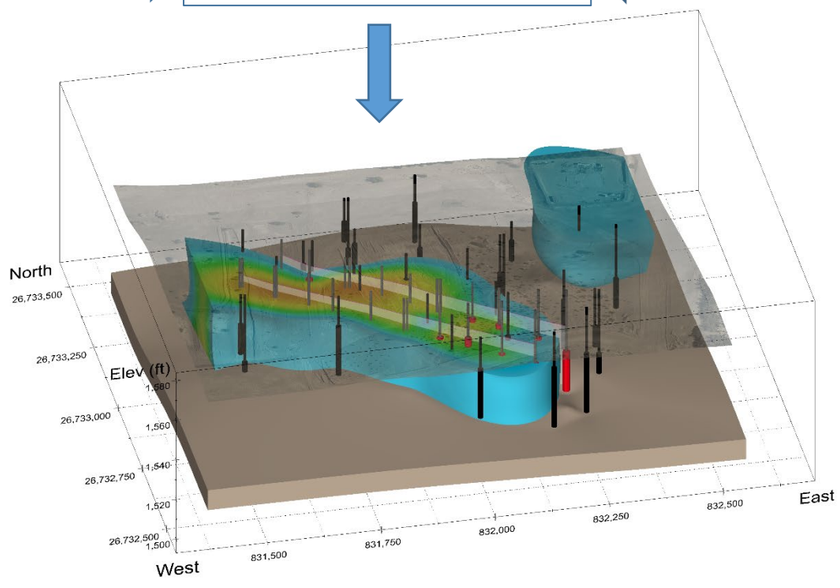
Baseline conditions



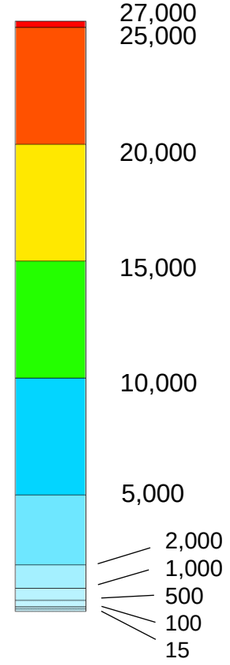
December 2022



Baseline - December 2022



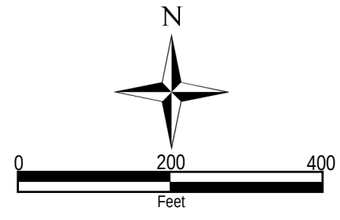
Perchlorate in groundwater (µg/L)



Visualization of Perchlorate Treated during December 2022

Sample locations are shown in black.

Injection wells are Shown in red.



Notes:

1. Each image represents the interpolated perchlorate concentration plume where concentrations exceed 5,000 µg/L.
2. Baseline concentrations presented from July 2017 are representative of pre-injection conditions.
3. Injection events have occurred periodically from 2017-2021. Images presented in this figure represent groundwater sampling events that have occurred during the 2022 reporting period following the eighth injection event performed in November 2021.
4. Due to the length of time between the final injection event in November 2021 and the September and December 2022 sampling events, some rebound in perchlorate concentration may have occurred in groundwater at the injection well transects. As a result, the depictions of perchlorate concentrations in the immediate vicinity of the injection well transects may be biased low.

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NEVADA ENVIRONMENTAL RESPONSE TRUST SITE

SEEP WELL FIELD AREA BIOREMEDIATION TREATABILITY STUDY
2022 ANNUAL PROGRESS REPORT
HENDERSON, NEVADA

3D VISUALIZATION OF TREATED PERCHLORATE GREATER THAN 5,000 µg/L DURING TREATABILITY STUDY

Project No.:	117-7502021-M11
Date:	December 15, 2023
Designed By:	CKG

Figure No.
4C

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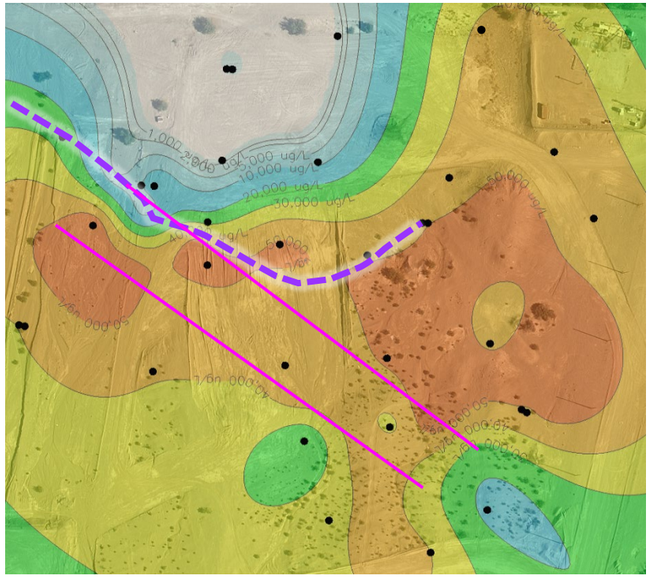
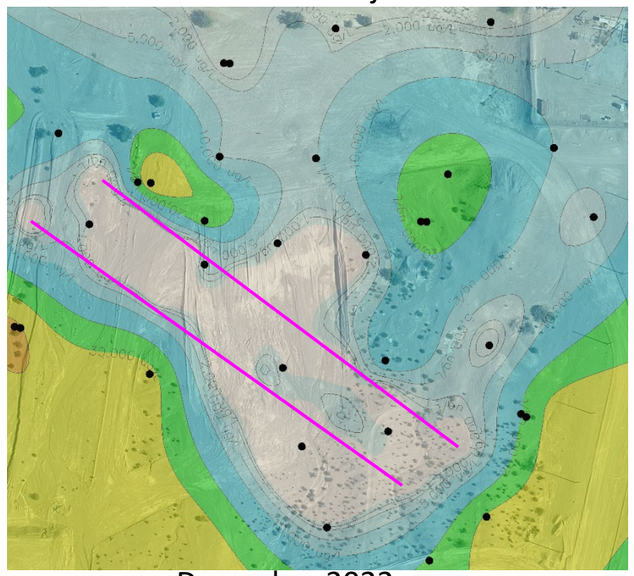
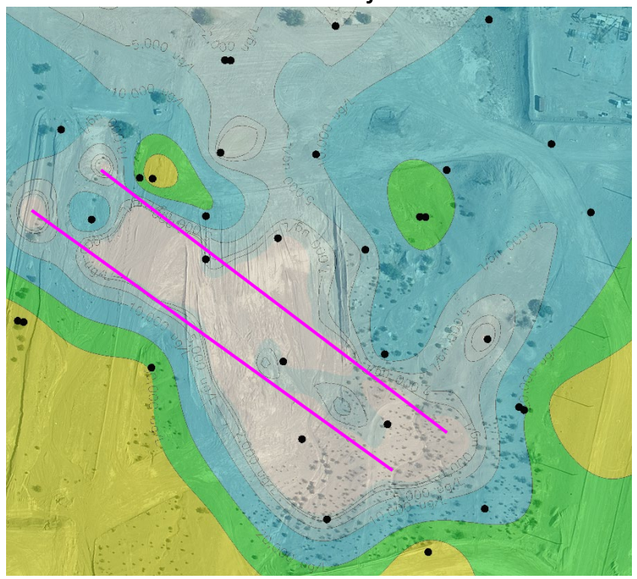
Baseline Conditions



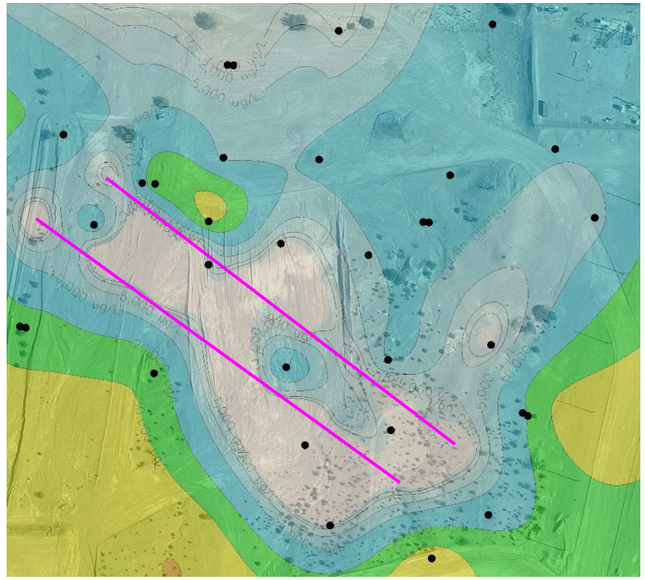
March 2022
Four Months After Injection Event 8



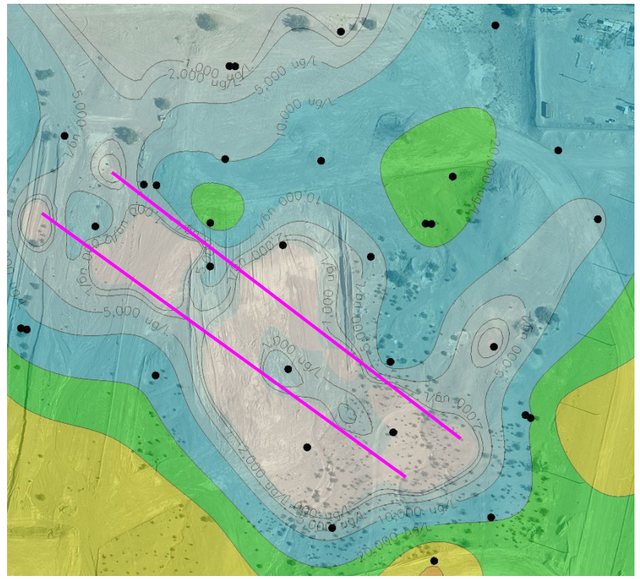
June 2022
Seven Months After Injection Event 8



September 2022
Ten Months After Injection Event 8



December 2022
Thirteen Months After Injection Event 8



Chlorate in groundwater (µg/L)

60,000
50,000
40,000
30,000
20,000
10,000
5,000
2,000
1,000
100

Sample locations

Injection Well Transect Lines

Approximate Paleochannel Centerline

N

0 200 400
Feet

Notes:

1. Each image represents a horizontal slice at 1522 feet amsl (above mean sea level) through the interpolated chlorate concentration plume. Concentrations represented at monitoring well clusters may vary from reported concentrations based on screen elevations.
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NEVADA ENVIRONMENTAL RESPONSE TRUST SITE

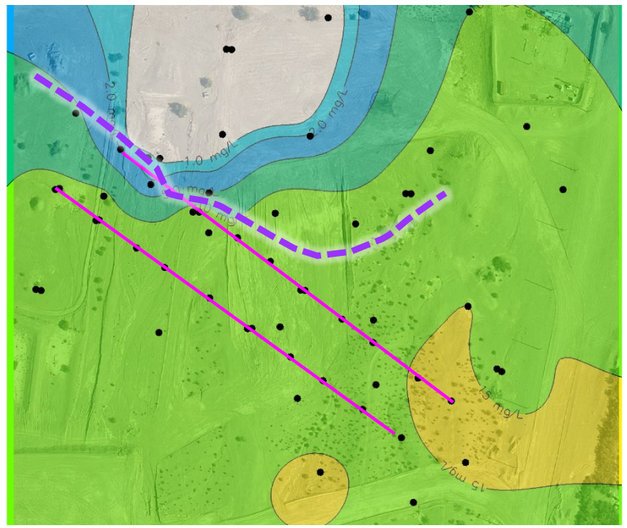
SEEP WELL FIELD AREA BIOREMEDIATION TREATABILITY STUDY
2022 ANNUAL PROGRESS REPORT
HENDERSON, NEVADA

CHLORATE DISTRIBUTION IN GROUNDWATER – MARCH 2022 TO DECEMBER 2022

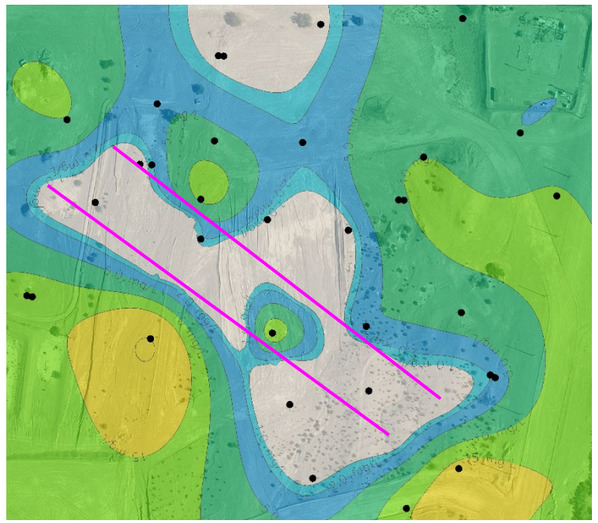
Project No.:	117-7502021-M11
Date:	December 15, 2023
Designed By:	CKG
Figure No.	5

\\tts134fs1\GEOSU\PVOL1\PROJECTS\DATA\NERT\M11\ppt Figs\2020\Annual Report EVS Figures 2020 v1.5.pptx

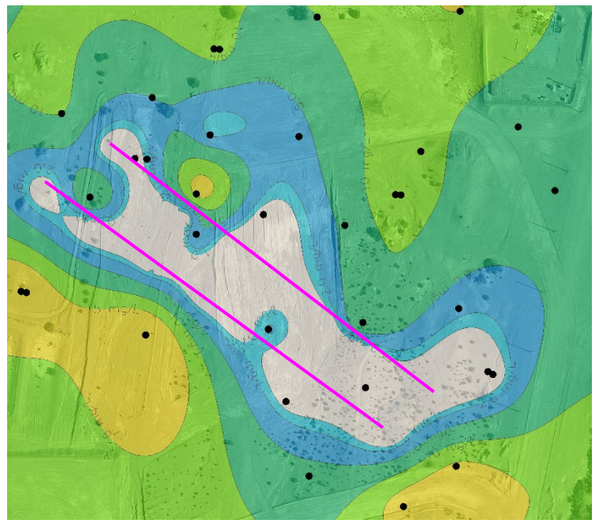
Baseline Conditions



March 2022
Four Months After Injection Event 8



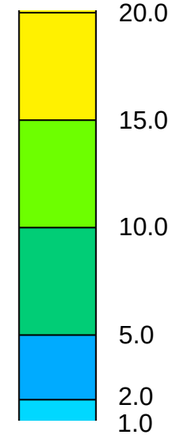
June 2022
Seven Months After Injection Event 8



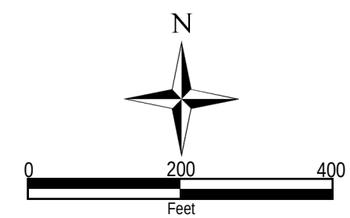
September 2022
Ten Months After Injection Event 8

December 2022
Thirteen Months After Injection Event 8

Nitrate in groundwater (mg/L)



- Sample locations
- Injection Well Transect Lines
- Approximate Paleochannel Centerline



Notes:

1. Each image represents a horizontal slice at 1522 feet amsl (above mean sea level) through the interpolated nitrate concentration plume. Concentrations represented at monitoring well clusters may vary from reported concentrations based on screen elevations.
2. Baseline concentrations presented from July 2017 are representative of pre-injection conditions.
3. Injection events have occurred periodically from 2017-2021. Images presented in this figure represent groundwater sampling events that have occurred during the 2022 reporting period following the eighth injection event performed in November 2021.
4. Due to the length of time between the final injection event in November 2021 and the September and December 2022 sampling events, some rebound in nitrate concentration may have occurred in groundwater at the injection well transects. As a result, the depictions of nitrate concentrations in the immediate vicinity of the injection well transects may be biased low.

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NEVADA ENVIRONMENTAL RESPONSE TRUST SITE
SEEP WELL FIELD AREA BIOREMEDIATION TREATABILITY STUDY
2022 ANNUAL PROGRESS REPORT
HENDERSON, NEVADA
NITRATE DISTRIBUTION IN GROUNDWATER – MARCH 2022 TO DECEMBER 2022

Project No.:	117-7502021-M11
Date:	December 15, 2023
Designed By:	CKG
Figure No.	6

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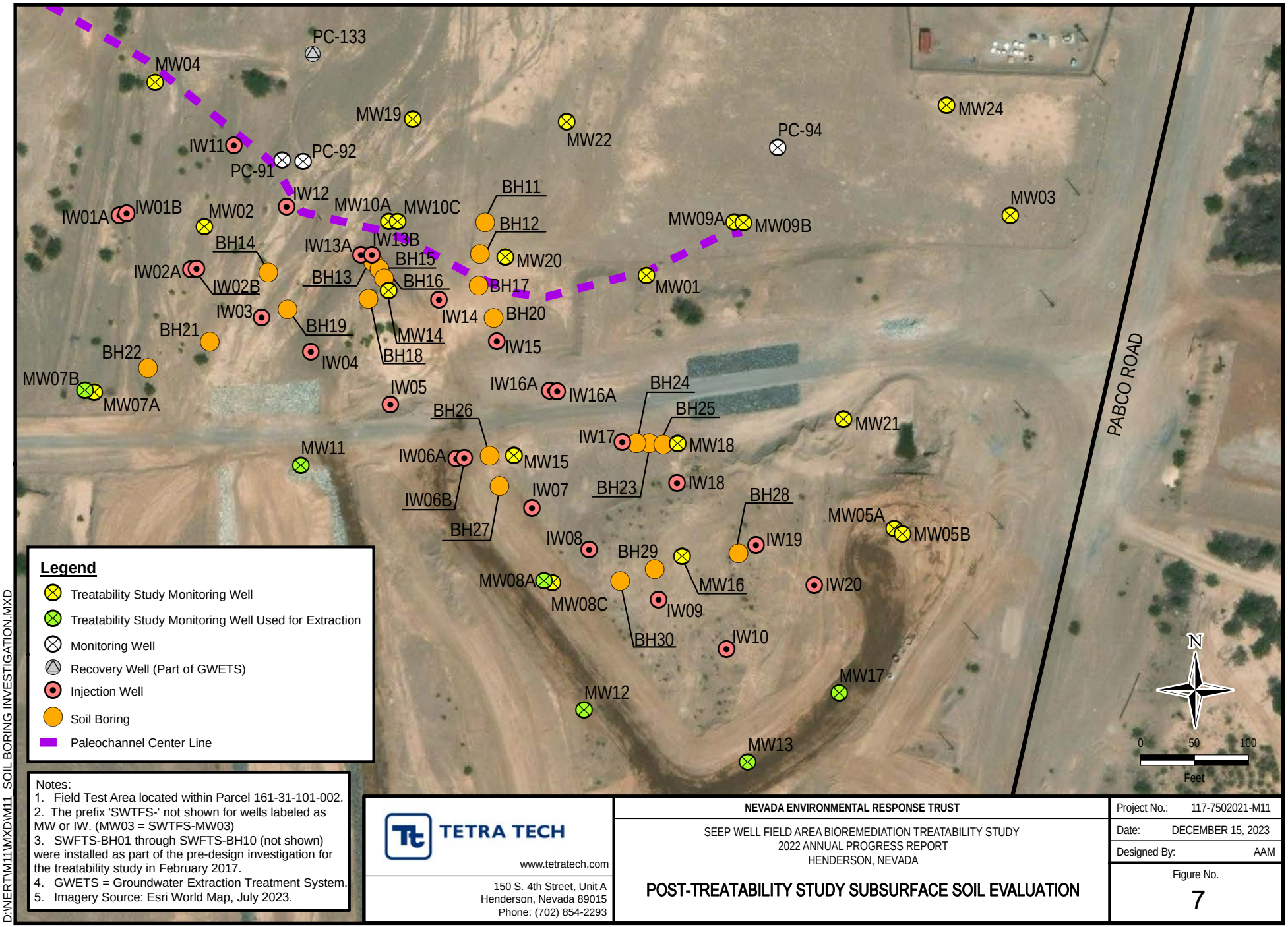

Legend

- Treatability Study Monitoring Well
- Treatability Study Monitoring Well Used for Extraction
- Monitoring Well
- Recovery Well (Part of GWETS)
- Injection Well
- Soil Boring
- Paleochannel Center Line

Notes:
1. Field Test Area located within Parcel 161-31-101-002.
2. The prefix 'SWTFS-' not shown for wells labeled as MW or IW. (MW03 = SWTFS-MW03)
3. SWFTS-BH01 through SWFTS-BH10 (not shown) were installed as part of the pre-design investigation for the treatability study in February 2017.
4. GWETS = Groundwater Extraction Treatment System.
5. Imagery Source: Esri World Map, July 2023.

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NEVADA ENVIRONMENTAL RESPONSE TRUST

SEEP WELL FIELD AREA BIOREMEDIATION TREATABILITY STUDY
2022 ANNUAL PROGRESS REPORT
HENDERSON, NEVADA

POST-TREATABILITY STUDY SUBSURFACE SOIL EVALUATION

Project No.:	117-7502021-M11
Date:	DECEMBER 15, 2023
Designed By:	AAM

Figure No. 7

D:\NERT\M11\MXD\M11_SOIL BORING INVESTIGATION.MXD

Appendix A
Groundwater Sampling Field Logs

LOW FLOW GROUNDWATER SAMPLING LOG

NERT, Henderson, NV

Task Name: SWF Area Bio Treatability Study	Task Manager: D. Grady/ J. Dabbs	Task No.: M11	Date: 2022-03-07	Well ID: PC-58
Field Samplers: A. Pettley				
Transducer Removal Time: n/a	Transducer Redeployment Time: n/a			General Well Condition: Good
Depth to Water (ft): 13.58	Screened Interval Top (ft): 7.8			Pump Intake Depth (ft): 22.60
Well Depth (ft): 38.54	Screened/Open Interval Bottom (ft): 32.8			Well Diameter (in): 2
Pump/Tubing Type: QED Bladder Pump & TLPE/LDPE	GW Disposal: GW-11			Equipment Decon. Method: Alconox/DI Rinse SOP
Y Dedicated Tubing Present? (Y/N)	N New Dedicated Tubing Placed? (Y/N)			
Purge Start Time: 11:48				

Time	Temp. (°C)		pH (pH Units)		Conductivity (mS/cm)		DO (mg/L)		ORP (mV)		Turbidity (NTU)		Purge Rate (mL/min)	Depth to Water (ft)	Cum. Vol. Purged (mL)	Color/Odor
	READ	CHANGE*	READ	CHANGE*	READ	CHANGE*	READ	CHANGE*	READ	CHANGE*	READ	CHANGE*				
11:48	21.1	0%	7.15	0.0	4.131	0%	0.99	8%	328.8	0.0	5.0	<10	200	13.60		Clear/None
11:51	21.1	0%	7.14	0.0	4.139	0%	0.91	0%	328.8	0.0	4.7	<10	200	13.60	600	Clear/None
11:54	21.1	0%	7.13	0.0	4.125	0%	0.85	7%	328.7	0.1	4.7	<10	200	13.60	1200	Clear/None

Stop Purge Time: 11:55	Sample Time: 11:54	QA/QC Sample Time(s): n/a	*PC-58*
	Sample ID: PC-58-EM37	QA/QC Sample ID(s): n/a	

Observations/Comments: Well Condition: Good General Comments:

HACH Kit Sulfide: n/a mg/L Hach Kit Ferrous Iron: n/a mg/L

Bottle Set Summary

VOA w/ HCl	1 125 mL Plastic	500 mL Plastic	4 40 mL Amber VOA w/ HCl	250 mL Amber Glass w/ H2S04
1 125 mL w/ EDA	1 250 mL Plastic	250 mL Plastic w/ H2SO4	250 mL Plastic w/ HNO3	500 mL Amber Glass w/ H2S04

*INDICATOR PARAMETERS HAVE STABLIZED WHEN 3 CONSECUTIVE READINGS ARE WITHIN:

± 0.1 for pH; ± 3% for Cond and Temp; ± 10 mv for ORP; ± 10% or <0.5 mg/L for DO; ± 10% or <10 NTU Turbidity

LOW FLOW GROUNDWATER SAMPLING LOG

NERT, Henderson, NV

Task Name: SWF Area Bio Treatability Study	Task Manager: D. Grady/ J. Dabbs	Task No.: M11	Date: 2022-03-08	Well ID: PC-88
Field Samplers: A. Pettley				
Transducer Removal Time: 08:15	Transducer Redeployment Time: 09:40			General Well Condition: Good
Depth to Water (ft): 1.07	Screened Interval Top (ft): 40.0			Pump Intake Depth (ft): 44.90
Well Depth (ft): 46.60	Screened/Open Interval Bottom (ft): 50.0			Well Diameter (in): 2
Pump/Tubing Type: QED Bladder Pump & TLPE/LDPE	GW Disposal: GW-11			Equipment Decon. Method: Alconox/DI Rinse SOP
Y Dedicated Tubing Present? (Y/N)	N New Dedicated Tubing Placed? (Y/N)			
Purge Start Time: 08:34				

Time	Temp. (°C)		pH (pH Units)		Conductivity (mS/cm)		DO (mg/L)		ORP (mV)		Turbidity (NTU)		Purge Rate (mL/min)	Depth to Water (ft)	Cum. Vol. Purged (mL)	Color/Odor
	READ	CHANGE*	READ	CHANGE*	READ	CHANGE*	READ	CHANGE*	READ	CHANGE*	READ	CHANGE*				
08:34	20.8		7.29		2.936		1.10		109.3		50.0		200	1.07		Clear/None
08:38	21.1		7.30		2.962		0.95		103.1		68.1		200	1.07	800	Clear/None
08:41	21.3		7.30		2.966		0.79		100.1		46.5		200	1.20	1400	Clear/None
08:44	21.4		7.30		2.972		0.73		98.6		44.8		200	1.20	2000	Clear/None
08:48	21.5		7.30		2.971		0.69		95.9		52.7		200	1.22	2800	Clear/None
08:51	21.3		7.30		2.970		0.66		92.9		60.1		200	1.22	3400	Clear/None
08:54	21.5		7.30		2.977		0.64		90.6		74.2		200	1.22	4000	Clear/None
08:58	21.3		7.31		2.980		0.69		79.4		7.5		200	1.22	4800	Clear/None
09:02	21.1		7.31		2.962		0.67		77.7		7.9		180	1.27	5520	Clear/None
09:05	21.3		7.30		2.967		0.67		75.8		10.6		180	1.27	6060	Clear/None
09:12	21.5		7.31		2.991		0.62		66.9		7.3		180	1.27	7320	Clear/None
09:15	21.6		7.30		2.987		0.59		64.8		11.0		180	1.27	7860	Clear/None
09:18	21.5	0%	7.30	0.0	2.983	0%	0.58	0%	63.3	1.5	17.9	83%	180	1.27	8400	Clear/None
09:22	21.6	0%	7.31	0.0	2.999	0%	0.58	0%	61.8	0.0	5.0	<10	180	1.27	9120	Clear/None
09:26	21.7	0%	7.30	0.0	3.005	0%	0.58	0%	60.3	1.5	6.3	<10	180	1.27	9840	Clear/None

Stop Purge Time: 09:27	Sample Time: 09:26	QA/QC Sample Time(s): 09:26	*PC-88*
	Sample ID: PC-88-EM37	QA/QC Sample ID(s): PC-88-EM37-FD	

Observations/Comments: Well Condition: Good General Comments:

HACH Kit Sulfide: n/a mg/L Hach Kit Ferrous Iron: n/a mg/L

Bottle Set Summary

VOA w/ HCl	2 125 mL Plastic	500 mL Plastic	8 40 mL Amber VOA w/ HCl	250 mL Amber Glass w/ H2S04
2 125 mL w/ EDA	2 250 mL Plastic	250 mL Plastic w/ H2SO4	250 mL Plastic w/ HNO3	500 mL Amber Glass w/ H2S04

*INDICATOR PARAMETERS HAVE STABLIZED WHEN 3 CONSECUTIVE READINGS ARE WITHIN:

± 0.1 for pH; ± 3% for Cond and Temp; ± 10 mv for ORP; ± 10% or <0.5 mg/L for DO; ± 10% or <10 NTU Turbidity

LOW FLOW GROUNDWATER SAMPLING LOG

NERT, Henderson, NV

Task Name: SWF Area Bio Treatability Study	Task Manager: D. Grady/ J. Dabbs	Task No.: M11	Date: 2022-03-07	Well ID: PC-91
Field Samplers: A. Pettley				
Transducer Removal Time: n/a	Transducer Redeployment Time: n/a			General Well Condition: Good
Depth to Water (ft): 6.60	Screened Interval Top (ft): 11.5			Pump Intake Depth (ft): 16.00
Well Depth (ft): 19.51	Screened/Open Interval Bottom (ft): 21.5			Well Diameter (in): 2
Pump/Tubing Type: QED Bladder Pump & TLPE/LDPE	GW Disposal: GW-11			Equipment Decon. Method: Alconox/DI Rinse SOP
Y Dedicated Tubing Present? (Y/N)	N New Dedicated Tubing Placed? (Y/N)			
Purge Start Time: 12:52				

Time	Temp. (°C)		pH (pH Units)		Conductivity (mS/cm)		DO (mg/L)		ORP (mV)		Turbidity (NTU)		Purge Rate (mL/min)	Depth to Water (ft)	Cum. Vol. Purged (mL)	Color/Odor
	READ	CHANGE*	READ	CHANGE*	READ	CHANGE*	READ	CHANGE*	READ	CHANGE*	READ	CHANGE*				
12:52	24.4		6.69		3.625		0.40		-291.7		26.0		200	6.65		Clear/None
12:56	24.2		6.68		3.587		0.38		-308.6		18.7		150	6.77	600	Clear/None
12:59	24.2		6.68		3.576		0.37		-318.2		13.5		150	6.77	1050	Clear/None
13:03	24.1	0%	6.66	0.0	3.564	0%	0.36	<0.5	-323.4	1.9	10.2	10%	120	6.79	1530	Clear/None
13:06	24.3	0%	6.65	0.0	3.574	0%	0.36	<0.5	-325.7	0.4	8.7	<10	120	6.79	1890	Clear/None
13:09	24.4	0%	6.65	0.0	3.579	0%	0.36	<0.5	-326.9	1.6	8.7	<10	120	6.79	2250	Clear/None

Stop Purge Time: 13:10	Sample Time: 13:09	QA/QC Sample Time(s): n/a	*PC-91*
	Sample ID: PC-91-EM37	QA/QC Sample ID(s): n/a	

Observations/Comments: Well Condition: Good General Comments:

HACH Kit Sulfide: n/a mg/L Hach Kit Ferrous Iron: n/a mg/L

Bottle Set Summary

VOA w/ HCl	1 125 mL Plastic	500 mL Plastic	4 40 mL Amber VOA w/ HCl	250 mL Amber Glass w/ H2S04
1 125 mL w/ EDA	1 250 mL Plastic	250 mL Plastic w/ H2SO4	250 mL Plastic w/ HNO3	500 mL Amber Glass w/ H2S04

*INDICATOR PARAMETERS HAVE STABLIZED WHEN 3 CONSECUTIVE READINGS ARE WITHIN:

± 0.1 for pH; ± 3% for Cond and Temp; ± 10 mv for ORP; ± 10% or <0.5 mg/L for DO; ± 10% or <10 NTU Turbidity

LOW FLOW GROUNDWATER SAMPLING LOG

NERT, Henderson, NV

Task Name: SWF Area Bio Treatability Study	Task Manager: D. Grady/ J. Dabbs	Task No.: M11	Date: 2022-03-07	Well ID: PC-92
Field Samplers: A. Pettley				
Transducer Removal Time: n/a	Transducer Redeployment Time: n/a			General Well Condition: Good
Depth to Water (ft): 6.00	Screened Interval Top (ft): 26.5			Pump Intake Depth (ft): 31.20
Well Depth (ft): 37.10	Screened/Open Interval Bottom (ft): 36.5			Well Diameter (in): 2
Pump/Tubing Type: QED Bladder Pump & TLPE/LDPE	GW Disposal: GW-11			Equipment Decon. Method: Alconox/DI Rinse SOP
Y Dedicated Tubing Present? (Y/N)	N New Dedicated Tubing Placed? (Y/N)			
Purge Start Time: 13:52				

Time	Temp. (°C)		pH (pH Units)		Conductivity (mS/cm)		DO (mg/L)		ORP (mV)		Turbidity (NTU)		Purge Rate (mL/min)	Depth to Water (ft)	Cum. Vol. Purged (mL)	Color/Odor
	READ	CHANGE*	READ	CHANGE*	READ	CHANGE*	READ	CHANGE*	READ	CHANGE*	READ	CHANGE*				
13:52	22.8		7.23		5.377		0.54		-229.1		6.6		200	6.01		Clear/None
13:55	22.6	0%	7.22	0.0	5.435	0%	0.52	4%	-230.3	1.2	7.0	<10	200	6.01	600	Clear/None
13:58	22.6	0%	7.20	0.0	5.445	0%	0.50	0%	-231.5	0.0	7.1	<10	200	6.01	1200	Clear/None
14:02	22.6	0%	7.19	0.0	5.454	0%	0.48	<0.5	-232.6	1.1	7.9	<10	200	6.01	2000	Clear/None

Stop Purge Time: 14:03	Sample Time: 14:02	QA/QC Sample Time(s): n/a	*PC-92*
	Sample ID: PC-92-EM37	QA/QC Sample ID(s): n/a	

Observations/Comments: Well Condition: Good General Comments:

HACH Kit Sulfide: n/a mg/L Hach Kit Ferrous Iron: n/a mg/L

Bottle Set Summary

VOA w/ HCl	1 125 mL Plastic	500 mL Plastic	4 40 mL Amber VOA w/ HCl	250 mL Amber Glass w/ H2S04
1 125 mL w/ EDA	1 250 mL Plastic	250 mL Plastic w/ H2SO4	250 mL Plastic w/ HNO3	500 mL Amber Glass w/ H2SO4

*INDICATOR PARAMETERS HAVE STABLIZED WHEN 3 CONSECUTIVE READINGS ARE WITHIN:

± 0.1 for pH; ± 3% for Cond and Temp; ± 10 mv for ORP; ± 10% or <0.5 mg/L for DO; ± 10% or <10 NTU Turbidity

LOW FLOW GROUNDWATER SAMPLING LOG

NERT, Henderson, NV

Task Name: SWF Area Bio Treatability Study	Task Manager: D. Grady/ J. Dabbs	Task No.: M11	Date: 2022-03-08	Well ID: PC-94
Field Samplers: A. Pettley				
Transducer Removal Time: n/a	Transducer Redeployment Time: n/a			General Well Condition: Good
Depth to Water (ft): 10.82	Screened Interval Top (ft): 9.5			Pump Intake Depth (ft): 16.30
Well Depth (ft): 19.98	Screened/Open Interval Bottom (ft): 19.5			Well Diameter (in): 2
Pump/Tubing Type: QED Bladder Pump & TLPE/LDPE	GW Disposal: GW-11			Equipment Decon. Method: Alconox/DI Rinse SOP
Y Dedicated Tubing Present? (Y/N)	N New Dedicated Tubing Placed? (Y/N)			
Purge Start Time: 10:45				

Time	Temp. (°C)		pH (pH Units)		Conductivity (mS/cm)		DO (mg/L)		ORP (mV)		Turbidity (NTU)		Purge Rate (mL/min)	Depth to Water (ft)	Cum. Vol. Purged (mL)	Color/Odor
	READ	CHANGE*	READ	CHANGE*	READ	CHANGE*	READ	CHANGE*	READ	CHANGE*	READ	CHANGE*				
10:45	22.5		6.79		6.157		0.76		104.9		94.7		180	10.90		Clear/None
10:48	22.8		6.79		6.185		0.69		102.5		90.2		180	10.90	540	Clear/None
10:51	22.8		6.79		6.185		0.63		100.9		74.1		180	10.90	1080	Clear/None
10:54	22.9		6.79		6.200		0.60		98.8		65.0		180	10.90	1620	Clear/None
10:58	22.9		6.79		6.197		0.57		95.3		133.9		240	10.95	2580	Clear/None
11:03	22.8		6.79		6.186		0.58		99.7		113.8		240	10.98	3780	Clear/None
11:06	23.1		6.79		6.223		0.55		99.0		71.2		240	10.98	4500	Clear/None
11:10	22.9		6.78		6.199		0.53		95.1		53.1		240	10.97	5460	Clear/None
11:13	23.1		6.79		6.219		0.52		93.3		41.1		240	10.97	6180	Clear/None
11:17	23.2	0%	6.79	0.0	6.237	0%	0.50	0%	92.9	1.1	34.6	12%	240	10.97	7140	Clear/None
11:20	23.2	0%	6.79	0.0	6.232	0%	0.50	0%	92.0	0.2	29.2	4%	240	10.97	7860	Clear/None
11:23	23.2	0%	6.79	0.0	6.233	0%	0.49	<0.5	90.5	1.3	28.3	7%	240	10.97	8580	Clear/None

Stop Purge Time: 11:24	Sample Time: 11:23	QA/QC Sample Time(s): n/a	*PC-94*
	Sample ID: PC-94-EM37	QA/QC Sample ID(s): n/a	

Observations/Comments: Well Condition: Good General Comments:

HACH Kit Sulfide: n/a mg/L Hach Kit Ferrous Iron: n/a mg/L

Bottle Set Summary

VOA w/ HCl	1 125 mL Plastic	500 mL Plastic	4 40 mL Amber VOA w/ HCl	250 mL Amber Glass w/ H2S04
1 125 mL w/ EDA	1 250 mL Plastic	250 mL Plastic w/ H2SO4	250 mL Plastic w/ HNO3	500 mL Amber Glass w/ H2S04

*INDICATOR PARAMETERS HAVE STABLIZED WHEN 3 CONSECUTIVE READINGS ARE WITHIN:

± 0.1 for pH; ± 3% for Cond and Temp; ± 10 mv for ORP; ± 10% or <0.5 mg/L for DO; ± 10% or <10 NTU Turbidity

LOW FLOW GROUNDWATER SAMPLING LOG

NERT, Henderson, NV

Task Name: SWF Area Bio Treatability Study	Task Manager: D. Grady/ J. Dabbs	Task No.: M11	Date: 2022-03-09	Well ID: SWFTS-MW01
Field Samplers: A. Pettley				
Transducer Removal Time: n/a	Transducer Redeployment Time: n/a			General Well Condition: Good
Depth to Water (ft): 11.70	Screened Interval Top (ft): 24.2			Pump Intake Depth (ft): 31.30
Well Depth (ft): 38.40	Screened/Open Interval Bottom (ft): 38.9			Well Diameter (in): 2
Pump/Tubing Type: QED Bladder Pump & TLPE/LDPE	GW Disposal: GW-11			Equipment Decon. Method: Alconox/DI Rinse SOP
Y Dedicated Tubing Present? (Y/N)	N New Dedicated Tubing Placed? (Y/N)			
Purge Start Time: 08:58				

Time	Temp. (°C)		pH (pH Units)		Conductivity (mS/cm)		DO (mg/L)		ORP (mV)		Turbidity (NTU)		Purge Rate (mL/min)	Depth to Water (ft)	Cum. Vol. Purged (mL)	Color/Odor
	READ	CHANGE*	READ	CHANGE*	READ	CHANGE*	READ	CHANGE*	READ	CHANGE*	READ	CHANGE*				
08:58	23.3		6.69		6.869		0.79		112.7		4.0		200	11.67		Clear/None
09:02	23.6		6.69		6.903		0.66		108.6		6.8		180	11.73	720	Clear/None
09:05	23.7		6.68		6.922		0.61		106.4		11.4		180	11.73	1260	Clear/None
09:08	23.7	0%	6.68	0.0	6.910	0%	0.59	5%	104.1	5.6	19.5	67%	180	11.73	1800	Clear/None
09:12	24.0	0%	6.68	0.0	6.975	0%	0.55	1%	97.1	1.4	6.0	<10	180	11.70	2520	Clear/None
09:15	23.8	0%	6.68	0.0	6.934	0%	0.54	3%	94.3	4.2	9.4	<10	180	11.70	3060	Clear/None

Stop Purge Time: 09:16	Sample Time: 09:15	QA/QC Sample Time(s): n/a	*SWFTS-MW01*
	Sample ID: SWFTS-MW01-EM37	QA/QC Sample ID(s): n/a	

Observations/Comments: Well Condition: Good General Comments:

HACH Kit Sulfide: n/a mg/L Hach Kit Ferrous Iron: n/a mg/L

Bottle Set Summary

VOA w/ HCl	1 125 mL Plastic	500 mL Plastic	4 40 mL Amber VOA w/ HCl	250 mL Amber Glass w/ H2S04
1 125 mL w/ EDA	1 250 mL Plastic	250 mL Plastic w/ H2SO4	250 mL Plastic w/ HNO3	500 mL Amber Glass w/ H2S04

*INDICATOR PARAMETERS HAVE STABLIZED WHEN 3 CONSECUTIVE READINGS ARE WITHIN:

± 0.1 for pH; ± 3% for Cond and Temp; ± 10 mv for ORP; ± 10% or <0.5 mg/L for DO; ± 10% or <10 NTU Turbidity

LOW FLOW GROUNDWATER SAMPLING LOG

NERT, Henderson, NV

Task Name: SWF Area Bio Treatability Study	Task Manager: D. Grady/ J. Dabbs	Task No.: M11	Date: 2022-03-09	Well ID: SWFTS-MW02
Field Samplers: A. Pettley				
Transducer Removal Time: 10:15	Transducer Redeployment Time: 11:20			General Well Condition: Good
Depth to Water (ft): 7.47	Screened Interval Top (ft): 18.4			Pump Intake Depth (ft): 25.50
Well Depth (ft): 31.05	Screened/Open Interval Bottom (ft): 33.1			Well Diameter (in): 2
Pump/Tubing Type: QED Bladder Pump & TLPE/LDPE	GW Disposal: GW-11			Equipment Decon. Method: Alconox/DI Rinse SOP
Y Dedicated Tubing Present? (Y/N)	N New Dedicated Tubing Placed? (Y/N)			
Purge Start Time: 10:24				

Time	Temp. (°C)		pH (pH Units)		Conductivity (mS/cm)		DO (mg/L)		ORP (mV)		Turbidity (NTU)		Purge Rate (mL/min)	Depth to Water (ft)	Cum. Vol. Purged (mL)	Color/Odor
	READ	CHANGE*	READ	CHANGE*	READ	CHANGE*	READ	CHANGE*	READ	CHANGE*	READ	CHANGE*				
10:24	26.0		6.50		10.202		1.16		97.7		12.8		200	7.49		Clear/None
10:27	26.1		6.48		10.827		0.78		89.0		7.4		200	7.49	600	Clear/None
10:35	26.4	0%	6.47	0.0	11.124	0%	0.55	5%	79.2	2.5	4.1	<10	200	7.50	2200	Clear/None
10:39	26.5	0%	6.47	0.0	11.164	0%	0.52	0%	76.4	0.3	3.8	<10	200	7.51	3000	Clear/None
10:42	26.3	0%	6.47	0.0	11.146	0%	0.50	4%	74.4	2.3	3.7	<10	200	7.51	3600	Clear/None

Stop Purge Time: 10:43	Sample Time: 10:42	QA/QC Sample Time(s): n/a	*SWFTS-MW02*
	Sample ID: SWFTS-MW02-EM37	QA/QC Sample ID(s): n/a	

Observations/Comments: Well Condition: Good General Comments:

HACH Kit Sulfide: n/a mg/L Hach Kit Ferrous Iron: n/a mg/L

Bottle Set Summary

VOA w/ HCl	1 125 mL Plastic	500 mL Plastic	4 40 mL Amber VOA w/ HCl	250 mL Amber Glass w/ H2S04
1 125 mL w/ EDA	1 250 mL Plastic	250 mL Plastic w/ H2SO4	250 mL Plastic w/ HNO3	500 mL Amber Glass w/ H2SO4

*INDICATOR PARAMETERS HAVE STABLIZED WHEN 3 CONSECUTIVE READINGS ARE WITHIN:

± 0.1 for pH; ± 3% for Cond and Temp; ± 10 mv for ORP; ± 10% or <0.5 mg/L for DO; ± 10% or <10 NTU Turbidity

LOW FLOW GROUNDWATER SAMPLING LOG

NERT, Henderson, NV

Task Name: SWF Area Bio Treatability Study	Task Manager: D. Grady/ J. Dabbs	Task No.: M11	Date: 2022-03-09	Well ID: SWFTS-MW03
Field Samplers: A. Pettley				
Transducer Removal Time: 07:50	Transducer Redeployment Time: 08:55			General Well Condition: Good
Depth to Water (ft): 11.42	Screened Interval Top (ft): 27.2			Pump Intake Depth (ft): 34.40
Well Depth (ft): 41.75	Screened/Open Interval Bottom (ft): 42.1			Well Diameter (in): 2
Pump/Tubing Type: QED Bladder Pump & TLPE/LDPE	GW Disposal: GW-11			Equipment Decon. Method: Alconox/DI Rinse SOP
Y Dedicated Tubing Present? (Y/N)	N New Dedicated Tubing Placed? (Y/N)			
Purge Start Time: 08:01				

Time	Temp. (°C)		pH (pH Units)		Conductivity (mS/cm)		DO (mg/L)		ORP (mV)		Turbidity (NTU)		Purge Rate (mL/min)	Depth to Water (ft)	Cum. Vol. Purged (mL)	Color/Odor
	READ	CHANGE*	READ	CHANGE*	READ	CHANGE*	READ	CHANGE*	READ	CHANGE*	READ	CHANGE*				
08:01	21.7		6.90		6.189		0.95		125.5		17.1		200	11.43		Clear/None
08:05	21.9		6.91		6.198		0.81		119.3		14.3		200	11.43	800	Clear/None
08:09	21.9		6.91		6.199		0.74		115.6		10.1		200	11.45	1600	Clear/None
08:12	21.7	1%	6.92	0.0	6.178	0%	0.70	2%	113.2	2.4	12.5	51%	200	11.45	2200	Clear/None
08:16	22.2	0%	6.91	0.0	6.233	0%	0.68	0%	110.5	0.3	6.4	<10	200	11.43	3000	Clear/None
08:19	22.1	0%	6.91	0.0	6.233	0%	0.66	2%	108.6	2.2	5.9	<10	200	11.43	3600	Clear/None

Stop Purge Time: 08:20	Sample Time: 08:20	QA/QC Sample Time(s): n/a	*SWFTS-MW03*
	Sample ID: SWFTS-MW03-EM37	QA/QC Sample ID(s): n/a	

Observations/Comments: Well Condition: Good General Comments:

HACH Kit Sulfide: n/a mg/L Hach Kit Ferrous Iron: n/a mg/L

Bottle Set Summary

VOA w/ HCl	1 125 mL Plastic	500 mL Plastic	4 40 mL Amber VOA w/ HCl	250 mL Amber Glass w/ H2S04
1 125 mL w/ EDA	1 250 mL Plastic	250 mL Plastic w/ H2SO4	250 mL Plastic w/ HNO3	500 mL Amber Glass w/ H2SO4

*INDICATOR PARAMETERS HAVE STABLIZED WHEN 3 CONSECUTIVE READINGS ARE WITHIN:

± 0.1 for pH; ± 3% for Cond and Temp; ± 10 mv for ORP; ± 10% or <0.5 mg/L for DO; ± 10% or <10 NTU Turbidity

LOW FLOW GROUNDWATER SAMPLING LOG

NERT, Henderson, NV

Task Name: SWF Area Bio Treatability Study	Task Manager: D. Grady/ J. Dabbs	Task No.: M11	Date: 2022-03-09	Well ID: SWFTS-MW04
Field Samplers: G. Schuler				
Transducer Removal Time: n/a	Transducer Redeployment Time: n/a			General Well Condition: Good
Depth to Water (ft): 5.04	Screened Interval Top (ft): 25.8			Pump Intake Depth (ft): 32.80
Well Depth (ft): 39.75	Screened/Open Interval Bottom (ft): 40.4			Well Diameter (in): 2
Pump/Tubing Type: QED Bladder Pump & TLPE/LDPE	GW Disposal: GW-11			Equipment Decon. Method: Alconox/DI Rinse SOP
Y Dedicated Tubing Present? (Y/N)	N New Dedicated Tubing Placed? (Y/N)			
Purge Start Time: 09:18				

Time	Temp. (°C)		pH (pH Units)		Conductivity (mS/cm)		DO (mg/L)		ORP (mV)		Turbidity (NTU)		Purge Rate (mL/min)	Depth to Water (ft)	Cum. Vol. Purged (mL)	Color/Odor
	READ	CHANGE*	READ	CHANGE*	READ	CHANGE*	READ	CHANGE*	READ	CHANGE*	READ	CHANGE*				
09:18	20.7		7.31		4.898		3.42		74.4		34.7		300	5.28		Clear/None
09:21	21.9		7.10		5.429		1.06		94.4		34.9		300	5.28	900	Clear/None
09:25	21.9		7.08		5.483		0.81		98.5		37.6		300	5.28	2100	Clear/None
09:28	22.0		7.08		5.547		0.72		100.0		30.5		300	5.28	3000	Clear/None
09:31	22.0		7.08		5.526		0.66		100.3		29.9		300	5.28	3900	Clear/None
09:34	22.1		7.07		5.546		0.62		100.3		23.2		300	5.28	4800	Clear/None
09:37	22.2		7.07		5.555		0.60		100.2		20.6		300	5.28	5700	Clear/None
09:41	22.3	0%	7.07	0.0	5.564	0%	0.62	6%	99.8	0.3	14.8	12%	300	5.28	6900	Clear/None
09:44	22.3	0%	7.07	0.0	5.558	0%	0.57	1%	99.5	0.0	12.5	4%	300	5.28	7800	Clear/None
09:47	22.2	0%	7.07	0.0	5.560	0%	0.55	5%	99.3	0.2	12.0	8%	300	5.28	8700	Clear/None

Stop Purge Time: 09:48	Sample Time: 10:00	QA/QC Sample Time(s): n/a	*SWFTS-MW04*
	Sample ID: SWFTS-MW04-EM37	QA/QC Sample ID(s): n/a	

Observations/Comments: Well Condition: Good General Comments:

HACH Kit Sulfide: n/a mg/L Hach Kit Ferrous Iron: n/a mg/L

Bottle Set Summary

VOA w/ HCl	1 125 mL Plastic	500 mL Plastic	4 40 mL Amber VOA w/ HCl	250 mL Amber Glass w/ H2S04
1 125 mL w/ EDA	1 250 mL Plastic	250 mL Plastic w/ H2SO4	250 mL Plastic w/ HNO3	500 mL Amber Glass w/ H2SO4

*INDICATOR PARAMETERS HAVE STABLIZED WHEN 3 CONSECUTIVE READINGS ARE WITHIN:

± 0.1 for pH; ± 3% for Cond and Temp; ± 10 mv for ORP; ± 10% or <0.5 mg/L for DO; ± 10% or <10 NTU Turbidity

LOW FLOW GROUNDWATER SAMPLING LOG

NERT, Henderson, NV

Task Name: SWF Area Bio Treatability Study	Task Manager: D. Grady/ J. Dabbs	Task No.: M11	Date: 2022-03-07	Well ID: SWFTS-MW06A
Field Samplers: G. Schuler				
Transducer Removal Time: n/a	Transducer Redeployment Time: n/a			General Well Condition: Good
Depth to Water (ft): 1.17	Screened Interval Top (ft): 11.8			Pump Intake Depth (ft): 16.20
Well Depth (ft): 20.90	Screened/Open Interval Bottom (ft): 21.4			Well Diameter (in): 2
Pump/Tubing Type: QED Bladder Pump & TLPE/LDPE	GW Disposal: GW-11			Equipment Decon. Method: Alconox/DI Rinse SOP
Y Dedicated Tubing Present? (Y/N)	N New Dedicated Tubing Placed? (Y/N)			
Purge Start Time: 11:49				

Time	Temp. (°C)		pH (pH Units)		Conductivity (mS/cm)		DO (mg/L)		ORP (mV)		Turbidity (NTU)		Purge Rate (mL/min)	Depth to Water (ft)	Cum. Vol. Purged (mL)	Color/Odor
	READ	CHANGE*	READ	CHANGE*	READ	CHANGE*	READ	CHANGE*	READ	CHANGE*	READ	CHANGE*				
11:49	22.0		7.52		2.763		2.14		8.6		25.7		270	1.19		Clear/None
11:52	21.4		7.25		2.526		0.94		22.2		25.1		270	1.19	810	Clear/None
11:55	21.7		7.23		2.530		0.81		26.3		21.0		270	1.19	1620	Clear/None
11:58	21.8	0%	7.22	0.0	2.539	0%	0.69	6%	28.3	0.9	17.0	27%	270	1.19	2430	Clear/None
12:01	21.6	0%	7.22	0.0	2.528	0%	0.65	0%	29.4	0.2	11.9	10%	270	1.19	3240	Clear/None
12:04	21.9	0%	7.22	0.0	2.538	0%	0.60	7%	30.0	0.8	11.2	16%	270	1.19	4050	Clear/None

Stop Purge Time: 12:05	Sample Time: 12:15	QA/QC Sample Time(s): 12:15	*SWFTS-MW06A*
	Sample ID: SWFTS-MW06A-EM37	QA/QC Sample ID(s): SWFTS-MW06A-EM37-FD	

Observations/Comments: Well Condition: Good General Comments:

HACH Kit Sulfide: n/a mg/L Hach Kit Ferrous Iron: n/a mg/L

Bottle Set Summary

VOA w/ HCl	2 125 mL Plastic	500 mL Plastic	4 40 mL Amber VOA w/ HCl	250 mL Amber Glass w/ H2S04
2 125 mL w/ EDA	2 250 mL Plastic	250 mL Plastic w/ H2SO4	250 mL Plastic w/ HNO3	500 mL Amber Glass w/ H2SO4

*INDICATOR PARAMETERS HAVE STABLIZED WHEN 3 CONSECUTIVE READINGS ARE WITHIN:

± 0.1 for pH; ± 3% for Cond and Temp; ± 10 mv for ORP; ± 10% or <0.5 mg/L for DO; ± 10% or <10 NTU Turbidity

LOW FLOW GROUNDWATER SAMPLING LOG

NERT, Henderson, NV

Task Name: SWF Area Bio Treatability Study	Task Manager: D. Grady/ J. Dabbs	Task No.: M11	Date: 2022-03-07	Well ID: SWFTS-MW06B
Field Samplers: G. Schuler				
Transducer Removal Time: 12:34	Transducer Redeployment Time: 13:00			General Well Condition: Good
Depth to Water (ft): 1.38	Screened Interval Top (ft): 25.9			Pump Intake Depth (ft): 30.30
Well Depth (ft): 35.10	Screened/Open Interval Bottom (ft): 35.5			Well Diameter (in): 2
Pump/Tubing Type: QED Bladder Pump & TLPE/LDPE	GW Disposal: GW-11			Equipment Decon. Method: Alconox/DI Rinse SOP
Y Dedicated Tubing Present? (Y/N)	N New Dedicated Tubing Placed? (Y/N)			
Purge Start Time: 12:44				

Time	Temp. (°C)		pH (pH Units)		Conductivity (mS/cm)		DO (mg/L)		ORP (mV)		Turbidity (NTU)		Purge Rate (mL/min)	Depth to Water (ft)	Cum. Vol. Purged (mL)	Color/Odor
	READ	CHANGE*	READ	CHANGE*	READ	CHANGE*	READ	CHANGE*	READ	CHANGE*	READ	CHANGE*				
12:44	21.2		7.31		2.694		2.56		59.1		121.2		300	1.37		Clear/None
12:47	21.2		7.20		2.668		1.13		60.3		128.6		300	1.37	900	Clear/None
12:50	21.2		7.20		2.664		0.86		57.7		127.9		300	1.37	1800	Clear/None
12:53	21.2		7.20		2.663		0.76		54.9		189.9		300	1.37	2700	Clear/None
12:56	21.3		7.20		2.668		0.73		52.3		228.1		300	1.37	3600	Clear/None
12:59	21.3		7.19		2.673		0.59		50.7		37.9		300	1.37	4500	Clear/None
13:02	21.3	0%	7.19	0.0	2.671	0%	0.57	3%	49.0	1.3	32.5	17%	300	1.37	5400	Clear/None
13:05	21.3	0%	7.20	0.0	2.670	0%	0.55	0%	47.7	0.0	25.9	6%	300	1.37	6300	Clear/None
13:09	21.3	0%	7.20	0.0	2.668	0%	0.53	3%	46.5	1.2	24.3	11%	300	1.37	7500	Clear/None

Stop Purge Time: 13:10	Sample Time: 13:15	QA/QC Sample Time(s): n/a	*SWFTS-MW06B*
	Sample ID: SWFTS-MW06B-EM37	QA/QC Sample ID(s): n/a	

Observations/Comments: Well Condition: Good General Comments: Other

HACH Kit Sulfide: n/a mg/L Hach Kit Ferrous Iron: n/a mg/L

Bottle Set Summary

VOA w/ HCl	1 125 mL Plastic	500 mL Plastic	4 40 mL Amber VOA w/ HCl	250 mL Amber Glass w/ H2S04
1 125 mL w/ EDA	1 250 mL Plastic	250 mL Plastic w/ H2SO4	250 mL Plastic w/ HNO3	500 mL Amber Glass w/ H2S04

*INDICATOR PARAMETERS HAVE STABLIZED WHEN 3 CONSECUTIVE READINGS ARE WITHIN:

± 0.1 for pH; ± 3% for Cond and Temp; ± 10 mv for ORP; ± 10% or <0.5 mg/L for DO; ± 10% or <10 NTU Turbidity

LOW FLOW GROUNDWATER SAMPLING LOG

NERT, Henderson, NV

Task Name: SWF Area Bio Treatability Study	Task Manager: D. Grady/ J. Dabbs	Task No.: M11	Date: 2022-03-08	Well ID: SWFTS-MW07A
Field Samplers: G. Schuler				
Transducer Removal Time: n/a	Transducer Redeployment Time: n/a			General Well Condition: Good
Depth to Water (ft): 7.42	Screened Interval Top (ft): 15.0			Pump Intake Depth (ft): 22.00
Well Depth (ft): 30.10	Screened/Open Interval Bottom (ft): 29.5			Well Diameter (in): 4
Pump/Tubing Type: QED Bladder Pump & TLPE/LDPE	GW Disposal: GW-11			Equipment Decon. Method: Alconox/DI Rinse SOP
Y Dedicated Tubing Present? (Y/N)	N New Dedicated Tubing Placed? (Y/N)			
Purge Start Time: 12:33				

Time	Temp. (°C)		pH (pH Units)		Conductivity (mS/cm)		DO (mg/L)		ORP (mV)		Turbidity (NTU)		Purge Rate (mL/min)	Depth to Water (ft)	Cum. Vol. Purged (mL)	Color/Odor
	READ	CHANGE*	READ	CHANGE*	READ	CHANGE*	READ	CHANGE*	READ	CHANGE*	READ	CHANGE*				
12:33	23.7		7.06		6.348		1.62		75.5		0.5		300	7.42		Clear/None
12:36	23.9		7.03		6.344		0.98		75.4		0.3		300	7.42	900	Clear/None
12:39	23.9	0%	7.03	0.0	6.349	0%	0.87	7%	74.9	0.5	0.2	<10	300	7.42	1800	Clear/None
12:42	24.0	0%	7.03	0.0	6.365	0%	0.79	2%	74.3	0.1	0.2	<10	300	7.42	2700	Clear/None
12:45	23.9	0%	7.04	0.0	6.362	0%	0.76	5%	74.1	0.3	0.2	<10	300	7.42	3600	Clear/None

Stop Purge Time: 12:46	Sample Time: 12:55	QA/QC Sample Time(s): n/a	*SWFTS-MW07A*
	Sample ID: SWFTS-MW07A-EM37	QA/QC Sample ID(s): n/a	

Observations/Comments: Well Condition: Good General Comments:

HACH Kit Sulfide: n/a mg/L Hach Kit Ferrous Iron: n/a mg/L

Bottle Set Summary

VOA w/ HCl	1 125 mL Plastic	500 mL Plastic	4 40 mL Amber VOA w/ HCl	250 mL Amber Glass w/ H2S04
1 125 mL w/ EDA	1 250 mL Plastic	250 mL Plastic w/ H2SO4	250 mL Plastic w/ HNO3	500 mL Amber Glass w/ H2SO4

*INDICATOR PARAMETERS HAVE STABLIZED WHEN 3 CONSECUTIVE READINGS ARE WITHIN:

± 0.1 for pH; ± 3% for Cond and Temp; ± 10 mv for ORP; ± 10% or <0.5 mg/L for DO; ± 10% or <10 NTU Turbidity

LOW FLOW GROUNDWATER SAMPLING LOG

NERT, Henderson, NV

Task Name: SWF Area Bio Treatability Study	Task Manager: D. Grady/ J. Dabbs	Task No.: M11	Date: 2022-03-08	Well ID: SWFTS-MW07B
Field Samplers: G. Schuler				
Transducer Removal Time: 11:27	Transducer Redeployment Time: 13:00			General Well Condition: Good
Depth to Water (ft): 7.21	Screened Interval Top (ft): 33.8			Pump Intake Depth (ft): 35.70
Well Depth (ft): 38.70	Screened/Open Interval Bottom (ft): 38.3			Well Diameter (in): 2
Pump/Tubing Type: QED Bladder Pump & TLPE/LDPE	GW Disposal: GW-11			Equipment Decon. Method: Alconox/DI Rinse SOP
Y Dedicated Tubing Present? (Y/N)	N New Dedicated Tubing Placed? (Y/N)			
Purge Start Time: 11:38				

Time	Temp. (°C)		pH (pH Units)		Conductivity (mS/cm)		DO (mg/L)		ORP (mV)		Turbidity (NTU)		Purge Rate (mL/min)	Depth to Water (ft)	Cum. Vol. Purged (mL)	Color/Odor
	READ	CHANGE*	READ	CHANGE*	READ	CHANGE*	READ	CHANGE*	READ	CHANGE*	READ	CHANGE*				
11:38	23.1		7.08		6.030		1.78		30.1		46.1		300	7.21		Clear/None
11:41	23.6		7.01		6.242		0.83		39.1		25.3		300	7.21	900	Clear/None
11:44	23.7		7.00		6.267		0.71		43.6		19.4		300	7.21	1800	Clear/None
11:47	23.6		7.00		6.260		0.63		47.0		14.2		300	7.21	2700	Clear/None
11:50	23.7		6.99		6.276		0.59		49.8		10.3		300	7.21	3600	Clear/None
11:53	24.0	1%	6.99	0.0	6.317	0%	0.55	1%	52.0	1.8	7.3	<10	300	7.21	4500	Clear/None
11:56	23.5	0%	6.99	0.0	6.263	0%	0.53	1%	53.8	0.0	5.3	<10	300	7.21	5400	Clear/None
11:59	23.4	0%	6.99	0.0	6.246	0%	0.54	0%	55.7	1.9	5.0	<10	300	7.21	6300	Clear/None

Stop Purge Time: 12:00	Sample Time: 12:10	QA/QC Sample Time(s): n/a	*SWFTS-MW07B*
	Sample ID: SWFTS-MW07B-EM37	QA/QC Sample ID(s): n/a	

Observations/Comments: Well Condition: Good General Comments:

HACH Kit Sulfide: n/a mg/L Hach Kit Ferrous Iron: n/a mg/L

Bottle Set Summary

VOA w/ HCl	1 125 mL Plastic	500 mL Plastic	4 40 mL Amber VOA w/ HCl	250 mL Amber Glass w/ H2S04
1 125 mL w/ EDA	1 250 mL Plastic	250 mL Plastic w/ H2SO4	250 mL Plastic w/ HNO3	500 mL Amber Glass w/ H2S04

*INDICATOR PARAMETERS HAVE STABLIZED WHEN 3 CONSECUTIVE READINGS ARE WITHIN:

± 0.1 for pH; ± 3% for Cond and Temp; ± 10 mv for ORP; ± 10% or <0.5 mg/L for DO; ± 10% or <10 NTU Turbidity

LOW FLOW GROUNDWATER SAMPLING LOG

NERT, Henderson, NV

Task Name: SWF Area Bio Treatability Study	Task Manager: D. Grady/ J. Dabbs	Task No.: M11	Date: 2022-03-08	Well ID: SWFTS-MW09A
Field Samplers: A. Pettley				
Transducer Removal Time: 12:10	Transducer Redeployment Time: 13:25			General Well Condition: Good
Depth to Water (ft): 11.13	Screened Interval Top (ft): 19.3			Pump Intake Depth (ft): 23.70
Well Depth (ft): 29.00	Screened/Open Interval Bottom (ft): 28.9			Well Diameter (in): 4
Pump/Tubing Type: QED Bladder Pump & TLPE/LDPE	GW Disposal: GW-11			Equipment Decon. Method: Alconox/DI Rinse SOP
Y Dedicated Tubing Present? (Y/N)	N New Dedicated Tubing Placed? (Y/N)			
Purge Start Time: 12:20				

Time	Temp. (°C)		pH (pH Units)		Conductivity (mS/cm)		DO (mg/L)		ORP (mV)		Turbidity (NTU)		Purge Rate (mL/min)	Depth to Water (ft)	Cum. Vol. Purged (mL)	Color/Odor
	READ	CHANGE*	READ	CHANGE*	READ	CHANGE*	READ	CHANGE*	READ	CHANGE*	READ	CHANGE*				
12:20	23.9		6.80		5.986		0.96		111.7		2.5		200	11.15		Clear/None
12:23	24.1		6.79		6.052		0.80		113.5		2.6		200	11.15	600	Clear/None
12:27	24.0		6.78		6.166		0.64		115.2		3.0		200	11.15	1400	Clear/None
12:30	24.0	0%	6.77	0.0	6.254	1%	0.57	6%	116.2	0.8	3.1	<10	200	11.15	2000	Clear/None
12:34	24.0	0%	6.75	0.0	6.392	0%	0.53	1%	117.1	0.1	3.8	<10	200	11.15	2800	Clear/None
12:38	24.1	0%	6.75	0.0	6.469	1%	0.51	4%	117.8	0.8	4.4	<10	200	11.15	3600	Clear/None

Stop Purge Time: 12:39	Sample Time: 12:38	QA/QC Sample Time(s): n/a	*SWFTS-MW09A*
	Sample ID: SWFTS-MW09A-EM37	QA/QC Sample ID(s): n/a	

Observations/Comments: Well Condition: Good General Comments:

HACH Kit Sulfide: n/a mg/L Hach Kit Ferrous Iron: n/a mg/L

Bottle Set Summary

VOA w/ HCl	1 125 mL Plastic	500 mL Plastic	4 40 mL Amber VOA w/ HCl	250 mL Amber Glass w/ H2S04
1 125 mL w/ EDA	1 250 mL Plastic	250 mL Plastic w/ H2SO4	250 mL Plastic w/ HNO3	500 mL Amber Glass w/ H2SO4

*INDICATOR PARAMETERS HAVE STABLIZED WHEN 3 CONSECUTIVE READINGS ARE WITHIN:

± 0.1 for pH; ± 3% for Cond and Temp; ± 10 mv for ORP; ± 10% or <0.5 mg/L for DO; ± 10% or <10 NTU Turbidity

LOW FLOW GROUNDWATER SAMPLING LOG

NERT, Henderson, NV

Task Name: SWF Area Bio Treatability Study	Task Manager: D. Grady/ J. Dabbs	Task No.: M11	Date: 2022-03-08	Well ID: SWFTS-MW09B
Field Samplers: A. Pettley				
Transducer Removal Time: n/a	Transducer Redeployment Time: n/a			General Well Condition: Good
Depth to Water (ft): 11.25	Screened Interval Top (ft): 34.4			Pump Intake Depth (ft): 36.20
Well Depth (ft): 39.07	Screened/Open Interval Bottom (ft): 39.0			Well Diameter (in): 2
Pump/Tubing Type: QED Bladder Pump & TLPE/LDPE	GW Disposal: GW-11			Equipment Decon. Method: Alconox/DI Rinse SOP
Y Dedicated Tubing Present? (Y/N)	N New Dedicated Tubing Placed? (Y/N)			
Purge Start Time: 13:10				

Time	Temp. (°C)		pH (pH Units)		Conductivity (mS/cm)		DO (mg/L)		ORP (mV)		Turbidity (NTU)		Purge Rate (mL/min)	Depth to Water (ft)	Cum. Vol. Purged (mL)	Color/Odor
	READ	CHANGE*	READ	CHANGE*	READ	CHANGE*	READ	CHANGE*	READ	CHANGE*	READ	CHANGE*				
13:10	23.9		6.92		5.586		0.81		94.8		2.3		200	11.28		Clear/None
13:13	23.8		6.88		5.848		0.71		95.1		2.4		200	11.28	600	Clear/None
13:20	23.5		6.85		6.117		0.62		92.7		2.1		200	11.25	2000	Clear/None
13:23	23.6	0%	6.85	0.0	6.165	0%	0.61	5%	89.2	2.8	1.9	<10	200	11.25	2600	Clear/None
13:28	23.7	0%	6.85	0.0	6.196	0%	0.57	1%	86.0	0.4	2.1	<10	200	11.25	3600	Clear/None
13:31	23.8	0%	6.85	0.0	6.222	0%	0.55	4%	84.1	2.3	2.0	<10	200	11.25	4200	Clear/None

Stop Purge Time: 13:32	Sample Time: 13:32	QA/QC Sample Time(s): n/a	*SWFTS-MW09B*
	Sample ID: SWFTS-MW09B-EM37	QA/QC Sample ID(s): n/a	

Observations/Comments: Well Condition: Good General Comments:

HACH Kit Sulfide: n/a mg/L Hach Kit Ferrous Iron: n/a mg/L

Bottle Set Summary

VOA w/ HCl	1 125 mL Plastic	500 mL Plastic	4 40 mL Amber VOA w/ HCl	250 mL Amber Glass w/ H2S04
1 125 mL w/ EDA	1 250 mL Plastic	250 mL Plastic w/ H2SO4	250 mL Plastic w/ HNO3	500 mL Amber Glass w/ H2S04

*INDICATOR PARAMETERS HAVE STABLIZED WHEN 3 CONSECUTIVE READINGS ARE WITHIN:

± 0.1 for pH; ± 3% for Cond and Temp; ± 10 mv for ORP; ± 10% or <0.5 mg/L for DO; ± 10% or <10 NTU Turbidity

LOW FLOW GROUNDWATER SAMPLING LOG

NERT, Henderson, NV

Task Name: SWF Area Bio Treatability Study	Task Manager: D. Grady/ J. Dabbs	Task No.: M11	Date: 2022-03-07	Well ID: SWFTS-MW10A
Field Samplers: G. Schuler				
Transducer Removal Time: 13:45	Transducer Redeployment Time: 15:00			General Well Condition: Good
Depth to Water (ft): 6.41	Screened Interval Top (ft): 20.4			Pump Intake Depth (ft): 27.40
Well Depth (ft): 35.10	Screened/Open Interval Bottom (ft): 35.0			Well Diameter (in): 4
Pump/Tubing Type: QED Bladder Pump & TLPE/LDPE	GW Disposal: GW-11			Equipment Decon. Method: Alconox/DI Rinse SOP
Y Dedicated Tubing Present? (Y/N)	N New Dedicated Tubing Placed? (Y/N)			
Purge Start Time: 13:50				

Time	Temp. (°C)		pH (pH Units)		Conductivity (mS/cm)		DO (mg/L)		ORP (mV)		Turbidity (NTU)		Purge Rate (mL/min)	Depth to Water (ft)	Cum. Vol. Purged (mL)	Color/Odor
	READ	CHANGE*	READ	CHANGE*	READ	CHANGE*	READ	CHANGE*	READ	CHANGE*	READ	CHANGE*				
13:50	22.7		7.19		2.736		4.70		48.0		8.0		240	6.41		Clear/None
13:53	24.0		6.97		5.813		1.07		59.4		1.9		240	6.41	720	Clear/None
13:56	24.0		6.97		5.823		0.79		61.2		3.1		240	6.41	1440	Clear/None
13:59	24.0	0%	6.97	0.0	5.830	0%	0.69	6%	62.0	0.3	3.3	<10	240	6.41	2160	Clear/None
14:02	24.1	0%	6.97	0.0	5.832	0%	0.64	1%	62.3	0.0	6.0	<10	240	6.41	2880	Clear/None
14:05	24.0	0%	6.97	0.0	5.828	0%	0.62	4%	62.7	0.4	6.0	<10	240	6.41	3600	Clear/None

Stop Purge Time: 14:06	Sample Time: 14:20	QA/QC Sample Time(s): 14:20	*SWFTS-MW10A*
	Sample ID: SWFTS-MW10A-EM37	QA/QC Sample ID(s): SWFTS-MW10A-EM37-MS/MSD	

Observations/Comments: Well Condition: Good General Comments:

HACH Kit Sulfide: n/a mg/L Hach Kit Ferrous Iron: n/a mg/L

Bottle Set Summary

VOA w/ HCl	2 125 mL Plastic	500 mL Plastic	8 40 mL Amber VOA w/ HCl	250 mL Amber Glass w/ H2S04
2 125 mL w/ EDA	2 250 mL Plastic	250 mL Plastic w/ H2SO4	250 mL Plastic w/ HNO3	500 mL Amber Glass w/ H2SO4

*INDICATOR PARAMETERS HAVE STABLIZED WHEN 3 CONSECUTIVE READINGS ARE WITHIN:

± 0.1 for pH; ± 3% for Cond and Temp; ± 10 mv for ORP; ± 10% or <0.5 mg/L for DO; ± 10% or <10 NTU Turbidity

LOW FLOW GROUNDWATER SAMPLING LOG

NERT, Henderson, NV

Task Name: SWF Area Bio Treatability Study	Task Manager: D. Grady/ J. Dabbs	Task No.: M11	Date: 2022-03-07	Well ID: SWFTS-MW11
Field Samplers: G. Schuler				
Transducer Removal Time: n/a	Transducer Redeployment Time: n/a			General Well Condition: Good
Depth to Water (ft): 12.18	Screened Interval Top (ft): 14.8			Pump Intake Depth (ft): 26.60
Well Depth (ft): 39.50	Screened/Open Interval Bottom (ft): 39.6			Well Diameter (in): 4
Pump/Tubing Type: QED Bladder Pump & TLPE/LDPE	GW Disposal: GW-11			Equipment Decon. Method: Alconox/DI Rinse SOP
Y Dedicated Tubing Present? (Y/N)	N New Dedicated Tubing Placed? (Y/N)			
Purge Start Time: 10:46				

Time	Temp. (°C)		pH (pH Units)		Conductivity (mS/cm)		DO (mg/L)		ORP (mV)		Turbidity (NTU)		Purge Rate (mL/min)	Depth to Water (ft)	Cum. Vol. Purged (mL)	Color/Odor
	READ	CHANGE*	READ	CHANGE*	READ	CHANGE*	READ	CHANGE*	READ	CHANGE*	READ	CHANGE*				
10:46	20.5		7.24		7.250		8.03		63.5		1.8		180	12.18		Clear/None
10:49	21.2	0%	7.23	0.0	7.715	0%	7.06	0%	61.1	3.0	1.5	<10	180	12.18	540	Clear/None
10:52	21.4	0%	7.24	0.0	7.767	0%	7.08	0%	64.1	0.0	1.5	<10	180	12.18	1080	Clear/None
10:55	21.4	0%	7.25	0.0	7.786	0%	7.16	0%	67.0	2.9	1.5	<10	180	12.18	1620	Clear/None

Stop Purge Time: 10:56	Sample Time: 11:10	QA/QC Sample Time(s): 11:10	*SWFTS-MW11*
	Sample ID: SWFTS-MW11-EM37	QA/QC Sample ID(s): SWFTS-MW11-EM37-FD	

Observations/Comments: Well Condition: Good General Comments:

HACH Kit Sulfide: n/a mg/L Hach Kit Ferrous Iron: n/a mg/L

Bottle Set Summary

VOA w/ HCl	2 125 mL Plastic	500 mL Plastic	8 40 mL Amber VOA w/ HCl	250 mL Amber Glass w/ H2S04
2 125 mL w/ EDA	2 250 mL Plastic	250 mL Plastic w/ H2SO4	250 mL Plastic w/ HNO3	500 mL Amber Glass w/ H2SO4

*INDICATOR PARAMETERS HAVE STABLIZED WHEN 3 CONSECUTIVE READINGS ARE WITHIN:

± 0.1 for pH; ± 3% for Cond and Temp; ± 10 mv for ORP; ± 10% or <0.5 mg/L for DO; ± 10% or <10 NTU Turbidity

LOW FLOW GROUNDWATER SAMPLING LOG

NERT, Henderson, NV

Task Name: SWF Area Bio Treatability Study	Task Manager: D. Grady/ J. Dabbs	Task No.: M11	Date: 2022-03-08	Well ID: SWFTS-MW12
Field Samplers: G. Schuler				
Transducer Removal Time: n/a	Transducer Redeployment Time: n/a			General Well Condition: Good
Depth to Water (ft): 14.96	Screened Interval Top (ft): 15.8			Pump Intake Depth (ft): 27.90
Well Depth (ft): 40.10	Screened/Open Interval Bottom (ft): 40.6			Well Diameter (in): 4
Pump/Tubing Type: QED Bladder Pump & TLPE/LDPE	GW Disposal: GW-11			Equipment Decon. Method: Alconox/DI Rinse SOP
Y Dedicated Tubing Present? (Y/N)	N New Dedicated Tubing Placed? (Y/N)			
Purge Start Time: 13:34				

Time	Temp. (°C)		pH (pH Units)		Conductivity (mS/cm)		DO (mg/L)		ORP (mV)		Turbidity (NTU)		Purge Rate (mL/min)	Depth to Water (ft)	Cum. Vol. Purged (mL)	Color/Odor
	READ	CHANGE*	READ	CHANGE*	READ	CHANGE*	READ	CHANGE*	READ	CHANGE*	READ	CHANGE*				
13:34	24.2		6.80		6.866		1.79		-13.9		12.0		300	15.05		Clear/None
13:37	23.9		6.60		6.802		0.89		-4.9		9.7		300	15.05	900	Clear/None
13:42	23.4		6.59		6.726		0.72		-6.4		11.1		240	15.05	2100	Clear/None
13:45	23.8	0%	6.59	0.0	6.770	0%	0.64	6%	-8.8	4.5	10.3	4%	240	15.05	2820	Clear/None
13:48	23.9	0%	6.59	0.0	6.774	0%	0.60	0%	-12.3	1.0	11.3	4%	240	15.05	3540	Clear/None
13:51	23.8	0%	6.60	0.0	6.771	0%	0.57	5%	-18.7	5.4	10.7	0%	240	15.05	4260	Clear/None

Stop Purge Time: 13:52	Sample Time: 14:00	QA/QC Sample Time(s): n/a	*SWFTS-MW12*
	Sample ID: SWFTS-MW12-EM37	QA/QC Sample ID(s): n/a	

Observations/Comments: Well Condition: Good General Comments:

HACH Kit Sulfide: n/a mg/L Hach Kit Ferrous Iron: n/a mg/L

Bottle Set Summary

VOA w/ HCl	1 125 mL Plastic	500 mL Plastic	4 40 mL Amber VOA w/ HCl	250 mL Amber Glass w/ H2S04
1 125 mL w/ EDA	1 250 mL Plastic	250 mL Plastic w/ H2SO4	250 mL Plastic w/ HNO3	500 mL Amber Glass w/ H2SO4

*INDICATOR PARAMETERS HAVE STABLIZED WHEN 3 CONSECUTIVE READINGS ARE WITHIN:

± 0.1 for pH; ± 3% for Cond and Temp; ± 10 mv for ORP; ± 10% or <0.5 mg/L for DO; ± 10% or <10 NTU Turbidity

LOW FLOW GROUNDWATER SAMPLING LOG

NERT, Henderson, NV

Task Name: SWF Area Bio Treatability Study	Task Manager: D. Grady/ J. Dabbs	Task No.: M11	Date: 2022-03-09	Well ID: SWFTS-MW13
Field Samplers: G. Schuler				
Transducer Removal Time: n/a	Transducer Redeployment Time: n/a			General Well Condition: Good
Depth to Water (ft): 20.71	Screened Interval Top (ft): 17.8			Pump Intake Depth (ft): 32.30
Well Depth (ft): 47.60	Screened/Open Interval Bottom (ft): 47.6			Well Diameter (in): 4
Pump/Tubing Type: QED Bladder Pump & TLPE/LDPE	GW Disposal: GW-11			Equipment Decon. Method: Alconox/DI Rinse SOP
Y Dedicated Tubing Present? (Y/N)	N New Dedicated Tubing Placed? (Y/N)			
Purge Start Time: 08:08				

Time	Temp. (°C)		pH (pH Units)		Conductivity (mS/cm)		DO (mg/L)		ORP (mV)		Turbidity (NTU)		Purge Rate (mL/min)	Depth to Water (ft)	Cum. Vol. Purged (mL)	Color/Odor
	READ	CHANGE*	READ	CHANGE*	READ	CHANGE*	READ	CHANGE*	READ	CHANGE*	READ	CHANGE*				
08:08	19.4		7.32		5.452		6.02		101.7		2.4		240	20.71		Clear/None
08:11	21.4		7.19		5.969		2.59		98.6		1.0		240	20.71	720	Clear/None
08:14	21.8	0%	7.19	0.0	6.052	0%	2.26	3%	97.6	0.0	0.8	<10	240	20.71	1440	Clear/None
08:17	22.0	0%	7.19	0.0	6.084	0%	2.16	0%	97.5	0.1	0.7	<10	240	20.71	2160	Clear/None
08:20	22.0	0%	7.19	0.0	6.096	0%	2.11	3%	97.6	0.0	0.6	<10	240	20.71	2880	Clear/None

Stop Purge Time: 08:21	Sample Time: 08:30	QA/QC Sample Time(s): n/a	*SWFTS-MW13*
	Sample ID: SWFTS-MW13-EM37	QA/QC Sample ID(s): n/a	

Observations/Comments: Well Condition: Good General Comments:

HACH Kit Sulfide: n/a mg/L Hach Kit Ferrous Iron: n/a mg/L

Bottle Set Summary

VOA w/ HCl	1 125 mL Plastic	500 mL Plastic	4 40 mL Amber VOA w/ HCl	250 mL Amber Glass w/ H2S04
1 125 mL w/ EDA	1 250 mL Plastic	250 mL Plastic w/ H2SO4	250 mL Plastic w/ HNO3	500 mL Amber Glass w/ H2SO4

*INDICATOR PARAMETERS HAVE STABLIZED WHEN 3 CONSECUTIVE READINGS ARE WITHIN:

± 0.1 for pH; ± 3% for Cond and Temp; ± 10 mv for ORP; ± 10% or <0.5 mg/L for DO; ± 10% or <10 NTU Turbidity

LOW FLOW GROUNDWATER SAMPLING LOG

NERT, Henderson, NV

Task Name: SWF Area Bio Treatability Study	Task Manager: D. Grady/ J. Dabbs	Task No.: M11	Date: 2022-03-08	Well ID: SWFTS-MW14
Field Samplers: G. Schuler				
Transducer Removal Time: n/a	Transducer Redeployment Time: n/a			General Well Condition: Good
Depth to Water (ft): 6.43	Screened Interval Top (ft): 16.8			Pump Intake Depth (ft): 26.40
Well Depth (ft): 36.05	Screened/Open Interval Bottom (ft): 36.6			Well Diameter (in): 2
Pump/Tubing Type: QED Bladder Pump & TLPE/LDPE	GW Disposal: GW-11			Equipment Decon. Method: Alconox/DI Rinse SOP
Y Dedicated Tubing Present? (Y/N)	N New Dedicated Tubing Placed? (Y/N)			
Purge Start Time: 09:16				

Time	Temp. (°C)		pH (pH Units)		Conductivity (mS/cm)		DO (mg/L)		ORP (mV)		Turbidity (NTU)		Purge Rate (mL/min)	Depth to Water (ft)	Cum. Vol. Purged (mL)	Color/Odor
	READ	CHANGE*	READ	CHANGE*	READ	CHANGE*	READ	CHANGE*	READ	CHANGE*	READ	CHANGE*				
09:16	21.0		6.82		5.641		4.35		149.9		31.3		270	6.43		Clear/None
09:22	23.0		6.92		6.256		0.89		74.2		15.0		270	6.43	1620	Clear/None
09:25	23.2		6.92		6.270		0.73		65.1		9.9		270	6.43	2430	Clear/None
09:28	23.3		6.91		6.281		0.65		57.4		14.6		270	6.43	3240	Clear/None
09:31	23.2	0%	6.91	0.0	6.280	0%	0.61	3%	50.1	9.5	18.1	10%	270	6.43	4050	Clear/None
09:34	23.2	0%	6.91	0.0	6.269	0%	0.60	1%	40.3	0.3	21.6	6%	270	6.43	4860	Clear/None
09:37	23.2	0%	6.91	0.0	6.278	0%	0.56	5%	31.4	9.2	21.3	4%	270	6.43	5670	Clear/None

Stop Purge Time: 09:38	Sample Time: 09:45	QA/QC Sample Time(s): n/a	*SWFTS-MW14*
	Sample ID: SWFTS-MW14-EM37	QA/QC Sample ID(s): n/a	

Observations/Comments: Well Condition: Good General Comments:

HACH Kit Sulfide: n/a mg/L Hach Kit Ferrous Iron: n/a mg/L

Bottle Set Summary

VOA w/ HCl	1 125 mL Plastic	500 mL Plastic	4 40 mL Amber VOA w/ HCl	250 mL Amber Glass w/ H2S04
1 125 mL w/ EDA	1 250 mL Plastic	250 mL Plastic w/ H2SO4	250 mL Plastic w/ HNO3	500 mL Amber Glass w/ H2SO4

*INDICATOR PARAMETERS HAVE STABLIZED WHEN 3 CONSECUTIVE READINGS ARE WITHIN:

± 0.1 for pH; ± 3% for Cond and Temp; ± 10 mv for ORP; ± 10% or <0.5 mg/L for DO; ± 10% or <10 NTU Turbidity

LOW FLOW GROUNDWATER SAMPLING LOG

NERT, Henderson, NV

Task Name: SWF Area Bio Treatability Study	Task Manager: D. Grady/ J. Dabbs	Task No.: M11	Date: 2022-03-08	Well ID: SWFTS-MW15
Field Samplers: G. Schuler				
Transducer Removal Time: 10:20	Transducer Redeployment Time: 11:00			General Well Condition: Good
Depth to Water (ft): 10.15	Screened Interval Top (ft): 14.8			Pump Intake Depth (ft): 24.40
Well Depth (ft): 33.60	Screened/Open Interval Bottom (ft): 34.6			Well Diameter (in): 2
Pump/Tubing Type: QED Bladder Pump & TLPE/LDPE	GW Disposal: GW-11			Equipment Decon. Method: Alconox/DI Rinse SOP
Y Dedicated Tubing Present? (Y/N)	N New Dedicated Tubing Placed? (Y/N)			
Purge Start Time: 10:28				

Time	Temp. (°C)		pH (pH Units)		Conductivity (mS/cm)		DO (mg/L)		ORP (mV)		Turbidity (NTU)		Purge Rate (mL/min)	Depth to Water (ft)	Cum. Vol. Purged (mL)	Color/Odor
	READ	CHANGE*	READ	CHANGE*	READ	CHANGE*	READ	CHANGE*	READ	CHANGE*	READ	CHANGE*				
10:28	21.2		6.73		7.465		2.49		-90.1		10.7		285	10.15		Clear/None
10:31	22.1		6.63		7.783		0.97		-75.2		2.3		285	10.15	855	Clear/None
10:34	22.2		6.62		7.801		0.80		-46.4		1.7		285	10.15	1710	Clear/None
10:38	22.1		6.62		7.789		0.71		-26.8		1.6		285	10.15	2850	Clear/None
10:41	22.2	0%	6.62	0.0	7.801	0%	0.66	5%	-12.5	10.2	1.6	<10	285	10.15	3705	Clear/None
10:44	22.2	0%	6.62	0.0	7.800	0%	0.63	1%	-1.2	1.1	1.5	<10	285	10.15	4560	Clear/None
10:47	22.2	0%	6.62	0.0	7.799	0%	0.58	6%	6.8	9.1	1.4	<10	285	10.15	5415	Clear/None

Stop Purge Time: 10:48	Sample Time: 11:00	QA/QC Sample Time(s): n/a	*SWFTS-MW15*
	Sample ID: SWFTS-MW15-EM37	QA/QC Sample ID(s): n/a	

Observations/Comments: Well Condition: Good General Comments:

HACH Kit Sulfide: n/a mg/L Hach Kit Ferrous Iron: n/a mg/L

Bottle Set Summary

VOA w/ HCl	1 125 mL Plastic	500 mL Plastic	4 40 mL Amber VOA w/ HCl	250 mL Amber Glass w/ H2S04
1 125 mL w/ EDA	1 250 mL Plastic	250 mL Plastic w/ H2SO4	250 mL Plastic w/ HNO3	500 mL Amber Glass w/ H2SO4

*INDICATOR PARAMETERS HAVE STABLIZED WHEN 3 CONSECUTIVE READINGS ARE WITHIN:

± 0.1 for pH; ± 3% for Cond and Temp; ± 10 mv for ORP; ± 10% or <0.5 mg/L for DO; ± 10% or <10 NTU Turbidity

LOW FLOW GROUNDWATER SAMPLING LOG

NERT, Henderson, NV

Task Name: SWF Area Bio Treatability Study	Task Manager: D. Grady/ J. Dabbs	Task No.: M11	Date: 2022-03-09	Well ID: SWFTS-MW16
Field Samplers: J. Bunkers				
Transducer Removal Time: 08:54	Transducer Redeployment Time: 10:00			General Well Condition: Good
Depth to Water (ft): 19.50	Screened Interval Top (ft): 21.8			Pump Intake Depth (ft): 31.30
Well Depth (ft): 39.70	Screened/Open Interval Bottom (ft): 41.6			Well Diameter (in): 2
Pump/Tubing Type: QED Bladder Pump & TLPE/LDPE	GW Disposal: GW-11			Equipment Decon. Method: Alconox/DI Rinse SOP
Y Dedicated Tubing Present? (Y/N)	N New Dedicated Tubing Placed? (Y/N)			
Purge Start Time: 09:00				

Time	Temp. (°C)		pH (pH Units)		Conductivity (mS/cm)		DO (mg/L)		ORP (mV)		Turbidity (NTU)		Purge Rate (mL/min)	Depth to Water (ft)	Cum. Vol. Purged (mL)	Color/Odor
	READ	CHANGE*	READ	CHANGE*	READ	CHANGE*	READ	CHANGE*	READ	CHANGE*	READ	CHANGE*				
09:00	21.3		6.66		5.268		1.92		-8.7		116.2		200	19.50		Clear/None
09:03	22.1		6.64		5.418		1.15		-24.4		121.8		200	19.50	600	Clear/None
09:06	22.2	0%	6.65	0.0	5.436	0%	1.01	5%	-29.6	3.2	86.9	16%	200	19.50	1200	Clear/None
09:10	22.2	0%	6.65	0.0	5.440	0%	0.95	1%	-33.2	0.4	69.5	6%	200	19.50	2000	Clear/None
09:13	22.3	0%	6.65	0.0	5.432	0%	0.92	4%	-35.7	2.9	66.9	10%	200	19.50	2600	Clear/None

Stop Purge Time: 09:14	Sample Time: 09:20	QA/QC Sample Time(s): n/a	*SWFTS-MW16*
	Sample ID: SWFTS-MW16-EM37	QA/QC Sample ID(s): n/a	

Observations/Comments: Well Condition: Good General Comments:

HACH Kit Sulfide: n/a mg/L Hach Kit Ferrous Iron: n/a mg/L

Bottle Set Summary

VOA w/ HCl	1 125 mL Plastic	500 mL Plastic	4 40 mL Amber VOA w/ HCl	250 mL Amber Glass w/ H2S04
1 125 mL w/ EDA	1 250 mL Plastic	250 mL Plastic w/ H2SO4	250 mL Plastic w/ HNO3	500 mL Amber Glass w/ H2S04

*INDICATOR PARAMETERS HAVE STABLIZED WHEN 3 CONSECUTIVE READINGS ARE WITHIN:

± 0.1 for pH; ± 3% for Cond and Temp; ± 10 mv for ORP; ± 10% or <0.5 mg/L for DO; ± 10% or <10 NTU Turbidity

LOW FLOW GROUNDWATER SAMPLING LOG

NERT, Henderson, NV

Task Name: SWF Area Bio Treatability Study	Task Manager: D. Grady/ J. Dabbs	Task No.: M11	Date: 2022-03-09	Well ID: SWFTS-MW17
Field Samplers: J. Bunkers				
Transducer Removal Time: n/a	Transducer Redeployment Time: n/a			General Well Condition: Good
Depth to Water (ft): 24.00	Screened Interval Top (ft): 22.8			Pump Intake Depth (ft): 37.40
Well Depth (ft): 51.50	Screened/Open Interval Bottom (ft): 52.6			Well Diameter (in): 4
Pump/Tubing Type: QED Bladder Pump & TLPE/LDPE	GW Disposal: GW-11			Equipment Decon. Method: Alconox/DI Rinse SOP
Y Dedicated Tubing Present? (Y/N)	N New Dedicated Tubing Placed? (Y/N)			
Purge Start Time: 08:13				

Time	Temp. (°C)		pH (pH Units)		Conductivity (mS/cm)		DO (mg/L)		ORP (mV)		Turbidity (NTU)		Purge Rate (mL/min)	Depth to Water (ft)	Cum. Vol. Purged (mL)	Color/Odor
	READ	CHANGE*	READ	CHANGE*	READ	CHANGE*	READ	CHANGE*	READ	CHANGE*	READ	CHANGE*				
08:13	20.9		7.12		5.533		5.64		132.6		20.1		200	24.00		Clear/None
08:16	21.5		7.11		5.581		5.21		103.4		15.2		200	24.00	600	Clear/None
08:19	21.7		7.12		5.583		5.09		84.4		12.9		200	24.00	1200	Clear/None
08:22	21.8	0%	7.12	0.0	5.590	0%	5.05	0%	80.1	7.9	9.9	<10	200	24.00	1800	Clear/None
08:25	22.0	0%	7.12	0.0	5.620	0%	5.02	0%	91.0	3.0	8.3	<10	200	24.00	2400	Clear/None
08:28	22.1	0%	7.12	0.0	5.645	0%	5.01	0%	92.9	4.9	8.1	<10	200	24.00	3000	Clear/None

Stop Purge Time: 08:29	Sample Time: 08:30	QA/QC Sample Time(s): n/a	*SWFTS-MW17*
	Sample ID: SWFTS-MW17-EM37	QA/QC Sample ID(s): n/a	

Observations/Comments: Well Condition: Good General Comments:

HACH Kit Sulfide: n/a mg/L Hach Kit Ferrous Iron: n/a mg/L

Bottle Set Summary

VOA w/ HCl	1 125 mL Plastic	500 mL Plastic	4 40 mL Amber VOA w/ HCl	250 mL Amber Glass w/ H2S04
1 125 mL w/ EDA	1 250 mL Plastic	250 mL Plastic w/ H2SO4	250 mL Plastic w/ HNO3	500 mL Amber Glass w/ H2SO4

*INDICATOR PARAMETERS HAVE STABLIZED WHEN 3 CONSECUTIVE READINGS ARE WITHIN:

± 0.1 for pH; ± 3% for Cond and Temp; ± 10 mv for ORP; ± 10% or <0.5 mg/L for DO; ± 10% or <10 NTU Turbidity

LOW FLOW GROUNDWATER SAMPLING LOG

NERT, Henderson, NV

Task Name: SWF Area Bio Treatability Study	Task Manager: D. Grady/ J. Dabbs	Task No.: M11	Date: 2022-03-08	Well ID: SWFTS-MW18
Field Samplers: J. Bunkers				
Transducer Removal Time: n/a	Transducer Redeployment Time: n/a			General Well Condition: Good
Depth to Water (ft): 12.93	Screened Interval Top (ft): 16.8			Pump Intake Depth (ft): 26.10
Well Depth (ft): 35.30	Screened/Open Interval Bottom (ft): 36.6			Well Diameter (in): 2
Pump/Tubing Type: QED Bladder Pump & TLPE/LDPE	GW Disposal: GW-11			Equipment Decon. Method: Alconox/DI Rinse SOP
Y Dedicated Tubing Present? (Y/N)	N New Dedicated Tubing Placed? (Y/N)			
Purge Start Time: 13:25				

Time	Temp. (°C)		pH (pH Units)		Conductivity (mS/cm)		DO (mg/L)		ORP (mV)		Turbidity (NTU)		Purge Rate (mL/min)	Depth to Water (ft)	Cum. Vol. Purged (mL)	Color/Odor
	READ	CHANGE*	READ	CHANGE*	READ	CHANGE*	READ	CHANGE*	READ	CHANGE*	READ	CHANGE*				
13:25	22.9		6.61		5.451		1.88		79.4		107.1		200	12.93		Clear/None
13:28	23.0		6.60		5.448		1.14		53.7		54.0		200	12.93	600	Clear/None
13:31	23.2	0%	6.61	0.0	5.437	0%	1.02	5%	39.5	3.3	44.7	3%	200	12.93	1200	Clear/None
13:34	22.9	0%	6.62	0.0	5.380	0%	0.96	1%	35.2	1.0	44.0	2%	200	12.93	1800	Clear/None
13:37	23.0	0%	6.63	0.0	5.370	0%	0.93	4%	33.9	2.3	40.4	6%	200	12.93	2400	Clear/None

Stop Purge Time: 13:38	Sample Time: 13:45	QA/QC Sample Time(s): n/a	*SWFTS-MW18*
	Sample ID: SWFTS-MW18-EM37	QA/QC Sample ID(s): n/a	

Observations/Comments: Well Condition: Good General Comments:

HACH Kit Sulfide: n/a mg/L Hach Kit Ferrous Iron: n/a mg/L

Bottle Set Summary

VOA w/ HCl	1 125 mL Plastic	500 mL Plastic	4 40 mL Amber VOA w/ HCl	250 mL Amber Glass w/ H2S04
1 125 mL w/ EDA	1 250 mL Plastic	250 mL Plastic w/ H2SO4	250 mL Plastic w/ HNO3	500 mL Amber Glass w/ H2SO4

*INDICATOR PARAMETERS HAVE STABLIZED WHEN 3 CONSECUTIVE READINGS ARE WITHIN:

± 0.1 for pH; ± 3% for Cond and Temp; ± 10 mv for ORP; ± 10% or <0.5 mg/L for DO; ± 10% or <10 NTU Turbidity

LOW FLOW GROUNDWATER SAMPLING LOG

NERT, Henderson, NV

Task Name: SWF Area Bio Treatability Study	Task Manager: D. Grady/ J. Dabbs	Task No.: M11	Date: 2022-03-08	Well ID: SWFTS-MW19
Field Samplers: J. Bunkers				
Transducer Removal Time: n/a	Transducer Redeployment Time: n/a			General Well Condition: Good
Depth to Water (ft): 6.44	Screened Interval Top (ft): 11.3			Pump Intake Depth (ft): 21.00
Well Depth (ft): 30.00	Screened/Open Interval Bottom (ft): 31.1			Well Diameter (in): 2
Pump/Tubing Type: QED Bladder Pump & TLPE/LDPE	GW Disposal: GW-11			Equipment Decon. Method: Alconox/DI Rinse SOP
Y Dedicated Tubing Present? (Y/N)	N New Dedicated Tubing Placed? (Y/N)			
Purge Start Time: 12:24				

Time	Temp. (°C)		pH (pH Units)		Conductivity (mS/cm)		DO (mg/L)		ORP (mV)		Turbidity (NTU)		Purge Rate (mL/min)	Depth to Water (ft)	Cum. Vol. Purged (mL)	Color/Odor
	READ	CHANGE*	READ	CHANGE*	READ	CHANGE*	READ	CHANGE*	READ	CHANGE*	READ	CHANGE*				
12:24	21.0		6.62		6.424		1.63		71.9		53.9		200	6.44		Clear/None
12:27	21.2		6.62		6.128		1.12		63.1		30.6		200	6.44	600	Clear/None
12:30	21.1		6.62		6.119		1.02		59.9		21.9		200	6.44	1200	Clear/None
12:33	21.1		6.62		6.119		0.97		57.5		16.8		200	6.44	1800	Clear/None
12:36	21.1		6.63		6.108		0.94		55.8		14.3		200	6.44	2400	Clear/None
12:39	21.2	0%	6.63	0.0	6.109	0%	0.91	0%	54.5	0.4	11.8	16%	200	6.44	3000	Clear/None
12:42	21.1	0%	6.63	0.0	6.085	0%	0.90	0%	54.1	0.0	9.8	<10	200	6.44	3600	Clear/None
12:45	21.0	0%	6.63	0.0	6.053	0%	0.90	0%	53.7	0.4	8.8	<10	200	6.44	4200	Clear/None

Stop Purge Time: 12:46	Sample Time: 12:50	QA/QC Sample Time(s): 12:50	*SWFTS-MW19*
	Sample ID: SWFTS-MW19-EM37	QA/QC Sample ID(s): SWFTS-MW19-EM37-FD	

Observations/Comments: Well Condition: Good General Comments:

HACH Kit Sulfide: n/a mg/L Hach Kit Ferrous Iron: n/a mg/L

Bottle Set Summary

VOA w/ HCl	2 125 mL Plastic	500 mL Plastic	8 40 mL Amber VOA w/ HCl	250 mL Amber Glass w/ H2S04
2 125 mL w/ EDA	2 250 mL Plastic	250 mL Plastic w/ H2SO4	250 mL Plastic w/ HNO3	500 mL Amber Glass w/ H2S04

*INDICATOR PARAMETERS HAVE STABLIZED WHEN 3 CONSECUTIVE READINGS ARE WITHIN:

± 0.1 for pH; ± 3% for Cond and Temp; ± 10 mv for ORP; ± 10% or <0.5 mg/L for DO; ± 10% or <10 NTU Turbidity

LOW FLOW GROUNDWATER SAMPLING LOG

NERT, Henderson, NV

Task Name: SWF Area Bio Treatability Study	Task Manager: D. Grady/ J. Dabbs	Task No.: M11	Date: 2022-03-08	Well ID: SWFTS-MW20
Field Samplers: J. Bunkers				
Transducer Removal Time: n/a	Transducer Redeployment Time: n/a			General Well Condition: Good
Depth to Water (ft): 9.72	Screened Interval Top (ft): 12.8			Pump Intake Depth (ft): 24.80
Well Depth (ft): 35.40	Screened/Open Interval Bottom (ft): 37.6			Well Diameter (in): 2
Pump/Tubing Type: QED Bladder Pump & TLPE/LDPE	GW Disposal: GW-11			Equipment Decon. Method: Alconox/DI Rinse SOP
Y Dedicated Tubing Present? (Y/N)	N New Dedicated Tubing Placed? (Y/N)			
Purge Start Time: 11:07				

Time	Temp. (°C)		pH (pH Units)		Conductivity (mS/cm)		DO (mg/L)		ORP (mV)		Turbidity (NTU)		Purge Rate (mL/min)	Depth to Water (ft)	Cum. Vol. Purged (mL)	Color/Odor
	READ	CHANGE*	READ	CHANGE*	READ	CHANGE*	READ	CHANGE*	READ	CHANGE*	READ	CHANGE*				
11:07	23.0		6.33		7.260		1.46		70.7		249.0		200	9.72		Clear/None
11:10	23.3		6.33		7.370		1.02		57.3		166.1		200	9.72	600	Clear/None
11:14	23.4	0%	6.34	0.0	7.366	0%	0.94	1%	49.2	3.4	117.1	28%	200	9.72	1400	Clear/None
11:17	23.1	0%	6.34	0.0	7.284	0%	0.92	0%	45.7	0.1	80.4	11%	200	9.72	2000	Clear/None
11:20	23.1	0%	6.34	0.0	7.239	0%	0.91	1%	42.5	3.3	76.5	16%	200	9.72	2600	Clear/None

Stop Purge Time: 11:21	Sample Time: 11:25	QA/QC Sample Time(s): n/a	*SWFTS-MW20*
	Sample ID: SWFTS-MW20-EM37	QA/QC Sample ID(s): n/a	

Observations/Comments: Well Condition: Good General Comments:

HACH Kit Sulfide: n/a mg/L Hach Kit Ferrous Iron: n/a mg/L

Bottle Set Summary

VOA w/ HCl	1 125 mL Plastic	500 mL Plastic	4 40 mL Amber VOA w/ HCl	250 mL Amber Glass w/ H2S04
1 125 mL w/ EDA	1 250 mL Plastic	250 mL Plastic w/ H2SO4	250 mL Plastic w/ HNO3	500 mL Amber Glass w/ H2S04

*INDICATOR PARAMETERS HAVE STABLIZED WHEN 3 CONSECUTIVE READINGS ARE WITHIN:

± 0.1 for pH; ± 3% for Cond and Temp; ± 10 mv for ORP; ± 10% or <0.5 mg/L for DO; ± 10% or <10 NTU Turbidity

LOW FLOW GROUNDWATER SAMPLING LOG

NERT, Henderson, NV

Task Name: SWF Area Bio Treatability Study	Task Manager: D. Grady/ J. Dabbs	Task No.: M11	Date: 2022-03-08	Well ID: SWFTS-MW21
Field Samplers: J. Bunkers				
Transducer Removal Time: n/a	Transducer Redeployment Time: n/a			General Well Condition: Good
Depth to Water (ft): 13.46	Screened Interval Top (ft): 14.8			Pump Intake Depth (ft): 26.90
Well Depth (ft): 38.05	Screened/Open Interval Bottom (ft): 39.6			Well Diameter (in): 2
Pump/Tubing Type: QED Bladder Pump & TLPE/LDPE	GW Disposal: GW-11			Equipment Decon. Method: Alconox/DI Rinse SOP
Y Dedicated Tubing Present? (Y/N)	N New Dedicated Tubing Placed? (Y/N)			
Purge Start Time: 11:46				

Time	Temp. (°C)		pH (pH Units)		Conductivity (mS/cm)		DO (mg/L)		ORP (mV)		Turbidity (NTU)		Purge Rate (mL/min)	Depth to Water (ft)	Cum. Vol. Purged (mL)	Color/Odor
	READ	CHANGE*	READ	CHANGE*	READ	CHANGE*	READ	CHANGE*	READ	CHANGE*	READ	CHANGE*				
11:46	22.7		7.00		5.240		1.51		36.6		57.8		200	13.46		Clear/None
11:49	22.7		6.98		5.225		1.08		27.3		33.7		200	13.46	600	Clear/None
11:52	22.7	0%	6.97	0.0	5.201	0%	1.00	4%	23.8	1.6	23.9	13%	200	13.46	1200	Clear/None
11:55	22.8	0%	6.97	0.0	5.197	0%	0.96	0%	22.2	0.0	20.3	3%	200	13.46	1800	Clear/None
11:58	22.9	0%	6.97	0.0	5.194	0%	0.92	4%	20.7	1.5	19.1	9%	200	13.46	2400	Clear/None

Stop Purge Time: 11:59	Sample Time: 12:05	QA/QC Sample Time(s): n/a	*SWFTS-MW21*
	Sample ID: SWFTS-MW21-EM37	QA/QC Sample ID(s): n/a	

Observations/Comments: Well Condition: Good General Comments:

HACH Kit Sulfide: n/a mg/L Hach Kit Ferrous Iron: n/a mg/L

Bottle Set Summary

VOA w/ HCl	1 125 mL Plastic	500 mL Plastic	4 40 mL Amber VOA w/ HCl	250 mL Amber Glass w/ H2S04
1 125 mL w/ EDA	1 250 mL Plastic	250 mL Plastic w/ H2SO4	250 mL Plastic w/ HNO3	500 mL Amber Glass w/ H2SO4

*INDICATOR PARAMETERS HAVE STABLIZED WHEN 3 CONSECUTIVE READINGS ARE WITHIN:

± 0.1 for pH; ± 3% for Cond and Temp; ± 10 mv for ORP; ± 10% or <0.5 mg/L for DO; ± 10% or <10 NTU Turbidity

LOW FLOW GROUNDWATER SAMPLING LOG

NERT, Henderson, NV

Task Name: SWF Area Bio Treatability Study	Task Manager: D. Grady/ J. Dabbs	Task No.: M11	Date: 2022-03-08	Well ID: SWFTS-MW22
Field Samplers: J. Bunkers				
Transducer Removal Time: n/a	Transducer Redeployment Time: n/a			General Well Condition: Good
Depth to Water (ft): 8.42	Screened Interval Top (ft): 11.8			Pump Intake Depth (ft): 21.30
Well Depth (ft): 31.60	Screened/Open Interval Bottom (ft): 31.6			Well Diameter (in): 2
Pump/Tubing Type: QED Bladder Pump & TLPE/LDPE	GW Disposal: GW-11			Equipment Decon. Method: Alconox/DI Rinse SOP
Y Dedicated Tubing Present? (Y/N)	N New Dedicated Tubing Placed? (Y/N)			
Purge Start Time: 10:17				

Time	Temp. (°C)		pH (pH Units)		Conductivity (mS/cm)		DO (mg/L)		ORP (mV)		Turbidity (NTU)		Purge Rate (mL/min)	Depth to Water (ft)	Cum. Vol. Purged (mL)	Color/Odor
	READ	CHANGE*	READ	CHANGE*	READ	CHANGE*	READ	CHANGE*	READ	CHANGE*	READ	CHANGE*				
10:17	21.5		7.09		3.588		2.61		91.3		443.1		200	8.42		Clear/None
10:20	22.2		7.03		3.718		1.24		94.7		278.2		200	8.42	600	Clear/None
10:23	22.2		7.00		3.775		1.09		91.9		198.5		200	8.42	1200	Clear/None
10:26	22.3		6.97		3.861		1.03		86.4		143.4		200	8.42	1800	Clear/None
10:30	22.4		6.96		3.916		0.98		79.5		127.3		200	8.42	2600	Clear/None
10:33	22.4		6.94		3.964		0.95		71.9		96.4		200	8.42	3200	Clear/None
10:36	22.3		6.93		4.010		0.93		62.6		73.9		200	8.42	3800	Clear/None
10:39	22.4	0%	6.91	0.0	4.070	0%	0.90	1%	54.5	6.4	64.2	24%	200	8.42	4400	Clear/None
10:42	22.4	0%	6.90	0.0	4.108	0%	0.89	0%	47.4	0.7	45.6	11%	200	8.42	5000	Clear/None
10:45	22.4	0%	6.90	0.0	4.125	0%	0.87	1%	42.5	5.6	44.6	13%	200	8.42	5600	Clear/None

Stop Purge Time: 10:46	Sample Time: 10:50	QA/QC Sample Time(s): n/a	*SWFTS-MW22*
	Sample ID: SWFTS-MW22-EM37	QA/QC Sample ID(s): n/a	

Observations/Comments: Well Condition: Good General Comments:

HACH Kit Sulfide: n/a mg/L Hach Kit Ferrous Iron: n/a mg/L

Bottle Set Summary

VOA w/ HCl	1 125 mL Plastic	500 mL Plastic	4 40 mL Amber VOA w/ HCl	250 mL Amber Glass w/ H2S04
1 125 mL w/ EDA	1 250 mL Plastic	250 mL Plastic w/ H2SO4	250 mL Plastic w/ HNO3	500 mL Amber Glass w/ H2SO4

*INDICATOR PARAMETERS HAVE STABLIZED WHEN 3 CONSECUTIVE READINGS ARE WITHIN:

± 0.1 for pH; ± 3% for Cond and Temp; ± 10 mv for ORP; ± 10% or <0.5 mg/L for DO; ± 10% or <10 NTU Turbidity

LOW FLOW GROUNDWATER SAMPLING LOG

NERT, Henderson, NV

Task Name: SWF Area Bio Treatability Study	Task Manager: D. Grady/ J. Dabbs	Task No.: M11	Date: 2022-03-07	Well ID: SWFTS-MW23
Field Samplers: J. Bunkers				
Transducer Removal Time: 13:17	Transducer Redeployment Time: 14:00			General Well Condition: Good
Depth to Water (ft): 9.90	Screened Interval Top (ft): 13.8			Pump Intake Depth (ft): 26.30
Well Depth (ft): 35.95	Screened/Open Interval Bottom (ft): 33.6			Well Diameter (in): 2
Pump/Tubing Type: QED Bladder Pump & TLPE/LDPE	GW Disposal: GW-11			Equipment Decon. Method: Alconox/DI Rinse SOP
Y Dedicated Tubing Present? (Y/N)	N New Dedicated Tubing Placed? (Y/N)			
Purge Start Time: 13:24				

Time	Temp. (°C)		pH (pH Units)		Conductivity (mS/cm)		DO (mg/L)		ORP (mV)		Turbidity (NTU)		Purge Rate (mL/min)	Depth to Water (ft)	Cum. Vol. Purged (mL)	Color/Odor
	READ	CHANGE*	READ	CHANGE*	READ	CHANGE*	READ	CHANGE*	READ	CHANGE*	READ	CHANGE*				
13:24	19.9		7.26		2.705		1.78		127.0		100.6		200	9.90		Clear/None
13:27	20.0		7.25		2.685		1.21		125.8		40.5		200	9.90	600	Clear/None
13:30	20.0		7.24		2.679		1.10		124.0		24.7		200	9.90	1200	Clear/None
13:35	19.8	0%	7.24	0.0	2.670	0%	1.09	3%	121.4	1.2	18.5	13%	200	9.90	2200	Clear/None
13:37	19.9	0%	7.24	0.0	2.668	0%	1.03	1%	119.9	0.3	15.8	3%	200	9.90	2600	Clear/None
13:39	20.0	0%	7.23	0.0	2.673	0%	1.03	1%	119.4	0.8	14.6	10%	200	9.90	3000	Clear/None

Stop Purge Time: 13:40	Sample Time: 13:45	QA/QC Sample Time(s): n/a	*SWFTS-MW23*
	Sample ID: SWFTS-MW23-EM37	QA/QC Sample ID(s): n/a	

Observations/Comments: Well Condition: Good General Comments:

HACH Kit Sulfide: n/a mg/L Hach Kit Ferrous Iron: n/a mg/L

Bottle Set Summary

VOA w/ HCl	1 125 mL Plastic	500 mL Plastic	4 40 mL Amber VOA w/ HCl	250 mL Amber Glass w/ H2S04
1 125 mL w/ EDA	1 250 mL Plastic	250 mL Plastic w/ H2SO4	250 mL Plastic w/ HNO3	500 mL Amber Glass w/ H2SO4

*INDICATOR PARAMETERS HAVE STABLIZED WHEN 3 CONSECUTIVE READINGS ARE WITHIN:

± 0.1 for pH; ± 3% for Cond and Temp; ± 10 mv for ORP; ± 10% or <0.5 mg/L for DO; ± 10% or <10 NTU Turbidity

LOW FLOW GROUNDWATER SAMPLING LOG

NERT, Henderson, NV

Task Name: SWF Area Bio Treatability Study	Task Manager: D. Grady/ J. Dabbs	Task No.: M11	Date: 2022-03-08	Well ID: SWFTS-MW24
Field Samplers: J. Bunkers				
Transducer Removal Time: n/a	Transducer Redeployment Time: n/a			General Well Condition: Good
Depth to Water (ft): 11.12	Screened Interval Top (ft): 12.8			Pump Intake Depth (ft): 24.90
Well Depth (ft): 36.60	Screened/Open Interval Bottom (ft): 37.6			Well Diameter (in): 2
Pump/Tubing Type: QED Bladder Pump & TLPE/LDPE	GW Disposal: GW-11			Equipment Decon. Method: Alconox/DI Rinse SOP
Y Dedicated Tubing Present? (Y/N)	N New Dedicated Tubing Placed? (Y/N)			
Purge Start Time: 09:20				

Time	Temp. (°C)		pH (pH Units)		Conductivity (mS/cm)		DO (mg/L)		ORP (mV)		Turbidity (NTU)		Purge Rate (mL/min)	Depth to Water (ft)	Cum. Vol. Purged (mL)	Color/Odor
	READ	CHANGE*	READ	CHANGE*	READ	CHANGE*	READ	CHANGE*	READ	CHANGE*	READ	CHANGE*				
09:20	21.1		6.88		5.060		3.07		140.7		31.4		200	11.12		Clear/None
09:23	21.7	0%	6.86	0.0	5.137	0%	2.17	3%	105.8	14.5	12.5	25%	200	11.12	600	Clear/None
09:26	21.6	0%	6.86	0.0	5.126	0%	2.05	1%	88.4	2.9	9.5	<10	200	11.12	1200	Clear/None
09:29	21.6	0%	6.86	0.0	5.116	0%	2.04	2%	79.8	11.5	7.8	<10	200	11.12	1800	Clear/None

Stop Purge Time: 09:30	Sample Time: 09:35	QA/QC Sample Time(s): n/a	*SWFTS-MW24*
	Sample ID: SWFTS-MW24-EM37	QA/QC Sample ID(s): n/a	

Observations/Comments: Well Condition: Good General Comments:

HACH Kit Sulfide: n/a mg/L Hach Kit Ferrous Iron: n/a mg/L

Bottle Set Summary

VOA w/ HCl	1 125 mL Plastic	500 mL Plastic	4 40 mL Amber VOA w/ HCl	250 mL Amber Glass w/ H2S04
1 125 mL w/ EDA	1 250 mL Plastic	250 mL Plastic w/ H2SO4	250 mL Plastic w/ HNO3	500 mL Amber Glass w/ H2SO4

*INDICATOR PARAMETERS HAVE STABLIZED WHEN 3 CONSECUTIVE READINGS ARE WITHIN:

± 0.1 for pH; ± 3% for Cond and Temp; ± 10 mv for ORP; ± 10% or <0.5 mg/L for DO; ± 10% or <10 NTU Turbidity

LOW FLOW GROUNDWATER SAMPLING LOG

NERT, Henderson, NV

Task Name: SWF Area Bio Treatability Study	Task Manager: D. Grady/ J. Dabbs	Task No.: M11	Date: 2022-03-07	Well ID: SWFTS-MW25
Field Samplers: J. Bunkers				
Transducer Removal Time: 11:52	Transducer Redeployment Time: 13:00			General Well Condition: Good
Depth to Water (ft): 8.43	Screened Interval Top (ft): 12.8			Pump Intake Depth (ft): 27.30
Well Depth (ft): 43.00	Screened/Open Interval Bottom (ft): 42.6			Well Diameter (in): 2
Pump/Tubing Type: QED Bladder Pump & TLPE/LDPE	GW Disposal: GW-11			Equipment Decon. Method: Alconox/DI Rinse SOP
Y Dedicated Tubing Present? (Y/N)	N New Dedicated Tubing Placed? (Y/N)			
Purge Start Time: 12:15				

Time	Temp. (°C)		pH (pH Units)		Conductivity (mS/cm)		DO (mg/L)		ORP (mV)		Turbidity (NTU)		Purge Rate (mL/min)	Depth to Water (ft)	Cum. Vol. Purged (mL)	Color/Odor
	READ	CHANGE*	READ	CHANGE*	READ	CHANGE*	READ	CHANGE*	READ	CHANGE*	READ	CHANGE*				
12:15	22.5		6.85		4.542		1.75		128.8		547.8		200	8.43		Clear/None
12:18	22.6		6.87		4.827		1.19		126.7		381.6		200	8.43	600	Clear/None
12:21	22.7		6.88		5.002		1.04		123.9		376.6		200	8.43	1200	Clear/None
12:24	22.6		6.89		5.086		0.97		122.9		316.9		200	8.43	1800	Clear/None
12:27	22.5		6.89		5.135		0.93		122.6		210.3		200	8.43	2400	Clear/None
12:31	22.5		6.90		5.193		0.90		120.7		266.9		200	8.43	3200	Clear/None
12:34	22.6		6.90		5.233		0.88		119.1		185.7		200	8.43	3800	Clear/None
12:43	23.5		6.91		5.539		0.98		114.4		325.6		200	8.43	5600	Clear/None
12:46	22.6	0%	6.91	0.0	5.363	0%	0.89	4%	113.5	1.1	259.5	9%	200	8.43	6200	Clear/None
12:49	22.6	0%	6.91	0.0	5.377	0%	0.84	1%	113.2	0.8	227.2	4%	200	8.43	6800	Clear/None
12:52	22.6	0%	6.91	0.0	5.396	0%	0.82	3%	110.4	2.0	223.6	5%	200	8.43	7400	Clear/None

Stop Purge Time: 12:53	Sample Time: 13:00	QA/QC Sample Time(s): n/a	*SWFTS-MW25*
	Sample ID: SWFTS-MW25-EM37	QA/QC Sample ID(s): n/a	

Observations/Comments: Well Condition: Good General Comments:

HACH Kit Sulfide: n/a mg/L Hach Kit Ferrous Iron: n/a mg/L

Bottle Set Summary

VOA w/ HCl	1 125 mL Plastic	500 mL Plastic	4 40 mL Amber VOA w/ HCl	250 mL Amber Glass w/ H2S04
1 125 mL w/ EDA	1 250 mL Plastic	250 mL Plastic w/ H2SO4	250 mL Plastic w/ HNO3	500 mL Amber Glass w/ H2SO4

*INDICATOR PARAMETERS HAVE STABLIZED WHEN 3 CONSECUTIVE READINGS ARE WITHIN:

± 0.1 for pH; ± 3% for Cond and Temp; ± 10 mv for ORP; ± 10% or <0.5 mg/L for DO; ± 10% or <10 NTU Turbidity

LOW FLOW GROUNDWATER SAMPLING LOG

NERT, Henderson, NV

Task Name: SWF Area Bio Treatability Study	Task Manager: D. Grady/ J. Dabbs	Task No.: M11	Date: 2022-06-21	Well ID: PC-58
Field Samplers: J. Bunkers				
Transducer Removal Time: n/a	Transducer Redeployment Time: n/a			General Well Condition: Good
Depth to Water (ft): 19.16	Screened Interval Top (ft): 7.8			Pump Intake Depth (ft): 22.60
Well Depth (ft): 38.40	Screened/Open Interval Bottom (ft): 32.8			Well Diameter (in): 2
Pump/Tubing Type: QED Bladder Pump & TLPE/LDPE	GW Disposal: GW-11			Equipment Decon. Method: Alconox/DI Rinse SOP
Y Dedicated Tubing Present? (Y/N)	N New Dedicated Tubing Placed? (Y/N)			
Purge Start Time: 08:21				

Time	Temp. (°C)		pH (pH Units)		Conductivity (mS/cm)		DO (mg/L)		ORP (mV)		Turbidity (NTU)		Purge Rate (mL/min)	Depth to Water (ft)	Cum. Vol. Purged (mL)	Color/Odor
	READ	CHANGE*	READ	CHANGE*	READ	CHANGE*	READ	CHANGE*	READ	CHANGE*	READ	CHANGE*				
08:21	24.1		7.29		3.607		2.45		28.4		28.0		300	19.16		Clear/None
08:24	23.2		7.26		3.481		1.37		23.7		14.7		300	19.16	900	Clear/None
08:27	23.1		7.26		3.468		1.28		22.8		17.0		300	19.16	1800	Clear/None
08:30	23.0		7.26		3.466		1.21		23.4		22.0		300	19.16	2700	Clear/None
08:33	22.9		7.25		3.458		1.14		23.4		27.4		300	19.16	3600	Clear/None
08:36	23.0		7.25		3.467		1.07		23.7		34.7		300	19.16	4500	Clear/None
08:39	23.0	0%	7.25	0.0	3.476	0%	1.16	3%	25.2	1.2	42.8	22%	300	19.16	5400	Clear/None
08:42	22.9	0%	7.25	0.0	3.469	0%	1.23	2%	26.6	0.2	61.8	11%	300	19.16	6300	Clear/None
08:45	23.0	0%	7.25	0.0	3.470	0%	1.22	1%	27.3	0.9	62.1	11%	300	19.16	7200	Clear/None

Stop Purge Time: 08:46	Sample Time: 08:50	QA/QC Sample Time(s): n/a	*PC-58*
	Sample ID: PC-58-EM38	QA/QC Sample ID(s): n/a	

Observations/Comments: Well Condition: Good General Comments:

HACH Kit Sulfide: 0.0 mg/L Hach Kit Ferrous Iron: 0.0 mg/L

Bottle Set Summary

VOA w/ HCl	1 125 mL Plastic	500 mL Plastic	4 40 mL Amber VOA w/ HCl	250 mL Amber Glass w/ H2S04
1 125 mL w/ EDA	1 250 mL Plastic	250 mL Plastic w/ H2SO4	250 mL Plastic w/ HNO3	500 mL Amber Glass w/ H2S04

*INDICATOR PARAMETERS HAVE STABLIZED WHEN 3 CONSECUTIVE READINGS ARE WITHIN:

± 0.1 for pH; ± 3% for Cond and Temp; ± 10 mv for ORP; ± 10% or <0.5 mg/L for DO; ± 10% or <10 NTU Turbidity

LOW FLOW GROUNDWATER SAMPLING LOG

NERT, Henderson, NV

Task Name: SWF Area Bio Treatability Study	Task Manager: D. Grady/ J. Dabbs	Task No.: M11	Date: 2022-06-21	Well ID: PC-88
Field Samplers: J. Bunkers				
Transducer Removal Time: 09:24	Transducer Redeployment Time: 09:27			General Well Condition: Good
Depth to Water (ft): 5.72	Screened Interval Top (ft): 40.0			Pump Intake Depth (ft): 44.90
Well Depth (ft): 46.45	Screened/Open Interval Bottom (ft): 50.0			Well Diameter (in): 2
Pump/Tubing Type: QED Bladder Pump & TLPE/LDPE	GW Disposal: GW-11			Equipment Decon. Method: Alconox/DI Rinse SOP
Y Dedicated Tubing Present? (Y/N)	N New Dedicated Tubing Placed? (Y/N)			
Purge Start Time: 09:31				

Time	Temp. (°C)		pH (pH Units)		Conductivity (mS/cm)		DO (mg/L)		ORP (mV)		Turbidity (NTU)		Purge Rate (mL/min)	Depth to Water (ft)	Cum. Vol. Purged (mL)	Color/Odor
	READ	CHANGE*	READ	CHANGE*	READ	CHANGE*	READ	CHANGE*	READ	CHANGE*	READ	CHANGE*				
09:31	24.1		7.42		3.029		1.68		43.0		131.9		300	5.72		Clear/None
09:34	23.2		7.39		3.036		0.82		41.6		79.1		300	5.72	900	Clear/None
09:37	23.4		7.39		3.045		0.68		40.0		94.4		300	5.72	1800	Clear/None
09:40	23.1		7.39		3.029		0.62		38.9		106.0		300	5.72	2700	Clear/None
09:43	23.1	1%	7.39	0.0	3.031	0%	0.55	7%	38.3	0.8	138.2	21%	300	5.72	3600	Clear/None
09:46	23.6	0%	7.39	0.0	3.058	0%	0.51	0%	37.4	0.1	187.3	6%	300	5.72	4500	Clear/None
09:49	23.4	0%	7.39	0.0	3.060	0%	0.48	<0.5	36.7	0.8	202.1	14%	300	5.72	5400	Clear/None

Stop Purge Time: 09:50	Sample Time: 10:10	QA/QC Sample Time(s): 10:10	*PC-88*
	Sample ID: PC-88-EM38	QA/QC Sample ID(s): PC-88-EM38-FD	

Observations/Comments: Well Condition: Good General Comments:

HACH Kit Sulfide: 0.0 mg/L Hach Kit Ferrous Iron: 0.0 mg/L

Bottle Set Summary

VOA w/ HCl	2 125 mL Plastic	500 mL Plastic	8 40 mL Amber VOA w/ HCl	250 mL Amber Glass w/ H2S04
2 125 mL w/ EDA	2 250 mL Plastic	250 mL Plastic w/ H2SO4	250 mL Plastic w/ HNO3	500 mL Amber Glass w/ H2S04

*INDICATOR PARAMETERS HAVE STABLIZED WHEN 3 CONSECUTIVE READINGS ARE WITHIN:

± 0.1 for pH; ± 3% for Cond and Temp; ± 10 mv for ORP; ± 10% or <0.5 mg/L for DO; ± 10% or <10 NTU Turbidity

LOW FLOW GROUNDWATER SAMPLING LOG

NERT, Henderson, NV

Task Name: SWF Area Bio Treatability Study	Task Manager: D. Grady/ J. Dabbs	Task No.: M11	Date: 2022-06-21	Well ID: PC-91
Field Samplers: J. Bunkers				
Transducer Removal Time: n/a	Transducer Redeployment Time: n/a			General Well Condition: Good
Depth to Water (ft): 9.94	Screened Interval Top (ft): 11.5			Pump Intake Depth (ft): 16.00
Well Depth (ft): 19.90	Screened/Open Interval Bottom (ft): 21.5			Well Diameter (in): 2
Pump/Tubing Type: QED Bladder Pump & TLPE/LDPE	GW Disposal: GW-11			Equipment Decon. Method: Alconox/DI Rinse SOP
Y Dedicated Tubing Present? (Y/N)	N New Dedicated Tubing Placed? (Y/N)			
Purge Start Time: 10:47				

Time	Temp. (°C)		pH (pH Units)		Conductivity (mS/cm)		DO (mg/L)		ORP (mV)		Turbidity (NTU)		Purge Rate (mL/min)	Depth to Water (ft)	Cum. Vol. Purged (mL)	Color/Odor
	READ	CHANGE*	READ	CHANGE*	READ	CHANGE*	READ	CHANGE*	READ	CHANGE*	READ	CHANGE*				
10:47	28.7		7.01		4.431		0.54		-325.3		33.1		100	10.24		Clear/None
10:50	28.8		6.97		4.322		0.38		-373.8		49.2		100	10.24	300	Clear/None
10:53	28.9		6.94		4.256		0.33		-367.2		44.1		100	10.24	600	Clear/None
10:56	28.5	0%	6.92	0.0	4.160	0%	0.31	<0.5	-356.5	9.7	45.8	27%	100	10.24	900	Clear/None
10:59	28.6	0%	6.90	0.0	4.123	0%	0.29	<0.5	-343.9	2.9	70.3	10%	100	10.24	1200	Clear/None
11:02	28.6	0%	6.88	0.0	4.090	0%	0.28	<0.5	-340.1	6.7	74.0	16%	100	10.24	1500	Clear/None

Stop Purge Time: 11:03	Sample Time: 11:05	QA/QC Sample Time(s): n/a	*PC-91*
	Sample ID: PC-91-EM38	QA/QC Sample ID(s): n/a	

Observations/Comments: Well Condition: Good General Comments:

HACH Kit Sulfide: 0.1 mg/L Hach Kit Ferrous Iron: 0.0 mg/L

Bottle Set Summary

VOA w/ HCl	1 125 mL Plastic	500 mL Plastic	4 40 mL Amber VOA w/ HCl	250 mL Amber Glass w/ H2S04
1 125 mL w/ EDA	1 250 mL Plastic	250 mL Plastic w/ H2SO4	250 mL Plastic w/ HNO3	500 mL Amber Glass w/ H2S04

*INDICATOR PARAMETERS HAVE STABLIZED WHEN 3 CONSECUTIVE READINGS ARE WITHIN:

± 0.1 for pH; ± 3% for Cond and Temp; ± 10 mv for ORP; ± 10% or <0.5 mg/L for DO; ± 10% or <10 NTU Turbidity

LOW FLOW GROUNDWATER SAMPLING LOG

NERT, Henderson, NV

Task Name: SWF Area Bio Treatability Study	Task Manager: D. Grady/ J. Dabbs	Task No.: M11	Date: 2022-06-21	Well ID: PC-92
Field Samplers: J. Bunkers				
Transducer Removal Time: n/a	Transducer Redeployment Time: n/a			General Well Condition: Good
Depth to Water (ft): 9.45	Screened Interval Top (ft): 26.5			Pump Intake Depth (ft): 31.20
Well Depth (ft): 7.10	Screened/Open Interval Bottom (ft): 36.5			Well Diameter (in): 2
Pump/Tubing Type: QED Bladder Pump & TLPE/LDPE	GW Disposal: GW-11			Equipment Decon. Method: Alconox/DI Rinse SOP
Y Dedicated Tubing Present? (Y/N)	N New Dedicated Tubing Placed? (Y/N)			
Purge Start Time: 11:20				

Time	Temp. (°C)		pH (pH Units)		Conductivity (mS/cm)		DO (mg/L)		ORP (mV)		Turbidity (NTU)		Purge Rate (mL/min)	Depth to Water (ft)	Cum. Vol. Purged (mL)	Color/Odor
	READ	CHANGE*	READ	CHANGE*	READ	CHANGE*	READ	CHANGE*	READ	CHANGE*	READ	CHANGE*				
11:20	25.3		7.06		5.733		0.66		-231.3		33.7		300	9.45		Clear/None
11:23	24.9	0%	7.05	0.0	5.722	0%	0.44	<0.5	-232.8	1.1	15.8	43%	300	9.45	900	Clear/None
11:26	24.7	0%	7.06	0.0	5.686	0%	0.39	<0.5	-232.3	0.6	10.0	9%	300	9.45	1800	Clear/None
11:29	24.7	0%	7.06	0.0	5.669	0%	0.37	<0.5	-230.0	1.7	7.2	<10	300	9.45	2700	Clear/None

Stop Purge Time: 11:30	Sample Time: 11:35	QA/QC Sample Time(s): n/a	*PC-92*
	Sample ID: PC-92-EM38	QA/QC Sample ID(s): n/a	

Observations/Comments: Well Condition: Good General Comments:

HACH Kit Sulfide: 0.0 mg/L Hach Kit Ferrous Iron: 0.0 mg/L

Bottle Set Summary

VOA w/ HCl	1 125 mL Plastic	500 mL Plastic	4 40 mL Amber VOA w/ HCl	250 mL Amber Glass w/ H2S04
1 125 mL w/ EDA	1 250 mL Plastic	250 mL Plastic w/ H2SO4	250 mL Plastic w/ HNO3	500 mL Amber Glass w/ H2S04

*INDICATOR PARAMETERS HAVE STABLIZED WHEN 3 CONSECUTIVE READINGS ARE WITHIN:

± 0.1 for pH; ± 3% for Cond and Temp; ± 10 mv for ORP; ± 10% or <0.5 mg/L for DO; ± 10% or <10 NTU Turbidity

LOW FLOW GROUNDWATER SAMPLING LOG

NERT, Henderson, NV

Task Name: SWF Area Bio Treatability Study	Task Manager: D. Grady/ J. Dabbs	Task No.: M11	Date: 2022-06-21	Well ID: PC-94
Field Samplers: J. Bunkers				
Transducer Removal Time: n/a	Transducer Redeployment Time: n/a			General Well Condition: Good
Depth to Water (ft): 12.50	Screened Interval Top (ft): 9.5			Pump Intake Depth (ft): 16.30
Well Depth (ft): 19.96	Screened/Open Interval Bottom (ft): 19.5			Well Diameter (in): 2
Pump/Tubing Type: QED Bladder Pump & TLPE/LDPE	GW Disposal: GW-11			Equipment Decon. Method: Alconox/DI Rinse SOP
Y Dedicated Tubing Present? (Y/N)	N New Dedicated Tubing Placed? (Y/N)			
Purge Start Time: 11:56				

Time	Temp. (°C)		pH (pH Units)		Conductivity (mS/cm)		DO (mg/L)		ORP (mV)		Turbidity (NTU)		Purge Rate (mL/min)	Depth to Water (ft)	Cum. Vol. Purged (mL)	Color/Odor
	READ	CHANGE*	READ	CHANGE*	READ	CHANGE*	READ	CHANGE*	READ	CHANGE*	READ	CHANGE*				
11:56	26.5		6.86		6.166		0.80		-53.2		235.2		300	12.50		Clear/None
11:59	26.8		6.84		6.171		0.50		-64.2		137.0		300	12.50	900	Clear/None
12:02	26.6		6.84		6.146		0.43		-69.4		102.3		300	12.50	1800	Clear/None
12:05	26.7		6.84		6.149		0.40		-72.9		82.3		300	12.50	2700	Clear/None
12:08	26.6		6.84		6.141		0.57		-67.4		64.7		300	12.50	3600	Clear/None
12:11	26.9		6.84		6.163		0.54		-67.1		67.2		300	12.50	4500	Clear/None
12:14	26.7	0%	6.84	0.0	6.163	0%	0.42	<0.5	-68.5	1.2	61.3	5%	300	12.50	5400	Clear/None
12:17	26.7	0%	6.84	0.0	6.149	0%	0.38	<0.5	-68.7	1.4	68.7	6%	300	12.50	6300	Clear/None
12:20	26.8	0%	6.84	0.0	6.152	0%	0.49	<0.5	-64.8	2.5	63.7	1%	300	12.50	7200	Clear/None

Stop Purge Time: 12:21	Sample Time: 12:30	QA/QC Sample Time(s): n/a	*PC-94*
	Sample ID: PC-94-EM38	QA/QC Sample ID(s): n/a	

Observations/Comments: Well Condition: Good General Comments:

HACH Kit Sulfide: 0.0 mg/L Hach Kit Ferrous Iron: 0.0 mg/L

Bottle Set Summary

VOA w/ HCl	1 125 mL Plastic	500 mL Plastic	4 40 mL Amber VOA w/ HCl	250 mL Amber Glass w/ H2S04
1 125 mL w/ EDA	1 250 mL Plastic	250 mL Plastic w/ H2SO4	250 mL Plastic w/ HNO3	500 mL Amber Glass w/ H2S04

*INDICATOR PARAMETERS HAVE STABLIZED WHEN 3 CONSECUTIVE READINGS ARE WITHIN:

± 0.1 for pH; ± 3% for Cond and Temp; ± 10 mv for ORP; ± 10% or <0.5 mg/L for DO; ± 10% or <10 NTU Turbidity

LOW FLOW GROUNDWATER SAMPLING LOG

NERT, Henderson, NV

Task Name: SWF Area Bio Treatability Study	Task Manager: D. Grady/ J. Dabbs	Task No.: M11	Date: 2022-06-21	Well ID: SWFTS-MW01
Field Samplers: J. Bunkers				
Transducer Removal Time: n/a	Transducer Redeployment Time: n/a			General Well Condition: Good
Depth to Water (ft): 13.70	Screened Interval Top (ft): 24.2			Pump Intake Depth (ft): 31.30
Well Depth (ft): 38.40	Screened/Open Interval Bottom (ft): 38.9			Well Diameter (in): 2
Pump/Tubing Type: QED Bladder Pump & TLPE/LDPE	GW Disposal: GW-11			Equipment Decon. Method: Alconox/DI Rinse SOP
Y Dedicated Tubing Present? (Y/N)	N New Dedicated Tubing Placed? (Y/N)			
Purge Start Time: 13:03				

Time	Temp. (°C)		pH (pH Units)		Conductivity (mS/cm)		DO (mg/L)		ORP (mV)		Turbidity (NTU)		Purge Rate (mL/min)	Depth to Water (ft)	Cum. Vol. Purged (mL)	Color/Odor
	READ	CHANGE*	READ	CHANGE*	READ	CHANGE*	READ	CHANGE*	READ	CHANGE*	READ	CHANGE*				
13:03	26.1		6.85		5.905		0.98		-25.4		21.5		300	13.70		Clear/None
13:06	25.5		6.83		5.802		0.56		-32.7		12.1		300	13.70	900	Clear/None
13:09	25.2		6.84		5.763		0.51		-36.0		13.7		300	13.70	1800	Clear/None
13:12	25.2	0%	6.84	0.0	5.743	0%	0.48	<0.5	-37.1	0.7	18.4	23%	300	13.70	2700	Clear/None
13:15	25.1	0%	6.84	0.0	5.735	0%	0.44	<0.5	-37.8	0.0	25.7	7%	300	13.70	3600	Clear/None
13:18	25.0	0%	6.83	0.0	5.728	0%	0.41	<0.5	-38.5	0.7	27.6	15%	300	13.70	4500	Clear/None

Stop Purge Time: 13:19	Sample Time: 13:30	QA/QC Sample Time(s): 13:30	*SWFTS-MW01*
	Sample ID: SWFTS-MW01-EM38	QA/QC Sample ID(s): SWFTS-MW01-EM38-MS/MSD	

Observations/Comments: Well Condition: Good General Comments:

HACH Kit Sulfide: 0.0 mg/L Hach Kit Ferrous Iron: 0.0 mg/L

Bottle Set Summary

VOA w/ HCl	2 125 mL Plastic	500 mL Plastic	8 40 mL Amber VOA w/ HCl	250 mL Amber Glass w/ H2S04
2 125 mL w/ EDA	2 250 mL Plastic	250 mL Plastic w/ H2SO4	250 mL Plastic w/ HNO3	500 mL Amber Glass w/ H2S04

*INDICATOR PARAMETERS HAVE STABLIZED WHEN 3 CONSECUTIVE READINGS ARE WITHIN:

± 0.1 for pH; ± 3% for Cond and Temp; ± 10 mv for ORP; ± 10% or <0.5 mg/L for DO; ± 10% or <10 NTU Turbidity

LOW FLOW GROUNDWATER SAMPLING LOG

NERT, Henderson, NV

Task Name: SWF Area Bio Treatability Study	Task Manager: D. Grady/ J. Dabbs	Task No.: M11	Date: 2022-06-22	Well ID: SWFTS-MW02
Field Samplers: J. Bunkers				
Transducer Removal Time: 08:56	Transducer Redeployment Time: 09:57			General Well Condition: Good
Depth to Water (ft): 11.11	Screened Interval Top (ft): 18.4			Pump Intake Depth (ft): 25.50
Well Depth (ft): 31.05	Screened/Open Interval Bottom (ft): 33.1			Well Diameter (in): 2
Pump/Tubing Type: QED Bladder Pump & TLPE/LDPE	GW Disposal: GW-11			Equipment Decon. Method: Alconox/DI Rinse SOP
Y Dedicated Tubing Present? (Y/N)	N New Dedicated Tubing Placed? (Y/N)			
Purge Start Time: 09:04				

Time	Temp. (°C)		pH (pH Units)		Conductivity (mS/cm)		DO (mg/L)		ORP (mV)		Turbidity (NTU)		Purge Rate (mL/min)	Depth to Water (ft)	Cum. Vol. Purged (mL)	Color/Odor
	READ	CHANGE*	READ	CHANGE*	READ	CHANGE*	READ	CHANGE*	READ	CHANGE*	READ	CHANGE*				
09:04	26.4		6.63		6.667		1.03		101.3		62.9		300	11.11		Clear/None
09:07	26.4		6.64		6.668		0.65		97.1		37.7		300	11.11	900	Clear/None
09:10	26.6		6.64		6.665		0.54		95.5		28.0		300	11.11	1800	Clear/None
09:13	26.7	0%	6.64	0.0	6.677	0%	0.49	<0.5	94.3	0.9	18.4	6%	300	11.11	2700	Clear/None
09:16	26.8	0%	6.64	0.0	6.678	0%	0.45	<0.5	93.4	0.0	20.3	3%	300	11.11	3600	Clear/None
09:19	27.0	0%	6.64	0.0	6.707	0%	0.43	<0.5	92.4	1.0	20.1	2%	300	11.11	4500	Clear/None

Stop Purge Time: 09:20	Sample Time: 09:25	QA/QC Sample Time(s): n/a	*SWFTS-MW02*
	Sample ID: SWFTS-MW02-EM38	QA/QC Sample ID(s): n/a	

Observations/Comments: Well Condition: Good General Comments:

HACH Kit Sulfide: 0.0 mg/L Hach Kit Ferrous Iron: 0.0 mg/L

Bottle Set Summary

VOA w/ HCl	1 125 mL Plastic	500 mL Plastic	4 40 mL Amber VOA w/ HCl	250 mL Amber Glass w/ H2S04
1 125 mL w/ EDA	1 250 mL Plastic	250 mL Plastic w/ H2SO4	250 mL Plastic w/ HNO3	500 mL Amber Glass w/ H2S04

*INDICATOR PARAMETERS HAVE STABLIZED WHEN 3 CONSECUTIVE READINGS ARE WITHIN:

± 0.1 for pH; ± 3% for Cond and Temp; ± 10 mv for ORP; ± 10% or <0.5 mg/L for DO; ± 10% or <10 NTU Turbidity

LOW FLOW GROUNDWATER SAMPLING LOG

NERT, Henderson, NV

Task Name: SWF Area Bio Treatability Study	Task Manager: D. Grady/ J. Dabbs	Task No.: M11	Date: 2022-06-22	Well ID: SWFTS-MW03
Field Samplers: J. Bunkers				
Transducer Removal Time: 09:52	Transducer Redeployment Time: 10:52			General Well Condition: Good
Depth to Water (ft): 12.90	Screened Interval Top (ft): 27.2			Pump Intake Depth (ft): 34.40
Well Depth (ft): 41.75	Screened/Open Interval Bottom (ft): 42.1			Well Diameter (in): 2
Pump/Tubing Type: QED Bladder Pump & TLPE/LDPE	GW Disposal: GW-11			Equipment Decon. Method: Alconox/DI Rinse SOP
Y Dedicated Tubing Present? (Y/N)	N New Dedicated Tubing Placed? (Y/N)			
Purge Start Time: 09:56				

Time	Temp. (°C)		pH (pH Units)		Conductivity (mS/cm)		DO (mg/L)		ORP (mV)		Turbidity (NTU)		Purge Rate (mL/min)	Depth to Water (ft)	Cum. Vol. Purged (mL)	Color/Odor
	READ	CHANGE*	READ	CHANGE*	READ	CHANGE*	READ	CHANGE*	READ	CHANGE*	READ	CHANGE*				
09:56	25.8		6.87		5.734		1.20		83.7		41.3		300	12.90		Clear/None
09:59	25.4		6.86		5.666		0.65		81.7		32.2		300	12.90	900	Clear/None
10:02	25.5		6.86		5.660		0.70		80.5		34.1		300	12.90	1800	Clear/None
10:05	25.3		6.86		5.629		1.29		81.7		40.7		300	12.90	2700	Clear/None
10:08	25.4		6.87		5.641		1.41		82.8		53.6		300	12.90	3600	Clear/None
10:11	25.3		6.87		5.620		1.40		83.5		62.4		300	12.90	4500	Clear/None
10:14	25.4		6.86		5.626		1.07		82.5		72.0		300	12.90	5400	Clear/None
10:17	25.4	0%	6.86	0.0	5.624	0%	1.04	1%	82.3	0.0	82.5	11%	300	12.90	6300	Clear/None
10:20	25.5	0%	6.86	0.0	5.623	0%	1.06	0%	82.3	0.0	93.9	1%	300	12.90	7200	Clear/None
10:23	25.4	0%	6.86	0.0	5.617	0%	1.06	0%	82.4	0.1	102.5	10%	300	12.90	8100	Clear/None

Stop Purge Time: 10:24	Sample Time: 10:25	QA/QC Sample Time(s): n/a	*SWFTS-MW03*
	Sample ID: SWFTS-MW03-EM38	QA/QC Sample ID(s): n/a	

Observations/Comments: Well Condition: Good General Comments:

HACH Kit Sulfide: 0.0 mg/L Hach Kit Ferrous Iron: 0.0 mg/L

Bottle Set Summary

VOA w/ HCl	1 125 mL Plastic	500 mL Plastic	4 40 mL Amber VOA w/ HCl	250 mL Amber Glass w/ H2S04
1 125 mL w/ EDA	1 250 mL Plastic	250 mL Plastic w/ H2SO4	250 mL Plastic w/ HNO3	500 mL Amber Glass w/ H2SO4

*INDICATOR PARAMETERS HAVE STABLIZED WHEN 3 CONSECUTIVE READINGS ARE WITHIN:

± 0.1 for pH; ± 3% for Cond and Temp; ± 10 mv for ORP; ± 10% or <0.5 mg/L for DO; ± 10% or <10 NTU Turbidity

LOW FLOW GROUNDWATER SAMPLING LOG

NERT, Henderson, NV

Task Name: SWF Area Bio Treatability Study	Task Manager: D. Grady/ J. Dabbs	Task No.: M11	Date: 2022-06-22	Well ID: SWFTS-MW04
Field Samplers: J. Bunkers				
Transducer Removal Time: n/a	Transducer Redeployment Time: n/a			General Well Condition: Good
Depth to Water (ft): 8.70	Screened Interval Top (ft): 25.8			Pump Intake Depth (ft): 32.80
Well Depth (ft): 39.75	Screened/Open Interval Bottom (ft): 40.4			Well Diameter (in): 2
Pump/Tubing Type: QED Bladder Pump & TLPE/LDPE	GW Disposal: GW-11			Equipment Decon. Method: Alconox/DI Rinse SOP
Y Dedicated Tubing Present? (Y/N)	N New Dedicated Tubing Placed? (Y/N)			
Purge Start Time: 11:00				

Time	Temp. (°C)		pH (pH Units)		Conductivity (mS/cm)		DO (mg/L)		ORP (mV)		Turbidity (NTU)		Purge Rate (mL/min)	Depth to Water (ft)	Cum. Vol. Purged (mL)	Color/Odor
	READ	CHANGE*	READ	CHANGE*	READ	CHANGE*	READ	CHANGE*	READ	CHANGE*	READ	CHANGE*				
11:00	25.3		7.14		4.395		1.35		74.7		47.1		300	8.70		Clear/None
11:03	24.8		7.08		4.730		0.65		73.4		50.0		300	8.70	900	Clear/None
11:06	24.7		7.05		4.950		0.54		73.6		41.8		300	8.70	1800	Clear/None
11:09	24.8	0%	7.05	0.0	5.018	0%	0.47	<0.5	73.0	0.5	33.8	4%	300	8.70	2700	Clear/None
11:12	24.8	0%	7.05	0.0	5.063	0%	0.44	<0.5	72.5	0.0	37.5	6%	300	8.70	3600	Clear/None
11:15	24.7	0%	7.04	0.0	5.085	0%	0.42	<0.5	71.9	0.6	34.4	2%	300	8.70	4500	Clear/None

Stop Purge Time: 11:16	Sample Time: 11:20	QA/QC Sample Time(s): n/a	*SWFTS-MW04*
	Sample ID: SWFTS-MW04-EM38	QA/QC Sample ID(s): n/a	

Observations/Comments: Well Condition: Good General Comments:

HACH Kit Sulfide: 0.0 mg/L Hach Kit Ferrous Iron: 0.0 mg/L

Bottle Set Summary

VOA w/ HCl	1 125 mL Plastic	500 mL Plastic	4 40 mL Amber VOA w/ HCl	250 mL Amber Glass w/ H2S04
1 125 mL w/ EDA	1 250 mL Plastic	250 mL Plastic w/ H2SO4	250 mL Plastic w/ HNO3	500 mL Amber Glass w/ H2S04

*INDICATOR PARAMETERS HAVE STABLIZED WHEN 3 CONSECUTIVE READINGS ARE WITHIN:

± 0.1 for pH; ± 3% for Cond and Temp; ± 10 mv for ORP; ± 10% or <0.5 mg/L for DO; ± 10% or <10 NTU Turbidity

LOW FLOW GROUNDWATER SAMPLING LOG

NERT, Henderson, NV

Task Name: SWF Area Bio Treatability Study	Task Manager: D. Grady/ J. Dabbs	Task No.: M11	Date: 2022-06-22	Well ID: SWFTS-MW06A
Field Samplers: J. Bunkers				
Transducer Removal Time: n/a	Transducer Redeployment Time: n/a			General Well Condition: Good
Depth to Water (ft): 4.56	Screened Interval Top (ft): 11.8			Pump Intake Depth (ft): 16.20
Well Depth (ft): 20.90	Screened/Open Interval Bottom (ft): 21.4			Well Diameter (in): 2
Pump/Tubing Type: QED Bladder Pump & TLPE/LDPE	GW Disposal: GW-11			Equipment Decon. Method: Alconox/DI Rinse SOP
Y Dedicated Tubing Present? (Y/N)	N New Dedicated Tubing Placed? (Y/N)			
Purge Start Time: 11:42				

Time	Temp. (°C)		pH (pH Units)		Conductivity (mS/cm)		DO (mg/L)		ORP (mV)		Turbidity (NTU)		Purge Rate (mL/min)	Depth to Water (ft)	Cum. Vol. Purged (mL)	Color/Odor
	READ	CHANGE*	READ	CHANGE*	READ	CHANGE*	READ	CHANGE*	READ	CHANGE*	READ	CHANGE*				
11:42	24.6		7.27		2.556		1.10		62.8		75.4		300	4.56		Clear/None
11:45	24.2		7.26		2.513		0.72		60.3		123.1		300	4.56	900	Clear/None
11:48	24.0		7.25		2.495		0.60		59.3		144.9		300	4.56	1800	Clear/None
11:51	23.6		7.25		2.480		0.53		58.7		198.1		300	4.56	2700	Clear/None
11:54	23.7		7.24		2.476		0.48		58.0		221.1		300	4.56	3600	Clear/None
11:57	23.6		7.24		2.470		0.46		57.8		239.7		300	4.56	4500	Clear/None
12:00	23.6		7.24		2.466		0.44		57.5		203.5		300	4.56	5400	Clear/None
12:03	23.7		7.23		2.474		0.44		57.0		178.9		300	4.56	6300	Clear/None
12:06	23.8		7.23		2.475		0.55		57.0		108.7		300	4.56	7200	Clear/None
12:09	23.8	0%	7.23	0.0	2.471	0%	0.62	5%	57.2	0.3	152.9	9%	300	4.56	8100	Clear/None
12:12	23.7	0%	7.23	0.0	2.482	0%	0.64	2%	57.6	0.1	132.8	4%	300	4.56	9000	Clear/None
12:15	23.6	0%	7.23	0.0	2.457	0%	0.70	7%	57.8	0.3	131.8	5%	300	4.56	9900	Clear/None

Stop Purge Time: 12:16	Sample Time: 12:20	QA/QC Sample Time(s): 12:20	*SWFTS-MW06A*
	Sample ID: SWFTS-MW06A-EM38	QA/QC Sample ID(s): SWFTS-MW06A-EM38-FD	

Observations/Comments: Well Condition: Good General Comments:

HACH Kit Sulfide: 0.0 mg/L Hach Kit Ferrous Iron: 0.0 mg/L

Bottle Set Summary

VOA w/ HCl	2 125 mL Plastic	500 mL Plastic	8 40 mL Amber VOA w/ HCl	250 mL Amber Glass w/ H2S04
2 125 mL w/ EDA	2 250 mL Plastic	250 mL Plastic w/ H2SO4	250 mL Plastic w/ HNO3	500 mL Amber Glass w/ H2SO4

*INDICATOR PARAMETERS HAVE STABLIZED WHEN 3 CONSECUTIVE READINGS ARE WITHIN:

± 0.1 for pH; ± 3% for Cond and Temp; ± 10 mv for ORP; ± 10% or <0.5 mg/L for DO; ± 10% or <10 NTU Turbidity

LOW FLOW GROUNDWATER SAMPLING LOG

NERT, Henderson, NV

Task Name: SWF Area Bio Treatability Study	Task Manager: D. Grady/ J. Dabbs	Task No.: M11	Date: 2022-06-22	Well ID: SWFTS-MW06B
Field Samplers: J. Bunkers				
Transducer Removal Time: 12:50	Transducer Redeployment Time: 13:50			General Well Condition: Good
Depth to Water (ft): 4.80	Screened Interval Top (ft): 25.9			Pump Intake Depth (ft): 30.30
Well Depth (ft): 35.10	Screened/Open Interval Bottom (ft): 35.5			Well Diameter (in): 2
Pump/Tubing Type: QED Bladder Pump & TLPE/LDPE	GW Disposal: GW-11			Equipment Decon. Method: Alconox/DI Rinse SOP
Y Dedicated Tubing Present? (Y/N)	N New Dedicated Tubing Placed? (Y/N)			
Purge Start Time: 12:51				

Time	Temp. (°C)		pH (pH Units)		Conductivity (mS/cm)		DO (mg/L)		ORP (mV)		Turbidity (NTU)		Purge Rate (mL/min)	Depth to Water (ft)	Cum. Vol. Purged (mL)	Color/Odor
	READ	CHANGE*	READ	CHANGE*	READ	CHANGE*	READ	CHANGE*	READ	CHANGE*	READ	CHANGE*				
12:51	24.9		7.28		2.881		2.95		57.3		208.4		300	4.80		Clear/None
12:54	23.7		7.15		2.984		0.71		64.0		188.5		300	4.80	900	Clear/None
12:57	23.6		7.15		2.970		0.55		64.6		121.9		300	4.80	1800	Clear/None
13:00	23.6	0%	7.15	0.0	2.962	0%	0.48	<0.5	64.3	0.4	118.2	0%	300	4.80	2700	Clear/None
13:03	23.6	0%	7.14	0.0	2.965	0%	0.44	<0.5	64.1	0.2	118.6	0%	300	4.80	3600	Clear/None
13:06	23.6	0%	7.15	0.0	2.966	0%	0.41	<0.5	63.3	0.6	118.5	0%	300	4.80	4500	Clear/None

Stop Purge Time: 13:07	Sample Time: 13:10	QA/QC Sample Time(s): n/a	*SWFTS-MW06B*
	Sample ID: SWFTS-MW06B-EM38	QA/QC Sample ID(s): n/a	

Observations/Comments: Well Condition: Good General Comments:

HACH Kit Sulfide: 0.0 mg/L Hach Kit Ferrous Iron: 0.0 mg/L

Bottle Set Summary

VOA w/ HCl	1 125 mL Plastic	500 mL Plastic	4 40 mL Amber VOA w/ HCl	250 mL Amber Glass w/ H2S04
1 125 mL w/ EDA	1 250 mL Plastic	250 mL Plastic w/ H2SO4	250 mL Plastic w/ HNO3	500 mL Amber Glass w/ H2S04

*INDICATOR PARAMETERS HAVE STABLIZED WHEN 3 CONSECUTIVE READINGS ARE WITHIN:

± 0.1 for pH; ± 3% for Cond and Temp; ± 10 mv for ORP; ± 10% or <0.5 mg/L for DO; ± 10% or <10 NTU Turbidity

LOW FLOW GROUNDWATER SAMPLING LOG

NERT, Henderson, NV

Task Name: SWF Area Bio Treatability Study	Task Manager: D. Grady/ J. Dabbs	Task No.: M11	Date: 2022-06-23	Well ID: SWFTS-MW07A
Field Samplers: J. Bunkers				
Transducer Removal Time: n/a	Transducer Redeployment Time: n/a			General Well Condition: Good
Depth to Water (ft): 11.70	Screened Interval Top (ft): 15.0			Pump Intake Depth (ft): 22.00
Well Depth (ft): 29.85	Screened/Open Interval Bottom (ft): 29.5			Well Diameter (in): 4
Pump/Tubing Type: QED Bladder Pump & TLPE/LDPE	GW Disposal: GW-11			Equipment Decon. Method: Alconox/DI Rinse SOP
Y Dedicated Tubing Present? (Y/N)	N New Dedicated Tubing Placed? (Y/N)			
Purge Start Time: 08:24				

Time	Temp. (°C)		pH (pH Units)		Conductivity (mS/cm)		DO (mg/L)		ORP (mV)		Turbidity (NTU)		Purge Rate (mL/min)	Depth to Water (ft)	Cum. Vol. Purged (mL)	Color/Odor
	READ	CHANGE*	READ	CHANGE*	READ	CHANGE*	READ	CHANGE*	READ	CHANGE*	READ	CHANGE*				
08:24	24.5		6.94		5.745		1.85		69.8		2.1		300	11.70		Clear/None
08:27	24.6		6.93		5.765		1.71		71.7		1.3		300	11.70	900	Clear/None
08:30	24.7	0%	6.94	0.0	5.775	0%	1.50	2%	72.6	0.7	1.2	<10	300	11.70	1800	Clear/None
08:33	24.7	0%	6.94	0.0	5.784	0%	1.60	3%	73.6	0.3	1.2	<10	300	11.70	2700	Clear/None
08:36	24.7	0%	6.94	0.0	5.785	0%	1.53	0%	73.8	0.5	1.4	<10	300	11.70	3600	Clear/None

Stop Purge Time: 08:37	Sample Time: 08:40	QA/QC Sample Time(s): n/a	*SWFTS-MW07A*
	Sample ID: SWFTS-MW07A-EM38	QA/QC Sample ID(s): n/a	

Observations/Comments: Well Condition: Good General Comments:

HACH Kit Sulfide: 0.0 mg/L Hach Kit Ferrous Iron: 0.0 mg/L

Bottle Set Summary

VOA w/ HCl	1 125 mL Plastic	500 mL Plastic	4 40 mL Amber VOA w/ HCl	250 mL Amber Glass w/ H2S04
1 125 mL w/ EDA	1 250 mL Plastic	250 mL Plastic w/ H2SO4	250 mL Plastic w/ HNO3	500 mL Amber Glass w/ H2S04

*INDICATOR PARAMETERS HAVE STABLIZED WHEN 3 CONSECUTIVE READINGS ARE WITHIN:

± 0.1 for pH; ± 3% for Cond and Temp; ± 10 mv for ORP; ± 10% or <0.5 mg/L for DO; ± 10% or <10 NTU Turbidity

LOW FLOW GROUNDWATER SAMPLING LOG

NERT, Henderson, NV

Task Name: SWF Area Bio Treatability Study	Task Manager: D. Grady/ J. Dabbs	Task No.: M11	Date: 2022-06-23	Well ID: SWFTS-MW07B
Field Samplers: J. Bunkers				
Transducer Removal Time: 09:02	Transducer Redeployment Time: 10:03			General Well Condition: Good
Depth to Water (ft): 11.28	Screened Interval Top (ft): 33.8			Pump Intake Depth (ft): 35.70
Well Depth (ft): 38.70	Screened/Open Interval Bottom (ft): 38.3			Well Diameter (in): 2
Pump/Tubing Type: QED Bladder Pump & TLPE/LDPE	GW Disposal: GW-11			Equipment Decon. Method: Alconox/DI Rinse SOP
Y Dedicated Tubing Present? (Y/N)	N New Dedicated Tubing Placed? (Y/N)			
Purge Start Time: 09:13				

Time	Temp. (°C)		pH (pH Units)		Conductivity (mS/cm)		DO (mg/L)		ORP (mV)		Turbidity (NTU)		Purge Rate (mL/min)	Depth to Water (ft)	Cum. Vol. Purged (mL)	Color/Odor
	READ	CHANGE*	READ	CHANGE*	READ	CHANGE*	READ	CHANGE*	READ	CHANGE*	READ	CHANGE*				
09:13	26.2		6.98		5.826		1.91		76.0		15.6		300	11.28		Clear/None
09:16	26.0		6.89		6.156		0.77		73.5		10.5		300	11.28	900	Clear/None
09:19	26.0		6.88		6.153		0.57		72.2		10.0		300	11.28	1800	Clear/None
09:22	25.9	0%	6.88	0.0	6.146	0%	0.48	<0.5	71.8	0.5	8.5	<10	300	11.28	2700	Clear/None
09:25	25.7	0%	6.88	0.0	6.125	0%	0.43	<0.5	71.2	0.1	8.9	<10	300	11.28	3600	Clear/None
09:28	25.9	0%	6.88	0.0	6.138	0%	0.41	<0.5	70.9	0.4	9.0	<10	300	11.28	4500	Clear/None

Stop Purge Time: 09:29	Sample Time: 09:35	QA/QC Sample Time(s): n/a	*SWFTS-MW07B*
	Sample ID: SWFTS-MW07B-EM38	QA/QC Sample ID(s): n/a	

Observations/Comments: Well Condition: Good General Comments:

HACH Kit Sulfide: 0.0 mg/L Hach Kit Ferrous Iron: 0.0 mg/L

Bottle Set Summary

VOA w/ HCl	1 125 mL Plastic	500 mL Plastic	4 40 mL Amber VOA w/ HCl	250 mL Amber Glass w/ H2S04
1 125 mL w/ EDA	1 250 mL Plastic	250 mL Plastic w/ H2SO4	250 mL Plastic w/ HNO3	500 mL Amber Glass w/ H2S04

*INDICATOR PARAMETERS HAVE STABLIZED WHEN 3 CONSECUTIVE READINGS ARE WITHIN:

± 0.1 for pH; ± 3% for Cond and Temp; ± 10 mv for ORP; ± 10% or <0.5 mg/L for DO; ± 10% or <10 NTU Turbidity

LOW FLOW GROUNDWATER SAMPLING LOG

NERT, Henderson, NV

Task Name: SWF Area Bio Treatability Study	Task Manager: D. Grady/ J. Dabbs	Task No.: M11	Date: 2022-06-23	Well ID: SWFTS-MW09A
Field Samplers: G. Schuler				
Transducer Removal Time: 10:20	Transducer Redeployment Time: 11:00			General Well Condition: Good
Depth to Water (ft): 13.02	Screened Interval Top (ft): 19.3			Pump Intake Depth (ft): 23.70
Well Depth (ft): 29.00	Screened/Open Interval Bottom (ft): 28.9			Well Diameter (in): 4
Pump/Tubing Type: QED Bladder Pump & TLPE/LDPE	GW Disposal: GW-11			Equipment Decon. Method: Alconox/DI Rinse SOP
Y Dedicated Tubing Present? (Y/N)	N New Dedicated Tubing Placed? (Y/N)			
Purge Start Time: 10:27				

Time	Temp. (°C)		pH (pH Units)		Conductivity (mS/cm)		DO (mg/L)		ORP (mV)		Turbidity (NTU)		Purge Rate (mL/min)	Depth to Water (ft)	Cum. Vol. Purged (mL)	Color/Odor
	READ	CHANGE*	READ	CHANGE*	READ	CHANGE*	READ	CHANGE*	READ	CHANGE*	READ	CHANGE*				
10:27	26.5		6.80		7.336		2.30		110.6		6.3		300	13.02		Clear/None
10:30	25.4		6.74		7.119		1.12		114.8		1.7		300	13.02	900	Clear/None
10:33	25.3	0%	6.74	0.0	7.084	0%	0.97	7%	113.3	2.2	1.9	<10	300	13.02	1800	Clear/None
10:36	25.3	0%	6.74	0.0	7.088	0%	0.90	0%	111.1	0.0	2.3	<10	300	13.02	2700	Clear/None
10:39	25.2	0%	6.74	0.0	7.075	0%	0.84	7%	108.9	2.2	2.5	<10	300	13.02	3600	Clear/None

Stop Purge Time: 10:40	Sample Time: 10:50	QA/QC Sample Time(s): n/a	*SWFTS-MW09A*
	Sample ID: SWFTS-MW09A-EM38	QA/QC Sample ID(s): n/a	

Observations/Comments: Well Condition: Good General Comments:

HACH Kit Sulfide: 0.0 mg/L Hach Kit Ferrous Iron: 0.0 mg/L

Bottle Set Summary

VOA w/ HCl	1 125 mL Plastic	500 mL Plastic	4 40 mL Amber VOA w/ HCl	250 mL Amber Glass w/ H2S04
1 125 mL w/ EDA	1 250 mL Plastic	250 mL Plastic w/ H2SO4	250 mL Plastic w/ HNO3	500 mL Amber Glass w/ H2SO4

*INDICATOR PARAMETERS HAVE STABLIZED WHEN 3 CONSECUTIVE READINGS ARE WITHIN:

± 0.1 for pH; ± 3% for Cond and Temp; ± 10 mv for ORP; ± 10% or <0.5 mg/L for DO; ± 10% or <10 NTU Turbidity

LOW FLOW GROUNDWATER SAMPLING LOG

NERT, Henderson, NV

Task Name: SWF Area Bio Treatability Study	Task Manager: D. Grady/ J. Dabbs	Task No.: M11	Date: 2022-06-23	Well ID: SWFTS-MW09B
Field Samplers: G. Schuler				
Transducer Removal Time: n/a	Transducer Redeployment Time: n/a			General Well Condition: Good
Depth to Water (ft): 13.14	Screened Interval Top (ft): 34.4			Pump Intake Depth (ft): 36.20
Well Depth (ft): 39.05	Screened/Open Interval Bottom (ft): 39.0			Well Diameter (in): 2
Pump/Tubing Type: QED Bladder Pump & TLPE/LDPE	GW Disposal: GW-11			Equipment Decon. Method: Alconox/DI Rinse SOP
Y Dedicated Tubing Present? (Y/N)	N New Dedicated Tubing Placed? (Y/N)			
Purge Start Time: 11:12				

Time	Temp. (°C)		pH (pH Units)		Conductivity (mS/cm)		DO (mg/L)		ORP (mV)		Turbidity (NTU)		Purge Rate (mL/min)	Depth to Water (ft)	Cum. Vol. Purged (mL)	Color/Odor
	READ	CHANGE*	READ	CHANGE*	READ	CHANGE*	READ	CHANGE*	READ	CHANGE*	READ	CHANGE*				
11:12	28.4		6.93		7.761		2.56		112.8		10.5		240	13.14		Clear/None
11:15	27.6		6.88		7.654		1.52		109.7		2.9		240	13.14	720	Clear/None
11:18	27.5		6.87		7.639		1.27		103.9		2.5		240	13.14	1440	Clear/None
11:21	27.5	0%	6.87	0.0	7.650	0%	1.15	7%	96.9	9.4	3.6	<10	240	13.14	2160	Clear/None
11:24	27.4	0%	6.87	0.0	7.630	0%	1.06	0%	86.6	0.9	2.4	<10	240	13.14	2880	Clear/None
11:27	27.2	0%	6.87	0.0	7.585	0%	0.99	7%	79.0	8.5	2.2	<10	240	13.14	3600	Clear/None

Stop Purge Time: 11:28	Sample Time: 11:45	QA/QC Sample Time(s): 11:45	*SWFTS-MW09B*
	Sample ID: SWFTS-MW09B-EM38	QA/QC Sample ID(s): SWFTS-MW09B-EM38-FD	

Observations/Comments: Well Condition: Good General Comments:

HACH Kit Sulfide: 0.0 mg/L Hach Kit Ferrous Iron: 0.0 mg/L

Bottle Set Summary

VOA w/ HCl	2 125 mL Plastic	500 mL Plastic	8 40 mL Amber VOA w/ HCl	250 mL Amber Glass w/ H2S04
2 125 mL w/ EDA	2 250 mL Plastic	250 mL Plastic w/ H2SO4	250 mL Plastic w/ HNO3	500 mL Amber Glass w/ H2SO4

*INDICATOR PARAMETERS HAVE STABLIZED WHEN 3 CONSECUTIVE READINGS ARE WITHIN:

± 0.1 for pH; ± 3% for Cond and Temp; ± 10 mv for ORP; ± 10% or <0.5 mg/L for DO; ± 10% or <10 NTU Turbidity

LOW FLOW GROUNDWATER SAMPLING LOG

NERT, Henderson, NV

Task Name: SWF Area Bio Treatability Study	Task Manager: D. Grady/ J. Dabbs	Task No.: M11	Date: 2022-06-23	Well ID: SWFTS-MW10A
Field Samplers: G. Schuler				
Transducer Removal Time: 09:17	Transducer Redeployment Time: 10:00			General Well Condition: Good
Depth to Water (ft): 9.75	Screened Interval Top (ft): 20.4			Pump Intake Depth (ft): 27.40
Well Depth (ft): 35.10	Screened/Open Interval Bottom (ft): 35.0			Well Diameter (in): 4
Pump/Tubing Type: QED Bladder Pump & TLPE/LDPE	GW Disposal: GW-11			Equipment Decon. Method: Alconox/DI Rinse SOP
Y Dedicated Tubing Present? (Y/N)	N New Dedicated Tubing Placed? (Y/N)			
Purge Start Time: 09:21				

Time	Temp. (°C)		pH (pH Units)		Conductivity (mS/cm)		DO (mg/L)		ORP (mV)		Turbidity (NTU)		Purge Rate (mL/min)	Depth to Water (ft)	Cum. Vol. Purged (mL)	Color/Odor
	READ	CHANGE*	READ	CHANGE*	READ	CHANGE*	READ	CHANGE*	READ	CHANGE*	READ	CHANGE*				
09:21	27.2		6.93		7.793		1.89		101.9		11.9		300	9.75		Clear/None
09:24	26.4		6.89		7.711		1.05		101.0		3.5		300	9.75	900	Clear/None
09:27	26.4	0%	6.88	0.0	7.697	0%	0.88	6%	99.2	1.4	2.1	<10	300	9.75	1800	Clear/None
09:30	26.5	0%	6.88	0.0	7.690	0%	0.82	1%	97.7	0.1	1.9	<10	300	9.75	2700	Clear/None
09:33	26.5	0%	6.88	0.0	7.698	0%	0.79	4%	96.6	1.2	3.1	<10	300	9.75	3600	Clear/None

Stop Purge Time: 09:34	Sample Time: 09:50	QA/QC Sample Time(s): 09:50	*SWFTS-MW10A*
	Sample ID: SWFTS-MW10A-EM38	QA/QC Sample ID(s): SWFTS-MW10A-EM38-MS/MSD	

Observations/Comments: Well Condition: Good General Comments:

HACH Kit Sulfide: 0.0 mg/L Hach Kit Ferrous Iron: 0.0 mg/L

Bottle Set Summary

VOA w/ HCl	2 125 mL Plastic	500 mL Plastic	8 40 mL Amber VOA w/ HCl	250 mL Amber Glass w/ H2S04
2 125 mL w/ EDA	2 250 mL Plastic	250 mL Plastic w/ H2SO4	250 mL Plastic w/ HNO3	500 mL Amber Glass w/ H2SO4

*INDICATOR PARAMETERS HAVE STABLIZED WHEN 3 CONSECUTIVE READINGS ARE WITHIN:

± 0.1 for pH; ± 3% for Cond and Temp; ± 10 mv for ORP; ± 10% or <0.5 mg/L for DO; ± 10% or <10 NTU Turbidity

LOW FLOW GROUNDWATER SAMPLING LOG

NERT, Henderson, NV

Task Name: SWF Area Bio Treatability Study	Task Manager: D. Grady/ J. Dabbs	Task No.: M11	Date: 2022-06-23	Well ID: SWFTS-MW12
Field Samplers: G. Schuler				
Transducer Removal Time: n/a	Transducer Redeployment Time: n/a			General Well Condition: Good
Depth to Water (ft): 16.96	Screened Interval Top (ft): 15.8			Pump Intake Depth (ft): 27.90
Well Depth (ft): 40.10	Screened/Open Interval Bottom (ft): 40.6			Well Diameter (in): 4
Pump/Tubing Type: QED Bladder Pump & TLPE/LDPE	GW Disposal: GW-11			Equipment Decon. Method: Alconox/DI Rinse SOP
Y Dedicated Tubing Present? (Y/N)	N New Dedicated Tubing Placed? (Y/N)			
Purge Start Time: 08:13				

Time	Temp. (°C)		pH (pH Units)		Conductivity (mS/cm)		DO (mg/L)		ORP (mV)		Turbidity (NTU)		Purge Rate (mL/min)	Depth to Water (ft)	Cum. Vol. Purged (mL)	Color/Odor
	READ	CHANGE*	READ	CHANGE*	READ	CHANGE*	READ	CHANGE*	READ	CHANGE*	READ	CHANGE*				
08:13	25.7		6.63		5.886		1.19		98.4		4.5		240	17.14		Clear/None
08:16	25.7		6.64		5.890		1.08		76.2		3.5		240	17.14	720	Clear/None
08:19	26.0		6.64		5.924		0.98		56.7		3.8		240	17.14	1440	Clear/None
08:22	25.8	0%	6.64	0.0	5.907	0%	0.93	4%	40.7	9.3	5.0	<10	240	17.14	2160	Clear/None
08:25	25.8	0%	6.64	0.0	5.908	0%	0.89	0%	29.6	1.8	4.2	<10	240	17.14	2880	Clear/None
08:28	25.9	0%	6.64	0.0	5.922	0%	0.86	3%	23.9	7.5	2.9	<10	240	17.14	3600	Clear/None

Stop Purge Time: 08:29	Sample Time: 08:45	QA/QC Sample Time(s): n/a	*SWFTS-MW12*
	Sample ID: SWFTS-MW12-EM38	QA/QC Sample ID(s): n/a	

Observations/Comments: Well Condition: Good General Comments:

HACH Kit Sulfide: 0.0 mg/L Hach Kit Ferrous Iron: 0.0 mg/L

Bottle Set Summary

VOA w/ HCl	1 125 mL Plastic	500 mL Plastic	4 40 mL Amber VOA w/ HCl	250 mL Amber Glass w/ H2S04
1 125 mL w/ EDA	1 250 mL Plastic	250 mL Plastic w/ H2SO4	250 mL Plastic w/ HNO3	500 mL Amber Glass w/ H2S04

*INDICATOR PARAMETERS HAVE STABLIZED WHEN 3 CONSECUTIVE READINGS ARE WITHIN:

± 0.1 for pH; ± 3% for Cond and Temp; ± 10 mv for ORP; ± 10% or <0.5 mg/L for DO; ± 10% or <10 NTU Turbidity

LOW FLOW GROUNDWATER SAMPLING LOG

NERT, Henderson, NV

Task Name: SWF Area Bio Treatability Study	Task Manager: D. Grady/ J. Dabbs	Task No.: M11	Date: 2022-06-22	Well ID: SWFTS-MW13
Field Samplers: G. Schuler				
Transducer Removal Time: n/a	Transducer Redeployment Time: n/a			General Well Condition: Good
Depth to Water (ft): 22.26	Screened Interval Top (ft): 17.8			Pump Intake Depth (ft): 32.30
Well Depth (ft): 47.60	Screened/Open Interval Bottom (ft): 47.6			Well Diameter (in): 4
Pump/Tubing Type: QED Bladder Pump & TLPE/LDPE	GW Disposal: GW-11			Equipment Decon. Method: Alconox/DI Rinse SOP
Y Dedicated Tubing Present? (Y/N)	N New Dedicated Tubing Placed? (Y/N)			
Purge Start Time: 13:26				

Time	Temp. (°C)		pH (pH Units)		Conductivity (mS/cm)		DO (mg/L)		ORP (mV)		Turbidity (NTU)		Purge Rate (mL/min)	Depth to Water (ft)	Cum. Vol. Purged (mL)	Color/Odor
	READ	CHANGE*	READ	CHANGE*	READ	CHANGE*	READ	CHANGE*	READ	CHANGE*	READ	CHANGE*				
13:26	27.6		7.13		8.530		5.34		80.0		18.1		300	22.26		Clear/None
13:30	25.9	0%	7.10	0.0	8.229	0%	4.63	1%	88.1	2.4	3.7	<10	300	22.26	1200	Clear/None
13:33	25.6	0%	7.10	0.0	8.191	0%	4.56	0%	91.7	1.2	3.3	<10	300	22.26	2100	Clear/None
13:36	25.7	0%	7.10	0.0	8.204	0%	4.50	1%	91.7	1.2	2.5	<10	300	22.26	3000	Clear/None

Stop Purge Time: 13:37	Sample Time: 13:45	QA/QC Sample Time(s): n/a	*SWFTS-MW13*
	Sample ID: SWFTS-MW13-EM38	QA/QC Sample ID(s): n/a	

Observations/Comments: Well Condition: Good General Comments:

HACH Kit Sulfide: 0.0 mg/L Hach Kit Ferrous Iron: 0.0 mg/L

Bottle Set Summary

VOA w/ HCl	1 125 mL Plastic	500 mL Plastic	4 40 mL Amber VOA w/ HCl	250 mL Amber Glass w/ H2S04
1 125 mL w/ EDA	1 250 mL Plastic	250 mL Plastic w/ H2SO4	250 mL Plastic w/ HNO3	500 mL Amber Glass w/ H2SO4

*INDICATOR PARAMETERS HAVE STABLIZED WHEN 3 CONSECUTIVE READINGS ARE WITHIN:

± 0.1 for pH; ± 3% for Cond and Temp; ± 10 mv for ORP; ± 10% or <0.5 mg/L for DO; ± 10% or <10 NTU Turbidity

LOW FLOW GROUNDWATER SAMPLING LOG

NERT, Henderson, NV

Task Name: SWF Area Bio Treatability Study	Task Manager: D. Grady/ J. Dabbs	Task No.: M11	Date: 2022-06-22	Well ID: SWFTS-MW14
Field Samplers: G. Schuler				
Transducer Removal Time: n/a	Transducer Redeployment Time: n/a			General Well Condition: Good
Depth to Water (ft): 9.78	Screened Interval Top (ft): 16.8			Pump Intake Depth (ft): 26.40
Well Depth (ft): 36.05	Screened/Open Interval Bottom (ft): 36.6			Well Diameter (in): 2
Pump/Tubing Type: QED Bladder Pump & TLPE/LDPE	GW Disposal: GW-11			Equipment Decon. Method: Alconox/DI Rinse SOP
Y Dedicated Tubing Present? (Y/N)	N New Dedicated Tubing Placed? (Y/N)			
Purge Start Time: 12:39				

Time	Temp. (°C)		pH (pH Units)		Conductivity (mS/cm)		DO (mg/L)		ORP (mV)		Turbidity (NTU)		Purge Rate (mL/min)	Depth to Water (ft)	Cum. Vol. Purged (mL)	Color/Odor
	READ	CHANGE*	READ	CHANGE*	READ	CHANGE*	READ	CHANGE*	READ	CHANGE*	READ	CHANGE*				
12:39	29.1		6.78		8.020		3.28		82.0		54.3		300	9.78		Clear/None
12:42	26.5		6.70		7.756		1.08		70.5		6.1		300	9.78	900	Clear/None
12:45	26.3		6.70		7.702		0.93		63.5		11.3		300	9.78	1800	Clear/None
12:48	26.2	0%	6.70	0.0	7.679	0%	0.86	8%	61.4	1.0	29.8	99%	300	9.78	2700	Clear/None
12:51	26.0	0%	6.70	0.0	7.641	0%	0.78	1%	60.6	0.2	8.0	<10	300	9.78	3600	Clear/None
12:54	26.1	0%	6.69	0.0	7.646	0%	0.74	6%	59.3	1.1	7.0	<10	300	9.78	4500	Clear/None

Stop Purge Time: 12:55	Sample Time: 13:05	QA/QC Sample Time(s): n/a	*SWFTS-MW14*
	Sample ID: SWFTS-MW14-EM38	QA/QC Sample ID(s): n/a	

Observations/Comments: Well Condition: Good General Comments:

HACH Kit Sulfide: 0.0 mg/L Hach Kit Ferrous Iron: 0.0 mg/L

Bottle Set Summary

VOA w/ HCl	1 125 mL Plastic	500 mL Plastic	4 40 mL Amber VOA w/ HCl	250 mL Amber Glass w/ H2S04
1 125 mL w/ EDA	1 250 mL Plastic	250 mL Plastic w/ H2SO4	250 mL Plastic w/ HNO3	500 mL Amber Glass w/ H2S04

*INDICATOR PARAMETERS HAVE STABLIZED WHEN 3 CONSECUTIVE READINGS ARE WITHIN:

± 0.1 for pH; ± 3% for Cond and Temp; ± 10 mv for ORP; ± 10% or <0.5 mg/L for DO; ± 10% or <10 NTU Turbidity

LOW FLOW GROUNDWATER SAMPLING LOG

NERT, Henderson, NV

Task Name: SWF Area Bio Treatability Study	Task Manager: D. Grady/ J. Dabbs	Task No.: M11	Date: 2022-06-22	Well ID: SWFTS-MW15
Field Samplers: G. Schuler				
Transducer Removal Time: 11:48	Transducer Redeployment Time: 13:00			General Well Condition: Good
Depth to Water (ft): 12.68	Screened Interval Top (ft): 14.8			Pump Intake Depth (ft): 24.40
Well Depth (ft): 33.60	Screened/Open Interval Bottom (ft): 34.6			Well Diameter (in): 2
Pump/Tubing Type: QED Bladder Pump & TLPE/LDPE	GW Disposal: GW-11			Equipment Decon. Method: Alconox/DI Rinse SOP
Y Dedicated Tubing Present? (Y/N)	N New Dedicated Tubing Placed? (Y/N)			
Purge Start Time: 11:50				

Time	Temp. (°C)		pH (pH Units)		Conductivity (mS/cm)		DO (mg/L)		ORP (mV)		Turbidity (NTU)		Purge Rate (mL/min)	Depth to Water (ft)	Cum. Vol. Purged (mL)	Color/Odor
	READ	CHANGE*	READ	CHANGE*	READ	CHANGE*	READ	CHANGE*	READ	CHANGE*	READ	CHANGE*				
11:50	28.3		6.87		5.567		2.82		70.1		44.6		300	12.60		Clear/None
11:54	25.5		6.78		5.221		1.07		64.7		11.5		300	12.60	1200	Clear/None
11:57	25.6		6.77		5.216		0.95		59.0		8.9		300	12.60	2100	Clear/None
12:00	25.5	0%	6.77	0.0	5.205	0%	0.86	3%	46.9	10.9	8.1	<10	300	12.60	3000	Clear/None
12:03	25.6	0%	6.77	0.0	5.218	0%	0.84	0%	33.7	2.3	7.8	<10	300	12.60	3900	Clear/None
12:06	25.6	0%	6.77	0.0	5.218	0%	0.80	3%	27.3	8.7	6.2	<10	300	12.60	4800	Clear/None

Stop Purge Time: 12:07	Sample Time: 12:15	QA/QC Sample Time(s): n/a	*SWFTS-MW15*
	Sample ID: SWFTS-MW15-EM38	QA/QC Sample ID(s): n/a	

Observations/Comments: Well Condition: Good General Comments:

HACH Kit Sulfide: 0.0 mg/L Hach Kit Ferrous Iron: 0.0 mg/L

Bottle Set Summary

VOA w/ HCl	1 125 mL Plastic	500 mL Plastic	4 40 mL Amber VOA w/ HCl	250 mL Amber Glass w/ H2S04
1 125 mL w/ EDA	1 250 mL Plastic	250 mL Plastic w/ H2SO4	250 mL Plastic w/ HNO3	500 mL Amber Glass w/ H2S04

*INDICATOR PARAMETERS HAVE STABLIZED WHEN 3 CONSECUTIVE READINGS ARE WITHIN:

± 0.1 for pH; ± 3% for Cond and Temp; ± 10 mv for ORP; ± 10% or <0.5 mg/L for DO; ± 10% or <10 NTU Turbidity

LOW FLOW GROUNDWATER SAMPLING LOG

NERT, Henderson, NV

Task Name: SWF Area Bio Treatability Study	Task Manager: D. Grady/ J. Dabbs	Task No.: M11	Date: 2022-06-22	Well ID: SWFTS-MW16
Field Samplers: G. Schuler				
Transducer Removal Time: n/a	Transducer Redeployment Time: n/a			General Well Condition: Good
Depth to Water (ft): 21.40	Screened Interval Top (ft): 21.8			Pump Intake Depth (ft): 31.30
Well Depth (ft): 39.70	Screened/Open Interval Bottom (ft): 41.6			Well Diameter (in): 2
Pump/Tubing Type: QED Bladder Pump & TLPE/LDPE	GW Disposal: GW-11			Equipment Decon. Method: Alconox/DI Rinse SOP
Y Dedicated Tubing Present? (Y/N)	N New Dedicated Tubing Placed? (Y/N)			
Purge Start Time: 11:02				

Time	Temp. (°C)		pH (pH Units)		Conductivity (mS/cm)		DO (mg/L)		ORP (mV)		Turbidity (NTU)		Purge Rate (mL/min)	Depth to Water (ft)	Cum. Vol. Purged (mL)	Color/Odor
	READ	CHANGE*	READ	CHANGE*	READ	CHANGE*	READ	CHANGE*	READ	CHANGE*	READ	CHANGE*				
11:02	27.6		6.69		6.656		1.94		-49.8		-8975.2		300	21.40		Clear/None
11:05	26.3		6.68		6.444		0.97		-64.0		81.6		300	21.40	900	Clear/None
11:08	26.2	0%	6.68	0.0	6.426	0%	0.86	5%	-67.4	1.2	60.6	6%	300	21.40	1800	Clear/None
11:11	26.1	0%	6.68	0.0	6.411	0%	0.81	0%	-68.8	0.2	53.4	5%	300	21.40	2700	Clear/None
11:14	26.0	0%	6.68	0.0	6.400	0%	0.78	4%	-69.6	1.0	56.3	0%	300	21.40	3600	Clear/None

Stop Purge Time: 11:15	Sample Time: 11:25	QA/QC Sample Time(s): n/a	*SWFTS-MW16*
	Sample ID: SWFTS-MW16-EM38	QA/QC Sample ID(s): n/a	

Observations/Comments: Well Condition: Good General Comments:

HACH Kit Sulfide: 0.0 mg/L Hach Kit Ferrous Iron: 2.0 mg/L

Bottle Set Summary

VOA w/ HCl	1 125 mL Plastic	500 mL Plastic	4 40 mL Amber VOA w/ HCl	250 mL Amber Glass w/ H2S04
1 125 mL w/ EDA	1 250 mL Plastic	250 mL Plastic w/ H2SO4	250 mL Plastic w/ HNO3	500 mL Amber Glass w/ H2S04

*INDICATOR PARAMETERS HAVE STABLIZED WHEN 3 CONSECUTIVE READINGS ARE WITHIN:

± 0.1 for pH; ± 3% for Cond and Temp; ± 10 mv for ORP; ± 10% or <0.5 mg/L for DO; ± 10% or <10 NTU Turbidity

LOW FLOW GROUNDWATER SAMPLING LOG

NERT, Henderson, NV

Task Name: SWF Area Bio Treatability Study	Task Manager: D. Grady/ J. Dabbs	Task No.: M11	Date: 2022-06-22	Well ID: SWFTS-MW17
Field Samplers: G. Schuler				
Transducer Removal Time: n/a	Transducer Redeployment Time: n/a			General Well Condition: Good
Depth to Water (ft): 25.40	Screened Interval Top (ft): 22.8			Pump Intake Depth (ft): 37.40
Well Depth (ft): 51.50	Screened/Open Interval Bottom (ft): 52.6			Well Diameter (in): 4
Pump/Tubing Type: QED Bladder Pump & TLPE/LDPE	GW Disposal: GW-11			Equipment Decon. Method: Alconox/DI Rinse SOP
Y Dedicated Tubing Present? (Y/N)	N New Dedicated Tubing Placed? (Y/N)			
Purge Start Time: 10:13				

Time	Temp. (°C)		pH (pH Units)		Conductivity (mS/cm)		DO (mg/L)		ORP (mV)		Turbidity (NTU)		Purge Rate (mL/min)	Depth to Water (ft)	Cum. Vol. Purged (mL)	Color/Odor
	READ	CHANGE*	READ	CHANGE*	READ	CHANGE*	READ	CHANGE*	READ	CHANGE*	READ	CHANGE*				
10:13	27.2		7.18		5.774		5.31		95.2		20.2		300	25.40		Clear/None
10:17	26.8	0%	7.15	0.0	5.724	0%	5.08	1%	95.7	2.5	7.7	<10	300	25.40	1200	Clear/None
10:20	26.7	0%	7.15	0.0	5.715	0%	4.99	0%	94.0	0.8	8.0	<10	300	25.40	2100	Clear/None
10:23	26.9	0%	7.15	0.0	5.727	0%	4.93	1%	89.8	3.4	9.4	<10	300	25.40	3000	Clear/None

Stop Purge Time: 10:24	Sample Time: 10:35	QA/QC Sample Time(s): n/a	*SWFTS-MW17*
	Sample ID: SWFTS-MW17-EM38	QA/QC Sample ID(s): n/a	

Observations/Comments: Well Condition: Good General Comments:

HACH Kit Sulfide: 0.0 mg/L Hach Kit Ferrous Iron: 0.0 mg/L

Bottle Set Summary

VOA w/ HCl	1 125 mL Plastic	500 mL Plastic	4 40 mL Amber VOA w/ HCl	250 mL Amber Glass w/ H2S04
1 125 mL w/ EDA	1 250 mL Plastic	250 mL Plastic w/ H2SO4	250 mL Plastic w/ HNO3	500 mL Amber Glass w/ H2SO4

*INDICATOR PARAMETERS HAVE STABLIZED WHEN 3 CONSECUTIVE READINGS ARE WITHIN:

± 0.1 for pH; ± 3% for Cond and Temp; ± 10 mv for ORP; ± 10% or <0.5 mg/L for DO; ± 10% or <10 NTU Turbidity

LOW FLOW GROUNDWATER SAMPLING LOG

NERT, Henderson, NV

Task Name: SWF Area Bio Treatability Study	Task Manager: D. Grady/ J. Dabbs	Task No.: M11	Date: 2022-06-22	Well ID: SWFTS-MW18
Field Samplers: G. Schuler				
Transducer Removal Time: n/a	Transducer Redeployment Time: n/a			General Well Condition: Good
Depth to Water (ft): 14.90	Screened Interval Top (ft): 16.8			Pump Intake Depth (ft): 26.10
Well Depth (ft): 35.30	Screened/Open Interval Bottom (ft): 36.6			Well Diameter (in): 2
Pump/Tubing Type: QED Bladder Pump & TLPE/LDPE	GW Disposal: GW-11			Equipment Decon. Method: Alconox/DI Rinse SOP
Y Dedicated Tubing Present? (Y/N)	N New Dedicated Tubing Placed? (Y/N)			
Purge Start Time: 09:21				

Time	Temp. (°C)		pH (pH Units)		Conductivity (mS/cm)		DO (mg/L)		ORP (mV)		Turbidity (NTU)		Purge Rate (mL/min)	Depth to Water (ft)	Cum. Vol. Purged (mL)	Color/Odor
	READ	CHANGE*	READ	CHANGE*	READ	CHANGE*	READ	CHANGE*	READ	CHANGE*	READ	CHANGE*				
09:21	28.3		6.60		6.970		2.21		105.0		80.9		315	14.90		Clear/None
09:24	27.1		6.58		6.743		1.08		89.4		32.8		315	14.90	945	Clear/None
09:28	27.0		6.59		6.696		0.99		79.1		68.1		315	14.90	2205	Clear/None
09:31	26.7		6.60		6.637		0.88		73.1		30.6		315	14.90	3150	Clear/None
09:34	26.6	0%	6.61	0.0	6.592	0%	0.82	2%	69.7	2.3	24.8	12%	315	14.90	4095	Clear/None
09:37	26.3	0%	6.62	0.0	6.544	0%	0.80	0%	67.3	0.1	30.2	6%	315	14.90	5040	Clear/None
09:40	26.6	0%	6.62	0.0	6.563	0%	0.77	3%	65.2	2.2	30.3	6%	315	14.90	5985	Clear/None

Stop Purge Time: 09:41	Sample Time: 09:50	QA/QC Sample Time(s): n/a	*SWFTS-MW18*
	Sample ID: SWFTS-MW18-EM38	QA/QC Sample ID(s): n/a	

Observations/Comments: Well Condition: Good General Comments:

HACH Kit Sulfide: 0.0 mg/L Hach Kit Ferrous Iron: 0.0 mg/L

Bottle Set Summary

VOA w/ HCl	1 125 mL Plastic	500 mL Plastic	4 40 mL Amber VOA w/ HCl	250 mL Amber Glass w/ H2S04
1 125 mL w/ EDA	1 250 mL Plastic	250 mL Plastic w/ H2SO4	250 mL Plastic w/ HNO3	500 mL Amber Glass w/ H2S04

*INDICATOR PARAMETERS HAVE STABLIZED WHEN 3 CONSECUTIVE READINGS ARE WITHIN:

± 0.1 for pH; ± 3% for Cond and Temp; ± 10 mv for ORP; ± 10% or <0.5 mg/L for DO; ± 10% or <10 NTU Turbidity

LOW FLOW GROUNDWATER SAMPLING LOG

NERT, Henderson, NV

Task Name: SWF Area Bio Treatability Study	Task Manager: D. Grady/ J. Dabbs	Task No.: M11	Date: 2022-06-22	Well ID: SWFTS-MW19
Field Samplers: G. Schuler				
Transducer Removal Time: n/a	Transducer Redeployment Time: n/a			General Well Condition: Good
Depth to Water (ft): 9.48	Screened Interval Top (ft): 11.3			Pump Intake Depth (ft): 21.00
Well Depth (ft): 30.00	Screened/Open Interval Bottom (ft): 31.1			Well Diameter (in): 2
Pump/Tubing Type: QED Bladder Pump & TLPE/LDPE	GW Disposal: GW-11			Equipment Decon. Method: Alconox/DI Rinse SOP
Y Dedicated Tubing Present? (Y/N)	N New Dedicated Tubing Placed? (Y/N)			
Purge Start Time: 08:18				

Time	Temp. (°C)		pH (pH Units)		Conductivity (mS/cm)		DO (mg/L)		ORP (mV)		Turbidity (NTU)		Purge Rate (mL/min)	Depth to Water (ft)	Cum. Vol. Purged (mL)	Color/Odor
	READ	CHANGE*	READ	CHANGE*	READ	CHANGE*	READ	CHANGE*	READ	CHANGE*	READ	CHANGE*				
08:18	24.9		6.58		6.448		2.31		139.6		123.1		315	9.48		Clear/None
08:21	24.7		6.68		6.414		1.11		119.3		43.1		315	9.48	945	Clear/None
08:24	24.7		6.69		6.385		1.01		112.2		25.4		315	9.48	1890	Clear/None
08:27	24.7	0%	6.70	0.0	6.374	0%	0.90	5%	108.3	3.4	16.7	2%	315	9.48	2835	Clear/None
08:30	24.8	0%	6.70	0.0	6.390	0%	0.84	1%	104.7	0.2	15.8	2%	315	9.48	3780	Clear/None
08:33	24.8	0%	6.70	0.0	6.384	0%	0.81	4%	101.8	3.1	16.2	0%	315	9.48	4725	Clear/None

Stop Purge Time: 08:34	Sample Time: 08:45	QA/QC Sample Time(s): 08:45	*SWFTS-MW19*
	Sample ID: SWFTS-MW19-EM38	QA/QC Sample ID(s): SWFTS-MW19-EM38-FD	

Observations/Comments: Well Condition: Good General Comments:

HACH Kit Sulfide: 0.0 mg/L Hach Kit Ferrous Iron: 0.0 mg/L

Bottle Set Summary

VOA w/ HCl	2 125 mL Plastic	500 mL Plastic	8 40 mL Amber VOA w/ HCl	250 mL Amber Glass w/ H2S04
2 125 mL w/ EDA	2 250 mL Plastic	250 mL Plastic w/ H2SO4	250 mL Plastic w/ HNO3	500 mL Amber Glass w/ H2S04

*INDICATOR PARAMETERS HAVE STABLIZED WHEN 3 CONSECUTIVE READINGS ARE WITHIN:

± 0.1 for pH; ± 3% for Cond and Temp; ± 10 mv for ORP; ± 10% or <0.5 mg/L for DO; ± 10% or <10 NTU Turbidity

LOW FLOW GROUNDWATER SAMPLING LOG

NERT, Henderson, NV

Task Name: SWF Area Bio Treatability Study	Task Manager: D. Grady/ J. Dabbs	Task No.: M11	Date: 2022-06-21	Well ID: SWFTS-MW20
Field Samplers: G. Schuler				
Transducer Removal Time: n/a	Transducer Redeployment Time: n/a			General Well Condition: Good
Depth to Water (ft): 11.98	Screened Interval Top (ft): 12.8			Pump Intake Depth (ft): 24.80
Well Depth (ft): 35.40	Screened/Open Interval Bottom (ft): 37.6			Well Diameter (in): 2
Pump/Tubing Type: QED Bladder Pump & TLPE/LDPE	GW Disposal: GW-11			Equipment Decon. Method: Alconox/DI Rinse SOP
Y Dedicated Tubing Present? (Y/N)	N New Dedicated Tubing Placed? (Y/N)			
Purge Start Time: 13:13				

Time	Temp. (°C)		pH (pH Units)		Conductivity (mS/cm)		DO (mg/L)		ORP (mV)		Turbidity (NTU)		Purge Rate (mL/min)	Depth to Water (ft)	Cum. Vol. Purged (mL)	Color/Odor
	READ	CHANGE*	READ	CHANGE*	READ	CHANGE*	READ	CHANGE*	READ	CHANGE*	READ	CHANGE*				
13:13	30.1		6.48		10.382		4.37		61.2		-35337.6		300	12.00		Clear/None
13:16	27.5		6.43		9.914		1.05		9.4		-9748.9		300	12.00	900	Clear/None
13:19	27.2		6.44		9.831		0.92		2.7		-12471.2		300	12.00	1800	Clear/None
13:22	27.2		6.44		9.820		0.84		0.4		118.2		300	12.00	2700	Clear/None
13:25	27.4		6.44		9.825		0.80		-1.4		89.9		300	12.00	3600	Clear/None
13:28	27.2		6.44		9.780		0.77		-2.4		75.2		300	12.00	4500	Clear/None
13:31	27.2		6.44		9.737		0.76		-4.1		61.7		300	12.00	5400	Clear/None
13:34	27.1		6.44		9.666		0.73		-5.0		49.1		300	12.00	6300	Clear/None
13:37	27.2		6.45		9.652		0.72		-6.0		38.5		300	12.00	7200	Clear/None
13:40	27.3		6.45		9.608		0.70		-6.8		33.8		300	12.00	8100	Clear/None
13:44	27.2	0%	6.45	0.0	9.518	0%	0.69	0%	-8.8	1.5	28.3	18%	300	12.00	9300	Clear/None
13:47	27.1	0%	6.46	0.0	9.442	0%	0.68	0%	-10.5	0.2	22.5	5%	300	12.00	10200	Clear/None
13:50	27.0	0%	6.46	0.0	9.381	0%	0.68	0%	-11.7	1.4	20.8	12%	300	12.00	11100	Clear/None

Stop Purge Time: 13:51	Sample Time: 14:00	QA/QC Sample Time(s): n/a	*SWFTS-MW20*
	Sample ID: SWFTS-MW20-EM38	QA/QC Sample ID(s): n/a	

Observations/Comments: Well Condition: Good General Comments:

HACH Kit Sulfide: 0.0 mg/L Hach Kit Ferrous Iron: 0.5 mg/L

Bottle Set Summary

VOA w/ HCl	1 125 mL Plastic	500 mL Plastic	4 40 mL Amber VOA w/ HCl	250 mL Amber Glass w/ H2S04
1 125 mL w/ EDA	1 250 mL Plastic	250 mL Plastic w/ H2SO4	250 mL Plastic w/ HNO3	500 mL Amber Glass w/ H2S04

*INDICATOR PARAMETERS HAVE STABLIZED WHEN 3 CONSECUTIVE READINGS ARE WITHIN:

± 0.1 for pH; ± 3% for Cond and Temp; ± 10 mv for ORP; ± 10% or <0.5 mg/L for DO; ± 10% or <10 NTU Turbidity

LOW FLOW GROUNDWATER SAMPLING LOG

NERT, Henderson, NV

Task Name: SWF Area Bio Treatability Study	Task Manager: D. Grady/ J. Dabbs	Task No.: M11	Date: 2022-06-21	Well ID: SWFTS-MW21
Field Samplers: G. Schuler				
Transducer Removal Time: n/a	Transducer Redeployment Time: n/a			General Well Condition: Good
Depth to Water (ft): 15.10	Screened Interval Top (ft): 14.8			Pump Intake Depth (ft): 26.90
Well Depth (ft): 38.05	Screened/Open Interval Bottom (ft): 39.6			Well Diameter (in): 2
Pump/Tubing Type: QED Bladder Pump & TLPE/LDPE	GW Disposal: GW-11			Equipment Decon. Method: Alconox/DI Rinse SOP
Y Dedicated Tubing Present? (Y/N)	N New Dedicated Tubing Placed? (Y/N)			
Purge Start Time: 11:28				

Time	Temp. (°C)		pH (pH Units)		Conductivity (mS/cm)		DO (mg/L)		ORP (mV)		Turbidity (NTU)		Purge Rate (mL/min)	Depth to Water (ft)	Cum. Vol. Purged (mL)	Color/Odor
	READ	CHANGE*	READ	CHANGE*	READ	CHANGE*	READ	CHANGE*	READ	CHANGE*	READ	CHANGE*				
11:28	27.9		7.00		6.987		1.79		102.2		62.2		300	15.10		Clear/None
11:32	26.5		6.97		6.763		1.02		89.9		45.8		300	15.10	1200	Clear/None
11:35	26.6	0%	6.97	0.0	6.756	0%	0.89	4%	81.9	5.7	35.2	7%	300	15.10	2100	Clear/None
11:38	26.7	0%	6.96	0.0	6.762	0%	0.85	0%	75.8	0.4	31.3	3%	300	15.10	3000	Clear/None
11:41	27.0	0%	6.96	0.0	6.801	0%	0.81	4%	70.9	5.3	31.3	3%	300	15.10	3900	Clear/None

Stop Purge Time: 11:42	Sample Time: 11:50	QA/QC Sample Time(s): n/a	*SWFTS-MW21*
	Sample ID: SWFTS-MW21-EM38	QA/QC Sample ID(s): n/a	

Observations/Comments: Well Condition: Good General Comments:

HACH Kit Sulfide: 0.0 mg/L Hach Kit Ferrous Iron: 0.0 mg/L

Bottle Set Summary

VOA w/ HCl	1 125 mL Plastic	500 mL Plastic	4 40 mL Amber VOA w/ HCl	250 mL Amber Glass w/ H2S04
1 125 mL w/ EDA	1 250 mL Plastic	250 mL Plastic w/ H2SO4	250 mL Plastic w/ HNO3	500 mL Amber Glass w/ H2S04

*INDICATOR PARAMETERS HAVE STABLIZED WHEN 3 CONSECUTIVE READINGS ARE WITHIN:

± 0.1 for pH; ± 3% for Cond and Temp; ± 10 mv for ORP; ± 10% or <0.5 mg/L for DO; ± 10% or <10 NTU Turbidity

LOW FLOW GROUNDWATER SAMPLING LOG

NERT, Henderson, NV

Task Name: SWF Area Bio Treatability Study	Task Manager: D. Grady/ J. Dabbs	Task No.: M11	Date: 2022-06-21	Well ID: SWFTS-MW22
Field Samplers: G. Schuler				
Transducer Removal Time: n/a	Transducer Redeployment Time: n/a			General Well Condition: Good
Depth to Water (ft): 10.49	Screened Interval Top (ft): 11.8			Pump Intake Depth (ft): 21.30
Well Depth (ft): 31.60	Screened/Open Interval Bottom (ft): 31.6			Well Diameter (in): 2
Pump/Tubing Type: QED Bladder Pump & TLPE/LDPE	GW Disposal: GW-11			Equipment Decon. Method: Alconox/DI Rinse SOP
Y Dedicated Tubing Present? (Y/N)	N New Dedicated Tubing Placed? (Y/N)			
Purge Start Time: 12:16				

Time	Temp. (°C)		pH (pH Units)		Conductivity (mS/cm)		DO (mg/L)		ORP (mV)		Turbidity (NTU)		Purge Rate (mL/min)	Depth to Water (ft)	Cum. Vol. Purged (mL)	Color/Odor
	READ	CHANGE*	READ	CHANGE*	READ	CHANGE*	READ	CHANGE*	READ	CHANGE*	READ	CHANGE*				
12:16	28.5		7.10		5.583		2.47		91.8		-44453.6		300	10.50		Clear/None
12:19	26.3		7.01		5.340		1.03		88.9		-8638.5		300	10.50	900	Clear/None
12:22	26.5		6.97		5.473		0.92		86.8		-5012.6		300	10.50	1800	Clear/None
12:25	26.7		6.96		5.576		0.90		85.7		-256.5		300	10.50	2700	Clear/None
12:28	26.6		6.94		5.640		0.82		84.2		92.2		300	10.50	3600	Clear/None
12:31	27.0	1%	6.91	0.0	5.837	2%	0.78	3%	83.4	0.3	77.0	5%	300	10.50	4500	Clear/None
12:34	26.6	0%	6.89	0.0	6.017	0%	0.76	0%	83.3	0.2	73.0	0%	300	10.50	5400	Clear/None
12:37	26.4	1%	6.87	0.0	6.075	1%	0.72	4%	82.5	0.6	69.0	5%	300	10.50	6300	Clear/None

Stop Purge Time: 11:42	Sample Time: 11:50	QA/QC Sample Time(s): n/a	*SWFTS-MW21*
	Sample ID: SWFTS-MW21-EM38	QA/QC Sample ID(s): n/a	

Observations/Comments: Well Condition: Good General Comments:

HACH Kit Sulfide: 0.0 mg/L Hach Kit Ferrous Iron: 0.0 mg/L

Bottle Set Summary

VOA w/ HCl	1 125 mL Plastic	500 mL Plastic	4 40 mL Amber VOA w/ HCl	250 mL Amber Glass w/ H2S04
1 125 mL w/ EDA	1 250 mL Plastic	250 mL Plastic w/ H2SO4	250 mL Plastic w/ HNO3	500 mL Amber Glass w/ H2S04

*INDICATOR PARAMETERS HAVE STABLIZED WHEN 3 CONSECUTIVE READINGS ARE WITHIN:

± 0.1 for pH; ± 3% for Cond and Temp; ± 10 mv for ORP; ± 10% or <0.5 mg/L for DO; ± 10% or <10 NTU Turbidity

LOW FLOW GROUNDWATER SAMPLING LOG

NERT, Henderson, NV

Task Name: SWF Area Bio Treatability Study	Task Manager: D. Grady/ J. Dabbs	Task No.: M11	Date: 2022-06-21	Well ID: SWFTS-MW23
Field Samplers: G. Schuler				
Transducer Removal Time: 09:18	Transducer Redeployment Time: 10:00			General Well Condition: Good
Depth to Water (ft): 11.88	Screened Interval Top (ft): 13.8			Pump Intake Depth (ft): 26.30
Well Depth (ft): 34.00	Screened/Open Interval Bottom (ft): 33.6			Well Diameter (in): 2
Pump/Tubing Type: QED Bladder Pump & TLPE/LDPE	GW Disposal: GW-11			Equipment Decon. Method: Alconox/DI Rinse SOP
Y Dedicated Tubing Present? (Y/N)	N New Dedicated Tubing Placed? (Y/N)			
Purge Start Time: 09:27				

Time	Temp. (°C)		pH (pH Units)		Conductivity (mS/cm)		DO (mg/L)		ORP (mV)		Turbidity (NTU)		Purge Rate (mL/min)	Depth to Water (ft)	Cum. Vol. Purged (mL)	Color/Odor
	READ	CHANGE*	READ	CHANGE*	READ	CHANGE*	READ	CHANGE*	READ	CHANGE*	READ	CHANGE*				
09:27	25.4		6.75		3.486		3.39		146.8		50.6		300	11.88		Clear/None
09:30	23.5		7.04		3.399		1.48		113.1		10.1		300	11.88	900	Clear/None
09:33	23.6		7.07		3.395		1.33		102.1		7.9		300	11.88	1800	Clear/None
09:36	23.5	0%	7.08	0.0	3.388	0%	1.18	6%	94.9	5.2	6.6	<10	300	11.88	2700	Clear/None
09:39	23.5	0%	7.08	0.0	3.387	0%	1.10	0%	89.4	0.3	5.7	<10	300	11.88	3600	Clear/None
09:42	23.7	0%	7.08	0.0	3.398	0%	1.04	6%	84.8	4.9	5.4	<10	300	11.88	4500	Clear/None

Stop Purge Time: 09:43	Sample Time: 09:50	QA/QC Sample Time(s): n/a	*SWFTS-MW23*
	Sample ID: SWFTS-MW23-EM38	QA/QC Sample ID(s): n/a	

Observations/Comments: Well Condition: Good General Comments:

HACH Kit Sulfide: 0.0 mg/L Hach Kit Ferrous Iron: 0.0 mg/L

Bottle Set Summary

VOA w/ HCl	1 125 mL Plastic	500 mL Plastic	4 40 mL Amber VOA w/ HCl	250 mL Amber Glass w/ H2S04
1 125 mL w/ EDA	1 250 mL Plastic	250 mL Plastic w/ H2SO4	250 mL Plastic w/ HNO3	500 mL Amber Glass w/ H2S04

*INDICATOR PARAMETERS HAVE STABLIZED WHEN 3 CONSECUTIVE READINGS ARE WITHIN:

± 0.1 for pH; ± 3% for Cond and Temp; ± 10 mv for ORP; ± 10% or <0.5 mg/L for DO; ± 10% or <10 NTU Turbidity

LOW FLOW GROUNDWATER SAMPLING LOG

NERT, Henderson, NV

Task Name: SWF Area Bio Treatability Study	Task Manager: D. Grady/ J. Dabbs	Task No.: M11	Date: 2022-06-21	Well ID: SWFTS-MW24
Field Samplers: G. Schuler				
Transducer Removal Time: n/a	Transducer Redeployment Time: n/a			General Well Condition: Good
Depth to Water (ft): 12.45	Screened Interval Top (ft): 12.8			Pump Intake Depth (ft): 24.90
Well Depth (ft): 36.60	Screened/Open Interval Bottom (ft): 37.6			Well Diameter (in): 2
Pump/Tubing Type: QED Bladder Pump & TLPE/LDPE	GW Disposal: GW-11			Equipment Decon. Method: Alconox/DI Rinse SOP
Y Dedicated Tubing Present? (Y/N)	N New Dedicated Tubing Placed? (Y/N)			
Purge Start Time: 10:20				

Time	Temp. (°C)		pH (pH Units)		Conductivity (mS/cm)		DO (mg/L)		ORP (mV)		Turbidity (NTU)		Purge Rate (mL/min)	Depth to Water (ft)	Cum. Vol. Purged (mL)	Color/Odor
	READ	CHANGE*	READ	CHANGE*	READ	CHANGE*	READ	CHANGE*	READ	CHANGE*	READ	CHANGE*				
10:20	26.5		6.88		6.774		2.84		105.4		-57239.2		315	12.45		Clear/None
10:23	25.4		6.86		6.676		1.77		105.8		-44633.3		315	12.45	945	Clear/None
10:26	25.4		6.87		6.674		1.71		104.5		-7242.8		315	12.45	1890	Clear/None
10:29	25.3		6.86		6.657		1.49		103.0		41.6		315	12.45	2835	Clear/None
10:32	25.2	0%	6.86	0.0	6.631	0%	1.53	2%	100.6	2.6	18.7	31%	315	12.45	3780	Clear/None
10:35	25.4	0%	6.87	0.0	6.652	0%	1.52	2%	97.9	0.1	12.4	13%	315	12.45	4725	Clear/None
10:38	25.2	0%	6.86	0.0	6.638	0%	1.41	5%	95.4	2.6	11.7	17%	315	12.45	5670	Clear/None

Stop Purge Time: 10:39	Sample Time: 10:50	QA/QC Sample Time(s): n/a	*SWFTS-MW24*
	Sample ID: SWFTS-MW24-EM38	QA/QC Sample ID(s): n/a	

Observations/Comments: Well Condition: Good General Comments:

HACH Kit Sulfide: 0.0 mg/L Hach Kit Ferrous Iron: 0.0 mg/L

Bottle Set Summary

VOA w/ HCl	1 125 mL Plastic	500 mL Plastic	4 40 mL Amber VOA w/ HCl	250 mL Amber Glass w/ H2S04
1 125 mL w/ EDA	1 250 mL Plastic	250 mL Plastic w/ H2SO4	250 mL Plastic w/ HNO3	500 mL Amber Glass w/ H2S04

*INDICATOR PARAMETERS HAVE STABLIZED WHEN 3 CONSECUTIVE READINGS ARE WITHIN:

± 0.1 for pH; ± 3% for Cond and Temp; ± 10 mv for ORP; ± 10% or <0.5 mg/L for DO; ± 10% or <10 NTU Turbidity

LOW FLOW GROUNDWATER SAMPLING LOG

NERT, Henderson, NV

Task Name: SWF Area Bio Treatability Study	Task Manager: D. Grady/ J. Dabbs	Task No.: M11	Date: 2022-06-21	Well ID: SWFTS-MW25
Field Samplers: G. Schuler				
Transducer Removal Time: 08:18	Transducer Redeployment Time: 10:00			General Well Condition: Good
Depth to Water (ft): 9.99	Screened Interval Top (ft): 12.8			Pump Intake Depth (ft): 27.30
Well Depth (ft): 43.00	Screened/Open Interval Bottom (ft): 42.6			Well Diameter (in): 2
Pump/Tubing Type: QED Bladder Pump & TLPE/LDPE	GW Disposal: GW-11			Equipment Decon. Method: Alconox/DI Rinse SOP
Y Dedicated Tubing Present? (Y/N)	N New Dedicated Tubing Placed? (Y/N)			
Purge Start Time: 08:27				

Time	Temp. (°C)		pH (pH Units)		Conductivity (mS/cm)		DO (mg/L)		ORP (mV)		Turbidity (NTU)		Purge Rate (mL/min)	Depth to Water (ft)	Cum. Vol. Purged (mL)	Color/Odor
	READ	CHANGE*	READ	CHANGE*	READ	CHANGE*	READ	CHANGE*	READ	CHANGE*	READ	CHANGE*				
08:27	24.3		6.64		7.050		4.49		126.8		-69988.6		300	9.99		Clear/None
08:30	24.4		6.79		7.197		1.22		103.4		-19779.2		300	9.99	900	Clear/None
08:33	24.4	0%	6.80	0.0	7.180	0%	1.02	6%	98.8	1.8	-8288.9	<10	300	9.99	1800	Clear/None
08:36	24.4	0%	6.80	0.0	7.170	0%	0.93	3%	96.4	0.6	-10509.0	<10	300	9.99	2700	Clear/None
08:39	24.4	0%	6.80	0.0	7.176	0%	0.93	3%	95.9	1.1	-7476.5	<10	300	9.99	3600	Clear/None

Stop Purge Time: 08:40	Sample Time: 08:50	QA/QC Sample Time(s): n/a	*SWFTS-MW25*
	Sample ID: SWFTS-MW25-EM38	QA/QC Sample ID(s): n/a	

Observations/Comments: Well Condition: Good General Comments:

HACH Kit Sulfide: 0.0 mg/L Hach Kit Ferrous Iron: 0.0 mg/L

Bottle Set Summary

VOA w/ HCl	1 125 mL Plastic	500 mL Plastic	4 40 mL Amber VOA w/ HCl	250 mL Amber Glass w/ H2S04
1 125 mL w/ EDA	1 250 mL Plastic	250 mL Plastic w/ H2SO4	250 mL Plastic w/ HNO3	500 mL Amber Glass w/ H2S04

*INDICATOR PARAMETERS HAVE STABLIZED WHEN 3 CONSECUTIVE READINGS ARE WITHIN:

± 0.1 for pH; ± 3% for Cond and Temp; ± 10 mv for ORP; ± 10% or <0.5 mg/L for DO; ± 10% or <10 NTU Turbidity

LOW FLOW GROUNDWATER SAMPLING LOG

NERT, Henderson, NV

Task Name: SWF Area Bio Treatability Study	Task Manager: D. Grady/ J. Dabbs	Task No.: M11	Date: 2022-09-15	Well ID: PC-58
Field Samplers: G. Schuler				
Transducer Removal Time: n/a	Transducer Redeployment Time: n/a			General Well Condition: Good
Depth to Water (ft): 20.00	Screened Interval Top (ft): 7.8			Pump Intake Depth (ft): 22.60
Well Depth (ft): 38.45	Screened/Open Interval Bottom (ft): 32.8			Well Diameter (in): 2
Pump/Tubing Type: QED Bladder Pump & TLPE/LDPE	GW Disposal: GW-11			Equipment Decon. Method: Alconox/DI Rinse SOP
Y Dedicated Tubing Present? (Y/N)	N New Dedicated Tubing Placed? (Y/N)			
Purge Start Time: 13:15				

Time	Temp. (°C)		pH (pH Units)		Conductivity (mS/cm)		DO (mg/L)		ORP (mV)		Turbidity (NTU)		Purge Rate (mL/min)	Depth to Water (ft)	Cum. Vol. Purged (mL)	Color/Odor
	READ	CHANGE*	READ	CHANGE*	READ	CHANGE*	READ	CHANGE*	READ	CHANGE*	READ	CHANGE*				
13:15	27.5		7.61		3.195		5.11		61.2		97.8		300	20.00		Clear/None
13:18	25.2		7.25		4.063		0.90		74.1		30.8		300	20.00	900	Clear/None
13:21	25.2		7.23		4.040		0.67		71.4		24.1		300	20.00	1800	Clear/None
13:24	25.1		7.22		4.031		0.60		68.5		24.6		300	20.00	2700	Clear/None
13:27	24.9		7.22		4.022		0.72		67.0		31.6		300	20.00	3600	Clear/None
13:30	24.7		7.22		4.010		0.70		65.2		38.0		300	20.00	4500	Clear/None
13:33	24.6	0%	7.22	0.0	4.008	0%	0.68	2%	63.8	1.2	12.2	17%	300	20.00	5400	Clear/None
13:36	24.7	0%	7.22	0.0	4.006	0%	0.67	3%	62.5	0.1	16.8	13%	300	20.00	6300	Clear/None
13:39	24.7	0%	7.22	0.0	4.013	0%	0.74	6%	61.6	1.0	15.5	4%	300	20.00	7200	Clear/None

Stop Purge Time: 13:40	Sample Time: 13:45	QA/QC Sample Time(s): n/a	*PC-58*
	Sample ID: PC-58-EM39	QA/QC Sample ID(s): n/a	

Observations/Comments: Well Condition: Good General Comments:

HACH Kit Sulfide: n/a mg/L Hach Kit Ferrous Iron: n/a mg/L

Bottle Set Summary

VOA w/ HCl	1 125 mL Plastic	500 mL Plastic	4 40 mL Amber VOA w/ HCl	250 mL Amber Glass w/ H2S04
1 125 mL w/ EDA	1 250 mL Plastic	250 mL Plastic w/ H2SO4	250 mL Plastic w/ HNO3	500 mL Amber Glass w/ H2S04

*INDICATOR PARAMETERS HAVE STABLIZED WHEN 3 CONSECUTIVE READINGS ARE WITHIN:

± 0.1 for pH; ± 3% for Cond and Temp; ± 10 mv for ORP; ± 10% or <0.5 mg/L for DO; ± 10% or <10 NTU Turbidity

LOW FLOW GROUNDWATER SAMPLING LOG

NERT, Henderson, NV

Task Name: SWF Area Bio Treatability Study	Task Manager: D. Grady/ J. Dabbs	Task No.: M11	Date: 2022-09-15	Well ID: PC-88
Field Samplers: G. Schuler				
Transducer Removal Time: 11:45	Transducer Redeployment Time: 13:00			General Well Condition: Good
Depth to Water (ft): 5.98	Screened Interval Top (ft): 40.0			Pump Intake Depth (ft): 44.90
Well Depth (ft): 46.65	Screened/Open Interval Bottom (ft): 50.0			Well Diameter (in): 2
Pump/Tubing Type: QED Bladder Pump & TLPE/LDPE	GW Disposal: GW-11			Equipment Decon. Method: Alconox/DI Rinse SOP
Y Dedicated Tubing Present? (Y/N)	N New Dedicated Tubing Placed? (Y/N)			
Purge Start Time: 11:55				

Time	Temp. (°C)		pH (pH Units)		Conductivity (mS/cm)		DO (mg/L)		ORP (mV)		Turbidity (NTU)		Purge Rate (mL/min)	Depth to Water (ft)	Cum. Vol. Purged (mL)	Color/Odor
	READ	CHANGE*	READ	CHANGE*	READ	CHANGE*	READ	CHANGE*	READ	CHANGE*	READ	CHANGE*				
11:55	26.4		7.21		5.170		2.74		129.3		114.4		210	5.98		Clear/None
11:58	24.7		7.14		5.070		0.93		117.9		73.8		210	5.98	630	Clear/None
12:01	24.7		7.13		5.082		0.74		110.4		47.6		210	5.98	1260	Clear/None
12:04	24.7		7.13		5.083		0.64		103.8		31.2		210	5.98	1890	Clear/None
12:07	24.6		7.13		5.080		0.58		98.6		20.8		210	5.98	2520	Clear/None
12:10	24.2	1%	7.13	0.0	5.040	0%	0.54	3%	94.1	3.2	16.0	19%	210	5.98	3150	Clear/None
12:13	23.4	1%	7.14	0.0	4.954	0%	0.52	0%	90.8	0.1	12.1	9%	210	5.98	3780	Clear/None
12:16	23.8	0%	7.13	0.0	4.984	0%	0.50	3%	87.9	3.0	12.0	10%	210	5.98	4410	Clear/None

Stop Purge Time: 12:17	Sample Time: 12:35	QA/QC Sample Time(s): 12:35	*PC-88*
	Sample ID: PC-88-EM39	QA/QC Sample ID(s): PC-88-EM39-FD	

Observations/Comments: Well Condition: Good General Comments:

HACH Kit Sulfide: n/a mg/L Hach Kit Ferrous Iron: n/a mg/L

Bottle Set Summary

VOA w/ HCl	2 125 mL Plastic	500 mL Plastic	8 40 mL Amber VOA w/ HCl	250 mL Amber Glass w/ H2S04
2 125 mL w/ EDA	2 250 mL Plastic	250 mL Plastic w/ H2SO4	250 mL Plastic w/ HNO3	500 mL Amber Glass w/ H2S04

*INDICATOR PARAMETERS HAVE STABLIZED WHEN 3 CONSECUTIVE READINGS ARE WITHIN:

± 0.1 for pH; ± 3% for Cond and Temp; ± 10 mv for ORP; ± 10% or <0.5 mg/L for DO; ± 10% or <10 NTU Turbidity

LOW FLOW GROUNDWATER SAMPLING LOG

NERT, Henderson, NV

Task Name: SWF Area Bio Treatability Study	Task Manager: D. Grady/ J. Dabbs	Task No.: M11	Date: 2022-09-14	Well ID: PC-91
Field Samplers: G. Schuler				
Transducer Removal Time: n/a	Transducer Redeployment Time: n/a			General Well Condition: Good
Depth to Water (ft): 10.32	Screened Interval Top (ft): 11.5			Pump Intake Depth (ft): 16.00
Well Depth (ft): 19.75	Screened/Open Interval Bottom (ft): 21.5			Well Diameter (in): 2
Pump/Tubing Type: QED Bladder Pump & TLPE/LDPE	GW Disposal: GW-11			Equipment Decon. Method: Alconox/DI Rinse SOP
Y Dedicated Tubing Present? (Y/N)	N New Dedicated Tubing Placed? (Y/N)			
Purge Start Time: 07:19				

Time	Temp. (°C)		pH (pH Units)		Conductivity (mS/cm)		DO (mg/L)		ORP (mV)		Turbidity (NTU)		Purge Rate (mL/min)	Depth to Water (ft)	Cum. Vol. Purged (mL)	Color/Odor
	READ	CHANGE*	READ	CHANGE*	READ	CHANGE*	READ	CHANGE*	READ	CHANGE*	READ	CHANGE*				
07:19	25.6		6.83		5.064		0.41		-282.2		8.8		150	10.50		Clear/None
07:22	26.0	0%	6.78	0.0	5.005	1%	0.28	<0.5	-320.2	9.7	7.3	<10	150	10.50	450	Clear/None
07:25	26.0	0%	6.76	0.0	4.938	0%	0.23	<0.5	-309.9	0.6	7.8	<10	150	10.50	900	Clear/None
07:28	26.1	0%	6.74	0.0	4.885	1%	0.20	<0.5	-301.3	9.2	6.2	<10	150	10.50	1350	Clear/None

Stop Purge Time: 07:29	Sample Time: 07:35	QA/QC Sample Time(s): n/a	*PC-91*
	Sample ID: PC-91-EM39	QA/QC Sample ID(s): n/a	

Observations/Comments: Well Condition: Good General Comments:

HACH Kit Sulfide: n/a mg/L Hach Kit Ferrous Iron: n/a mg/L

Bottle Set Summary

VOA w/ HCl	1 125 mL Plastic	500 mL Plastic	4 40 mL Amber VOA w/ HCl	250 mL Amber Glass w/ H2S04
1 125 mL w/ EDA	1 250 mL Plastic	250 mL Plastic w/ H2SO4	250 mL Plastic w/ HNO3	500 mL Amber Glass w/ H2S04

*INDICATOR PARAMETERS HAVE STABLIZED WHEN 3 CONSECUTIVE READINGS ARE WITHIN:

± 0.1 for pH; ± 3% for Cond and Temp; ± 10 mv for ORP; ± 10% or <0.5 mg/L for DO; ± 10% or <10 NTU Turbidity

LOW FLOW GROUNDWATER SAMPLING LOG

NERT, Henderson, NV

Task Name: SWF Area Bio Treatability Study	Task Manager: D. Grady/ J. Dabbs	Task No.: M11	Date: 2022-09-14	Well ID: PC-92
Field Samplers: G. Schuler				
Transducer Removal Time: n/a	Transducer Redeployment Time: n/a			General Well Condition: Good
Depth to Water (ft): 9.90	Screened Interval Top (ft): 26.5			Pump Intake Depth (ft): 31.20
Well Depth (ft): 37.10	Screened/Open Interval Bottom (ft): 36.5			Well Diameter (in): 2
Pump/Tubing Type: QED Bladder Pump & TLPE/LDPE	GW Disposal: GW-11			Equipment Decon. Method: Alconox/DI Rinse SOP
Y Dedicated Tubing Present? (Y/N)	N New Dedicated Tubing Placed? (Y/N)			
Purge Start Time: 08:03				

Time	Temp. (°C)		pH (pH Units)		Conductivity (mS/cm)		DO (mg/L)		ORP (mV)		Turbidity (NTU)		Purge Rate (mL/min)	Depth to Water (ft)	Cum. Vol. Purged (mL)	Color/Odor
	READ	CHANGE*	READ	CHANGE*	READ	CHANGE*	READ	CHANGE*	READ	CHANGE*	READ	CHANGE*				
08:03	24.5		7.10		5.043		1.68		-161.2		58.6		150	9.90		Clear/None
08:06	24.5		7.04		5.123		1.02		-157.2		52.7		150	9.90	450	Clear/None
08:09	24.4		7.03		5.137		0.80		-153.1		43.9		150	9.90	900	Clear/None
08:12	24.4		7.02		5.140		0.71		-147.6		48.3		150	9.90	1350	Clear/None
08:15	24.4	0%	7.02	0.0	5.142	0%	0.63	3%	-141.6	8.2	31.4	0%	150	9.90	1800	Clear/None
08:18	24.4	0%	7.01	0.0	5.142	0%	0.69	6%	-131.6	1.8	33.1	5%	150	9.90	2250	Clear/None
08:21	24.5	0%	7.01	0.0	5.172	0%	0.63	3%	-126.9	6.5	30.0	4%	150	9.90	2700	Clear/None

Stop Purge Time: 08:22	Sample Time: 08:30	QA/QC Sample Time(s): n/a	*PC-92*
	Sample ID: PC-92-EM39	QA/QC Sample ID(s): n/a	

Observations/Comments: Well Condition: Good General Comments:

HACH Kit Sulfide: n/a mg/L Hach Kit Ferrous Iron: n/a mg/L

Bottle Set Summary

VOA w/ HCl	1 125 mL Plastic	500 mL Plastic	4 40 mL Amber VOA w/ HCl	250 mL Amber Glass w/ H2S04
1 125 mL w/ EDA	1 250 mL Plastic	250 mL Plastic w/ H2SO4	250 mL Plastic w/ HNO3	500 mL Amber Glass w/ H2S04

*INDICATOR PARAMETERS HAVE STABLIZED WHEN 3 CONSECUTIVE READINGS ARE WITHIN:

± 0.1 for pH; ± 3% for Cond and Temp; ± 10 mv for ORP; ± 10% or <0.5 mg/L for DO; ± 10% or <10 NTU Turbidity

LOW FLOW GROUNDWATER SAMPLING LOG

NERT, Henderson, NV

Task Name: SWF Area Bio Treatability Study	Task Manager: D. Grady/ J. Dabbs	Task No.: M11	Date: 2022-09-15	Well ID: PC-94
Field Samplers: G. Schuler				
Transducer Removal Time: n/a	Transducer Redeployment Time: n/a			General Well Condition: Good
Depth to Water (ft): 12.82	Screened Interval Top (ft): 9.5			Pump Intake Depth (ft): 16.30
Well Depth (ft): 19.95	Screened/Open Interval Bottom (ft): 19.5			Well Diameter (in): 2
Pump/Tubing Type: QED Bladder Pump & TLPE/LDPE	GW Disposal: GW-11			Equipment Decon. Method: Alconox/DI Rinse SOP
Y Dedicated Tubing Present? (Y/N)	N New Dedicated Tubing Placed? (Y/N)			
Purge Start Time: 10:52				

Time	Temp. (°C)		pH (pH Units)		Conductivity (mS/cm)		DO (mg/L)		ORP (mV)		Turbidity (NTU)		Purge Rate (mL/min)	Depth to Water (ft)	Cum. Vol. Purged (mL)	Color/Odor
	READ	CHANGE*	READ	CHANGE*	READ	CHANGE*	READ	CHANGE*	READ	CHANGE*	READ	CHANGE*				
10:52	26.4		6.86		6.075		1.04		102.1		283.8		270	12.95		Clear/None
10:55	26.2		6.86		6.073		0.75		101.3		234.4		270	12.95	810	Clear/None
10:58	26.2		6.86		6.065		0.64		103.3		196.7		270	12.95	1620	Clear/None
11:01	26.1		6.86		6.059		0.57		103.5		181.8		270	12.95	2430	Clear/None
11:04	26.1		6.86		6.069		0.53		102.5		211.5		270	12.95	3240	Clear/None
11:07	26.2		6.86		6.086		0.51		100.3		135.6		270	12.95	4050	Clear/None
11:10	26.1	0%	6.86	0.0	6.095	0%	0.52	1%	98.6	1.9	80.3	10%	270	12.95	4860	Clear/None
11:13	26.1	0%	6.86	0.0	6.093	0%	0.51	0%	96.3	0.4	70.8	2%	270	12.95	5670	Clear/None
11:16	26.2	0%	6.86	0.0	6.101	0%	0.50	1%	95.3	1.4	67.6	7%	270	12.95	6480	Clear/None

Stop Purge Time: 11:17	Sample Time: 11:25	QA/QC Sample Time(s): n/a	*PC-94*
	Sample ID: PC-94-EM39	QA/QC Sample ID(s): n/a	

Observations/Comments: Well Condition: Good General Comments:

HACH Kit Sulfide: n/a mg/L Hach Kit Ferrous Iron: n/a mg/L

Bottle Set Summary

VOA w/ HCl	1 125 mL Plastic	500 mL Plastic	4 40 mL Amber VOA w/ HCl	250 mL Amber Glass w/ H2S04
1 125 mL w/ EDA	1 250 mL Plastic	250 mL Plastic w/ H2SO4	250 mL Plastic w/ HNO3	500 mL Amber Glass w/ H2S04

*INDICATOR PARAMETERS HAVE STABLIZED WHEN 3 CONSECUTIVE READINGS ARE WITHIN:

± 0.1 for pH; ± 3% for Cond and Temp; ± 10 mv for ORP; ± 10% or <0.5 mg/L for DO; ± 10% or <10 NTU Turbidity

LOW FLOW GROUNDWATER SAMPLING LOG

NERT, Henderson, NV

Task Name: SWF Area Bio Treatability Study	Task Manager: D. Grady/ J. Dabbs	Task No.: M11	Date: 2022-09-13	Well ID: SWFTS-MW01
Field Samplers: G. Schuler				
Transducer Removal Time: n/a	Transducer Redeployment Time: n/a			General Well Condition: Good
Depth to Water (ft): 14.40	Screened Interval Top (ft): 24.2			Pump Intake Depth (ft): 31.30
Well Depth (ft): 39.40	Screened/Open Interval Bottom (ft): 38.9			Well Diameter (in): 2
Pump/Tubing Type: QED Bladder Pump & TLPE/LDPE	GW Disposal: GW-11			Equipment Decon. Method: Alconox/DI Rinse SOP
Y Dedicated Tubing Present? (Y/N)	N New Dedicated Tubing Placed? (Y/N)			
Purge Start Time: 11:01				

Time	Temp. (°C)		pH (pH Units)		Conductivity (mS/cm)		DO (mg/L)		ORP (mV)		Turbidity (NTU)		Purge Rate (mL/min)	Depth to Water (ft)	Cum. Vol. Purged (mL)	Color/Odor
	READ	CHANGE*	READ	CHANGE*	READ	CHANGE*	READ	CHANGE*	READ	CHANGE*	READ	CHANGE*				
11:01	37.2		6.95		6.863		3.99		113.0		107.2		105	14.40		Clear/None
11:04	34.0		6.81		6.984		2.76		129.3		108.0		105	14.40	315	Clear/None
11:07	32.4		6.77		6.784		2.13		133.9		89.4		105	14.40	630	Clear/None
11:10	31.4		6.76		6.651		1.73		135.8		54.2		75	14.40	855	Clear/None
11:13	30.8		6.76		6.579		1.48		136.9		34.1		75	14.40	1080	Clear/None
11:16	29.9		6.76		6.493		1.33		137.2		25.6		75	14.40	1305	Clear/None
11:19	28.3	0%	6.76	0.0	6.284	0%	1.17	9%	137.3	0.5	20.2	2%	75	14.40	1530	Clear/None
11:22	27.9	0%	6.76	0.0	6.217	0%	1.06	0%	137.8	0.0	20.1	3%	75	14.40	1755	Clear/None
11:25	28.2	0%	6.75	0.0	6.235	0%	0.98	8%	138.3	0.5	22.1	6%	75	14.40	1980	Clear/None

Stop Purge Time: 11:26	Sample Time: 11:45	QA/QC Sample Time(s): n/a	*SWFTS-MW01*
	Sample ID: SWFTS-MW01-EM39	QA/QC Sample ID(s): n/a	

Observations/Comments: Well Condition: Good General Comments:

HACH Kit Sulfide: n/a mg/L Hach Kit Ferrous Iron: n/a mg/L

Bottle Set Summary

VOA w/ HCl	1 125 mL Plastic	500 mL Plastic	4 40 mL Amber VOA w/ HCl	250 mL Amber Glass w/ H2S04
1 125 mL w/ EDA	1 250 mL Plastic	250 mL Plastic w/ H2SO4	250 mL Plastic w/ HNO3	500 mL Amber Glass w/ H2S04

*INDICATOR PARAMETERS HAVE STABLIZED WHEN 3 CONSECUTIVE READINGS ARE WITHIN:

± 0.1 for pH; ± 3% for Cond and Temp; ± 10 mv for ORP; ± 10% or <0.5 mg/L for DO; ± 10% or <10 NTU Turbidity

LOW FLOW GROUNDWATER SAMPLING LOG

NERT, Henderson, NV

Task Name: SWF Area Bio Treatability Study	Task Manager: D. Grady/ J. Dabbs	Task No.: M11	Date: 2022-09-14	Well ID: SWFTS-MW02
Field Samplers: G. Schuler				
Transducer Removal Time: 11:36	Transducer Redeployment Time: 13:00			General Well Condition: Good
Depth to Water (ft): 11.55	Screened Interval Top (ft): 18.4			Pump Intake Depth (ft): 25.50
Well Depth (ft): 31.05	Screened/Open Interval Bottom (ft): 33.1			Well Diameter (in): 2
Pump/Tubing Type: QED Bladder Pump & TLPE/LDPE	GW Disposal: GW-11			Equipment Decon. Method: Alconox/DI Rinse SOP
Y Dedicated Tubing Present? (Y/N)	N New Dedicated Tubing Placed? (Y/N)			
Purge Start Time: 11:41				

Time	Temp. (°C)		pH (pH Units)		Conductivity (mS/cm)		DO (mg/L)		ORP (mV)		Turbidity (NTU)		Purge Rate (mL/min)	Depth to Water (ft)	Cum. Vol. Purged (mL)	Color/Odor
	READ	CHANGE*	READ	CHANGE*	READ	CHANGE*	READ	CHANGE*	READ	CHANGE*	READ	CHANGE*				
11:41	26.6		6.78		7.289		3.04		38.2		194.6		300	11.55		Clear/None
11:44	26.1		6.67		7.357		0.73		23.2		108.0		300	11.55	900	Clear/None
11:47	26.1		6.67		7.356		0.59		12.8		65.1		300	11.55	1800	Clear/None
11:50	26.0		6.66		7.364		0.49		6.2		55.6		300	11.55	2700	Clear/None
11:53	26.0	0%	6.65	0.0	7.367	0%	0.44	<0.5	2.1	2.3	29.8	16%	300	11.55	3600	Clear/None
11:56	26.0	0%	6.65	0.0	7.371	0%	0.41	<0.5	-0.8	0.6	24.3	5%	300	11.55	4500	Clear/None
11:59	26.1	0%	6.65	0.0	7.371	0%	0.39	<0.5	-1.9	1.7	22.8	11%	300	11.55	5400	Clear/None

Stop Purge Time: 12:00	Sample Time: 12:10	QA/QC Sample Time(s): n/a	*SWFTS-MW02*
	Sample ID: SWFTS-MW02-EM39	QA/QC Sample ID(s): n/a	

Observations/Comments: Well Condition: Good General Comments:

HACH Kit Sulfide: n/a mg/L Hach Kit Ferrous Iron: n/a mg/L

Bottle Set Summary

VOA w/ HCl	1 125 mL Plastic	500 mL Plastic	4 40 mL Amber VOA w/ HCl	250 mL Amber Glass w/ H2S04
1 125 mL w/ EDA	1 250 mL Plastic	250 mL Plastic w/ H2SO4	250 mL Plastic w/ HNO3	500 mL Amber Glass w/ H2S04

*INDICATOR PARAMETERS HAVE STABLIZED WHEN 3 CONSECUTIVE READINGS ARE WITHIN:

± 0.1 for pH; ± 3% for Cond and Temp; ± 10 mv for ORP; ± 10% or <0.5 mg/L for DO; ± 10% or <10 NTU Turbidity

LOW FLOW GROUNDWATER SAMPLING LOG

NERT, Henderson, NV

Task Name: SWF Area Bio Treatability Study	Task Manager: D. Grady/ J. Dabbs	Task No.: M11	Date: 2022-09-13	Well ID: SWFTS-MW03
Field Samplers: G. Schuler				
Transducer Removal Time: 06:54	Transducer Redeployment Time: 08:01			General Well Condition: Good
Depth to Water (ft): 13.18	Screened Interval Top (ft): 27.2			Pump Intake Depth (ft): 34.40
Well Depth (ft): 41.50	Screened/Open Interval Bottom (ft): 42.1			Well Diameter (in): 2
Pump/Tubing Type: QED Bladder Pump & TLPE/LDPE	GW Disposal: GW-11			Equipment Decon. Method: Alconox/DI Rinse SOP
Y Dedicated Tubing Present? (Y/N)	N New Dedicated Tubing Placed? (Y/N)			
Purge Start Time: 07:48				

Time	Temp. (°C)		pH (pH Units)		Conductivity (mS/cm)		DO (mg/L)		ORP (mV)		Turbidity (NTU)		Purge Rate (mL/min)	Depth to Water (ft)	Cum. Vol. Purged (mL)	Color/Odor
	READ	CHANGE*	READ	CHANGE*	READ	CHANGE*	READ	CHANGE*	READ	CHANGE*	READ	CHANGE*				
07:48	26.1		6.86		5.919		1.86		152.7		20.8		150	13.18		Clear/None
07:51	25.5		6.84		5.860		1.12		146.3		28.4		150	13.18	450	Clear/None
07:54	25.5		6.82		5.850		0.92		142.7		20.8		150	13.18	900	Clear/None
07:57	25.4		6.84		5.847		0.83		138.6		25.1		150	13.18	1350	Clear/None
08:00	25.4		6.83		5.847		0.77		135.8		33.1		150	13.18	1800	Clear/None
08:03	25.4		6.83		5.851		0.72		133.2		17.9		150	13.18	2250	Clear/None
08:06	25.4		6.84		5.852		0.70		130.3		11.0		150	13.18	2700	Clear/None
08:09	25.4	0%	6.84	0.0	5.849	0%	0.68	0%	128.0	1.8	6.8	<10	150	13.18	3150	Clear/None
08:12	25.4	0%	6.84	0.0	5.848	0%	0.66	1%	125.9	0.3	9.3	<10	150	13.18	3600	Clear/None
08:15	25.5	0%	6.84	0.0	5.860	0%	0.68	0%	124.8	1.4	6.0	<10	150	13.18	4050	Clear/None

Stop Purge Time: 08:16	Sample Time: 08:25	QA/QC Sample Time(s): 08:25	*SWFTS-MW03*
	Sample ID: SWFTS-MW03-EM39	QA/QC Sample ID(s): SWFTS-MW03-EM39-MS/MSD	

Observations/Comments: Well Condition: Good General Comments:

HACH Kit Sulfide: n/a mg/L Hach Kit Ferrous Iron: n/a mg/L

Bottle Set Summary

VOA w/ HCl	2 125 mL Plastic	500 mL Plastic	8 40 mL Amber VOA w/ HCl	250 mL Amber Glass w/ H2S04
2 125 mL w/ EDA	2 250 mL Plastic	250 mL Plastic w/ H2SO4	250 mL Plastic w/ HNO3	500 mL Amber Glass w/ H2SO4

*INDICATOR PARAMETERS HAVE STABLIZED WHEN 3 CONSECUTIVE READINGS ARE WITHIN:

± 0.1 for pH; ± 3% for Cond and Temp; ± 10 mv for ORP; ± 10% or <0.5 mg/L for DO; ± 10% or <10 NTU Turbidity

LOW FLOW GROUNDWATER SAMPLING LOG

NERT, Henderson, NV

Task Name: SWF Area Bio Treatability Study	Task Manager: D. Grady/ J. Dabbs	Task No.: M11	Date: 2022-09-14	Well ID: SWFTS-MW04
Field Samplers: G. Schuler				
Transducer Removal Time: n/a	Transducer Redeployment Time: n/a			General Well Condition: Good
Depth to Water (ft): 9.03	Screened Interval Top (ft): 25.8			Pump Intake Depth (ft): 32.80
Well Depth (ft): 39.75	Screened/Open Interval Bottom (ft): 40.4			Well Diameter (in): 2
Pump/Tubing Type: QED Bladder Pump & TLPE/LDPE	GW Disposal: GW-11			Equipment Decon. Method: Alconox/DI Rinse SOP
Y Dedicated Tubing Present? (Y/N)	N New Dedicated Tubing Placed? (Y/N)			
Purge Start Time: 10:49				

Time	Temp. (°C)		pH (pH Units)		Conductivity (mS/cm)		DO (mg/L)		ORP (mV)		Turbidity (NTU)		Purge Rate (mL/min)	Depth to Water (ft)	Cum. Vol. Purged (mL)	Color/Odor
	READ	CHANGE*	READ	CHANGE*	READ	CHANGE*	READ	CHANGE*	READ	CHANGE*	READ	CHANGE*				
10:49	24.9		7.24		4.328		3.62		11.4		37.0		225	9.06		Clear/None
10:52	24.5		7.06		4.411		0.93		-1.9		50.4		225	9.06	675	Clear/None
10:55	24.4		7.05		4.467		0.78		-8.4		60.4		225	9.06	1350	Clear/None
10:58	24.5		7.04		4.530		0.61		-13.6		60.5		225	9.06	2025	Clear/None
11:01	24.4	0%	7.04	0.0	4.558	0%	0.51	8%	-17.8	2.8	54.6	0%	225	9.06	2700	Clear/None
11:04	24.4	0%	7.04	0.0	4.548	0%	0.47	<0.5	-20.9	0.3	56.0	1%	225	9.06	3375	Clear/None
11:07	24.4	0%	7.04	0.0	4.558	0%	0.43	<0.5	-23.0	2.4	54.5	0%	225	9.06	4050	Clear/None

Stop Purge Time: 11:08	Sample Time: 11:15	QA/QC Sample Time(s): n/a	*SWFTS-MW04*
	Sample ID: SWFTS-MW04-EM39	QA/QC Sample ID(s): n/a	

Observations/Comments: Well Condition: Good General Comments:

HACH Kit Sulfide: n/a mg/L Hach Kit Ferrous Iron: n/a mg/L

Bottle Set Summary

VOA w/ HCl	1 125 mL Plastic	500 mL Plastic	4 40 mL Amber VOA w/ HCl	250 mL Amber Glass w/ H2S04
1 125 mL w/ EDA	1 250 mL Plastic	250 mL Plastic w/ H2SO4	250 mL Plastic w/ HNO3	500 mL Amber Glass w/ H2S04

*INDICATOR PARAMETERS HAVE STABLIZED WHEN 3 CONSECUTIVE READINGS ARE WITHIN:

± 0.1 for pH; ± 3% for Cond and Temp; ± 10 mv for ORP; ± 10% or <0.5 mg/L for DO; ± 10% or <10 NTU Turbidity

LOW FLOW GROUNDWATER SAMPLING LOG

NERT, Henderson, NV

Task Name: SWF Area Bio Treatability Study	Task Manager: D. Grady/ J. Dabbs	Task No.: M11	Date: 2022-09-14	Well ID: SWFTS-MW06A
Field Samplers: G. Schuler				
Transducer Removal Time: n/a	Transducer Redeployment Time: n/a			General Well Condition: Good
Depth to Water (ft): 4.73	Screened Interval Top (ft): 11.8			Pump Intake Depth (ft): 16.20
Well Depth (ft): 20.90	Screened/Open Interval Bottom (ft): 21.4			Well Diameter (in): 2
Pump/Tubing Type: QED Bladder Pump & TLPE/LDPE	GW Disposal: GW-11			Equipment Decon. Method: Alconox/DI Rinse SOP
Y Dedicated Tubing Present? (Y/N)	N New Dedicated Tubing Placed? (Y/N)			
Purge Start Time: 08:57				

Time	Temp. (°C)		pH (pH Units)		Conductivity (mS/cm)		DO (mg/L)		ORP (mV)		Turbidity (NTU)		Purge Rate (mL/min)	Depth to Water (ft)	Cum. Vol. Purged (mL)	Color/Odor
	READ	CHANGE*	READ	CHANGE*	READ	CHANGE*	READ	CHANGE*	READ	CHANGE*	READ	CHANGE*				
08:57	24.5		7.36		1.477		3.84		-51.7		110.3		300	4.73		Clear/None
09:00	23.7		7.17		2.880		0.77		-62.6		119.6		300	4.73	900	Clear/None
09:03	23.6		7.14		2.870		0.58		-62.0		131.2		300	4.73	1800	Clear/None
09:06	23.6		7.14		2.864		0.60		-61.2		38.7		300	4.73	2700	Clear/None
09:09	23.6		7.14		2.857		0.42		-64.9		37.4		300	4.73	3600	Clear/None
09:12	23.5	0%	7.14	0.0	2.849	0%	0.39	<0.5	-66.7	0.1	38.0	35%	300	4.73	4500	Clear/None
09:15	23.5	0%	7.13	0.0	2.846	0%	0.35	<0.5	-66.9	0.3	23.0	18%	300	4.73	5400	Clear/None
09:18	23.5	0%	7.13	0.0	2.846	0%	0.34	<0.5	-66.2	0.4	23.4	16%	300	4.73	6300	Clear/None

Stop Purge Time: 09:19	Sample Time: 09:30	QA/QC Sample Time(s): 09:30	*SWFTS-MW06A*
	Sample ID: SWFTS-MW06A-EM39	QA/QC Sample ID(s): SWFTS-MW06A-EM39-FD	

Observations/Comments: Well Condition: Good General Comments:

HACH Kit Sulfide: n/a mg/L Hach Kit Ferrous Iron: n/a mg/L

Bottle Set Summary

VOA w/ HCl	2 125 mL Plastic	500 mL Plastic	8 40 mL Amber VOA w/ HCl	250 mL Amber Glass w/ H2S04
2 125 mL w/ EDA	2 250 mL Plastic	250 mL Plastic w/ H2SO4	250 mL Plastic w/ HNO3	500 mL Amber Glass w/ H2SO4

*INDICATOR PARAMETERS HAVE STABLIZED WHEN 3 CONSECUTIVE READINGS ARE WITHIN:

± 0.1 for pH; ± 3% for Cond and Temp; ± 10 mv for ORP; ± 10% or <0.5 mg/L for DO; ± 10% or <10 NTU Turbidity

LOW FLOW GROUNDWATER SAMPLING LOG

NERT, Henderson, NV

Task Name: SWF Area Bio Treatability Study	Task Manager: D. Grady/ J. Dabbs	Task No.: M11	Date: 2022-09-14	Well ID: SWFTS-MW06B
Field Samplers: G. Schuler				
Transducer Removal Time: 09:44	Transducer Redeployment Time: 11:00			General Well Condition: Good
Depth to Water (ft): 4.90	Screened Interval Top (ft): 25.9			Pump Intake Depth (ft): 30.30
Well Depth (ft): 35.10	Screened/Open Interval Bottom (ft): 35.5			Well Diameter (in): 2
Pump/Tubing Type: QED Bladder Pump & TLPE/LDPE	GW Disposal: GW-11			Equipment Decon. Method: Alconox/DI Rinse SOP
Y Dedicated Tubing Present? (Y/N)	N New Dedicated Tubing Placed? (Y/N)			
Purge Start Time: 09:52				

Time	Temp. (°C)		pH (pH Units)		Conductivity (mS/cm)		DO (mg/L)		ORP (mV)		Turbidity (NTU)		Purge Rate (mL/min)	Depth to Water (ft)	Cum. Vol. Purged (mL)	Color/Odor
	READ	CHANGE*	READ	CHANGE*	READ	CHANGE*	READ	CHANGE*	READ	CHANGE*	READ	CHANGE*				
09:52	24.1		7.28		2.993		3.84		-0.6		242.8		300	4.90		Clear/None
09:55	23.4		7.14		2.949		1.48		-12.5		383.5		300	4.90	900	Clear/None
09:58	23.3		7.13		2.948		0.74		-23.4		270.3		300	4.90	1800	Clear/None
10:01	23.2		7.13		2.944		0.50		-30.4		474.2		300	4.90	2700	Clear/None
10:04	23.2	0%	7.12	0.0	2.937	0%	0.44	<0.5	-34.2	2.0	172.9	14%	300	4.90	3600	Clear/None
10:07	23.2	0%	7.12	0.0	2.937	0%	0.39	<0.5	-37.0	0.8	140.9	6%	300	4.90	4500	Clear/None
10:10	23.5	0%	7.12	0.0	2.946	0%	0.41	<0.5	-37.4	1.2	140.1	7%	300	4.90	5400	Clear/None

Stop Purge Time: 10:11	Sample Time: 10:20	QA/QC Sample Time(s): n/a	*SWFTS-MW06B*
	Sample ID: SWFTS-MW06B-EM39	QA/QC Sample ID(s): n/a	

Observations/Comments: Well Condition: Good General Comments:

HACH Kit Sulfide: n/a mg/L Hach Kit Ferrous Iron: n/a mg/L

Bottle Set Summary

VOA w/ HCl	1 125 mL Plastic	500 mL Plastic	4 40 mL Amber VOA w/ HCl	250 mL Amber Glass w/ H2S04
1 125 mL w/ EDA	1 250 mL Plastic	250 mL Plastic w/ H2SO4	250 mL Plastic w/ HNO3	500 mL Amber Glass w/ H2S04

*INDICATOR PARAMETERS HAVE STABLIZED WHEN 3 CONSECUTIVE READINGS ARE WITHIN:

± 0.1 for pH; ± 3% for Cond and Temp; ± 10 mv for ORP; ± 10% or <0.5 mg/L for DO; ± 10% or <10 NTU Turbidity

LOW FLOW GROUNDWATER SAMPLING LOG

NERT, Henderson, NV

Task Name: SWF Area Bio Treatability Study	Task Manager: D. Grady/ J. Dabbs	Task No.: M11	Date: 2022-09-14	Well ID: SWFTS-MW07A
Field Samplers: G. Schuler				
Transducer Removal Time: n/a	Transducer Redeployment Time: n/a			General Well Condition: Good
Depth to Water (ft): 12.08	Screened Interval Top (ft): 15.0			Pump Intake Depth (ft): 22.00
Well Depth (ft): 29.85	Screened/Open Interval Bottom (ft): 29.5			Well Diameter (in): 4
Pump/Tubing Type: QED Bladder Pump & TLPE/LDPE	GW Disposal: GW-11			Equipment Decon. Method: Alconox/DI Rinse SOP
Y Dedicated Tubing Present? (Y/N)	N New Dedicated Tubing Placed? (Y/N)			
Purge Start Time: 12:27				

Time	Temp. (°C)		pH (pH Units)		Conductivity (mS/cm)		DO (mg/L)		ORP (mV)		Turbidity (NTU)		Purge Rate (mL/min)	Depth to Water (ft)	Cum. Vol. Purged (mL)	Color/Odor
	READ	CHANGE*	READ	CHANGE*	READ	CHANGE*	READ	CHANGE*	READ	CHANGE*	READ	CHANGE*				
12:27	28.0		7.43		0.411		6.39		28.9		64.0		300	12.08		Clear/None
12:30	25.5		6.83		6.604		1.04		27.3		23.5		300	12.08	900	Clear/None
12:33	25.5		6.82		6.582		0.99		23.4		7.3		300	12.08	1800	Clear/None
12:36	25.4		6.82		6.570		0.93		20.8		11.9		300	12.08	2700	Clear/None
12:39	25.4	0%	6.82	0.0	6.567	0%	0.88	2%	19.8	0.7	14.2	57%	300	12.08	3600	Clear/None
12:42	25.3	0%	6.82	0.0	6.562	0%	0.95	5%	19.2	0.1	6.7	<10	300	12.08	4500	Clear/None
12:45	25.4	0%	6.82	0.0	6.552	0%	0.88	2%	18.2	0.9	6.1	<10	300	12.08	5400	Clear/None

Stop Purge Time: 12:46	Sample Time: 12:55	QA/QC Sample Time(s): n/a	*SWFTS-MW07A*
	Sample ID: SWFTS-MW07A-EM39	QA/QC Sample ID(s): n/a	

Observations/Comments: Well Condition: Good General Comments:

HACH Kit Sulfide: n/a mg/L Hach Kit Ferrous Iron: n/a mg/L

Bottle Set Summary

VOA w/ HCl	1 125 mL Plastic	500 mL Plastic	4 40 mL Amber VOA w/ HCl	250 mL Amber Glass w/ H2S04
1 125 mL w/ EDA	1 250 mL Plastic	250 mL Plastic w/ H2SO4	250 mL Plastic w/ HNO3	500 mL Amber Glass w/ H2S04

*INDICATOR PARAMETERS HAVE STABLIZED WHEN 3 CONSECUTIVE READINGS ARE WITHIN:

± 0.1 for pH; ± 3% for Cond and Temp; ± 10 mv for ORP; ± 10% or <0.5 mg/L for DO; ± 10% or <10 NTU Turbidity

LOW FLOW GROUNDWATER SAMPLING LOG

NERT, Henderson, NV

Task Name: SWF Area Bio Treatability Study	Task Manager: D. Grady/ J. Dabbs	Task No.: M11	Date: 2022-09-14	Well ID: SWFTS-MW07B
Field Samplers: G. Schuler				
Transducer Removal Time: 13:06	Transducer Redeployment Time: 14:00			General Well Condition: Good
Depth to Water (ft): 11.75	Screened Interval Top (ft): 33.8			Pump Intake Depth (ft): 35.70
Well Depth (ft): 38.70	Screened/Open Interval Bottom (ft): 38.3			Well Diameter (in): 2
Pump/Tubing Type: QED Bladder Pump & TLPE/LDPE	GW Disposal: GW-11			Equipment Decon. Method: Alconox/DI Rinse SOP
Y Dedicated Tubing Present? (Y/N)	N New Dedicated Tubing Placed? (Y/N)			
Purge Start Time: 13:10				

Time	Temp. (°C)		pH (pH Units)		Conductivity (mS/cm)		DO (mg/L)		ORP (mV)		Turbidity (NTU)		Purge Rate (mL/min)	Depth to Water (ft)	Cum. Vol. Purged (mL)	Color/Odor
	READ	CHANGE*	READ	CHANGE*	READ	CHANGE*	READ	CHANGE*	READ	CHANGE*	READ	CHANGE*				
13:10	28.0		7.17		5.291		3.33		38.8		70.4		300	11.75		Clear/None
13:13	27.1		6.95		5.651		0.98		29.8		82.8		300	11.75	900	Clear/None
13:16	27.1		6.86		5.876		0.67		26.0		68.3		300	11.75	1800	Clear/None
13:19	27.0		6.83		5.895		0.50		20.1		37.0		300	11.75	2700	Clear/None
13:22	26.9		6.83		5.893		0.44		15.9		27.8		300	11.75	3600	Clear/None
13:25	26.9		6.82		5.885		0.41		12.7		23.9		300	11.75	4500	Clear/None
13:28	26.9		6.82		5.874		0.38		10.4		20.2		300	11.75	5400	Clear/None
13:31	27.0	0%	6.82	0.0	5.881	0%	0.36	<0.5	8.4	1.4	15.3	17%	300	11.75	6300	Clear/None
13:34	27.0	0%	6.81	0.0	5.880	0%	0.34	<0.5	6.9	0.1	12.3	5%	300	11.75	7200	Clear/None
13:37	26.9	0%	6.81	0.0	5.863	0%	0.34	<0.5	5.8	1.2	11.4	12%	300	11.75	8100	Clear/None

Stop Purge Time: 13:38	Sample Time: 13:45	QA/QC Sample Time(s): n/a	*SWFTS-MW07B*
	Sample ID: SWFTS-MW07B-EM39	QA/QC Sample ID(s): n/a	

Observations/Comments: Well Condition: Good General Comments:

HACH Kit Sulfide: n/a mg/L Hach Kit Ferrous Iron: n/a mg/L

Bottle Set Summary

VOA w/ HCl	1 125 mL Plastic	500 mL Plastic	4 40 mL Amber VOA w/ HCl	250 mL Amber Glass w/ H2S04
1 125 mL w/ EDA	1 250 mL Plastic	250 mL Plastic w/ H2SO4	250 mL Plastic w/ HNO3	500 mL Amber Glass w/ H2SO4

*INDICATOR PARAMETERS HAVE STABLIZED WHEN 3 CONSECUTIVE READINGS ARE WITHIN:

± 0.1 for pH; ± 3% for Cond and Temp; ± 10 mv for ORP; ± 10% or <0.5 mg/L for DO; ± 10% or <10 NTU Turbidity

LOW FLOW GROUNDWATER SAMPLING LOG

NERT, Henderson, NV

Task Name: SWF Area Bio Treatability Study	Task Manager: D. Grady/ J. Dabbs	Task No.: M11	Date: 2022-09-16	Well ID: SWFTS-MW09A
Field Samplers: G. Schuler				
Transducer Removal Time: n/a	Transducer Redeployment Time: n/a			General Well Condition: Good
Depth to Water (ft): 13.36	Screened Interval Top (ft): 19.3			Pump Intake Depth (ft): 23.70
Well Depth (ft): 28.98	Screened/Open Interval Bottom (ft): 28.9			Well Diameter (in): 4
Pump/Tubing Type: QED Bladder Pump & TLPE/LDPE	GW Disposal: GW-11			Equipment Decon. Method: Alconox/DI Rinse SOP
Y Dedicated Tubing Present? (Y/N)	N New Dedicated Tubing Placed? (Y/N)			
Purge Start Time: 09:34				

Time	Temp. (°C)		pH (pH Units)		Conductivity (mS/cm)		DO (mg/L)		ORP (mV)		Turbidity (NTU)		Purge Rate (mL/min)	Depth to Water (ft)	Cum. Vol. Purged (mL)	Color/Odor
	READ	CHANGE*	READ	CHANGE*	READ	CHANGE*	READ	CHANGE*	READ	CHANGE*	READ	CHANGE*				
09:34	25.9		6.82		5.830		1.54		149.3		1.1		180	13.36		Clear/None
09:37	25.7		6.80		5.796		0.94		146.2		1.8		180	13.36	540	Clear/None
09:40	25.6		6.80		5.785		0.79		142.3		2.4		180	13.36	1080	Clear/None
09:43	25.6		6.78		5.787		0.71		139.9		4.8		180	13.36	1620	Clear/None
09:46	25.6	0%	6.79	0.0	5.791	0%	0.64	6%	137.2	2.0	7.5	<10	180	13.36	2160	Clear/None
09:49	25.7	0%	6.78	0.0	5.802	0%	0.60	0%	135.2	0.0	7.5	<10	180	13.36	2700	Clear/None
09:52	25.7	0%	6.78	0.0	5.806	0%	0.57	5%	133.2	2.0	4.0	<10	180	13.36	3240	Clear/None

Stop Purge Time: 09:53	Sample Time: 10:00	QA/QC Sample Time(s): n/a	*SWFTS-MW09A*
	Sample ID: SWFTS-MW09A-EM39	QA/QC Sample ID(s): n/a	

Observations/Comments: Well Condition: Good General Comments:

HACH Kit Sulfide: n/a mg/L Hach Kit Ferrous Iron: n/a mg/L

Bottle Set Summary

VOA w/ HCl	1 125 mL Plastic	500 mL Plastic	4 40 mL Amber VOA w/ HCl	250 mL Amber Glass w/ H2S04
1 125 mL w/ EDA	1 250 mL Plastic	250 mL Plastic w/ H2SO4	250 mL Plastic w/ HNO3	500 mL Amber Glass w/ H2S04

*INDICATOR PARAMETERS HAVE STABLIZED WHEN 3 CONSECUTIVE READINGS ARE WITHIN:

± 0.1 for pH; ± 3% for Cond and Temp; ± 10 mv for ORP; ± 10% or <0.5 mg/L for DO; ± 10% or <10 NTU Turbidity

LOW FLOW GROUNDWATER SAMPLING LOG

NERT, Henderson, NV

Task Name: SWF Area Bio Treatability Study	Task Manager: D. Grady/ J. Dabbs	Task No.: M11	Date: 2022-09-13	Well ID: SWFTS-MW09B
Field Samplers: G. Schuler				
Transducer Removal Time: n/a	Transducer Redeployment Time: n/a			General Well Condition: Good
Depth to Water (ft): 13.49	Screened Interval Top (ft): 34.4			Pump Intake Depth (ft): 36.20
Well Depth (ft): 39.50	Screened/Open Interval Bottom (ft): 39.0			Well Diameter (in): 2
Pump/Tubing Type: QED Bladder Pump & TLPE/LDPE	GW Disposal: GW-11			Equipment Decon. Method: Alconox/DI Rinse SOP
Y Dedicated Tubing Present? (Y/N)	N New Dedicated Tubing Placed? (Y/N)			
Purge Start Time: 06:56				

Time	Temp. (°C)		pH (pH Units)		Conductivity (mS/cm)		DO (mg/L)		ORP (mV)		Turbidity (NTU)		Purge Rate (mL/min)	Depth to Water (ft)	Cum. Vol. Purged (mL)	Color/Odor
	READ	CHANGE*	READ	CHANGE*	READ	CHANGE*	READ	CHANGE*	READ	CHANGE*	READ	CHANGE*				
06:56	23.5		6.92		3.161		2.09		138.7		5.2		250	13.49		Clear/None
06:59	23.2		6.89		3.233		1.62		135.7		11.1		250	13.49	750	Clear/None
07:02	23.0	0%	6.89	0.0	3.296	2%	1.26	0%	134.4	0.0	5.2	<10	250	13.49	1500	Clear/None
07:05	23.0	0%	6.89	0.0	3.370	0%	1.24	2%	134.4	0.0	2.6	<10	250	13.49	2250	Clear/None
07:08	22.9	0%	6.89	0.0	3.431	1%	1.31	3%	134.5	0.1	3.3	<10	250	13.49	3000	Clear/None

Stop Purge Time: 07:09	Sample Time: 10:00	QA/QC Sample Time(s): n/a	*SWFTS-MW09B*
	Sample ID: SWFTS-MW09B-EM39	QA/QC Sample ID(s): n/a	

Observations/Comments: Well Condition: Good General Comments:

HACH Kit Sulfide: n/a mg/L Hach Kit Ferrous Iron: n/a mg/L

Bottle Set Summary

VOA w/ HCl	1 125 mL Plastic	500 mL Plastic	4 40 mL Amber VOA w/ HCl	250 mL Amber Glass w/ H2S04
1 125 mL w/ EDA	1 250 mL Plastic	250 mL Plastic w/ H2SO4	250 mL Plastic w/ HNO3	500 mL Amber Glass w/ H2S04

*INDICATOR PARAMETERS HAVE STABLIZED WHEN 3 CONSECUTIVE READINGS ARE WITHIN:

± 0.1 for pH; ± 3% for Cond and Temp; ± 10 mv for ORP; ± 10% or <0.5 mg/L for DO; ± 10% or <10 NTU Turbidity

LOW FLOW GROUNDWATER SAMPLING LOG

NERT, Henderson, NV

Task Name: SWF Area Bio Treatability Study	Task Manager: D. Grady/ J. Dabbs	Task No.: M11	Date: 2022-09-13	Well ID: SWFTS-MW10A
Field Samplers: J. Bunkers				
Transducer Removal Time: 09:00	Transducer Redeployment Time: 10:00			General Well Condition: Good
Depth to Water (ft): 10.22	Screened Interval Top (ft): 20.4			Pump Intake Depth (ft): 27.40
Well Depth (ft): 35.50	Screened/Open Interval Bottom (ft): 35.0			Well Diameter (in): 4
Pump/Tubing Type: QED Bladder Pump & TLPE/LDPE	GW Disposal: GW-11			Equipment Decon. Method: Alconox/DI Rinse SOP
Y Dedicated Tubing Present? (Y/N)	N New Dedicated Tubing Placed? (Y/N)			
Purge Start Time: 08:49				

Time	Temp. (°C)		pH (pH Units)		Conductivity (mS/cm)		DO (mg/L)		ORP (mV)		Turbidity (NTU)		Purge Rate (mL/min)	Depth to Water (ft)	Cum. Vol. Purged (mL)	Color/Odor
	READ	CHANGE*	READ	CHANGE*	READ	CHANGE*	READ	CHANGE*	READ	CHANGE*	READ	CHANGE*				
08:49	24.4		6.93		4.317		1.76		168.6		53.2		250	10.22		Clear/None
08:52	24.2		6.90		4.336		1.09		172.5		60.4		250	10.22	750	Clear/None
08:55	24.2		6.90		4.359		0.99		172.5		51.6		250	10.22	1500	Clear/None
08:58	24.2	0%	6.90	0.0	4.360	0%	0.94	3%	172.1	0.4	80.3	12%	250	10.22	2250	Clear/None
09:01	24.2	0%	6.90	0.0	4.365	0%	0.90	0%	171.7	0.0	101.2	10%	250	10.22	3000	Clear/None
09:04	24.1	0%	6.90	0.0	4.363	0%	0.88	2%	171.2	0.5	93.3	1%	250	10.22	3750	Clear/None

Stop Purge Time: 09:05	Sample Time: 09:10	QA/QC Sample Time(s): 09:10	*SWFTS-MW10A*
	Sample ID: SWFTS-MW10A-EM39	QA/QC Sample ID(s): SWFTS-MW10A-EM39-MS/MSD	

Observations/Comments: Well Condition: Good General Comments:

HACH Kit Sulfide: n/a mg/L Hach Kit Ferrous Iron: n/a mg/L

Bottle Set Summary

VOA w/ HCl	2 125 mL Plastic	500 mL Plastic	8 40 mL Amber VOA w/ HCl	250 mL Amber Glass w/ H2S04
2 125 mL w/ EDA	2 250 mL Plastic	250 mL Plastic w/ H2SO4	250 mL Plastic w/ HNO3	500 mL Amber Glass w/ H2SO4

*INDICATOR PARAMETERS HAVE STABLIZED WHEN 3 CONSECUTIVE READINGS ARE WITHIN:

± 0.1 for pH; ± 3% for Cond and Temp; ± 10 mv for ORP; ± 10% or <0.5 mg/L for DO; ± 10% or <10 NTU Turbidity

LOW FLOW GROUNDWATER SAMPLING LOG

NERT, Henderson, NV

Task Name: SWF Area Bio Treatability Study	Task Manager: D. Grady/ J. Dabbs	Task No.: M11	Date: 2022-09-13	Well ID: SWFTS-MW11
Field Samplers: J. Bunkers				
Transducer Removal Time: n/a	Transducer Redeployment Time: n/a			General Well Condition: Good
Depth to Water (ft): 16.04	Screened Interval Top (ft): 14.8			Pump Intake Depth (ft): 26.60
Well Depth (ft): 39.50	Screened/Open Interval Bottom (ft): 39.6			Well Diameter (in): 4
Pump/Tubing Type: QED Bladder Pump & TLPE/LDPE	GW Disposal: GW-11			Equipment Decon. Method: Alconox/DI Rinse SOP
Y Dedicated Tubing Present? (Y/N)	N New Dedicated Tubing Placed? (Y/N)			
Purge Start Time: 10:05				

Time	Temp. (°C)		pH (pH Units)		Conductivity (mS/cm)		DO (mg/L)		ORP (mV)		Turbidity (NTU)		Purge Rate (mL/min)	Depth to Water (ft)	Cum. Vol. Purged (mL)	Color/Odor
	READ	CHANGE*	READ	CHANGE*	READ	CHANGE*	READ	CHANGE*	READ	CHANGE*	READ	CHANGE*				
10:05	25.6	1%	7.29	0.0	4.120	3%	4.80	5%	178.1	0.4	0.9	<10	250	16.04		Clear/None
10:08	25.0	0%	7.26	0.0	3.961	0%	4.47	1%	178.8	0.3	0.5	<10	250	16.04	750	Clear/None
10:11	24.8	1%	7.25	0.0	3.891	2%	4.36	4%	178.5	0.0	0.5	<10	250	16.04	1500	Clear/None

Stop Purge Time: 10:12	Sample Time: 10:15	QA/QC Sample Time(s): 10:15	*SWFTS-MW11*
	Sample ID: SWFTS-MW11-EM39	QA/QC Sample ID(s): SWFTS-MW11-EM39-FD	

Observations/Comments: Well Condition: Good General Comments:

HACH Kit Sulfide: n/a mg/L Hach Kit Ferrous Iron: n/a mg/L

Bottle Set Summary

VOA w/ HCl	2 125 mL Plastic	500 mL Plastic	8 40 mL Amber VOA w/ HCl	250 mL Amber Glass w/ H2S04
2 125 mL w/ EDA	2 250 mL Plastic	250 mL Plastic w/ H2SO4	250 mL Plastic w/ HNO3	500 mL Amber Glass w/ H2S04

*INDICATOR PARAMETERS HAVE STABLIZED WHEN 3 CONSECUTIVE READINGS ARE WITHIN:

± 0.1 for pH; ± 3% for Cond and Temp; ± 10 mv for ORP; ± 10% or <0.5 mg/L for DO; ± 10% or <10 NTU Turbidity

LOW FLOW GROUNDWATER SAMPLING LOG

NERT, Henderson, NV

Task Name: SWF Area Bio Treatability Study	Task Manager: D. Grady/ J. Dabbs	Task No.: M11	Date: 2022-09-13	Well ID: SWFTS-MW12
Field Samplers: J. Bunkers				
Transducer Removal Time: n/a	Transducer Redeployment Time: n/a			General Well Condition: Good
Depth to Water (ft): 17.41	Screened Interval Top (ft): 15.8			Pump Intake Depth (ft): 27.90
Well Depth (ft): 41.00	Screened/Open Interval Bottom (ft): 40.6			Well Diameter (in): 4
Pump/Tubing Type: QED Bladder Pump & TLPE/LDPE	GW Disposal: GW-11			Equipment Decon. Method: Alconox/DI Rinse SOP
Y Dedicated Tubing Present? (Y/N)	N New Dedicated Tubing Placed? (Y/N)			
Purge Start Time: 10:56				

Time	Temp. (°C)		pH (pH Units)		Conductivity (mS/cm)		DO (mg/L)		ORP (mV)		Turbidity (NTU)		Purge Rate (mL/min)	Depth to Water (ft)	Cum. Vol. Purged (mL)	Color/Odor
	READ	CHANGE*	READ	CHANGE*	READ	CHANGE*	READ	CHANGE*	READ	CHANGE*	READ	CHANGE*				
10:56	25.8		6.73		3.224		1.52		-5.7		44.5		250	17.41		Clear/None
10:59	25.5	1%	6.64	0.0	3.105	1%	1.32	2%	-6.9	2.0	35.5	15%	250	17.41	750	Clear/None
11:02	25.4	0%	6.62	0.0	3.081	0%	1.38	2%	-8.4	0.5	29.8	3%	250	17.41	1500	Clear/None
11:05	24.7	1%	6.63	0.0	3.007	1%	1.35	0%	-11.3	2.4	27.1	12%	250	17.41	2250	Clear/None

Stop Purge Time: 11:06	Sample Time: 11:10	QA/QC Sample Time(s): n/a	*SWFTS-MW12*
	Sample ID: SWFTS-MW12-EM39	QA/QC Sample ID(s): n/a	

Observations/Comments: Well Condition: Good General Comments:

HACH Kit Sulfide: n/a mg/L Hach Kit Ferrous Iron: n/a mg/L

Bottle Set Summary

VOA w/ HCl	1 125 mL Plastic	500 mL Plastic	4 40 mL Amber VOA w/ HCl	250 mL Amber Glass w/ H2S04
1 125 mL w/ EDA	1 250 mL Plastic	250 mL Plastic w/ H2SO4	250 mL Plastic w/ HNO3	500 mL Amber Glass w/ H2SO4

*INDICATOR PARAMETERS HAVE STABLIZED WHEN 3 CONSECUTIVE READINGS ARE WITHIN:

± 0.1 for pH; ± 3% for Cond and Temp; ± 10 mv for ORP; ± 10% or <0.5 mg/L for DO; ± 10% or <10 NTU Turbidity

LOW FLOW GROUNDWATER SAMPLING LOG

NERT, Henderson, NV

Task Name: SWF Area Bio Treatability Study	Task Manager: D. Grady/ J. Dabbs	Task No.: M11	Date: 2022-09-13	Well ID: SWFTS-MW13
Field Samplers: J. Bunkers				
Transducer Removal Time: n/a	Transducer Redeployment Time: n/a			General Well Condition: Good
Depth to Water (ft): 22.66	Screened Interval Top (ft): 17.8			Pump Intake Depth (ft): 32.30
Well Depth (ft): 48.00	Screened/Open Interval Bottom (ft): 47.6			Well Diameter (in): 4
Pump/Tubing Type: QED Bladder Pump & TLPE/LDPE	GW Disposal: GW-11			Equipment Decon. Method: Alconox/DI Rinse SOP
Y Dedicated Tubing Present? (Y/N)	N New Dedicated Tubing Placed? (Y/N)			
Purge Start Time: 11:41				

Time	Temp. (°C)		pH (pH Units)		Conductivity (mS/cm)		DO (mg/L)		ORP (mV)		Turbidity (NTU)		Purge Rate (mL/min)	Depth to Water (ft)	Cum. Vol. Purged (mL)	Color/Odor
	READ	CHANGE*	READ	CHANGE*	READ	CHANGE*	READ	CHANGE*	READ	CHANGE*	READ	CHANGE*				
11:41	26.0		7.28		4.008		5.78		111.9		5.9		250	22.66		Clear/None
11:44	25.1		7.27		3.924		5.63		115.0		5.9		250	22.66	750	Clear/None
11:47	24.8		7.27		3.903		5.59		117.6		18.4		250	22.66	1500	Clear/None
11:50	24.7		7.27		3.899		5.53		120.0		33.9		250	22.66	2250	Clear/None
11:53	24.6	0%	7.27	0.0	3.898	0%	5.52	0%	122.0	2.1	49.1	26%	250	22.66	3000	Clear/None
11:56	24.5	0%	7.27	0.0	3.910	0%	5.53	0%	123.9	0.2	73.7	10%	250	22.66	3750	Clear/None
11:59	24.2	0%	7.24	0.0	3.914	0%	5.47	0%	126.3	2.2	76.9	15%	250	22.66	4500	Clear/None

Stop Purge Time: 12:00	Sample Time: 12:00	QA/QC Sample Time(s): n/a	*SWFTS-MW13*
	Sample ID: SWFTS-MW13-EM39	QA/QC Sample ID(s): n/a	

Observations/Comments: Well Condition: Good General Comments:

HACH Kit Sulfide: n/a mg/L Hach Kit Ferrous Iron: n/a mg/L

Bottle Set Summary

VOA w/ HCl	1 125 mL Plastic	500 mL Plastic	4 40 mL Amber VOA w/ HCl	250 mL Amber Glass w/ H2S04
1 125 mL w/ EDA	1 250 mL Plastic	250 mL Plastic w/ H2SO4	250 mL Plastic w/ HNO3	500 mL Amber Glass w/ H2SO4

*INDICATOR PARAMETERS HAVE STABLIZED WHEN 3 CONSECUTIVE READINGS ARE WITHIN:

± 0.1 for pH; ± 3% for Cond and Temp; ± 10 mv for ORP; ± 10% or <0.5 mg/L for DO; ± 10% or <10 NTU Turbidity

LOW FLOW GROUNDWATER SAMPLING LOG

NERT, Henderson, NV

Task Name: SWF Area Bio Treatability Study	Task Manager: D. Grady/ J. Dabbs	Task No.: M11	Date: 2022-09-13	Well ID: SWFTS-MW14
Field Samplers: J. Bunkers				
Transducer Removal Time: n/a	Transducer Redeployment Time: n/a			General Well Condition: Good
Depth to Water (ft): 10.22	Screened Interval Top (ft): 16.8			Pump Intake Depth (ft): 26.40
Well Depth (ft): 37.00	Screened/Open Interval Bottom (ft): 36.6			Well Diameter (in): 2
Pump/Tubing Type: QED Bladder Pump & TLPE/LDPE	GW Disposal: GW-11			Equipment Decon. Method: Alconox/DI Rinse SOP
Y Dedicated Tubing Present? (Y/N)	N New Dedicated Tubing Placed? (Y/N)			
Purge Start Time: 12:35				

Time	Temp. (°C)		pH (pH Units)		Conductivity (mS/cm)		DO (mg/L)		ORP (mV)		Turbidity (NTU)		Purge Rate (mL/min)	Depth to Water (ft)	Cum. Vol. Purged (mL)	Color/Odor
	READ	CHANGE*	READ	CHANGE*	READ	CHANGE*	READ	CHANGE*	READ	CHANGE*	READ	CHANGE*				
12:35	25.8		6.82		4.383		1.60		132.4		104.4		250	10.22		Clear/None
12:38	25.3		6.79		4.326		1.29		125.6		-53925.7		250	10.22	750	Clear/None
12:55	26.0		6.70		3.584		2.39		175.6		84.0		200	10.22	4150	Clear/None
12:58	25.3		6.76		4.157		1.17		153.1		85.6		200	10.22	4750	Clear/None
13:01	25.0		6.75		4.206		0.93		147.8		84.9		200	10.22	5350	Clear/None
13:04	26.2		6.75		4.369		0.95		145.1		123.8		200	10.22	5950	Clear/None
13:07	25.1	0%	6.76	0.0	4.281	0%	0.96	1%	141.1	2.7	78.1	72%	200	10.22	6550	Clear/None
13:10	24.8	0%	6.76	0.0	4.262	0%	0.95	0%	138.1	0.3	106.2	62%	200	10.22	7150	Clear/None
13:13	24.8	0%	6.76	0.0	4.274	0%	0.92	2%	135.9	2.5	668.4	135%	200	10.22	7750	Clear/None

Stop Purge Time: 13:14	Sample Time: 13:20	QA/QC Sample Time(s): n/a	*SWFTS-MW14*
	Sample ID: SWFTS-MW14-EM39	QA/QC Sample ID(s): n/a	

Observations/Comments: Well Condition: Good General Comments:

HACH Kit Sulfide: n/a mg/L Hach Kit Ferrous Iron: n/a mg/L

Bottle Set Summary

VOA w/ HCl	1 125 mL Plastic	500 mL Plastic	4 40 mL Amber VOA w/ HCl	250 mL Amber Glass w/ H2S04
1 125 mL w/ EDA	1 250 mL Plastic	250 mL Plastic w/ H2SO4	250 mL Plastic w/ HNO3	500 mL Amber Glass w/ H2SO4

*INDICATOR PARAMETERS HAVE STABLIZED WHEN 3 CONSECUTIVE READINGS ARE WITHIN:

± 0.1 for pH; ± 3% for Cond and Temp; ± 10 mv for ORP; ± 10% or <0.5 mg/L for DO; ± 10% or <10 NTU Turbidity

LOW FLOW GROUNDWATER SAMPLING LOG

NERT, Henderson, NV

Task Name: SWF Area Bio Treatability Study	Task Manager: D. Grady/ J. Dabbs	Task No.: M11	Date: 2022-09-14	Well ID: SWFTS-MW15
Field Samplers: J. Bunkers				
Transducer Removal Time: 07:25	Transducer Redeployment Time: 08:00			General Well Condition: Good
Depth to Water (ft): 13.15	Screened Interval Top (ft): 14.8			Pump Intake Depth (ft): 24.40
Well Depth (ft): 35.00	Screened/Open Interval Bottom (ft): 34.6			Well Diameter (in): 2
Pump/Tubing Type: QED Bladder Pump & TLPE/LDPE	GW Disposal: GW-11			Equipment Decon. Method: Alconox/DI Rinse SOP
Y Dedicated Tubing Present? (Y/N)	N New Dedicated Tubing Placed? (Y/N)			
Purge Start Time: 07:35				

Time	Temp. (°C)		pH (pH Units)		Conductivity (mS/cm)		DO (mg/L)		ORP (mV)		Turbidity (NTU)		Purge Rate (mL/min)	Depth to Water (ft)	Cum. Vol. Purged (mL)	Color/Odor
	READ	CHANGE*	READ	CHANGE*	READ	CHANGE*	READ	CHANGE*	READ	CHANGE*	READ	CHANGE*				
07:35	23.2		6.64		2.776		1.73		81.3		36.9		270	13.15		Clear/None
07:38	23.2		6.64		3.037		1.17		78.7		20.9		270	13.15	810	Clear/None
07:41	23.2	0%	6.64	0.0	3.157	3%	1.08	2%	71.2	4.9	12.8	12%	270	13.15	1620	Clear/None
07:44	23.3	0%	6.65	0.0	3.265	0%	1.05	0%	65.6	0.7	10.7	5%	270	13.15	2430	Clear/None
07:47	23.2	0%	6.66	0.0	3.356	2%	1.04	1%	62.1	4.2	10.5	7%	270	13.15	3240	Clear/None

Stop Purge Time: 07:48	Sample Time: 07:50	QA/QC Sample Time(s): n/a	*SWFTS-MW15*
	Sample ID: SWFTS-MW15-EM39	QA/QC Sample ID(s): n/a	

Observations/Comments: Well Condition: Good General Comments:

HACH Kit Sulfide: n/a mg/L Hach Kit Ferrous Iron: n/a mg/L

Bottle Set Summary

VOA w/ HCl	1 125 mL Plastic	500 mL Plastic	4 40 mL Amber VOA w/ HCl	250 mL Amber Glass w/ H2S04
1 125 mL w/ EDA	1 250 mL Plastic	250 mL Plastic w/ H2SO4	250 mL Plastic w/ HNO3	500 mL Amber Glass w/ H2SO4

*INDICATOR PARAMETERS HAVE STABLIZED WHEN 3 CONSECUTIVE READINGS ARE WITHIN:

± 0.1 for pH; ± 3% for Cond and Temp; ± 10 mv for ORP; ± 10% or <0.5 mg/L for DO; ± 10% or <10 NTU Turbidity

LOW FLOW GROUNDWATER SAMPLING LOG

NERT, Henderson, NV

Task Name: SWF Area Bio Treatability Study	Task Manager: D. Grady/ J. Dabbs	Task No.: M11	Date: 2022-09-14	Well ID: SWFTS-MW16
Field Samplers: J. Bunkers				
Transducer Removal Time: n/a	Transducer Redeployment Time: n/a			General Well Condition: Good
Depth to Water (ft): 21.81	Screened Interval Top (ft): 21.8			Pump Intake Depth (ft): 31.30
Well Depth (ft): 42.00	Screened/Open Interval Bottom (ft): 41.6			Well Diameter (in): 2
Pump/Tubing Type: QED Bladder Pump & TLPE/LDPE	GW Disposal: GW-11			Equipment Decon. Method: Alconox/DI Rinse SOP
Y Dedicated Tubing Present? (Y/N)	N New Dedicated Tubing Placed? (Y/N)			
Purge Start Time: 08:11				

Time	Temp. (°C)		pH (pH Units)		Conductivity (mS/cm)		DO (mg/L)		ORP (mV)		Turbidity (NTU)		Purge Rate (mL/min)	Depth to Water (ft)	Cum. Vol. Purged (mL)	Color/Odor
	READ	CHANGE*	READ	CHANGE*	READ	CHANGE*	READ	CHANGE*	READ	CHANGE*	READ	CHANGE*				
08:11	23.3		6.77		3.583		1.71		-25.7		71.4		270	21.81		Clear/None
08:14	23.3	0%	6.76	0.0	3.554	0%	1.07	7%	-33.9	3.7	75.4	101%	270	21.81	810	Clear/None
08:17	23.2	0%	6.76	0.0	3.543	0%	0.98	1%	-38.0	0.4	111.9	101%	270	21.81	1620	Clear/None
08:20	23.2	0%	6.76	0.0	3.541	0%	0.94	5%	-40.8	3.2	-20027.8	<10	270	21.81	2430	Clear/None

Stop Purge Time: 08:21	Sample Time: 08:25	QA/QC Sample Time(s): n/a	*SWFTS-MW16*
	Sample ID: SWFTS-MW16-EM39	QA/QC Sample ID(s): n/a	

Observations/Comments: Well Condition: Good General Comments:

HACH Kit Sulfide: n/a mg/L Hach Kit Ferrous Iron: n/a mg/L

Bottle Set Summary

VOA w/ HCl	1 125 mL Plastic	500 mL Plastic	4 40 mL Amber VOA w/ HCl	250 mL Amber Glass w/ H2S04
1 125 mL w/ EDA	1 250 mL Plastic	250 mL Plastic w/ H2SO4	250 mL Plastic w/ HNO3	500 mL Amber Glass w/ H2SO4

*INDICATOR PARAMETERS HAVE STABLIZED WHEN 3 CONSECUTIVE READINGS ARE WITHIN:

± 0.1 for pH; ± 3% for Cond and Temp; ± 10 mv for ORP; ± 10% or <0.5 mg/L for DO; ± 10% or <10 NTU Turbidity

LOW FLOW GROUNDWATER SAMPLING LOG

NERT, Henderson, NV

Task Name: SWF Area Bio Treatability Study	Task Manager: D. Grady/ J. Dabbs	Task No.: M11	Date: 2022-09-14	Well ID: SWFTS-MW17
Field Samplers: J. Bunkers				
Transducer Removal Time: n/a	Transducer Redeployment Time: n/a			General Well Condition: Good
Depth to Water (ft): 25.77	Screened Interval Top (ft): 22.8			Pump Intake Depth (ft): 37.40
Well Depth (ft): 53.00	Screened/Open Interval Bottom (ft): 52.6			Well Diameter (in): 4
Pump/Tubing Type: QED Bladder Pump & TLPE/LDPE	GW Disposal: GW-11			Equipment Decon. Method: Alconox/DI Rinse SOP
Y Dedicated Tubing Present? (Y/N)	N New Dedicated Tubing Placed? (Y/N)			
Purge Start Time: 08:53				

Time	Temp. (°C)		pH (pH Units)		Conductivity (mS/cm)		DO (mg/L)		ORP (mV)		Turbidity (NTU)		Purge Rate (mL/min)	Depth to Water (ft)	Cum. Vol. Purged (mL)	Color/Odor
	READ	CHANGE*	READ	CHANGE*	READ	CHANGE*	READ	CHANGE*	READ	CHANGE*	READ	CHANGE*				
08:53	23.1		7.27		3.190		4.98		88.4		26.6		270	25.77		Clear/None
08:56	23.0	0%	7.24	0.0	3.125	1%	4.59	0%	90.3	2.0	12.8	4%	270	25.77	810	Clear/None
08:59	23.0	0%	7.24	0.0	3.088	0%	4.54	0%	92.3	0.0	11.4	6%	270	25.77	1620	Clear/None
09:02	23.0	0%	7.23	0.0	3.064	0%	4.53	0%	94.4	2.1	12.4	1%	270	25.77	2430	Clear/None

Stop Purge Time: 09:03	Sample Time: 09:05	QA/QC Sample Time(s): n/a	*SWFTS-MW17*
	Sample ID: SWFTS-MW17-EM39	QA/QC Sample ID(s): n/a	

Observations/Comments: Well Condition: Good General Comments:

HACH Kit Sulfide: n/a mg/L Hach Kit Ferrous Iron: n/a mg/L

Bottle Set Summary

VOA w/ HCl	1 125 mL Plastic	500 mL Plastic	4 40 mL Amber VOA w/ HCl	250 mL Amber Glass w/ H2S04
1 125 mL w/ EDA	1 250 mL Plastic	250 mL Plastic w/ H2SO4	250 mL Plastic w/ HNO3	500 mL Amber Glass w/ H2SO4

*INDICATOR PARAMETERS HAVE STABLIZED WHEN 3 CONSECUTIVE READINGS ARE WITHIN:

± 0.1 for pH; ± 3% for Cond and Temp; ± 10 mv for ORP; ± 10% or <0.5 mg/L for DO; ± 10% or <10 NTU Turbidity

LOW FLOW GROUNDWATER SAMPLING LOG

NERT, Henderson, NV

Task Name: SWF Area Bio Treatability Study	Task Manager: D. Grady/ J. Dabbs	Task No.: M11	Date: 2022-09-14	Well ID: SWFTS-MW18
Field Samplers: J. Bunkers				
Transducer Removal Time: n/a	Transducer Redeployment Time: n/a			General Well Condition: Good
Depth to Water (ft): 15.28	Screened Interval Top (ft): 16.8			Pump Intake Depth (ft): 26.10
Well Depth (ft): 35.30	Screened/Open Interval Bottom (ft): 36.6			Well Diameter (in): 2
Pump/Tubing Type: QED Bladder Pump & TLPE/LDPE	GW Disposal: GW-11			Equipment Decon. Method: Alconox/DI Rinse SOP
Y Dedicated Tubing Present? (Y/N)	N New Dedicated Tubing Placed? (Y/N)			
Purge Start Time: 09:50				

Time	Temp. (°C)		pH (pH Units)		Conductivity (mS/cm)		DO (mg/L)		ORP (mV)		Turbidity (NTU)		Purge Rate (mL/min)	Depth to Water (ft)	Cum. Vol. Purged (mL)	Color/Odor
	READ	CHANGE*	READ	CHANGE*	READ	CHANGE*	READ	CHANGE*	READ	CHANGE*	READ	CHANGE*				
09:50	24.4		6.63		3.903		1.85		119.5		-91660.3		270	15.28		Clear/None
09:53	24.2	0%	6.64	0.0	3.858	0%	1.14	6%	109.5	5.3	-158404.7	<10	270	15.28	810	Clear/None
09:56	24.0	0%	6.65	0.0	3.842	0%	1.05	2%	103.6	0.6	-146693.7	<10	270	15.28	1620	Clear/None
09:59	24.0	0%	6.65	0.0	3.838	0%	1.03	4%	99.4	4.8	-9599.3	<10	270	15.28	2430	Clear/None

Stop Purge Time: 10:00	Sample Time: 10:05	QA/QC Sample Time(s): n/a	*SWFTS-MW18*
	Sample ID: SWFTS-MW18-EM39	QA/QC Sample ID(s): n/a	

Observations/Comments: Well Condition: Good General Comments:

HACH Kit Sulfide: n/a mg/L Hach Kit Ferrous Iron: n/a mg/L

Bottle Set Summary

VOA w/ HCl	1 125 mL Plastic	500 mL Plastic	4 40 mL Amber VOA w/ HCl	250 mL Amber Glass w/ H2S04
1 125 mL w/ EDA	1 250 mL Plastic	250 mL Plastic w/ H2SO4	250 mL Plastic w/ HNO3	500 mL Amber Glass w/ H2SO4

*INDICATOR PARAMETERS HAVE STABLIZED WHEN 3 CONSECUTIVE READINGS ARE WITHIN:

± 0.1 for pH; ± 3% for Cond and Temp; ± 10 mv for ORP; ± 10% or <0.5 mg/L for DO; ± 10% or <10 NTU Turbidity

LOW FLOW GROUNDWATER SAMPLING LOG

NERT, Henderson, NV

Task Name: SWF Area Bio Treatability Study	Task Manager: D. Grady/ J. Dabbs	Task No.: M11	Date: 2022-09-14	Well ID: SWFTS-MW19
Field Samplers: J. Bunkers				
Transducer Removal Time: n/a	Transducer Redeployment Time: n/a			General Well Condition: Good
Depth to Water (ft): 9.93	Screened Interval Top (ft): 11.3			Pump Intake Depth (ft): 21.00
Well Depth (ft): 30.00	Screened/Open Interval Bottom (ft): 31.1			Well Diameter (in): 2
Pump/Tubing Type: QED Bladder Pump & TLPE/LDPE	GW Disposal: GW-11			Equipment Decon. Method: Alconox/DI Rinse SOP
Y Dedicated Tubing Present? (Y/N)	N New Dedicated Tubing Placed? (Y/N)			
Purge Start Time: 10:33				

Time	Temp. (°C)		pH (pH Units)		Conductivity (mS/cm)		DO (mg/L)		ORP (mV)		Turbidity (NTU)		Purge Rate (mL/min)	Depth to Water (ft)	Cum. Vol. Purged (mL)	Color/Odor
	READ	CHANGE*	READ	CHANGE*	READ	CHANGE*	READ	CHANGE*	READ	CHANGE*	READ	CHANGE*				
10:33	24.3		6.97		3.501		2.50		130.2		111.0		270	9.93		Clear/None
10:36	24.1		6.94		3.436		1.29		127.1		80.9		270	9.93	810	Clear/None
10:39	24.2	0%	6.93	0.0	3.444	0%	1.15	4%	124.5	1.8	46.7	17%	270	9.93	1620	Clear/None
10:42	24.0	0%	6.93	0.0	3.440	0%	1.09	0%	122.5	0.2	37.0	6%	270	9.93	2430	Clear/None
10:45	24.0	0%	6.92	0.0	3.447	0%	1.05	4%	121.1	1.6	35.4	10%	270	9.93	3240	Clear/None

Stop Purge Time: 10:46	Sample Time: 10:50	QA/QC Sample Time(s): 10:50	*SWFTS-MW19*
	Sample ID: SWFTS-MW19-EM39	QA/QC Sample ID(s): SWFTS-MW19-EM39-FD	

Observations/Comments: Well Condition: Good General Comments:

HACH Kit Sulfide: n/a mg/L Hach Kit Ferrous Iron: n/a mg/L

Bottle Set Summary

VOA w/ HCl	2 125 mL Plastic	500 mL Plastic	8 40 mL Amber VOA w/ HCl	250 mL Amber Glass w/ H2S04
2 125 mL w/ EDA	2 250 mL Plastic	250 mL Plastic w/ H2SO4	250 mL Plastic w/ HNO3	500 mL Amber Glass w/ H2SO4

*INDICATOR PARAMETERS HAVE STABLIZED WHEN 3 CONSECUTIVE READINGS ARE WITHIN:

± 0.1 for pH; ± 3% for Cond and Temp; ± 10 mv for ORP; ± 10% or <0.5 mg/L for DO; ± 10% or <10 NTU Turbidity

LOW FLOW GROUNDWATER SAMPLING LOG

NERT, Henderson, NV

Task Name: SWF Area Bio Treatability Study	Task Manager: D. Grady/ J. Dabbs	Task No.: M11	Date: 2022-09-14	Well ID: SWFTS-MW20
Field Samplers: J. Bunkers				
Transducer Removal Time: n/a	Transducer Redeployment Time: n/a			General Well Condition: Good
Depth to Water (ft): 12.40	Screened Interval Top (ft): 12.8			Pump Intake Depth (ft): 24.80
Well Depth (ft): 35.40	Screened/Open Interval Bottom (ft): 37.6			Well Diameter (in): 2
Pump/Tubing Type: QED Bladder Pump & TLPE/LDPE	GW Disposal: GW-11			Equipment Decon. Method: Alconox/DI Rinse SOP
Y Dedicated Tubing Present? (Y/N)	N New Dedicated Tubing Placed? (Y/N)			
Purge Start Time: 11:28				

Time	Temp. (°C)		pH (pH Units)		Conductivity (mS/cm)		DO (mg/L)		ORP (mV)		Turbidity (NTU)		Purge Rate (mL/min)	Depth to Water (ft)	Cum. Vol. Purged (mL)	Color/Odor
	READ	CHANGE*	READ	CHANGE*	READ	CHANGE*	READ	CHANGE*	READ	CHANGE*	READ	CHANGE*				
11:28	25.3		6.38		5.810		1.80		59.0		-63248.1		270	12.40		Clear/None
11:31	25.2	0%	6.38	0.0	5.895	0%	1.11	7%	21.2	12.3	-21733.5	<10	270	12.40	810	Clear/None
11:34	25.2	0%	6.39	0.0	5.941	0%	1.01	2%	6.2	2.7	-23947.0	<10	270	12.40	1620	Clear/None
11:37	25.2	0%	6.39	0.0	5.958	0%	0.98	5%	-0.6	9.5	-10349.4	<10	270	12.40	2430	Clear/None

Stop Purge Time: 11:38	Sample Time: 11:40		QA/QC Sample Time(s): n/a		*SWFTS-MW20*
	Sample ID: SWFTS-MW20-EM39		QA/QC Sample ID(s): n/a		

Observations/Comments: Well Condition: Good General Comments:

HACH Kit Sulfide: n/a mg/L Hach Kit Ferrous Iron: n/a mg/L

Bottle Set Summary

VOA w/ HCl	1 125 mL Plastic	500 mL Plastic	4 40 mL Amber VOA w/ HCl	250 mL Amber Glass w/ H2S04
1 125 mL w/ EDA	1 250 mL Plastic	250 mL Plastic w/ H2SO4	250 mL Plastic w/ HNO3	500 mL Amber Glass w/ H2SO4

*INDICATOR PARAMETERS HAVE STABLIZED WHEN 3 CONSECUTIVE READINGS ARE WITHIN:

± 0.1 for pH; ± 3% for Cond and Temp; ± 10 mv for ORP; ± 10% or <0.5 mg/L for DO; ± 10% or <10 NTU Turbidity

LOW FLOW GROUNDWATER SAMPLING LOG

NERT, Henderson, NV

Task Name: SWF Area Bio Treatability Study	Task Manager: D. Grady/ J. Dabbs	Task No.: M11	Date: 2022-09-14	Well ID: SWFTS-MW21
Field Samplers: J. Bunkers				
Transducer Removal Time: n/a	Transducer Redeployment Time: n/a			General Well Condition: Good
Depth to Water (ft): 15.45	Screened Interval Top (ft): 14.8			Pump Intake Depth (ft): 26.90
Well Depth (ft): 38.05	Screened/Open Interval Bottom (ft): 39.6			Well Diameter (in): 2
Pump/Tubing Type: QED Bladder Pump & TLPE/LDPE	GW Disposal: GW-11			Equipment Decon. Method: Alconox/DI Rinse SOP
Y Dedicated Tubing Present? (Y/N)	N New Dedicated Tubing Placed? (Y/N)			
Purge Start Time: 12:13				

Time	Temp. (°C)		pH (pH Units)		Conductivity (mS/cm)		DO (mg/L)		ORP (mV)		Turbidity (NTU)		Purge Rate (mL/min)	Depth to Water (ft)	Cum. Vol. Purged (mL)	Color/Odor
	READ	CHANGE*	READ	CHANGE*	READ	CHANGE*	READ	CHANGE*	READ	CHANGE*	READ	CHANGE*				
12:13	25.0		6.90		5.021		2.66		102.7		-37318.8		270	15.45		Clear/None
12:16	24.5		6.87		4.720		1.26		99.4		-19571.9		270	15.45	810	Clear/None
12:19	24.4		6.87		4.618		1.14		97.1		105.1		270	15.45	1620	Clear/None
12:22	24.3	0%	6.86	0.0	4.585	0%	1.08	2%	95.2	1.8	76.0	10%	270	15.45	2430	Clear/None
12:25	24.3	0%	6.86	0.0	4.569	0%	1.06	0%	93.2	0.2	63.9	7%	270	15.45	3240	Clear/None
12:28	24.4	0%	6.86	0.0	4.549	0%	1.03	2%	91.7	1.7	66.8	3%	270	15.45	4050	Clear/None

Stop Purge Time: 12:29	Sample Time: 12:30	QA/QC Sample Time(s): n/a	*SWFTS-MW21*
	Sample ID: SWFTS-MW21-EM39	QA/QC Sample ID(s): n/a	

Observations/Comments: Well Condition: Good General Comments:

HACH Kit Sulfide: n/a mg/L Hach Kit Ferrous Iron: n/a mg/L

Bottle Set Summary

VOA w/ HCl	1 125 mL Plastic	500 mL Plastic	4 40 mL Amber VOA w/ HCl	250 mL Amber Glass w/ H2S04
1 125 mL w/ EDA	1 250 mL Plastic	250 mL Plastic w/ H2SO4	250 mL Plastic w/ HNO3	500 mL Amber Glass w/ H2S04

*INDICATOR PARAMETERS HAVE STABLIZED WHEN 3 CONSECUTIVE READINGS ARE WITHIN:

± 0.1 for pH; ± 3% for Cond and Temp; ± 10 mv for ORP; ± 10% or <0.5 mg/L for DO; ± 10% or <10 NTU Turbidity

LOW FLOW GROUNDWATER SAMPLING LOG

NERT, Henderson, NV

Task Name: SWF Area Bio Treatability Study	Task Manager: D. Grady/ J. Dabbs	Task No.: M11	Date: 2022-09-14	Well ID: SWFTS-MW22
Field Samplers: J. Bunkers				
Transducer Removal Time: n/a	Transducer Redeployment Time: n/a			General Well Condition: Good
Depth to Water (ft): 10.88	Screened Interval Top (ft): 11.8			Pump Intake Depth (ft): 21.30
Well Depth (ft): 31.60	Screened/Open Interval Bottom (ft): 31.6			Well Diameter (in): 2
Pump/Tubing Type: QED Bladder Pump & TLPE/LDPE	GW Disposal: GW-11			Equipment Decon. Method: Alconox/DI Rinse SOP
Y Dedicated Tubing Present? (Y/N)	N New Dedicated Tubing Placed? (Y/N)			
Purge Start Time: 12:59				

Time	Temp. (°C)		pH (pH Units)		Conductivity (mS/cm)		DO (mg/L)		ORP (mV)		Turbidity (NTU)		Purge Rate (mL/min)	Depth to Water (ft)	Cum. Vol. Purged (mL)	Color/Odor
	READ	CHANGE*	READ	CHANGE*	READ	CHANGE*	READ	CHANGE*	READ	CHANGE*	READ	CHANGE*				
12:59	25.0		6.97		4.225		2.17		126.2		-105477.6		270	10.88		Clear/None
13:02	24.7		6.94		4.149		1.30		124.7		-58791.2		270	10.88	810	Clear/None
13:05	24.5	0%	6.92	0.0	4.161	1%	1.14	5%	123.5	0.6	-39403.5	<10	270	10.88	1620	Clear/None
13:08	24.4	0%	6.90	0.0	4.210	0%	1.07	0%	123.0	0.1	-40079.9	<10	270	10.88	2430	Clear/None
13:11	24.4	0%	6.88	0.0	4.247	0%	1.03	4%	122.3	0.6	-21267.0	<10	270	10.88	3240	Clear/None

Stop Purge Time: 13:12	Sample Time: 13:15	QA/QC Sample Time(s): n/a	*SWFTS-MW22*
	Sample ID: SWFTS-MW22-EM39	QA/QC Sample ID(s): n/a	

Observations/Comments: Well Condition: Good General Comments:

HACH Kit Sulfide: n/a mg/L Hach Kit Ferrous Iron: n/a mg/L

Bottle Set Summary

VOA w/ HCl	1 125 mL Plastic	500 mL Plastic	4 40 mL Amber VOA w/ HCl	250 mL Amber Glass w/ H2S04
1 125 mL w/ EDA	1 250 mL Plastic	250 mL Plastic w/ H2SO4	250 mL Plastic w/ HNO3	500 mL Amber Glass w/ H2SO4

*INDICATOR PARAMETERS HAVE STABLIZED WHEN 3 CONSECUTIVE READINGS ARE WITHIN:

± 0.1 for pH; ± 3% for Cond and Temp; ± 10 mv for ORP; ± 10% or <0.5 mg/L for DO; ± 10% or <10 NTU Turbidity

LOW FLOW GROUNDWATER SAMPLING LOG

NERT, Henderson, NV

Task Name: SWF Area Bio Treatability Study	Task Manager: D. Grady/ J. Dabbs	Task No.: M11	Date: 2022-09-15	Well ID: SWFTS-MW23
Field Samplers: J. Bunkers				
Transducer Removal Time: 08:16	Transducer Redeployment Time: 09:00			General Well Condition: Good
Depth to Water (ft): 12.30	Screened Interval Top (ft): 13.8			Pump Intake Depth (ft): 26.30
Well Depth (ft): 34.00	Screened/Open Interval Bottom (ft): 33.6			Well Diameter (in): 2
Pump/Tubing Type: QED Bladder Pump & TLPE/LDPE	GW Disposal: GW-11			Equipment Decon. Method: Alconox/DI Rinse SOP
Y Dedicated Tubing Present? (Y/N)	N New Dedicated Tubing Placed? (Y/N)			
Purge Start Time: 08:20				

Time	Temp. (°C)		pH (pH Units)		Conductivity (mS/cm)		DO (mg/L)		ORP (mV)		Turbidity (NTU)		Purge Rate (mL/min)	Depth to Water (ft)	Cum. Vol. Purged (mL)	Color/Odor
	READ	CHANGE*	READ	CHANGE*	READ	CHANGE*	READ	CHANGE*	READ	CHANGE*	READ	CHANGE*				
08:20	23.6		7.03		1.718		1.93		193.9		30.7		270	12.30		Clear/None
08:23	23.5	0%	7.10	0.0	1.847	2%	1.26	8%	186.1	2.6	9.9	<10	270	12.30	810	Clear/None
08:26	23.4	0%	7.12	0.0	1.901	0%	1.14	1%	183.0	0.5	7.9	<10	270	12.30	1620	Clear/None
08:29	23.4	0%	7.13	0.0	1.942	2%	1.08	6%	181.3	2.2	9.4	<10	270	12.30	2430	Clear/None

Stop Purge Time: 08:30	Sample Time: 08:30	QA/QC Sample Time(s): n/a	*SWFTS-MW23*
	Sample ID: SWFTS-MW23-EM39	QA/QC Sample ID(s): n/a	

Observations/Comments: Well Condition: Good General Comments:

HACH Kit Sulfide: n/a mg/L Hach Kit Ferrous Iron: n/a mg/L

Bottle Set Summary

VOA w/ HCl	1 125 mL Plastic	500 mL Plastic	4 40 mL Amber VOA w/ HCl	250 mL Amber Glass w/ H2S04
1 125 mL w/ EDA	1 250 mL Plastic	250 mL Plastic w/ H2SO4	250 mL Plastic w/ HNO3	500 mL Amber Glass w/ H2S04

*INDICATOR PARAMETERS HAVE STABLIZED WHEN 3 CONSECUTIVE READINGS ARE WITHIN:

± 0.1 for pH; ± 3% for Cond and Temp; ± 10 mv for ORP; ± 10% or <0.5 mg/L for DO; ± 10% or <10 NTU Turbidity

LOW FLOW GROUNDWATER SAMPLING LOG

NERT, Henderson, NV

Task Name: SWF Area Bio Treatability Study	Task Manager: D. Grady/ J. Dabbs	Task No.: M11	Date: 2022-09-15	Well ID: SWFTS-MW24
Field Samplers: J. Bunkers				
Transducer Removal Time: n/a	Transducer Redeployment Time: n/a			General Well Condition: Good
Depth to Water (ft): 12.78	Screened Interval Top (ft): 12.8			Pump Intake Depth (ft): 24.90
Well Depth (ft): 36.60	Screened/Open Interval Bottom (ft): 37.6			Well Diameter (in): 2
Pump/Tubing Type: QED Bladder Pump & TLPE/LDPE	GW Disposal: GW-11			Equipment Decon. Method: Alconox/DI Rinse SOP
Y Dedicated Tubing Present? (Y/N)	N New Dedicated Tubing Placed? (Y/N)			
Purge Start Time: 08:54				

Time	Temp. (°C)		pH (pH Units)		Conductivity (mS/cm)		DO (mg/L)		ORP (mV)		Turbidity (NTU)		Purge Rate (mL/min)	Depth to Water (ft)	Cum. Vol. Purged (mL)	Color/Odor
	READ	CHANGE*	READ	CHANGE*	READ	CHANGE*	READ	CHANGE*	READ	CHANGE*	READ	CHANGE*				
08:54	24.6		6.86		3.781		2.56		195.6		-169773.0		270	12.78		Clear/None
08:57	24.6		6.88		3.924		2.18		195.7		-185652.8		270	12.78	810	Clear/None
09:00	24.6		6.88		3.991		2.23		195.5		-44314.5		270	12.78	1620	Clear/None
09:03	24.4		6.86		4.009		1.50		195.5		63.1		270	12.78	2430	Clear/None
09:06	24.4		6.86		4.029		1.38		195.0		42.2		270	12.78	3240	Clear/None
09:09	24.4		6.87		4.050		1.48		194.6		31.2		270	12.78	4050	Clear/None
09:12	24.4	0%	6.87	0.0	4.074	0%	1.49	1%	194.2	0.2	24.5	24%	270	12.78	4860	Clear/None
09:15	24.4	0%	6.88	0.0	4.089	0%	1.51	0%	194.0	0.0	17.9	9%	270	12.78	5670	Clear/None
09:18	24.4	0%	6.88	0.0	4.102	0%	1.53	1%	193.8	0.2	16.8	14%	270	12.78	6480	Clear/None

Stop Purge Time: 09:19	Sample Time: 09:20	QA/QC Sample Time(s): n/a	*SWFTS-MW24*
	Sample ID: SWFTS-MW24-EM39	QA/QC Sample ID(s): n/a	

Observations/Comments: Well Condition: Good General Comments:

HACH Kit Sulfide: n/a mg/L Hach Kit Ferrous Iron: n/a mg/L

Bottle Set Summary

VOA w/ HCl	1 125 mL Plastic	500 mL Plastic	4 40 mL Amber VOA w/ HCl	250 mL Amber Glass w/ H2S04
1 125 mL w/ EDA	1 250 mL Plastic	250 mL Plastic w/ H2SO4	250 mL Plastic w/ HNO3	500 mL Amber Glass w/ H2SO4

*INDICATOR PARAMETERS HAVE STABLIZED WHEN 3 CONSECUTIVE READINGS ARE WITHIN:

± 0.1 for pH; ± 3% for Cond and Temp; ± 10 mv for ORP; ± 10% or <0.5 mg/L for DO; ± 10% or <10 NTU Turbidity

LOW FLOW GROUNDWATER SAMPLING LOG

NERT, Henderson, NV

Task Name: SWF Area Bio Treatability Study	Task Manager: D. Grady/ J. Dabbs	Task No.: M11	Date: 2022-09-15	Well ID: SWFTS-MW25
Field Samplers: J. Bunkers				
Transducer Removal Time: 09:48	Transducer Redeployment Time: 11:00			General Well Condition: Good
Depth to Water (ft): 10.30	Screened Interval Top (ft): 12.8			Pump Intake Depth (ft): 27.30
Well Depth (ft): 43.00	Screened/Open Interval Bottom (ft): 42.6			Well Diameter (in): 2
Pump/Tubing Type: QED Bladder Pump & TLPE/LDPE	GW Disposal: GW-11			Equipment Decon. Method: Alconox/DI Rinse SOP
Y Dedicated Tubing Present? (Y/N)	N New Dedicated Tubing Placed? (Y/N)			
Purge Start Time: 09:53				

Time	Temp. (°C)		pH (pH Units)		Conductivity (mS/cm)		DO (mg/L)		ORP (mV)		Turbidity (NTU)		Purge Rate (mL/min)	Depth to Water (ft)	Cum. Vol. Purged (mL)	Color/Odor
	READ	CHANGE*	READ	CHANGE*	READ	CHANGE*	READ	CHANGE*	READ	CHANGE*	READ	CHANGE*				
09:53	25.0		6.93		4.374		2.12		191.6		-702746.0		270	10.30		Clear/None
09:56	24.5		6.88		4.433		1.22		192.9		-564719.2		270	10.30	810	Clear/None
09:59	24.7	0%	6.87	0.0	4.467	0%	1.07	4%	191.9	0.6	-382031.0	<10	270	10.30	1620	Clear/None
10:02	24.4	0%	6.87	0.0	4.458	0%	1.02	0%	191.4	0.1	-279033.9	<10	270	10.30	2430	Clear/None
10:05	24.7	0%	6.86	0.0	4.508	0%	0.98	4%	190.5	0.8	-232077.0	<10	270	10.30	3240	Clear/None

Stop Purge Time: 10:06	Sample Time: 10:10	QA/QC Sample Time(s): n/a	*SWFTS-MW25*
	Sample ID: SWFTS-MW25-EM39	QA/QC Sample ID(s): n/a	

Observations/Comments: Well Condition: Good General Comments:

HACH Kit Sulfide: n/a mg/L Hach Kit Ferrous Iron: n/a mg/L

Bottle Set Summary

VOA w/ HCl	1 125 mL Plastic	500 mL Plastic	4 40 mL Amber VOA w/ HCl	250 mL Amber Glass w/ H2S04
1 125 mL w/ EDA	1 250 mL Plastic	250 mL Plastic w/ H2SO4	250 mL Plastic w/ HNO3	500 mL Amber Glass w/ H2SO4

*INDICATOR PARAMETERS HAVE STABLIZED WHEN 3 CONSECUTIVE READINGS ARE WITHIN:

± 0.1 for pH; ± 3% for Cond and Temp; ± 10 mv for ORP; ± 10% or <0.5 mg/L for DO; ± 10% or <10 NTU Turbidity

LOW FLOW GROUNDWATER SAMPLING LOG

NERT, Henderson, NV

Task Name: SWF Area Bio Treatability Study	Task Manager: D. Grady/ J. Dabbs	Task No.: M11	Date: 2022-12-12	Well ID: PC-58
Field Samplers: D. Begley				
Transducer Removal Time: n/a	Transducer Redeployment Time: n/a			General Well Condition: Good
Depth to Water (ft): 19.38	Screened Interval Top (ft): 7.8			Pump Intake Depth (ft): 22.60
Well Depth (ft): 38.36	Screened/Open Interval Bottom (ft): 32.8			Well Diameter (in): 2
Pump/Tubing Type: QED Bladder Pump & TLPE/LDPE	GW Disposal: GW-11			Equipment Decon. Method: Alconox/DI Rinse SOP
Y Dedicated Tubing Present? (Y/N)	N New Dedicated Tubing Placed? (Y/N)			
Purge Start Time: 12:32				

Time	Temp. (°C)		pH (pH Units)		Conductivity (mS/cm)		DO (mg/L)		ORP (mV)		Turbidity (NTU)		Purge Rate (mL/min)	Depth to Water (ft)	Cum. Vol. Purged (mL)	Color/Odor
	READ	CHANGE*	READ	CHANGE*	READ	CHANGE*	READ	CHANGE*	READ	CHANGE*	READ	CHANGE*				
12:32	21.1		7.29		3.732		2.71		89.3		131.9		200	19.36		Clear/None
12:35	21.4		7.23		3.759		1.85		88.6		88.6		200	19.36	600	Clear/None
12:38	21.7		7.20		3.784		1.51		87.3		57.5		200	19.36	1200	Clear/None
12:41	21.6		7.20		3.783		1.35		85.7		60.1		200	19.36	1800	Clear/None
12:44	21.5		7.20		3.767		1.31		84.4		64.8		200	19.36	2400	Clear/None
12:48	21.6		7.19		3.773		1.31		82.6		50.5		200	19.36	3200	Clear/None
12:51	21.7		7.19		3.777		1.32		81.4		35.6		200	19.36	3800	Clear/None
12:54	21.7	0%	7.19	0.0	3.777	0%	1.35	0%	80.3	1.1	23.3	7%	200	19.36	4400	Clear/None
12:57	21.8	0%	7.19	0.0	3.786	0%	1.36	1%	79.2	0.0	20.3	6%	200	19.36	5000	Clear/None
13:00	21.6	0%	7.19	0.0	3.768	0%	1.32	1%	78.1	1.1	21.7	0%	200	19.36	5600	Clear/None

Stop Purge Time: 13:01	Sample Time: 13:01	QA/QC Sample Time(s): n/a	*PC-58*
	Sample ID: PC-58-EM40	QA/QC Sample ID(s): n/a	

Observations/Comments: Well Condition: Good General Comments:

HACH Kit Sulfide: 0.0 mg/L Hach Kit Ferrous Iron: 0.0 mg/L

Bottle Set Summary

3 VOA w/ HCl	1 125 mL Plastic	500 mL Plastic	4 40 mL Amber VOA w/ HCl	250 mL Amber Glass w/ H2S04
1 125 mL w/ EDA	1 250 mL Plastic	250 mL Plastic w/ H2SO4	2 250 mL Plastic w/ HNO3	500 mL Amber Glass w/ H2S04

*INDICATOR PARAMETERS HAVE STABLIZED WHEN 3 CONSECUTIVE READINGS ARE WITHIN:

± 0.1 for pH; ± 3% for Cond and Temp; ± 10 mv for ORP; ± 10% or <0.5 mg/L for DO; ± 10% or <10 NTU Turbidity

LOW FLOW GROUNDWATER SAMPLING LOG

NERT, Henderson, NV

Task Name: SWF Area Bio Treatability Study	Task Manager: D. Grady/ J. Dabbs	Task No.: M11	Date: 2022-12-12	Well ID: PC-88
Field Samplers: D. Begley				
Transducer Removal Time: 10:48	Transducer Redeployment Time: 11:04			General Well Condition: Good
Depth to Water (ft): 2.54	Screened Interval Top (ft): 40.0			Pump Intake Depth (ft): 44.90
Well Depth (ft): 46.50	Screened/Open Interval Bottom (ft): 50.0			Well Diameter (in): 2
Pump/Tubing Type: QED Bladder Pump & TLPE/LDPE	GW Disposal: GW-11			Equipment Decon. Method: Alconox/DI Rinse SOP
Y Dedicated Tubing Present? (Y/N)	N New Dedicated Tubing Placed? (Y/N)			
Purge Start Time: 11:12				

Time	Temp. (°C)		pH (pH Units)		Conductivity (mS/cm)		DO (mg/L)		ORP (mV)		Turbidity (NTU)		Purge Rate (mL/min)	Depth to Water (ft)	Cum. Vol. Purged (mL)	Color/Odor
	READ	CHANGE*	READ	CHANGE*	READ	CHANGE*	READ	CHANGE*	READ	CHANGE*	READ	CHANGE*				
11:12	19.7		7.07		3.934		3.71		73.4		173.7		200	2.55		Clear/None
11:15	19.7		7.12		3.948		4.58		72.0		177.1		200	2.55	600	Clear/None
11:18	19.7		7.14		3.950		5.49		72.0		118.5		200	2.55	1200	Clear/None
11:21	19.8		7.16		3.954		5.67		72.3		87.1		200	2.55	1800	Clear/None
11:24	19.8		7.16		3.956		5.68		72.9		67.9		200	2.55	2400	Clear/None
11:27	19.8		7.16		3.964		5.37		73.3		50.3		200	2.55	3000	Clear/None
11:33	19.7	0%	7.15	0.0	3.966	0%	4.51	9%	73.4	0.1	22.9	3%	200	2.55	4200	Clear/None
11:36	19.7	0%	7.15	0.0	3.974	0%	4.09	0%	73.3	0.0	22.8	2%	200	2.55	4800	Clear/None
11:39	19.8	0%	7.14	0.0	3.979	0%	3.76	8%	73.1	0.2	20.9	5%	200	2.55	5400	Clear/None

Stop Purge Time: 11:40	Sample Time: 11:41	QA/QC Sample Time(s): 11:41	*PC-88*
	Sample ID: PC-88-EM40	QA/QC Sample ID(s): PC-88-EM40-FD	

Observations/Comments: Well Condition: Good General Comments:

HACH Kit Sulfide: 0.0 mg/L Hach Kit Ferrous Iron: 0.0 mg/L

Bottle Set Summary

6 VOA w/ HCl	2 125 mL Plastic	500 mL Plastic	8 40 mL Amber VOA w/ HCl	250 mL Amber Glass w/ H2S04
2 125 mL w/ EDA	2 250 mL Plastic	250 mL Plastic w/ H2SO4	4 250 mL Plastic w/ HNO3	500 mL Amber Glass w/ H2S04

*INDICATOR PARAMETERS HAVE STABLIZED WHEN 3 CONSECUTIVE READINGS ARE WITHIN:

± 0.1 for pH; ± 3% for Cond and Temp; ± 10 mv for ORP; ± 10% or <0.5 mg/L for DO; ± 10% or <10 NTU Turbidity

LOW FLOW GROUNDWATER SAMPLING LOG

NERT, Henderson, NV

Task Name: SWF Area Bio Treatability Study	Task Manager: D. Grady/ J. Dabbs	Task No.: M11	Date: 2022-12-12	Well ID: PC-91
Field Samplers: D. Begley				
Transducer Removal Time: n/a	Transducer Redeployment Time: n/a			General Well Condition: Good
Depth to Water (ft): 9.90	Screened Interval Top (ft): 11.5			Pump Intake Depth (ft): 16.00
Well Depth (ft): 19.90	Screened/Open Interval Bottom (ft): 21.5			Well Diameter (in): 2
Pump/Tubing Type: QED Bladder Pump & TLPE/LDPE	GW Disposal: GW-11			Equipment Decon. Method: Alconox/DI Rinse SOP
Y Dedicated Tubing Present? (Y/N)	N New Dedicated Tubing Placed? (Y/N)			
Purge Start Time: 13:39				

Time	Temp. (°C)		pH (pH Units)		Conductivity (mS/cm)		DO (mg/L)		ORP (mV)		Turbidity (NTU)		Purge Rate (mL/min)	Depth to Water (ft)	Cum. Vol. Purged (mL)	Color/Odor
	READ	CHANGE*	READ	CHANGE*	READ	CHANGE*	READ	CHANGE*	READ	CHANGE*	READ	CHANGE*				
13:39	25.1		7.21		4.993		2.06		-294.1		15.6		150	9.95		Clear/None
13:42	25.5		7.11		4.963		1.39		-302.4		11.7		150	9.95	450	Clear/None
13:45	26.0		7.04		4.965		1.12		-304.1		8.6		150	9.95	900	Clear/None
13:48	26.1		7.01		4.966		0.96		-305.0		9.0		150	9.95	1350	Clear/None
13:51	25.8		6.98		4.917		0.84		-305.2		5.6		150	9.95	1800	Clear/None
13:54	25.9	2%	6.97	0.0	4.922	1%	0.75	7%	-306.4	0.1	4.3	<10	150	9.95	2250	Clear/None
13:57	25.3	0%	6.95	0.0	4.847	0%	0.70	0%	-306.1	0.4	3.3	<10	150	9.95	2700	Clear/None
14:00	24.8	2%	6.94	0.0	4.798	1%	0.65	7%	-306.9	0.4	2.6	<10	150	9.95	3150	Clear/None

Stop Purge Time: 14:01	Sample Time: 14:01	QA/QC Sample Time(s): n/a	*PC-91*
	Sample ID: PC-91-EM40	QA/QC Sample ID(s): n/a	

Observations/Comments: Well Condition: Good General Comments:

HACH Kit Sulfide: 0.6 mg/L Hach Kit Ferrous Iron: 0.5 mg/L

Bottle Set Summary

3 VOA w/ HCl	1 125 mL Plastic	500 mL Plastic	4 40 mL Amber VOA w/ HCl	250 mL Amber Glass w/ H2S04
1 125 mL w/ EDA	1 250 mL Plastic	250 mL Plastic w/ H2SO4	2 250 mL Plastic w/ HNO3	500 mL Amber Glass w/ H2S04

*INDICATOR PARAMETERS HAVE STABLIZED WHEN 3 CONSECUTIVE READINGS ARE WITHIN:

± 0.1 for pH; ± 3% for Cond and Temp; ± 10 mv for ORP; ± 10% or <0.5 mg/L for DO; ± 10% or <10 NTU Turbidity

LOW FLOW GROUNDWATER SAMPLING LOG

NERT, Henderson, NV

Task Name: SWF Area Bio Treatability Study	Task Manager: D. Grady/ J. Dabbs	Task No.: M11	Date: 2022-12-13	Well ID: PC-92
Field Samplers: D. Begley				
Transducer Removal Time: n/a	Transducer Redeployment Time: n/a			General Well Condition: Good
Depth to Water (ft): 8.89	Screened Interval Top (ft): 26.5			Pump Intake Depth (ft): 31.20
Well Depth (ft): 37.04	Screened/Open Interval Bottom (ft): 36.5			Well Diameter (in): 2
Pump/Tubing Type: QED Bladder Pump & TLPE/LDPE	GW Disposal: GW-11			Equipment Decon. Method: Alconox/DI Rinse SOP
Y Dedicated Tubing Present? (Y/N)	N New Dedicated Tubing Placed? (Y/N)			
Purge Start Time: 07:42				

Time	Temp. (°C)		pH (pH Units)		Conductivity (mS/cm)		DO (mg/L)		ORP (mV)		Turbidity (NTU)		Purge Rate (mL/min)	Depth to Water (ft)	Cum. Vol. Purged (mL)	Color/Odor
	READ	CHANGE*	READ	CHANGE*	READ	CHANGE*	READ	CHANGE*	READ	CHANGE*	READ	CHANGE*				
07:42	22.0		6.87		3.869		2.45		59.0		150.7		200	8.95		Clear/None
07:45	22.2		6.98		3.880		1.74		54.8		103.9		200	8.95	600	Clear/None
07:48	22.3		7.03		3.881		1.47		51.9		76.1		200	8.95	1200	Clear/None
07:51	22.2		7.05		3.885		1.31		50.1		68.6		200	8.95	1800	Clear/None
07:54	22.2		7.06		3.874		1.35		49.6		43.9		200	8.95	2400	Clear/None
07:57	22.1		7.07		3.868		1.20		48.8		32.9		200	8.95	3000	Clear/None
08:00	22.1		7.07		3.867		1.12		48.0		28.3		200	8.95	3600	Clear/None
08:03	22.2		7.08		3.867		1.07		47.3		21.2		200	8.95	4200	Clear/None
08:06	22.2	0%	7.08	0.0	3.865	0%	1.02	2%	46.6	0.7	16.8	8%	200	8.95	4800	Clear/None
08:09	22.3	0%	7.08	0.0	3.867	0%	0.99	0%	45.9	0.0	14.3	7%	200	8.95	5400	Clear/None
08:12	22.1	0%	7.08	0.0	3.856	0%	0.98	1%	45.3	0.6	15.5	0%	200	8.95	6000	Clear/None

Stop Purge Time: 08:13	Sample Time: 08:13	QA/QC Sample Time(s): n/a	*PC-92*
	Sample ID: PC-92-EM40	QA/QC Sample ID(s): n/a	

Observations/Comments: Well Condition: Good General Comments:

HACH Kit Sulfide: 0.0 mg/L Hach Kit Ferrous Iron: 0.0 mg/L

Bottle Set Summary

3 VOA w/ HCl	1 125 mL Plastic	500 mL Plastic	4 40 mL Amber VOA w/ HCl	250 mL Amber Glass w/ H2S04
1 125 mL w/ EDA	1 250 mL Plastic	250 mL Plastic w/ H2SO4	2 250 mL Plastic w/ HNO3	500 mL Amber Glass w/ H2S04

*INDICATOR PARAMETERS HAVE STABLIZED WHEN 3 CONSECUTIVE READINGS ARE WITHIN:

± 0.1 for pH; ± 3% for Cond and Temp; ± 10 mv for ORP; ± 10% or <0.5 mg/L for DO; ± 10% or <10 NTU Turbidity

LOW FLOW GROUNDWATER SAMPLING LOG

NERT, Henderson, NV

Task Name: SWF Area Bio Treatability Study	Task Manager: D. Grady/ J. Dabbs	Task No.: M11	Date: 2022-12-13	Well ID: PC-94
Field Samplers: D. Begley				
Transducer Removal Time: n/a	Transducer Redeployment Time: n/a			General Well Condition: Good
Depth to Water (ft): 12.68	Screened Interval Top (ft): 9.5			Pump Intake Depth (ft): 16.30
Well Depth (ft): 19.84	Screened/Open Interval Bottom (ft): 19.5			Well Diameter (in): 2
Pump/Tubing Type: QED Bladder Pump & TLPE/LDPE	GW Disposal: GW-11			Equipment Decon. Method: Alconox/DI Rinse SOP
Y Dedicated Tubing Present? (Y/N)	N New Dedicated Tubing Placed? (Y/N)			
Purge Start Time: 09:56				

Time	Temp. (°C)		pH (pH Units)		Conductivity (mS/cm)		DO (mg/L)		ORP (mV)		Turbidity (NTU)		Purge Rate (mL/min)	Depth to Water (ft)	Cum. Vol. Purged (mL)	Color/Odor
	READ	CHANGE*	READ	CHANGE*	READ	CHANGE*	READ	CHANGE*	READ	CHANGE*	READ	CHANGE*				
09:56	22.4		6.93		5.340		2.05		62.1		32.6		200	12.68		Clear/None
09:59	22.4		6.87		5.342		1.54		64.7		22.1		200	12.68	600	Clear/None
10:02	22.2		6.86		5.313		1.33		65.9		19.9		200	12.68	1200	Clear/None
10:05	22.3	0%	6.85	0.0	5.323	0%	1.21	4%	66.5	0.3	17.9	10%	200	12.68	1800	Clear/None
10:08	22.6	0%	6.84	0.0	5.356	0%	1.14	2%	66.8	0.0	15.3	5%	200	12.68	2400	Clear/None
10:11	22.4	0%	6.85	0.0	5.340	0%	1.14	2%	67.1	0.3	15.6	4%	200	12.68	3000	Clear/None

Stop Purge Time: 10:12	Sample Time: 10:12	QA/QC Sample Time(s): n/a	*PC-94*
	Sample ID: PC-94-EM40	QA/QC Sample ID(s): n/a	

Observations/Comments: Well Condition: Good General Comments:

HACH Kit Sulfide: 0.0 mg/L Hach Kit Ferrous Iron: 0.0 mg/L

Bottle Set Summary

3 VOA w/ HCl	1 125 mL Plastic	500 mL Plastic	4 40 mL Amber VOA w/ HCl	250 mL Amber Glass w/ H2S04
1 125 mL w/ EDA	1 250 mL Plastic	250 mL Plastic w/ H2SO4	2 250 mL Plastic w/ HNO3	500 mL Amber Glass w/ H2S04

*INDICATOR PARAMETERS HAVE STABLIZED WHEN 3 CONSECUTIVE READINGS ARE WITHIN:

± 0.1 for pH; ± 3% for Cond and Temp; ± 10 mv for ORP; ± 10% or <0.5 mg/L for DO; ± 10% or <10 NTU Turbidity

LOW FLOW GROUNDWATER SAMPLING LOG

NERT, Henderson, NV

Task Name: SWF Area Bio Treatability Study	Task Manager: D. Grady/ J. Dabbs	Task No.: M11	Date: 2022-12-13	Well ID: SWFTS-MW01
Field Samplers: D. Begley				
Transducer Removal Time: n/a	Transducer Redeployment Time: n/a			General Well Condition: Good
Depth to Water (ft): 13.39	Screened Interval Top (ft): 24.2			Pump Intake Depth (ft): 31.30
Well Depth (ft): 38.31	Screened/Open Interval Bottom (ft): 38.9			Well Diameter (in): 2
Pump/Tubing Type: QED Bladder Pump & TLPE/LDPE	GW Disposal: GW-11			Equipment Decon. Method: Alconox/DI Rinse SOP
Y Dedicated Tubing Present? (Y/N)	N New Dedicated Tubing Placed? (Y/N)			
Purge Start Time: 08:49				

Time	Temp. (°C)		pH (pH Units)		Conductivity (mS/cm)		DO (mg/L)		ORP (mV)		Turbidity (NTU)		Purge Rate (mL/min)	Depth to Water (ft)	Cum. Vol. Purged (mL)	Color/Odor
	READ	CHANGE*	READ	CHANGE*	READ	CHANGE*	READ	CHANGE*	READ	CHANGE*	READ	CHANGE*				
08:49	18.2		6.99		4.661		4.07		58.5		48.4		200	13.45		Clear/None
08:52	19.5		6.86		4.794		2.34		62.5		38.1		200	13.45	600	Clear/None
08:55	20.1		6.84		4.860		1.73		64.2		24.9		200	13.45	1200	Clear/None
08:58	20.3		6.83		4.879		1.46		64.9		18.2		200	13.45	1800	Clear/None
09:01	20.3	1%	6.83	0.0	4.877	0%	1.32	4%	65.3	0.1	5.8	<10	200	13.45	2400	Clear/None
09:04	20.6	0%	6.82	0.0	4.919	0%	1.22	3%	65.4	0.0	4.3	<10	200	13.45	3000	Clear/None
09:07	20.7	0%	6.82	0.0	4.925	0%	1.24	1%	65.5	0.1	0.9	<10	200	13.45	3600	Clear/None

Stop Purge Time: 09:08	Sample Time: 09:08	QA/QC Sample Time(s): n/a	*SWFTS-MW01*
	Sample ID: SWFTS-MW01-EM40	QA/QC Sample ID(s): n/a	

Observations/Comments: Well Condition: Good General Comments:

HACH Kit Sulfide: 0.0 mg/L Hach Kit Ferrous Iron: 0.0 mg/L

Bottle Set Summary

3 VOA w/ HCl	1 125 mL Plastic	500 mL Plastic	4 40 mL Amber VOA w/ HCl	250 mL Amber Glass w/ H2S04
1 125 mL w/ EDA	1 250 mL Plastic	250 mL Plastic w/ H2SO4	2 250 mL Plastic w/ HNO3	500 mL Amber Glass w/ H2S04

*INDICATOR PARAMETERS HAVE STABLIZED WHEN 3 CONSECUTIVE READINGS ARE WITHIN:

± 0.1 for pH; ± 3% for Cond and Temp; ± 10 mv for ORP; ± 10% or <0.5 mg/L for DO; ± 10% or <10 NTU Turbidity

LOW FLOW GROUNDWATER SAMPLING LOG

NERT, Henderson, NV

Task Name: SWF Area Bio Treatability Study	Task Manager: D. Grady/ J. Dabbs	Task No.: M11	Date: 2022-12-14	Well ID: SWFTS-MW02
Field Samplers: D. Begley				
Transducer Removal Time: 08:47	Transducer Redeployment Time: 10:58			General Well Condition: Good
Depth to Water (ft): 10.71	Screened Interval Top (ft): 18.4			Pump Intake Depth (ft): 25.50
Well Depth (ft): 31.01	Screened/Open Interval Bottom (ft): 33.1			Well Diameter (in): 2
Pump/Tubing Type: QED Bladder Pump & TLPE/LDPE	GW Disposal: GW-11			Equipment Decon. Method: Alconox/DI Rinse SOP
Y Dedicated Tubing Present? (Y/N)	N New Dedicated Tubing Placed? (Y/N)			
Purge Start Time: 09:07				

Time	Temp. (°C)		pH (pH Units)		Conductivity (mS/cm)		DO (mg/L)		ORP (mV)		Turbidity (NTU)		Purge Rate (mL/min)	Depth to Water (ft)	Cum. Vol. Purged (mL)	Color/Odor
	READ	CHANGE*	READ	CHANGE*	READ	CHANGE*	READ	CHANGE*	READ	CHANGE*	READ	CHANGE*				
09:07	24.6		6.70		7.598		3.46		71.3		31.0		200	6.92		Clear/None
09:11	24.6	0%	6.72	0.0	7.568	0%	3.47	1%	74.6	3.0	20.9	10%	200	13.71	800	Clear/None
09:14	24.6	0%	6.73	0.0	7.556	0%	3.53	0%	77.6	0.0	17.3	8%	200	13.71	1400	Clear/None
09:17	24.5	0%	6.73	0.0	7.530	0%	3.56	1%	80.6	3.0	18.4	2%	200	13.71	2000	Clear/None

Stop Purge Time: 09:18	Sample Time: 09:17	QA/QC Sample Time(s): n/a	*SWFTS-MW02*
	Sample ID: SWFTS-MW02-EM40	QA/QC Sample ID(s): n/a	

Observations/Comments: Well Condition: Good General Comments:

HACH Kit Sulfide: 0.0 mg/L Hach Kit Ferrous Iron: 0.0 mg/L

Bottle Set Summary

3 VOA w/ HCl	1 125 mL Plastic	500 mL Plastic	4 40 mL Amber VOA w/ HCl	250 mL Amber Glass w/ H2S04
1 125 mL w/ EDA	1 250 mL Plastic	250 mL Plastic w/ H2SO4	2 250 mL Plastic w/ HNO3	500 mL Amber Glass w/ H2S04

*INDICATOR PARAMETERS HAVE STABLIZED WHEN 3 CONSECUTIVE READINGS ARE WITHIN:

± 0.1 for pH; ± 3% for Cond and Temp; ± 10 mv for ORP; ± 10% or <0.5 mg/L for DO; ± 10% or <10 NTU Turbidity

LOW FLOW GROUNDWATER SAMPLING LOG

NERT, Henderson, NV

Task Name: SWF Area Bio Treatability Study	Task Manager: D. Grady/ J. Dabbs	Task No.: M11	Date: 2022-12-13	Well ID: SWFTS-MW03
Field Samplers: D. Begley				
Transducer Removal Time: 13:09	Transducer Redeployment Time: 14:13			General Well Condition: Good
Depth to Water (ft): 13.06	Screened Interval Top (ft): 27.2			Pump Intake Depth (ft): 34.40
Well Depth (ft): 41.44	Screened/Open Interval Bottom (ft): 42.1			Well Diameter (in): 2
Pump/Tubing Type: QED Bladder Pump & TLPE/LDPE	GW Disposal: GW-11			Equipment Decon. Method: Alconox/DI Rinse SOP
Y Dedicated Tubing Present? (Y/N)	N New Dedicated Tubing Placed? (Y/N)			
Purge Start Time: 13:18				

Time	Temp. (°C)		pH (pH Units)		Conductivity (mS/cm)		DO (mg/L)		ORP (mV)		Turbidity (NTU)		Purge Rate (mL/min)	Depth to Water (ft)	Cum. Vol. Purged (mL)	Color/Odor
	READ	CHANGE*	READ	CHANGE*	READ	CHANGE*	READ	CHANGE*	READ	CHANGE*	READ	CHANGE*				
13:18	23.5		6.91		5.930		2.01		72.3		92.3		200	13.08		Clear/None
13:21	23.5		6.87		5.926		1.45		74.3		60.7		200	13.08	600	Clear/None
13:24	23.6		6.86		5.935		1.24		75.0		60.5		200	13.08	1200	Clear/None
13:27	23.5		6.86		5.917		1.12		75.2		46.7		200	13.08	1800	Clear/None
13:30	23.5	0%	6.86	0.0	5.915	0%	1.03	2%	75.2	0.2	39.6	14%	200	13.08	2400	Clear/None
13:33	23.5	0%	6.85	0.0	5.918	0%	0.97	3%	75.0	0.0	32.2	7%	200	13.08	3000	Clear/None
13:36	23.5	0%	6.85	0.0	5.927	0%	1.02	1%	74.9	0.1	32.3	6%	200	13.08	3600	Clear/None

Stop Purge Time: 13:37	Sample Time: 13:37	QA/QC Sample Time(s): 13:37	*SWFTS-MW03*
	Sample ID: SWFTS-MW03-EM40	QA/QC Sample ID(s): SWFTS-MW03-EM40-MS/MSD	

Observations/Comments: Well Condition: Good General Comments:

HACH Kit Sulfide: 0.0 mg/L Hach Kit Ferrous Iron: 0.0 mg/L

Bottle Set Summary

6 VOA w/ HCl	2 125 mL Plastic	500 mL Plastic	8 40 mL Amber VOA w/ HCl	250 mL Amber Glass w/ H2S04
2 125 mL w/ EDA	2 250 mL Plastic	250 mL Plastic w/ H2SO4	4 250 mL Plastic w/ HNO3	500 mL Amber Glass w/ H2S04

*INDICATOR PARAMETERS HAVE STABLIZED WHEN 3 CONSECUTIVE READINGS ARE WITHIN:

± 0.1 for pH; ± 3% for Cond and Temp; ± 10 mv for ORP; ± 10% or <0.5 mg/L for DO; ± 10% or <10 NTU Turbidity

LOW FLOW GROUNDWATER SAMPLING LOG

NERT, Henderson, NV

Task Name: SWF Area Bio Treatability Study	Task Manager: D. Grady/ J. Dabbs	Task No.: M11	Date: 2022-12-14	Well ID: SWFTS-MW04
Field Samplers: D. Begley				
Transducer Removal Time: n/a	Transducer Redeployment Time: n/a			General Well Condition: Good
Depth to Water (ft): 6.90	Screened Interval Top (ft): 25.8			Pump Intake Depth (ft): 32.80
Well Depth (ft): 39.43	Screened/Open Interval Bottom (ft): 40.4			Well Diameter (in): 2
Pump/Tubing Type: QED Bladder Pump & TLPE/LDPE	GW Disposal: GW-11			Equipment Decon. Method: Alconox/DI Rinse SOP
Y Dedicated Tubing Present? (Y/N)	N New Dedicated Tubing Placed? (Y/N)			
Purge Start Time: 07:44				

Time	Temp. (°C)		pH (pH Units)		Conductivity (mS/cm)		DO (mg/L)		ORP (mV)		Turbidity (NTU)		Purge Rate (mL/min)	Depth to Water (ft)	Cum. Vol. Purged (mL)	Color/Odor
	READ	CHANGE*	READ	CHANGE*	READ	CHANGE*	READ	CHANGE*	READ	CHANGE*	READ	CHANGE*				
07:44	20.2		6.98		3.284		4.28		46.0		16.9		200	6.92		Clear/None
07:47	21.2		7.00		3.365		2.27		48.6		15.2		200	6.92	600	Clear/None
07:50	21.3		7.13		3.374		1.69		42.8		16.7		200	6.92	1200	Clear/None
07:53	21.5		7.15		3.389		1.42		41.9		20.3		200	6.92	1800	Clear/None
07:56	21.5		7.16		3.403		1.28		41.7		12.6		200	6.92	2400	Clear/None
07:59	21.4		7.17		3.386		1.21		41.6		16.9		200	6.92	3000	Clear/None
08:02	21.5	0%	7.17	0.0	3.392	0%	1.08	0%	42.0	0.1	9.2	<10	200	6.92	3600	Clear/None
08:06	21.2	0%	7.18	0.0	3.382	0%	1.12	3%	41.9	0.0	8.6	<10	200	6.92	4400	Clear/None
08:09	21.4	0%	7.18	0.0	3.395	0%	1.05	3%	41.7	0.2	9.8	<10	200	6.92	5000	Clear/None

Stop Purge Time: 08:10	Sample Time: 08:10	QA/QC Sample Time(s): n/a	*SWFTS-MW04*
	Sample ID: SWFTS-MW04-EM40	QA/QC Sample ID(s): n/a	

Observations/Comments: Well Condition: Good General Comments:

HACH Kit Sulfide: 0.0 mg/L Hach Kit Ferrous Iron: 0.0 mg/L

Bottle Set Summary

3 VOA w/ HCl	1 125 mL Plastic	500 mL Plastic	4 40 mL Amber VOA w/ HCl	250 mL Amber Glass w/ H2S04
1 125 mL w/ EDA	1 250 mL Plastic	250 mL Plastic w/ H2SO4	2 250 mL Plastic w/ HNO3	500 mL Amber Glass w/ H2SO4

*INDICATOR PARAMETERS HAVE STABLIZED WHEN 3 CONSECUTIVE READINGS ARE WITHIN:

± 0.1 for pH; ± 3% for Cond and Temp; ± 10 mv for ORP; ± 10% or <0.5 mg/L for DO; ± 10% or <10 NTU Turbidity

LOW FLOW GROUNDWATER SAMPLING LOG

NERT, Henderson, NV

Task Name: SWF Area Bio Treatability Study	Task Manager: D. Grady/ J. Dabbs	Task No.: M11	Date: 2022-12-14	Well ID: SWFTS-MW06A
Field Samplers: D. Begley				
Transducer Removal Time: n/a	Transducer Redeployment Time: n/a			General Well Condition: Good
Depth to Water (ft): 1.56	Screened Interval Top (ft): 11.8			Pump Intake Depth (ft): 16.20
Well Depth (ft): 20.89	Screened/Open Interval Bottom (ft): 21.4			Well Diameter (in): 2
Pump/Tubing Type: QED Bladder Pump & TLPE/LDPE	GW Disposal: GW-11			Equipment Decon. Method: Alconox/DI Rinse SOP
Y Dedicated Tubing Present? (Y/N)	N New Dedicated Tubing Placed? (Y/N)			
Purge Start Time: 10:04				

Time	Temp. (°C)		pH (pH Units)		Conductivity (mS/cm)		DO (mg/L)		ORP (mV)		Turbidity (NTU)		Purge Rate (mL/min)	Depth to Water (ft)	Cum. Vol. Purged (mL)	Color/Odor
	READ	CHANGE*	READ	CHANGE*	READ	CHANGE*	READ	CHANGE*	READ	CHANGE*	READ	CHANGE*				
10:04	19.5		7.70		2.764		5.74		42.3		60.4		200	1.56		Clear/None
10:07	20.9		7.20		2.843		2.18		60.7		41.1		200	1.56	600	Clear/None
10:10	21.0		7.22		2.848		1.57		59.2		35.4		200	1.56	1200	Clear/None
10:13	21.1		7.19		2.852		1.31		59.8		25.8		200	1.56	1800	Clear/None
10:16	21.3		7.19		2.860		1.17		59.9		31.6		200	1.56	2400	Clear/None
10:19	21.4	0%	7.18	0.0	2.865	0%	1.08	5%	59.8	0.1	23.3	14%	200	1.56	3000	Clear/None
10:22	21.3	0%	7.18	0.0	2.858	0%	1.02	0%	59.6	0.1	19.4	4%	200	1.56	3600	Clear/None
10:25	21.1	0%	7.17	0.0	2.850	0%	0.98	4%	59.7	0.0	18.4	9%	200	1.56	4200	Clear/None

Stop Purge Time: 10:26	Sample Time: 10:28	QA/QC Sample Time(s): 10:28	*SWFTS-MW06A*
	Sample ID: SWFTS-MW06A-EM40	QA/QC Sample ID(s): SWFTS-MW06A-EM40-FD	

Observations/Comments: Well Condition: Good General Comments:

HACH Kit Sulfide: 0.0 mg/L Hach Kit Ferrous Iron: 0.0 mg/L

Bottle Set Summary

6 VOA w/ HCl	2 125 mL Plastic	500 mL Plastic	8 40 mL Amber VOA w/ HCl	250 mL Amber Glass w/ H2S04
2 125 mL w/ EDA	2 250 mL Plastic	250 mL Plastic w/ H2SO4	4 250 mL Plastic w/ HNO3	500 mL Amber Glass w/ H2S04

*INDICATOR PARAMETERS HAVE STABLIZED WHEN 3 CONSECUTIVE READINGS ARE WITHIN:

± 0.1 for pH; ± 3% for Cond and Temp; ± 10 mv for ORP; ± 10% or <0.5 mg/L for DO; ± 10% or <10 NTU Turbidity

LOW FLOW GROUNDWATER SAMPLING LOG

NERT, Henderson, NV

Task Name: SWF Area Bio Treatability Study	Task Manager: D. Grady/ J. Dabbs	Task No.: M11	Date: 2022-12-14	Well ID: SWFTS-MW06B
Field Samplers: D. Begley				
Transducer Removal Time: 11:08	Transducer Redeployment Time: 11:13			General Well Condition: Good
Depth to Water (ft): 1.65	Screened Interval Top (ft): 25.9			Pump Intake Depth (ft): 30.30
Well Depth (ft): 35.03	Screened/Open Interval Bottom (ft): 35.5			Well Diameter (in): 2
Pump/Tubing Type: QED Bladder Pump & TLPE/LDPE	GW Disposal: GW-11			Equipment Decon. Method: Alconox/DI Rinse SOP
Y Dedicated Tubing Present? (Y/N)	N New Dedicated Tubing Placed? (Y/N)			
Purge Start Time: 11:17				

Time	Temp. (°C)		pH (pH Units)		Conductivity (mS/cm)		DO (mg/L)		ORP (mV)		Turbidity (NTU)		Purge Rate (mL/min)	Depth to Water (ft)	Cum. Vol. Purged (mL)	Color/Odor
	READ	CHANGE*	READ	CHANGE*	READ	CHANGE*	READ	CHANGE*	READ	CHANGE*	READ	CHANGE*				
11:17	20.8		7.30		2.798		3.11		61.1		152.1		200	1.65		Clear/None
11:20	21.0		7.22		2.821		1.88		62.2		144.9		200	1.65	600	Clear/None
11:23	21.0		7.21		2.813		1.47		62.2		138.1		200	1.65	1200	Clear/None
11:26	21.0		7.20		2.810		1.26		62.1		84.1		200	1.65	1800	Clear/None
11:29	21.1	0%	7.19	0.0	2.817	0%	1.13	2%	61.6	0.4	63.1	17%	200	1.65	2400	Clear/None
11:32	21.2	0%	7.19	0.0	2.820	0%	1.06	4%	61.1	0.1	49.5	7%	200	1.65	3000	Clear/None
11:35	21.1	0%	7.19	0.0	2.821	0%	1.13	2%	60.9	0.3	48.8	9%	200	1.65	3600	Clear/None

Stop Purge Time: 11:36	Sample Time: 11:37	QA/QC Sample Time(s): n/a	*SWFTS-MW06B*
	Sample ID: SWFTS-MW06B-EM40	QA/QC Sample ID(s): n/a	

Observations/Comments: Well Condition: Good General Comments:

HACH Kit Sulfide: 0.0 mg/L Hach Kit Ferrous Iron: 0.0 mg/L

Bottle Set Summary

3 VOA w/ HCl	1 125 mL Plastic	500 mL Plastic	4 40 mL Amber VOA w/ HCl	250 mL Amber Glass w/ H2S04
1 125 mL w/ EDA	1 250 mL Plastic	250 mL Plastic w/ H2SO4	2 250 mL Plastic w/ HNO3	500 mL Amber Glass w/ H2S04

*INDICATOR PARAMETERS HAVE STABLIZED WHEN 3 CONSECUTIVE READINGS ARE WITHIN:

± 0.1 for pH; ± 3% for Cond and Temp; ± 10 mv for ORP; ± 10% or <0.5 mg/L for DO; ± 10% or <10 NTU Turbidity

LOW FLOW GROUNDWATER SAMPLING LOG

NERT, Henderson, NV

Task Name: SWF Area Bio Treatability Study	Task Manager: D. Grady/ J. Dabbs	Task No.: M11	Date: 2022-12-14	Well ID: SWFTS-MW07A
Field Samplers: D. Begley				
Transducer Removal Time: n/a	Transducer Redeployment Time: n/a			General Well Condition: Good
Depth to Water (ft): 11.15	Screened Interval Top (ft): 15.0			Pump Intake Depth (ft): 22.00
Well Depth (ft): 29.85	Screened/Open Interval Bottom (ft): 29.5			Well Diameter (in): 4
Pump/Tubing Type: QED Bladder Pump & TLPE/LDPE	GW Disposal: GW-11			Equipment Decon. Method: Alconox/DI Rinse SOP
Y Dedicated Tubing Present? (Y/N)	N New Dedicated Tubing Placed? (Y/N)			
Purge Start Time: 12:16				

Time	Temp. (°C)		pH (pH Units)		Conductivity (mS/cm)		DO (mg/L)		ORP (mV)		Turbidity (NTU)		Purge Rate (mL/min)	Depth to Water (ft)	Cum. Vol. Purged (mL)	Color/Odor
	READ	CHANGE*	READ	CHANGE*	READ	CHANGE*	READ	CHANGE*	READ	CHANGE*	READ	CHANGE*				
12:16	22.3		6.85		5.336		2.46		91.0		5.3		200	11.15		Clear/None
12:19	22.9		6.90		5.410		1.55		88.7		4.4		200	11.15	600	Clear/None
12:22	22.8	0%	6.92	0.0	5.397	0%	1.26	5%	87.0	1.0	4.3	<10	200	11.15	1200	Clear/None
12:25	22.8	0%	6.92	0.0	5.395	0%	1.19	0%	86.1	0.1	5.7	<10	200	11.15	1800	Clear/None
12:28	22.9	0%	6.93	0.0	5.408	0%	1.14	4%	85.0	1.0	4.2	<10	200	11.15	2400	Clear/None

Stop Purge Time: 12:29	Sample Time: 12:28	QA/QC Sample Time(s): n/a	*SWFTS-MW07A*
	Sample ID: SWFTS-MW07A-EM40	QA/QC Sample ID(s): n/a	

Observations/Comments: Well Condition: Good General Comments:

HACH Kit Sulfide: 0.0 mg/L Hach Kit Ferrous Iron: 0.0 mg/L

Bottle Set Summary

3 VOA w/ HCl	1 125 mL Plastic	500 mL Plastic	4 40 mL Amber VOA w/ HCl	250 mL Amber Glass w/ H2S04
1 125 mL w/ EDA	1 250 mL Plastic	250 mL Plastic w/ H2SO4	2 250 mL Plastic w/ HNO3	500 mL Amber Glass w/ H2S04

*INDICATOR PARAMETERS HAVE STABLIZED WHEN 3 CONSECUTIVE READINGS ARE WITHIN:

± 0.1 for pH; ± 3% for Cond and Temp; ± 10 mv for ORP; ± 10% or <0.5 mg/L for DO; ± 10% or <10 NTU Turbidity

LOW FLOW GROUNDWATER SAMPLING LOG

NERT, Henderson, NV

Task Name: SWF Area Bio Treatability Study	Task Manager: D. Grady/ J. Dabbs	Task No.: M11	Date: 2022-12-14	Well ID: SWFTS-MW07B
Field Samplers: D. Begley				
Transducer Removal Time: 12:52	Transducer Redeployment Time: 12:55			General Well Condition: Good
Depth to Water (ft): 10.69	Screened Interval Top (ft): 33.8			Pump Intake Depth (ft): 35.70
Well Depth (ft): 38.48	Screened/Open Interval Bottom (ft): 38.3			Well Diameter (in): 2
Pump/Tubing Type: QED Bladder Pump & TLPE/LDPE	GW Disposal: GW-11			Equipment Decon. Method: Alconox/DI Rinse SOP
Y Dedicated Tubing Present? (Y/N)	N New Dedicated Tubing Placed? (Y/N)			
Purge Start Time: 12:59				

Time	Temp. (°C)		pH (pH Units)		Conductivity (mS/cm)		DO (mg/L)		ORP (mV)		Turbidity (NTU)		Purge Rate (mL/min)	Depth to Water (ft)	Cum. Vol. Purged (mL)	Color/Odor
	READ	CHANGE*	READ	CHANGE*	READ	CHANGE*	READ	CHANGE*	READ	CHANGE*	READ	CHANGE*				
12:59	22.3		7.07		4.437		2.05		73.4		87.4		200	10.69		Clear/None
13:02	22.4		7.00		4.433		1.43		74.5		56.2		200	10.69	600	Clear/None
13:05	21.2		7.00		4.310		1.27		75.1		45.4		200	10.69	1200	Clear/None
13:08	20.9		6.99		4.301		1.19		75.6		30.2		200	10.69	1800	Clear/None
13:11	20.9	1%	6.98	0.0	4.301	0%	1.12	4%	75.7	0.3	23.9	10%	200	10.69	2400	Clear/None
13:14	21.4	1%	6.97	0.0	4.352	0%	1.06	1%	75.4	0.0	20.8	3%	200	10.69	3000	Clear/None
13:17	21.1	0%	6.98	0.0	4.336	0%	1.04	3%	75.1	0.3	19.9	7%	200	10.69	3600	Clear/None

Stop Purge Time: 13:18	Sample Time: 13:18	QA/QC Sample Time(s): n/a	*SWFTS-MW07B*
	Sample ID: SWFTS-MW07B-EM40	QA/QC Sample ID(s): n/a	

Observations/Comments: Well Condition: Good General Comments:

HACH Kit Sulfide: 0.0 mg/L Hach Kit Ferrous Iron: 0.0 mg/L

Bottle Set Summary

3 VOA w/ HCl	1 125 mL Plastic	500 mL Plastic	4 40 mL Amber VOA w/ HCl	250 mL Amber Glass w/ H2S04
1 125 mL w/ EDA	1 250 mL Plastic	250 mL Plastic w/ H2SO4	2 250 mL Plastic w/ HNO3	500 mL Amber Glass w/ H2S04

*INDICATOR PARAMETERS HAVE STABLIZED WHEN 3 CONSECUTIVE READINGS ARE WITHIN:

± 0.1 for pH; ± 3% for Cond and Temp; ± 10 mv for ORP; ± 10% or <0.5 mg/L for DO; ± 10% or <10 NTU Turbidity

LOW FLOW GROUNDWATER SAMPLING LOG

NERT, Henderson, NV

Task Name: SWF Area Bio Treatability Study	Task Manager: D. Grady/ J. Dabbs	Task No.: M11	Date: 2022-12-14	Well ID: SWFTS-MW08C
Field Samplers: D. Begley				
Transducer Removal Time: n/a	Transducer Redeployment Time: n/a			General Well Condition: Good
Depth to Water (ft): 13.62	Screened Interval Top (ft): 49.9			Pump Intake Depth (ft): 59.30
Well Depth (ft): 69.73	Screened/Open Interval Bottom (ft): 69.5			Well Diameter (in): 2
Pump/Tubing Type: QED Bladder Pump & TLPE/LDPE	GW Disposal: GW-11			Equipment Decon. Method: Alconox/DI Rinse SOP
Y Dedicated Tubing Present? (Y/N)	N New Dedicated Tubing Placed? (Y/N)			
Purge Start Time: 13:54				

Time	Temp. (°C)		pH (pH Units)		Conductivity (mS/cm)		DO (mg/L)		ORP (mV)		Turbidity (NTU)		Purge Rate (mL/min)	Depth to Water (ft)	Cum. Vol. Purged (mL)	Color/Odor
	READ	CHANGE*	READ	CHANGE*	READ	CHANGE*	READ	CHANGE*	READ	CHANGE*	READ	CHANGE*				
13:54	20.4		7.23		7.581		4.43		82.2		67.2		200	13.65		Clear/None
13:57	21.2		7.16		7.762		2.35		82.2		73.2		200	13.65	600	Clear/None
14:00	21.5		7.13		7.815		1.66		82.1		70.3		200	13.65	1200	Clear/None
14:03	21.7		7.12		7.849		1.36		81.7		55.1		200	13.65	1800	Clear/None
14:06	21.8	0%	7.11	0.0	7.864	0%	1.21	4%	81.1	0.5	49.9	42%	200	13.65	2400	Clear/None
14:09	21.9	0%	7.11	0.0	7.891	0%	1.18	1%	80.6	0.0	28.9	17%	200	13.65	3000	Clear/None
14:12	21.6	0%	7.11	0.0	7.829	0%	1.09	6%	80.0	0.6	26.2	25%	200	13.65	3600	Clear/None

Stop Purge Time: 14:13	Sample Time: 14:13	QA/QC Sample Time(s): n/a	*SWFTS-MW08C*
	Sample ID: SWFTS-MW08C-EM40	QA/QC Sample ID(s): n/a	

Observations/Comments: Well Condition: Good General Comments:

HACH Kit Sulfide: 0.0 mg/L Hach Kit Ferrous Iron: 0.0 mg/L

Bottle Set Summary

3 VOA w/ HCl	1 125 mL Plastic	500 mL Plastic	4 40 mL Amber VOA w/ HCl	250 mL Amber Glass w/ H2S04
1 125 mL w/ EDA	1 250 mL Plastic	250 mL Plastic w/ H2SO4	2 250 mL Plastic w/ HNO3	500 mL Amber Glass w/ H2S04

*INDICATOR PARAMETERS HAVE STABLIZED WHEN 3 CONSECUTIVE READINGS ARE WITHIN:

± 0.1 for pH; ± 3% for Cond and Temp; ± 10 mv for ORP; ± 10% or <0.5 mg/L for DO; ± 10% or <10 NTU Turbidity

LOW FLOW GROUNDWATER SAMPLING LOG

NERT, Henderson, NV

Task Name: SWF Area Bio Treatability Study	Task Manager: D. Grady/ J. Dabbs	Task No.: M11	Date: 2022-12-13	Well ID: SWFTS-MW09A
Field Samplers: D. Begley				
Transducer Removal Time: 10:38	Transducer Redeployment Time: 00:52			General Well Condition: Good
Depth to Water (ft): 13.12	Screened Interval Top (ft): 19.3			Pump Intake Depth (ft): 23.70
Well Depth (ft): 28.98	Screened/Open Interval Bottom (ft): 28.9			Well Diameter (in): 4
Pump/Tubing Type: QED Bladder Pump & TLPE/LDPE	GW Disposal: GW-11			Equipment Decon. Method: Alconox/DI Rinse SOP
Y Dedicated Tubing Present? (Y/N)	N New Dedicated Tubing Placed? (Y/N)			
Purge Start Time: 10:56				

Time	Temp. (°C)		pH (pH Units)		Conductivity (mS/cm)		DO (mg/L)		ORP (mV)		Turbidity (NTU)		Purge Rate (mL/min)	Depth to Water (ft)	Cum. Vol. Purged (mL)	Color/Odor
	READ	CHANGE*	READ	CHANGE*	READ	CHANGE*	READ	CHANGE*	READ	CHANGE*	READ	CHANGE*				
10:56	22.7		6.90		5.288		2.46		69.7		4.7		200	13.12		Clear/None
10:59	22.4		6.87		5.252		1.82		71.6		4.8		200	13.12	600	Clear/None
11:02	22.6		6.85		5.278		1.56		72.2		4.9		200	13.12	1200	Clear/None
11:05	22.8	0%	6.84	0.0	5.301	0%	1.41	6%	72.2	0.2	5.1	<10	200	13.12	1800	Clear/None
11:08	22.9	0%	6.84	0.0	5.312	0%	1.34	1%	72.1	0.1	4.1	<10	200	13.12	2400	Clear/None
11:13	23.2	1%	6.84	0.0	5.332	0%	1.23	7%	71.7	0.3	5.5	<10	200	13.12	3400	Clear/None

Stop Purge Time: 11:14	Sample Time: 11:14	QA/QC Sample Time(s): n/a	*SWFTS-MW09A*
	Sample ID: SWFTS-MW09A-EM40	QA/QC Sample ID(s): n/a	

Observations/Comments: Well Condition: Good General Comments:

HACH Kit Sulfide: 0.0 mg/L Hach Kit Ferrous Iron: 0.0 mg/L

Bottle Set Summary

3 VOA w/ HCl	1 125 mL Plastic	500 mL Plastic	4 40 mL Amber VOA w/ HCl	250 mL Amber Glass w/ H2S04
1 125 mL w/ EDA	1 250 mL Plastic	250 mL Plastic w/ H2SO4	2 250 mL Plastic w/ HNO3	500 mL Amber Glass w/ H2S04

*INDICATOR PARAMETERS HAVE STABLIZED WHEN 3 CONSECUTIVE READINGS ARE WITHIN:

± 0.1 for pH; ± 3% for Cond and Temp; ± 10 mv for ORP; ± 10% or <0.5 mg/L for DO; ± 10% or <10 NTU Turbidity

LOW FLOW GROUNDWATER SAMPLING LOG

NERT, Henderson, NV

Task Name: SWF Area Bio Treatability Study	Task Manager: D. Grady/ J. Dabbs	Task No.: M11	Date: 2022-12-13	Well ID: SWFTS-MW09B
Field Samplers: D. Begley				
Transducer Removal Time: n/a	Transducer Redeployment Time: n/a			General Well Condition: Good
Depth to Water (ft): 13.26	Screened Interval Top (ft): 34.4			Pump Intake Depth (ft): 36.20
Well Depth (ft): 38.99	Screened/Open Interval Bottom (ft): 39.0			Well Diameter (in): 2
Pump/Tubing Type: QED Bladder Pump & TLPE/LDPE	GW Disposal: GW-11			Equipment Decon. Method: Alconox/DI Rinse SOP
Y Dedicated Tubing Present? (Y/N)	N New Dedicated Tubing Placed? (Y/N)			
Purge Start Time: 12:03				

Time	Temp. (°C)		pH (pH Units)		Conductivity (mS/cm)		DO (mg/L)		ORP (mV)		Turbidity (NTU)		Purge Rate (mL/min)	Depth to Water (ft)	Cum. Vol. Purged (mL)	Color/Odor
	READ	CHANGE*	READ	CHANGE*	READ	CHANGE*	READ	CHANGE*	READ	CHANGE*	READ	CHANGE*				
12:03	21.2		7.28		5.024		3.59		59.4		0.3		200	13.27		Clear/None
12:06	22.1		7.05		5.172		2.15		62.6		-1.8		200	13.27	600	Clear/None
12:09	22.3		6.98		5.202		1.73		63.6		-2.6		200	13.27	1200	Clear/None
12:20	21.9		6.60		5.014		4.02		110.3		2.8		200	13.27	3400	Clear/None
12:21	21.9		6.73		5.097		2.90		105.4		2.0		200	13.27	3600	Clear/None
12:25	21.6		6.87		5.096		1.80		97.1		1.7		200	13.27	4400	Clear/None
12:28	21.4		6.90		5.061		1.50		93.8		1.3		200	13.27	5000	Clear/None
12:31	21.4	0%	6.91	0.0	5.059	0%	1.33	7%	91.5	1.7	1.1	<10	200	13.27	5600	Clear/None
12:34	21.6	0%	6.91	0.0	5.077	0%	1.23	0%	89.7	0.1	1.1	<10	200	13.27	6200	Clear/None
12:37	21.6	0%	6.91	0.0	5.076	0%	1.16	6%	88.1	1.7	1.1	<10	200	13.27	6800	Clear/None

Stop Purge Time: 12:38	Sample Time: 12:38	QA/QC Sample Time(s): n/a	*SWFTS-MW09B*
	Sample ID: SWFTS-MW09B-EM40	QA/QC Sample ID(s): n/a	

Observations/Comments: Well Condition: Good General Comments:

HACH Kit Sulfide: 0.0 mg/L Hach Kit Ferrous Iron: 0.0 mg/L

Bottle Set Summary

3 VOA w/ HCl	1 125 mL Plastic	500 mL Plastic	4 40 mL Amber VOA w/ HCl	250 mL Amber Glass w/ H2S04
1 125 mL w/ EDA	1 250 mL Plastic	250 mL Plastic w/ H2SO4	2 250 mL Plastic w/ HNO3	500 mL Amber Glass w/ H2S04

*INDICATOR PARAMETERS HAVE STABLIZED WHEN 3 CONSECUTIVE READINGS ARE WITHIN:

± 0.1 for pH; ± 3% for Cond and Temp; ± 10 mv for ORP; ± 10% or <0.5 mg/L for DO; ± 10% or <10 NTU Turbidity

LOW FLOW GROUNDWATER SAMPLING LOG

NERT, Henderson, NV

Task Name: SWF Area Bio Treatability Study	Task Manager: D. Grady/ J. Dabbs	Task No.: M11	Date: 2022-12-15	Well ID: SWFTS-MW10A
Field Samplers: D. Begley				
Transducer Removal Time: 07:48	Transducer Redeployment Time: 07:49			General Well Condition: Good
Depth to Water (ft): 9.12	Screened Interval Top (ft): 20.4			Pump Intake Depth (ft): 27.40
Well Depth (ft): 34.86	Screened/Open Interval Bottom (ft): 35.0			Well Diameter (in): 4
Pump/Tubing Type: QED Bladder Pump & TLPE/LDPE	GW Disposal: GW-11			Equipment Decon. Method: Alconox/DI Rinse SOP
Y Dedicated Tubing Present? (Y/N)	N New Dedicated Tubing Placed? (Y/N)			
Purge Start Time: 07:58				

Time	Temp. (°C)		pH (pH Units)		Conductivity (mS/cm)		DO (mg/L)		ORP (mV)		Turbidity (NTU)		Purge Rate (mL/min)	Depth to Water (ft)	Cum. Vol. Purged (mL)	Color/Odor
	READ	CHANGE*	READ	CHANGE*	READ	CHANGE*	READ	CHANGE*	READ	CHANGE*	READ	CHANGE*				
07:58	22.1		6.60		6.254		3.21		147.2		5.3		200	9.12		Clear/None
08:01	22.7		6.75		6.417		1.70		138.0		4.3		200	9.12	600	Clear/None
08:04	22.9		6.80		6.474		1.29		132.5		4.3		200	9.12	1200	Clear/None
08:07	23.1	0%	6.82	0.0	6.494	0%	1.13	7%	128.6	2.9	4.3	<10	200	9.12	1800	Clear/None
08:10	22.9	0%	6.84	0.0	6.482	0%	1.04	0%	125.5	0.2	4.9	<10	200	9.12	2400	Clear/None
08:13	22.9	0%	6.84	0.0	6.478	0%	0.97	7%	123.0	2.7	4.7	<10	200	9.12	3000	Clear/None

Stop Purge Time: 08:14	Sample Time: 08:14	QA/QC Sample Time(s): 08:14	*SWFTS-MW10A*
	Sample ID: SWFTS-MW10A-EM40	QA/QC Sample ID(s): SWFTS-MW10A-EM40-MS/MSD	

Observations/Comments: Well Condition: Good General Comments:

HACH Kit Sulfide: 0.0 mg/L Hach Kit Ferrous Iron: 0.0 mg/L

Bottle Set Summary

6 VOA w/ HCl	2 125 mL Plastic	500 mL Plastic	8 40 mL Amber VOA w/ HCl	250 mL Amber Glass w/ H2S04
2 125 mL w/ EDA	2 250 mL Plastic	250 mL Plastic w/ H2SO4	4 250 mL Plastic w/ HNO3	500 mL Amber Glass w/ H2S04

*INDICATOR PARAMETERS HAVE STABLIZED WHEN 3 CONSECUTIVE READINGS ARE WITHIN:

± 0.1 for pH; ± 3% for Cond and Temp; ± 10 mv for ORP; ± 10% or <0.5 mg/L for DO; ± 10% or <10 NTU Turbidity

LOW FLOW GROUNDWATER SAMPLING LOG

NERT, Henderson, NV

Task Name: SWF Area Bio Treatability Study	Task Manager: D. Grady/ J. Dabbs	Task No.: M11	Date: 2022-12-15	Well ID: SWFTS-MW10C
Field Samplers: D. Begley				
Transducer Removal Time: 08:54	Transducer Redeployment Time: 08:54			General Well Condition: Good
Depth to Water (ft): 8.36	Screened Interval Top (ft): 43.5			Pump Intake Depth (ft): 53.10
Well Depth (ft): 62.27	Screened/Open Interval Bottom (ft): 63.1			Well Diameter (in): 2
Pump/Tubing Type: QED Bladder Pump & TLPE/LDPE	GW Disposal: GW-11			Equipment Decon. Method: Alconox/DI Rinse SOP
Y Dedicated Tubing Present? (Y/N)	N New Dedicated Tubing Placed? (Y/N)			
Purge Start Time: 09:04				

Time	Temp. (°C)		pH (pH Units)		Conductivity (mS/cm)		DO (mg/L)		ORP (mV)		Turbidity (NTU)		Purge Rate (mL/min)	Depth to Water (ft)	Cum. Vol. Purged (mL)	Color/Odor
	READ	CHANGE*	READ	CHANGE*	READ	CHANGE*	READ	CHANGE*	READ	CHANGE*	READ	CHANGE*				
09:04	21.5		7.17		7.376		2.70		-29.3		2506.6		200	8.30		Clear/None
09:07	21.8		7.08		7.752		1.70		-17.4		2085.9		200	8.30	600	Clear/None
09:10	22.3		7.05		7.878		1.36		-7.1		1700.9		200	8.30	1200	Clear/None
09:13	22.6		7.03		7.944		1.18		0.6		1433.2		200	8.30	1800	Clear/None
09:16	23.1		7.08		3.811		3.86		12.3		966.0		200	8.30	2400	Clear/None
09:19	23.0		7.04		8.074		1.39		16.1		802.3		200	8.30	3000	Clear/None
09:22	23.2		7.03		8.104		0.99		18.9		722.2		200	8.30	3600	Clear/None
09:25	23.4		7.09		0.083		4.06		26.5		58.6		200	8.30	4200	Clear/None
09:28	23.2		7.05		8.133		1.20		28.3		543.1		200	8.30	4800	Clear/None
09:31	22.2	0%	7.05	0.0	7.979	0%	0.97	4%	29.9	1.5	471.4	4%	200	8.30	5400	Clear/None
09:34	22.3	0%	7.03	0.0	7.987	0%	0.92	0%	31.6	0.2	428.6	5%	200	8.30	6000	Clear/None
09:37	22.6	1%	7.03	0.0	8.015	0%	0.89	3%	32.8	1.4	459.8	1%	200	8.30	6600	Clear/None

Stop Purge Time: 09:38	Sample Time: 09:37	QA/QC Sample Time(s): n/a	*SWFTS-MW10C*
	Sample ID: SWFTS-MW10C-EM40	QA/QC Sample ID(s): n/a	

Observations/Comments: Well Condition: Good General Comments:

HACH Kit Sulfide: 0.0 mg/L Hach Kit Ferrous Iron: 0.0 mg/L

Bottle Set Summary

3 VOA w/ HCl	1 125 mL Plastic	500 mL Plastic	4 40 mL Amber VOA w/ HCl	250 mL Amber Glass w/ H2S04
1 125 mL w/ EDA	1 250 mL Plastic	250 mL Plastic w/ H2SO4	2 250 mL Plastic w/ HNO3	500 mL Amber Glass w/ H2S04

*INDICATOR PARAMETERS HAVE STABLIZED WHEN 3 CONSECUTIVE READINGS ARE WITHIN:

± 0.1 for pH; ± 3% for Cond and Temp; ± 10 mv for ORP; ± 10% or <0.5 mg/L for DO; ± 10% or <10 NTU Turbidity

LOW FLOW GROUNDWATER SAMPLING LOG

NERT, Henderson, NV

Task Name: SWF Area Bio Treatability Study	Task Manager: D. Grady/ J. Dabbs	Task No.: M11	Date: 2022-12-15	Well ID: SWFTS-MW11
Field Samplers: D. Begley				
Transducer Removal Time: n/a	Transducer Redeployment Time: n/a			General Well Condition: Good
Depth to Water (ft): 15.31	Screened Interval Top (ft): 14.8			Pump Intake Depth (ft): 26.60
Well Depth (ft): 39.29	Screened/Open Interval Bottom (ft): 39.6			Well Diameter (in): 4
Pump/Tubing Type: QED Bladder Pump & TLPE/LDPE	GW Disposal: GW-11			Equipment Decon. Method: Alconox/DI Rinse SOP
Y Dedicated Tubing Present? (Y/N)	N New Dedicated Tubing Placed? (Y/N)			
Purge Start Time: 10:18				

Time	Temp. (°C)		pH (pH Units)		Conductivity (mS/cm)		DO (mg/L)		ORP (mV)		Turbidity (NTU)		Purge Rate (mL/min)	Depth to Water (ft)	Cum. Vol. Purged (mL)	Color/Odor
	READ	CHANGE*	READ	CHANGE*	READ	CHANGE*	READ	CHANGE*	READ	CHANGE*	READ	CHANGE*				
10:18	21.2		7.32		4.786		6.31		46.1		38.0		200	15.31		Clear/None
10:21	22.6	1%	7.24	0.0	4.920	0%	5.58	3%	51.7	3.9	9.6	<10	200	15.31	600	Clear/None
10:24	23.1	0%	7.23	0.0	4.971	0%	5.34	0%	55.9	0.3	5.0	<10	200	15.31	1200	Clear/None
10:27	23.2	1%	7.23	0.0	4.986	0%	5.25	2%	59.2	3.6	4.4	<10	200	15.31	1800	Clear/None

Stop Purge Time: 10:28	Sample Time: 10:30	QA/QC Sample Time(s): 10:30	*SWFTS-MW11*
	Sample ID: SWFTS-MW11-EM40	QA/QC Sample ID(s): SWFTS-MW11-EM40-FD	

Observations/Comments: Well Condition: Good General Comments:

HACH Kit Sulfide: 0.0 mg/L Hach Kit Ferrous Iron: 0.0 mg/L

Bottle Set Summary

6 VOA w/ HCl	2 125 mL Plastic	500 mL Plastic	8 40 mL Amber VOA w/ HCl	250 mL Amber Glass w/ H2S04
2 125 mL w/ EDA	2 250 mL Plastic	250 mL Plastic w/ H2SO4	4 250 mL Plastic w/ HNO3	500 mL Amber Glass w/ H2S04

*INDICATOR PARAMETERS HAVE STABLIZED WHEN 3 CONSECUTIVE READINGS ARE WITHIN:

± 0.1 for pH; ± 3% for Cond and Temp; ± 10 mv for ORP; ± 10% or <0.5 mg/L for DO; ± 10% or <10 NTU Turbidity

LOW FLOW GROUNDWATER SAMPLING LOG

NERT, Henderson, NV

Task Name: SWF Area Bio Treatability Study	Task Manager: D. Grady/ J. Dabbs	Task No.: M11	Date: 2022-12-15	Well ID: SWFTS-MW12
Field Samplers: D. Begley				
Transducer Removal Time: n/a	Transducer Redeployment Time: n/a			General Well Condition: Good
Depth to Water (ft): 17.22	Screened Interval Top (ft): 15.8			Pump Intake Depth (ft): 27.90
Well Depth (ft): 40.02	Screened/Open Interval Bottom (ft): 40.6			Well Diameter (in): 4
Pump/Tubing Type: QED Bladder Pump & TLPE/LDPE	GW Disposal: GW-11			Equipment Decon. Method: Alconox/DI Rinse SOP
Y Dedicated Tubing Present? (Y/N)	N New Dedicated Tubing Placed? (Y/N)			
Purge Start Time: 11:33				

Time	Temp. (°C)		pH (pH Units)		Conductivity (mS/cm)		DO (mg/L)		ORP (mV)		Turbidity (NTU)		Purge Rate (mL/min)	Depth to Water (ft)	Cum. Vol. Purged (mL)	Color/Odor
	READ	CHANGE*	READ	CHANGE*	READ	CHANGE*	READ	CHANGE*	READ	CHANGE*	READ	CHANGE*				
11:33	23.0		6.91		4.899		2.20		37.6		21.3		200	17.22		Clear/None
11:36	23.3		6.83		4.925		1.47		22.3		17.6		200	17.22	600	Clear/None
11:39	23.4		6.80		4.930		1.21		11.0		25.9		200	17.22	1200	Clear/None
11:42	23.3	0%	6.79	0.0	4.921	0%	1.09	5%	2.5	6.4	21.5	2%	200	17.22	1800	Clear/None
11:45	23.3	0%	6.78	0.0	4.908	0%	1.00	2%	-4.4	0.5	21.3	1%	200	17.22	2400	Clear/None
11:48	23.4	0%	6.77	0.0	4.914	0%	1.00	2%	-9.9	6.0	20.2	3%	200	17.22	3000	Clear/None

Stop Purge Time: 11:49	Sample Time: 11:49	QA/QC Sample Time(s): n/a	*SWFTS-MW12*
	Sample ID: SWFTS-MW12-EM40	QA/QC Sample ID(s): n/a	

Observations/Comments: Well Condition: Good General Comments:

HACH Kit Sulfide: 0.0 mg/L Hach Kit Ferrous Iron: 0.0 mg/L

Bottle Set Summary

3 VOA w/ HCl	1 125 mL Plastic	500 mL Plastic	4 40 mL Amber VOA w/ HCl	250 mL Amber Glass w/ H2S04
1 125 mL w/ EDA	1 250 mL Plastic	250 mL Plastic w/ H2SO4	2 250 mL Plastic w/ HNO3	500 mL Amber Glass w/ H2S04

*INDICATOR PARAMETERS HAVE STABLIZED WHEN 3 CONSECUTIVE READINGS ARE WITHIN:

± 0.1 for pH; ± 3% for Cond and Temp; ± 10 mv for ORP; ± 10% or <0.5 mg/L for DO; ± 10% or <10 NTU Turbidity

LOW FLOW GROUNDWATER SAMPLING LOG

NERT, Henderson, NV

Task Name: SWF Area Bio Treatability Study	Task Manager: D. Grady/ J. Dabbs	Task No.: M11	Date: 2022-12-15	Well ID: SWFTS-MW13
Field Samplers: J. Bunkers				
Transducer Removal Time: n/a	Transducer Redeployment Time: n/a			General Well Condition: Good
Depth to Water (ft): 22.53	Screened Interval Top (ft): 17.8			Pump Intake Depth (ft): 32.30
Well Depth (ft): 48.00	Screened/Open Interval Bottom (ft): 47.6			Well Diameter (in): 4
Pump/Tubing Type: QED Bladder Pump & TLPE/LDPE	GW Disposal: GW-11			Equipment Decon. Method: Alconox/DI Rinse SOP
Y Dedicated Tubing Present? (Y/N)	N New Dedicated Tubing Placed? (Y/N)			
Purge Start Time: 12:37				

Time	Temp. (°C)		pH (pH Units)		Conductivity (mS/cm)		DO (mg/L)		ORP (mV)		Turbidity (NTU)		Purge Rate (mL/min)	Depth to Water (ft)	Cum. Vol. Purged (mL)	Color/Odor
	READ	CHANGE*	READ	CHANGE*	READ	CHANGE*	READ	CHANGE*	READ	CHANGE*	READ	CHANGE*				
12:37	21.8		7.35		6.451		5.64		129.0		-1.9		300	22.53		Clear/None
12:40	22.5	0%	7.26	0.0	6.563	0%	5.24	0%	133.5	1.2	-2.6	<10	300	22.53	900	Clear/None
12:43	22.6	0%	7.25	0.0	6.580	0%	5.18	0%	135.0	0.3	-2.7	<10	300	22.53	1800	Clear/None
12:46	22.6	0%	7.24	0.0	6.584	0%	5.15	0%	135.6	0.9	-2.4	<10	300	22.53	2700	Clear/None

Stop Purge Time: 12:47	Sample Time: 13:00		QA/QC Sample Time(s): n/a	*SWFTS-MW13*
	Sample ID: SWFTS-MW13-EM40		QA/QC Sample ID(s): n/a	

Observations/Comments: Well Condition: Good General Comments:

HACH Kit Sulfide: 0.0 mg/L Hach Kit Ferrous Iron: 0.0 mg/L

Bottle Set Summary

3 VOA w/ HCl	1 125 mL Plastic	500 mL Plastic	4 40 mL Amber VOA w/ HCl	250 mL Amber Glass w/ H2S04
1 125 mL w/ EDA	1 250 mL Plastic	250 mL Plastic w/ H2SO4	2 250 mL Plastic w/ HNO3	500 mL Amber Glass w/ H2S04

*INDICATOR PARAMETERS HAVE STABLIZED WHEN 3 CONSECUTIVE READINGS ARE WITHIN:

± 0.1 for pH; ± 3% for Cond and Temp; ± 10 mv for ORP; ± 10% or <0.5 mg/L for DO; ± 10% or <10 NTU Turbidity

LOW FLOW GROUNDWATER SAMPLING LOG

NERT, Henderson, NV

Task Name: SWF Area Bio Treatability Study	Task Manager: D. Grady/ J. Dabbs	Task No.: M11	Date: 2022-12-15	Well ID: SWFTS-MW14
Field Samplers: J. Bunkers				
Transducer Removal Time: n/a	Transducer Redeployment Time: n/a			General Well Condition: Good
Depth to Water (ft): 9.38	Screened Interval Top (ft): 16.8			Pump Intake Depth (ft): 26.40
Well Depth (ft): 37.00	Screened/Open Interval Bottom (ft): 36.6			Well Diameter (in): 2
Pump/Tubing Type: QED Bladder Pump & TLPE/LDPE	GW Disposal: GW-11			Equipment Decon. Method: Alconox/DI Rinse SOP
Y Dedicated Tubing Present? (Y/N)	N New Dedicated Tubing Placed? (Y/N)			
Purge Start Time: 09:54				

Time	Temp. (°C)		pH (pH Units)		Conductivity (mS/cm)		DO (mg/L)		ORP (mV)		Turbidity (NTU)		Purge Rate (mL/min)	Depth to Water (ft)	Cum. Vol. Purged (mL)	Color/Odor
	READ	CHANGE*	READ	CHANGE*	READ	CHANGE*	READ	CHANGE*	READ	CHANGE*	READ	CHANGE*				
09:54	22.5		6.84		6.608		1.61		126.5		7.9		300	9.38		Clear/None
09:57	23.1		6.80		6.711		0.70		116.6		15.2		300	9.38	900	Clear/None
10:00	23.2		6.80		6.730		0.54		112.9		43.1		300	9.38	1800	Clear/None
10:03	23.2		6.79		6.725		0.46		111.5		25.6		300	9.38	2700	Clear/None
10:06	23.3		6.80		6.728		0.55		111.1		8.5		300	9.38	3600	Clear/None
10:09	23.3	0%	6.80	0.0	6.733	0%	0.71	3%	111.3	0.0	9.1	<10	300	9.38	4500	Clear/None
10:12	23.5	0%	6.80	0.0	6.752	0%	0.73	0%	111.4	0.1	2.9	<10	300	9.38	5400	Clear/None
10:15	23.4	0%	6.80	0.0	6.731	0%	0.76	3%	111.3	0.0	8.3	<10	300	9.38	6300	Clear/None

Stop Purge Time: 10:16	Sample Time: 10:25		QA/QC Sample Time(s): n/a	*SWFTS-MW14*
	Sample ID: SWFTS-MW14-EM40		QA/QC Sample ID(s): n/a	

Observations/Comments: Well Condition: Good General Comments:

HACH Kit Sulfide: 0.0 mg/L Hach Kit Ferrous Iron: 0.0 mg/L

Bottle Set Summary

3 VOA w/ HCl	1 125 mL Plastic	500 mL Plastic	4 40 mL Amber VOA w/ HCl	250 mL Amber Glass w/ H2S04
1 125 mL w/ EDA	1 250 mL Plastic	250 mL Plastic w/ H2SO4	2 250 mL Plastic w/ HNO3	500 mL Amber Glass w/ H2S04

*INDICATOR PARAMETERS HAVE STABLIZED WHEN 3 CONSECUTIVE READINGS ARE WITHIN:

± 0.1 for pH; ± 3% for Cond and Temp; ± 10 mv for ORP; ± 10% or <0.5 mg/L for DO; ± 10% or <10 NTU Turbidity

LOW FLOW GROUNDWATER SAMPLING LOG

NERT, Henderson, NV

Task Name: SWF Area Bio Treatability Study	Task Manager: D. Grady/ J. Dabbs	Task No.: M11	Date: 2022-12-15	Well ID: SWFTS-MW15
Field Samplers: J. Bunkers				
Transducer Removal Time: 07:48	Transducer Redeployment Time: 08:00			General Well Condition: Good
Depth to Water (ft): 12.74	Screened Interval Top (ft): 14.8			Pump Intake Depth (ft): 24.40
Well Depth (ft): 35.00	Screened/Open Interval Bottom (ft): 34.6			Well Diameter (in): 2
Pump/Tubing Type: QED Bladder Pump & TLPE/LDPE	GW Disposal: GW-11			Equipment Decon. Method: Alconox/DI Rinse SOP
Y Dedicated Tubing Present? (Y/N)	N New Dedicated Tubing Placed? (Y/N)			
Purge Start Time: 08:01				

Time	Temp. (°C)		pH (pH Units)		Conductivity (mS/cm)		DO (mg/L)		ORP (mV)		Turbidity (NTU)		Purge Rate (mL/min)	Depth to Water (ft)	Cum. Vol. Purged (mL)	Color/Odor
	READ	CHANGE*	READ	CHANGE*	READ	CHANGE*	READ	CHANGE*	READ	CHANGE*	READ	CHANGE*				
08:01	22.3		6.38		4.618		2.19		156.4		17.8		300	12.74		Clear/None
08:04	23.2		6.41		4.737		2.49		142.9		7.3		300	12.74	900	Clear/None
08:07	23.2		6.45		4.731		3.40		133.9		6.2		300	12.74	1800	Clear/None
08:10	23.1	0%	6.46	0.0	4.732	0%	3.82	6%	128.4	3.0	4.5	<10	300	12.74	2700	Clear/None
08:13	23.0	0%	6.47	0.0	4.727	0%	4.05	0%	125.0	0.4	4.1	<10	300	12.74	3600	Clear/None
08:16	23.3	0%	6.49	0.0	4.760	0%	4.36	6%	122.8	2.6	3.2	<10	300	12.74	4500	Clear/None

Stop Purge Time: 08:17	Sample Time: 08:20	QA/QC Sample Time(s): n/a	*SWFTS-MW15*
	Sample ID: SWFTS-MW15-EM40	QA/QC Sample ID(s): n/a	

Observations/Comments: Well Condition: Good General Comments:

HACH Kit Sulfide: 0.0 mg/L Hach Kit Ferrous Iron: 0.0 mg/L

Bottle Set Summary

3 VOA w/ HCl	1 125 mL Plastic	500 mL Plastic	4 40 mL Amber VOA w/ HCl	250 mL Amber Glass w/ H2S04
1 125 mL w/ EDA	1 250 mL Plastic	250 mL Plastic w/ H2SO4	2 250 mL Plastic w/ HNO3	500 mL Amber Glass w/ H2S04

*INDICATOR PARAMETERS HAVE STABLIZED WHEN 3 CONSECUTIVE READINGS ARE WITHIN:

± 0.1 for pH; ± 3% for Cond and Temp; ± 10 mv for ORP; ± 10% or <0.5 mg/L for DO; ± 10% or <10 NTU Turbidity

LOW FLOW GROUNDWATER SAMPLING LOG

NERT, Henderson, NV

Task Name: SWF Area Bio Treatability Study	Task Manager: D. Grady/ J. Dabbs	Task No.: M11	Date: 2022-12-14	Well ID: SWFTS-MW16
Field Samplers: J. Bunkers				
Transducer Removal Time: n/a	Transducer Redeployment Time: n/a			General Well Condition: Good
Depth to Water (ft): 21.65	Screened Interval Top (ft): 21.8			Pump Intake Depth (ft): 31.30
Well Depth (ft): 42.00	Screened/Open Interval Bottom (ft): 41.6			Well Diameter (in): 2
Pump/Tubing Type: QED Bladder Pump & TLPE/LDPE	GW Disposal: GW-11			Equipment Decon. Method: Alconox/DI Rinse SOP
Y Dedicated Tubing Present? (Y/N)	N New Dedicated Tubing Placed? (Y/N)			
Purge Start Time: 13:19				

Time	Temp. (°C)		pH (pH Units)		Conductivity (mS/cm)		DO (mg/L)		ORP (mV)		Turbidity (NTU)		Purge Rate (mL/min)	Depth to Water (ft)	Cum. Vol. Purged (mL)	Color/Odor
	READ	CHANGE*	READ	CHANGE*	READ	CHANGE*	READ	CHANGE*	READ	CHANGE*	READ	CHANGE*				
13:19	22.4		6.75		4.990		1.25		-20.3		54.0		300	21.65		Clear/None
13:22	23.1		6.79		5.067		2.00		-28.5		56.9		300	21.65	900	Clear/None
13:25	23.3		6.82		5.083		2.87		-28.0		53.2		300	21.65	1800	Clear/None
13:28	23.3		6.83		5.089		3.27		-28.9		45.9		300	21.65	2700	Clear/None
13:31	23.3	0%	6.84	0.0	5.089	0%	3.50	5%	-29.9	0.9	40.2	10%	300	21.65	3600	Clear/None
13:34	23.2	0%	6.85	0.0	5.079	0%	3.78	1%	-30.9	0.1	35.7	1%	300	21.65	4500	Clear/None
13:37	23.3	0%	6.86	0.0	5.112	0%	3.88	4%	-31.6	0.8	33.0	9%	300	21.65	5400	Clear/None

Stop Purge Time: 13:38	Sample Time: 13:40	QA/QC Sample Time(s): n/a	*SWFTS-MW16*
	Sample ID: SWFTS-MW16-EM40	QA/QC Sample ID(s): n/a	

Observations/Comments: Well Condition: Good General Comments:

HACH Kit Sulfide: 0.0 mg/L Hach Kit Ferrous Iron: 0.0 mg/L

Bottle Set Summary

3 VOA w/ HCl	1 125 mL Plastic	500 mL Plastic	4 40 mL Amber VOA w/ HCl	250 mL Amber Glass w/ H2S04
1 125 mL w/ EDA	1 250 mL Plastic	250 mL Plastic w/ H2SO4	2 250 mL Plastic w/ HNO3	500 mL Amber Glass w/ H2S04

*INDICATOR PARAMETERS HAVE STABLIZED WHEN 3 CONSECUTIVE READINGS ARE WITHIN:

± 0.1 for pH; ± 3% for Cond and Temp; ± 10 mv for ORP; ± 10% or <0.5 mg/L for DO; ± 10% or <10 NTU Turbidity

LOW FLOW GROUNDWATER SAMPLING LOG

NERT, Henderson, NV

Task Name: SWF Area Bio Treatability Study	Task Manager: D. Grady/ J. Dabbs	Task No.: M11	Date: 2022-12-14	Well ID: SWFTS-MW17
Field Samplers: J. Bunkers				
Transducer Removal Time: n/a	Transducer Redeployment Time: n/a			General Well Condition: Good
Depth to Water (ft): 25.68	Screened Interval Top (ft): 22.8			Pump Intake Depth (ft): 37.40
Well Depth (ft): 53.00	Screened/Open Interval Bottom (ft): 52.6			Well Diameter (in): 4
Pump/Tubing Type: QED Bladder Pump & TLPE/LDPE	GW Disposal: GW-11			Equipment Decon. Method: Alconox/DI Rinse SOP
Y Dedicated Tubing Present? (Y/N)	N New Dedicated Tubing Placed? (Y/N)			
Purge Start Time: 12:09				

Time	Temp. (°C)		pH (pH Units)		Conductivity (mS/cm)		DO (mg/L)		ORP (mV)		Turbidity (NTU)		Purge Rate (mL/min)	Depth to Water (ft)	Cum. Vol. Purged (mL)	Color/Odor
	READ	CHANGE*	READ	CHANGE*	READ	CHANGE*	READ	CHANGE*	READ	CHANGE*	READ	CHANGE*				
12:09	22.2		7.25		4.647		4.29		134.0		6.8		300	25.68		Clear/None
12:12	22.7		7.19		4.731		3.82		135.8		8.6		300	25.68	900	Clear/None
12:15	22.7		7.18		4.750		3.74		136.4		6.7		300	25.68	1800	Clear/None
12:18	22.7	0%	7.18	0.0	4.737	0%	4.38	0%	136.9	0.5	6.7	<10	300	25.68	2700	Clear/None
12:21	23.0	0%	7.17	0.0	4.747	0%	4.31	1%	137.4	0.0	9.8	<10	300	25.68	3600	Clear/None
12:24	23.0	0%	7.18	0.0	4.729	0%	4.41	0%	137.9	0.5	6.8	<10	300	25.68	4500	Clear/None

Stop Purge Time: 12:25	Sample Time: 12:30	QA/QC Sample Time(s): n/a	*SWFTS-MW17*
	Sample ID: SWFTS-MW17-EM40	QA/QC Sample ID(s): n/a	

Observations/Comments: Well Condition: Good General Comments:

HACH Kit Sulfide: 0.0 mg/L Hach Kit Ferrous Iron: 0.0 mg/L

Bottle Set Summary

3 VOA w/ HCl	1 125 mL Plastic	500 mL Plastic	4 40 mL Amber VOA w/ HCl	250 mL Amber Glass w/ H2S04
1 125 mL w/ EDA	1 250 mL Plastic	250 mL Plastic w/ H2SO4	2 250 mL Plastic w/ HNO3	500 mL Amber Glass w/ H2S04

*INDICATOR PARAMETERS HAVE STABLIZED WHEN 3 CONSECUTIVE READINGS ARE WITHIN:

± 0.1 for pH; ± 3% for Cond and Temp; ± 10 mv for ORP; ± 10% or <0.5 mg/L for DO; ± 10% or <10 NTU Turbidity

LOW FLOW GROUNDWATER SAMPLING LOG

NERT, Henderson, NV

Task Name: SWF Area Bio Treatability Study	Task Manager: D. Grady/ J. Dabbs	Task No.: M11	Date: 2022-12-14	Well ID: SWFTS-MW18
Field Samplers: J. Bunkers				
Transducer Removal Time: n/a	Transducer Redeployment Time: n/a			General Well Condition: Good
Depth to Water (ft): 15.08	Screened Interval Top (ft): 16.8			Pump Intake Depth (ft): 26.10
Well Depth (ft): 35.30	Screened/Open Interval Bottom (ft): 36.6			Well Diameter (in): 2
Pump/Tubing Type: QED Bladder Pump & TLPE/LDPE	GW Disposal: GW-11			Equipment Decon. Method: Alconox/DI Rinse SOP
Y Dedicated Tubing Present? (Y/N)	N New Dedicated Tubing Placed? (Y/N)			
Purge Start Time: 10:42				

Time	Temp. (°C)		pH (pH Units)		Conductivity (mS/cm)		DO (mg/L)		ORP (mV)		Turbidity (NTU)		Purge Rate (mL/min)	Depth to Water (ft)	Cum. Vol. Purged (mL)	Color/Odor
	READ	CHANGE*	READ	CHANGE*	READ	CHANGE*	READ	CHANGE*	READ	CHANGE*	READ	CHANGE*				
10:42	23.9		6.65		5.559		1.02		163.1		116.9		300	15.08		Clear/None
10:45	24.4		6.63		5.613		0.58		154.7		98.2		300	15.08	900	Clear/None
10:48	24.4		6.64		5.602		0.48		146.5		62.3		300	15.08	1800	Clear/None
10:51	24.4		6.67		5.579		0.41		140.3		38.2		300	15.08	2700	Clear/None
10:54	24.3		6.67		5.576		0.62		136.0		35.9		300	15.08	3600	Clear/None
10:57	24.4		6.69		5.559		0.80		131.8		28.7		300	15.08	4500	Clear/None
11:00	24.1	0%	6.71	0.0	5.514	0%	0.72	4%	128.9	1.7	23.0	10%	300	15.08	5400	Clear/None
11:03	24.4	0%	6.71	0.0	5.531	0%	0.67	2%	127.2	0.0	20.2	2%	300	15.08	6300	Clear/None
11:06	24.3	0%	6.71	0.0	5.528	0%	0.68	1%	125.4	1.8	19.2	7%	300	15.08	7200	Clear/None

Stop Purge Time: 11:07	Sample Time: 11:15	QA/QC Sample Time(s): n/a	*SWFTS-MW18*
	Sample ID: SWFTS-MW18-EM40	QA/QC Sample ID(s): n/a	

Observations/Comments: Well Condition: Good General Comments:

HACH Kit Sulfide: 0.0 mg/L Hach Kit Ferrous Iron: 0.0 mg/L

Bottle Set Summary

3 VOA w/ HCl	1 125 mL Plastic	500 mL Plastic	4 40 mL Amber VOA w/ HCl	250 mL Amber Glass w/ H2S04
1 125 mL w/ EDA	1 250 mL Plastic	250 mL Plastic w/ H2SO4	2 250 mL Plastic w/ HNO3	500 mL Amber Glass w/ H2SO4

*INDICATOR PARAMETERS HAVE STABLIZED WHEN 3 CONSECUTIVE READINGS ARE WITHIN:

± 0.1 for pH; ± 3% for Cond and Temp; ± 10 mv for ORP; ± 10% or <0.5 mg/L for DO; ± 10% or <10 NTU Turbidity

LOW FLOW GROUNDWATER SAMPLING LOG

NERT, Henderson, NV

Task Name: SWF Area Bio Treatability Study	Task Manager: D. Grady/ J. Dabbs	Task No.: M11	Date: 2022-12-14	Well ID: SWFTS-MW19
Field Samplers: J. Bunkers				
Transducer Removal Time: n/a	Transducer Redeployment Time: n/a			General Well Condition: Good
Depth to Water (ft): 9.16	Screened Interval Top (ft): 11.3			Pump Intake Depth (ft): 21.00
Well Depth (ft): 30.00	Screened/Open Interval Bottom (ft): 31.1			Well Diameter (in): 2
Pump/Tubing Type: QED Bladder Pump & TLPE/LDPE	GW Disposal: GW-11			Equipment Decon. Method: Alconox/DI Rinse SOP
Y Dedicated Tubing Present? (Y/N)	N New Dedicated Tubing Placed? (Y/N)			
Purge Start Time: 09:11				

Time	Temp. (°C)		pH (pH Units)		Conductivity (mS/cm)		DO (mg/L)		ORP (mV)		Turbidity (NTU)		Purge Rate (mL/min)	Depth to Water (ft)	Cum. Vol. Purged (mL)	Color/Odor
	READ	CHANGE*	READ	CHANGE*	READ	CHANGE*	READ	CHANGE*	READ	CHANGE*	READ	CHANGE*				
09:11	22.9		7.03		4.292		1.15		153.5		47.7		300	9.16		Clear/None
09:14	23.4		6.99		4.339		1.51		155.1		26.7		300	9.16	900	Clear/None
09:17	23.5	0%	7.00	0.0	4.346	0%	2.48	4%	154.6	0.2	18.3	12%	300	9.16	1800	Clear/None
09:20	23.7	0%	7.00	0.0	4.357	0%	2.66	2%	154.4	0.0	16.0	1%	300	9.16	2700	Clear/None
09:23	23.7	0%	6.99	0.0	4.363	0%	2.62	1%	154.2	0.2	14.6	10%	300	9.16	3600	Clear/None

Stop Purge Time: 09:24	Sample Time: 09:30	QA/QC Sample Time(s): 09:30	*SWFTS-MW19*
	Sample ID: SWFTS-MW19-EM40	QA/QC Sample ID(s): SWFTS-MW19-EM40-FD	

Observations/Comments: Well Condition: Good General Comments:

HACH Kit Sulfide: 0.0 mg/L Hach Kit Ferrous Iron: 0.0 mg/L

Bottle Set Summary

6 VOA w/ HCl	2 125 mL Plastic	500 mL Plastic	8 40 mL Amber VOA w/ HCl	250 mL Amber Glass w/ H2S04
2 125 mL w/ EDA	2 250 mL Plastic	250 mL Plastic w/ H2SO4	4 250 mL Plastic w/ HNO3	500 mL Amber Glass w/ H2S04

*INDICATOR PARAMETERS HAVE STABLIZED WHEN 3 CONSECUTIVE READINGS ARE WITHIN:

± 0.1 for pH; ± 3% for Cond and Temp; ± 10 mv for ORP; ± 10% or <0.5 mg/L for DO; ± 10% or <10 NTU Turbidity

LOW FLOW GROUNDWATER SAMPLING LOG

NERT, Henderson, NV

Task Name: SWF Area Bio Treatability Study	Task Manager: D. Grady/ J. Dabbs	Task No.: M11	Date: 2022-12-13	Well ID: SWFTS-MW20
Field Samplers: J. Bunkers				
Transducer Removal Time: n/a	Transducer Redeployment Time: n/a			General Well Condition: Good
Depth to Water (ft): 12.16	Screened Interval Top (ft): 12.8			Pump Intake Depth (ft): 24.80
Well Depth (ft): 35.40	Screened/Open Interval Bottom (ft): 37.6			Well Diameter (in): 2
Pump/Tubing Type: QED Bladder Pump & TLPE/LDPE	GW Disposal: GW-11			Equipment Decon. Method: Alconox/DI Rinse SOP
Y Dedicated Tubing Present? (Y/N)	N New Dedicated Tubing Placed? (Y/N)			
Purge Start Time: 13:20				

Time	Temp. (°C)		pH (pH Units)		Conductivity (mS/cm)		DO (mg/L)		ORP (mV)		Turbidity (NTU)		Purge Rate (mL/min)	Depth to Water (ft)	Cum. Vol. Purged (mL)	Color/Odor
	READ	CHANGE*	READ	CHANGE*	READ	CHANGE*	READ	CHANGE*	READ	CHANGE*	READ	CHANGE*				
13:20	24.3		6.32		6.743		1.13		162.9		231.1		300	12.16		Clear/None
13:23	24.8		6.32		6.816		1.01		121.0		161.1		300	12.16	900	Clear/None
13:26	24.6		6.35		6.790		1.77		105.5		130.8		300	12.16	1800	Clear/None
13:29	24.5		6.37		6.762		2.26		98.8		101.6		300	12.16	2700	Clear/None
13:32	24.4		6.39		6.708		2.74		93.0		82.2		300	12.16	3600	Clear/None
13:35	24.5		6.41		6.683		3.03		85.7		236.0		300	12.16	4500	Clear/None
13:38	24.5		6.66		0.424		6.64		82.7		74.8		300	12.16	5400	Clear/None
13:41	24.7		6.43		6.674		3.67		80.3		51.4		300	12.16	6300	Clear/None
13:44	24.7	0%	6.45	0.0	6.639	0%	3.78	2%	76.6	2.3	46.1	16%	300	12.16	7200	Clear/None
13:47	24.5	0%	6.46	0.0	6.583	0%	3.88	0%	73.9	0.4	36.9	6%	300	12.16	8100	Clear/None
13:50	24.6	0%	6.47	0.0	6.591	0%	4.00	2%	72.5	1.8	35.4	10%	300	12.16	9000	Clear/None

Stop Purge Time: 13:51	Sample Time: 13:55	QA/QC Sample Time(s): n/a	*SWFTS-MW20*
	Sample ID: SWFTS-MW20-EM40	QA/QC Sample ID(s): n/a	

Observations/Comments: Well Condition: Good General Comments:

HACH Kit Sulfide: 0.0 mg/L Hach Kit Ferrous Iron: 0.0 mg/L

Bottle Set Summary

3 VOA w/ HCl	1 125 mL Plastic	500 mL Plastic	4 40 mL Amber VOA w/ HCl	250 mL Amber Glass w/ H2S04
1 125 mL w/ EDA	1 250 mL Plastic	250 mL Plastic w/ H2SO4	2 250 mL Plastic w/ HNO3	500 mL Amber Glass w/ H2S04

*INDICATOR PARAMETERS HAVE STABLIZED WHEN 3 CONSECUTIVE READINGS ARE WITHIN:

± 0.1 for pH; ± 3% for Cond and Temp; ± 10 mv for ORP; ± 10% or <0.5 mg/L for DO; ± 10% or <10 NTU Turbidity

LOW FLOW GROUNDWATER SAMPLING LOG

NERT, Henderson, NV

Task Name: SWF Area Bio Treatability Study	Task Manager: D. Grady/ J. Dabbs	Task No.: M11	Date: 2022-12-15	Well ID: SWFTS-MW21
Field Samplers: J. Bunkers				
Transducer Removal Time: n/a	Transducer Redeployment Time: n/a			General Well Condition: Good
Depth to Water (ft): 15.25	Screened Interval Top (ft): 14.8			Pump Intake Depth (ft): 26.90
Well Depth (ft): 37.75	Screened/Open Interval Bottom (ft): 39.6			Well Diameter (in): 2
Pump/Tubing Type: QED Bladder Pump & TLPE/LDPE	GW Disposal: GW-11			Equipment Decon. Method: Alconox/DI Rinse SOP
Y Dedicated Tubing Present? (Y/N)	N New Dedicated Tubing Placed? (Y/N)			
Purge Start Time: 11:10				

Time	Temp. (°C)		pH (pH Units)		Conductivity (mS/cm)		DO (mg/L)		ORP (mV)		Turbidity (NTU)		Purge Rate (mL/min)	Depth to Water (ft)	Cum. Vol. Purged (mL)	Color/Odor
	READ	CHANGE*	READ	CHANGE*	READ	CHANGE*	READ	CHANGE*	READ	CHANGE*	READ	CHANGE*				
11:10	23.2		6.93		6.786		1.09		133.4		117.2		300	15.25		Clear/None
11:13	23.8		6.91		6.975		0.60		133.1		64.8		300	15.25	900	Clear/None
11:16	24.0		6.90		7.052		0.47		131.9		33.6		300	15.25	1800	Clear/None
11:19	23.9		6.89		7.064		0.39		130.4		19.7		300	15.25	2700	Clear/None
11:22	24.1	0%	6.89	0.0	7.101	0%	0.34	<0.5	129.0	1.3	16.0	13%	300	15.25	3600	Clear/None
11:25	23.9	0%	6.89	0.0	7.076	0%	0.32	<0.5	127.6	0.1	13.5	4%	300	15.25	4500	Clear/None
11:28	23.9	0%	6.89	0.0	7.074	0%	0.30	<0.5	126.4	1.3	12.9	8%	300	15.25	5400	Clear/None

Stop Purge Time: 11:29	Sample Time: 23:35	QA/QC Sample Time(s): n/a	*SWFTS-MW21*
	Sample ID: SWFTS-MW21-EM40	QA/QC Sample ID(s): n/a	

Observations/Comments: Well Condition: Good General Comments:

HACH Kit Sulfide: 0.0 mg/L Hach Kit Ferrous Iron: 0.0 mg/L

Bottle Set Summary

3 VOA w/ HCl	1 125 mL Plastic	500 mL Plastic	4 40 mL Amber VOA w/ HCl	250 mL Amber Glass w/ H2S04
1 125 mL w/ EDA	1 250 mL Plastic	250 mL Plastic w/ H2SO4	2 250 mL Plastic w/ HNO3	500 mL Amber Glass w/ H2S04

*INDICATOR PARAMETERS HAVE STABLIZED WHEN 3 CONSECUTIVE READINGS ARE WITHIN:

± 0.1 for pH; ± 3% for Cond and Temp; ± 10 mv for ORP; ± 10% or <0.5 mg/L for DO; ± 10% or <10 NTU Turbidity

LOW FLOW GROUNDWATER SAMPLING LOG

NERT, Henderson, NV

Task Name: SWF Area Bio Treatability Study	Task Manager: D. Grady/ J. Dabbs	Task No.: M11	Date: 2022-12-14	Well ID: SWFTS-MW22
Field Samplers: J. Bunkers				
Transducer Removal Time: n/a	Transducer Redeployment Time: n/a			General Well Condition: Good
Depth to Water (ft): 10.62	Screened Interval Top (ft): 11.8			Pump Intake Depth (ft): 21.30
Well Depth (ft): 31.60	Screened/Open Interval Bottom (ft): 31.6			Well Diameter (in): 2
Pump/Tubing Type: QED Bladder Pump & TLPE/LDPE	GW Disposal: GW-11			Equipment Decon. Method: Alconox/DI Rinse SOP
Y Dedicated Tubing Present? (Y/N)	N New Dedicated Tubing Placed? (Y/N)			
Purge Start Time: 08:09				

Time	Temp. (°C)		pH (pH Units)		Conductivity (mS/cm)		DO (mg/L)		ORP (mV)		Turbidity (NTU)		Purge Rate (mL/min)	Depth to Water (ft)	Cum. Vol. Purged (mL)	Color/Odor
	READ	CHANGE*	READ	CHANGE*	READ	CHANGE*	READ	CHANGE*	READ	CHANGE*	READ	CHANGE*				
08:09	22.9		6.68		5.691		1.40		188.9		201.2		300	10.62		Clear/None
08:12	23.9		6.77		5.890		0.65		178.6		174.7		300	10.62	900	Clear/None
08:15	23.9		6.78		5.912		0.52		173.7		177.5		300	10.62	1800	Clear/None
08:18	24.2		6.77		6.003		0.47		170.1		163.4		300	10.62	2700	Clear/None
08:21	24.1		6.76		6.058		0.40		166.9		131.6		300	10.62	3600	Clear/None
08:24	24.0	0%	6.75	0.0	6.095	0%	0.37	<0.5	164.5	2.1	104.3	12%	300	10.62	4500	Clear/None
08:27	24.1	0%	6.75	0.0	6.152	0%	0.33	<0.5	162.0	0.4	86.3	6%	300	10.62	5400	Clear/None
08:30	24.0	0%	6.74	0.0	6.162	0%	0.31	<0.5	160.7	1.7	87.1	5%	300	10.62	6300	Clear/None

Stop Purge Time: 08:31	Sample Time: 08:35	QA/QC Sample Time(s): n/a	*SWFTS-MW22*
	Sample ID: SWFTS-MW22-EM40	QA/QC Sample ID(s): n/a	

Observations/Comments: Well Condition: Good General Comments:

HACH Kit Sulfide: 0.0 mg/L Hach Kit Ferrous Iron: 0.0 mg/L

Bottle Set Summary

3 VOA w/ HCl	1 125 mL Plastic	500 mL Plastic	4 40 mL Amber VOA w/ HCl	250 mL Amber Glass w/ H2S04
1 125 mL w/ EDA	1 250 mL Plastic	250 mL Plastic w/ H2SO4	2 250 mL Plastic w/ HNO3	500 mL Amber Glass w/ H2SO4

*INDICATOR PARAMETERS HAVE STABLIZED WHEN 3 CONSECUTIVE READINGS ARE WITHIN:

± 0.1 for pH; ± 3% for Cond and Temp; ± 10 mv for ORP; ± 10% or <0.5 mg/L for DO; ± 10% or <10 NTU Turbidity

LOW FLOW GROUNDWATER SAMPLING LOG

NERT, Henderson, NV

Task Name: SWF Area Bio Treatability Study	Task Manager: D. Grady/ J. Dabbs	Task No.: M11	Date: 2022-12-13	Well ID: SWFTS-MW23
Field Samplers: J. Bunkers				
Transducer Removal Time: 12:10	Transducer Redeployment Time: 12:13			General Well Condition: Good
Depth to Water (ft): 12.04	Screened Interval Top (ft): 13.8			Pump Intake Depth (ft): 26.30
Well Depth (ft): 34.00	Screened/Open Interval Bottom (ft): 33.6			Well Diameter (in): 2
Pump/Tubing Type: QED Bladder Pump & TLPE/LDPE	GW Disposal: GW-11			Equipment Decon. Method: Alconox/DI Rinse SOP
Y Dedicated Tubing Present? (Y/N)	N New Dedicated Tubing Placed? (Y/N)			
Purge Start Time: 12:16				

Time	Temp. (°C)		pH (pH Units)		Conductivity (mS/cm)		DO (mg/L)		ORP (mV)		Turbidity (NTU)		Purge Rate (mL/min)	Depth to Water (ft)	Cum. Vol. Purged (mL)	Color/Odor
	READ	CHANGE*	READ	CHANGE*	READ	CHANGE*	READ	CHANGE*	READ	CHANGE*	READ	CHANGE*				
12:16	22.4		7.22		2.385		1.12		176.6		43.6		300	12.04		Clear/None
12:19	22.7		7.15		2.395		0.50		178.2		12.5		300	12.04	900	Clear/None
12:22	22.9	0%	7.14	0.0	2.401	0%	0.39	<0.5	175.6	1.4	10.8	12%	300	12.04	1800	Clear/None
12:25	22.7	0%	7.13	0.0	2.391	0%	0.33	<0.5	174.1	0.1	9.8	<10	300	12.04	2700	Clear/None
12:28	22.7	0%	7.13	0.0	2.391	0%	0.29	<0.5	172.8	1.4	8.2	<10	300	12.04	3600	Clear/None

Stop Purge Time: 12:29	Sample Time: 12:30	QA/QC Sample Time(s): n/a	*SWFTS-MW23*
	Sample ID: SWFTS-MW23-EM40	QA/QC Sample ID(s): n/a	

Observations/Comments: Well Condition: Good General Comments:

HACH Kit Sulfide: 0.0 mg/L Hach Kit Ferrous Iron: 0.0 mg/L

Bottle Set Summary

3 VOA w/ HCl	1 125 mL Plastic	500 mL Plastic	4 40 mL Amber VOA w/ HCl	250 mL Amber Glass w/ H2S04
1 125 mL w/ EDA	1 250 mL Plastic	250 mL Plastic w/ H2SO4	2 250 mL Plastic w/ HNO3	500 mL Amber Glass w/ H2S04

*INDICATOR PARAMETERS HAVE STABLIZED WHEN 3 CONSECUTIVE READINGS ARE WITHIN:

± 0.1 for pH; ± 3% for Cond and Temp; ± 10 mv for ORP; ± 10% or <0.5 mg/L for DO; ± 10% or <10 NTU Turbidity

LOW FLOW GROUNDWATER SAMPLING LOG

NERT, Henderson, NV

Task Name: SWF Area Bio Treatability Study	Task Manager: D. Grady/ J. Dabbs	Task No.: M11	Date: 2022-12-13	Well ID: SWFTS-MW24
Field Samplers: J. Bunkers				
Transducer Removal Time: n/a	Transducer Redeployment Time: n/a			General Well Condition: Good
Depth to Water (ft): 12.71	Screened Interval Top (ft): 12.8			Pump Intake Depth (ft): 24.90
Well Depth (ft): 36.60	Screened/Open Interval Bottom (ft): 37.6			Well Diameter (in): 2
Pump/Tubing Type: QED Bladder Pump & TLPE/LDPE	GW Disposal: GW-11			Equipment Decon. Method: Alconox/DI Rinse SOP
Y Dedicated Tubing Present? (Y/N)	N New Dedicated Tubing Placed? (Y/N)			
Purge Start Time: 11:15				

Time	Temp. (°C)		pH (pH Units)		Conductivity (mS/cm)		DO (mg/L)		ORP (mV)		Turbidity (NTU)		Purge Rate (mL/min)	Depth to Water (ft)	Cum. Vol. Purged (mL)	Color/Odor
	READ	CHANGE*	READ	CHANGE*	READ	CHANGE*	READ	CHANGE*	READ	CHANGE*	READ	CHANGE*				
11:15	23.8		7.01		4.760		2.00		186.1		162.1		300	12.71		Clear/None
11:18	24.1		6.89		4.754		1.77		196.4		111.1		300	12.71	900	Clear/None
11:21	24.0		6.85		4.712		1.16		199.5		37.4		300	12.71	1800	Clear/None
11:24	23.9		6.83		4.697		0.89		200.2		22.2		300	12.71	2700	Clear/None
11:27	23.8		6.82		4.694		0.91		199.7		15.2		300	12.71	3600	Clear/None
11:30	23.6		6.82		4.656		0.86		198.9		13.0		300	12.71	4500	Clear/None
11:33	23.7		6.81		4.664		0.73		198.3		11.2		300	12.71	5400	Clear/None
11:36	23.1	0%	6.81	0.0	4.608	0%	0.51	6%	197.3	1.2	10.9	2%	300	12.71	6300	Clear/None
11:39	23.5	2%	6.81	0.0	4.634	0%	0.58	6%	196.0	0.1	10.4	2%	300	12.71	7200	Clear/None
11:42	22.5	2%	6.81	0.0	4.556	0%	0.55	0%	194.9	1.2	10.7	0%	300	12.71	8100	Clear/None

Stop Purge Time: 11:43	Sample Time: 11:45	QA/QC Sample Time(s): n/a	*SWFTS-MW24*
	Sample ID: SWFTS-MW24-EM40	QA/QC Sample ID(s): n/a	

Observations/Comments: Well Condition: Good General Comments:

HACH Kit Sulfide: 0.0 mg/L Hach Kit Ferrous Iron: 0.0 mg/L

Bottle Set Summary

3 VOA w/ HCl	1 125 mL Plastic	500 mL Plastic	4 40 mL Amber VOA w/ HCl	250 mL Amber Glass w/ H2S04
1 125 mL w/ EDA	1 250 mL Plastic	250 mL Plastic w/ H2SO4	2 250 mL Plastic w/ HNO3	500 mL Amber Glass w/ H2SO4

*INDICATOR PARAMETERS HAVE STABLIZED WHEN 3 CONSECUTIVE READINGS ARE WITHIN:

± 0.1 for pH; ± 3% for Cond and Temp; ± 10 mv for ORP; ± 10% or <0.5 mg/L for DO; ± 10% or <10 NTU Turbidity

LOW FLOW GROUNDWATER SAMPLING LOG

NERT, Henderson, NV

Task Name: SWF Area Bio Treatability Study	Task Manager: D. Grady/ J. Dabbs	Task No.: M11	Date: 2022-12-13	Well ID: SWFTS-MW25
Field Samplers: J. Bunkers				
Transducer Removal Time: 08:57	Transducer Redeployment Time: 10:00			General Well Condition: Good
Depth to Water (ft): 10.20	Screened Interval Top (ft): 12.8			Pump Intake Depth (ft): 27.30
Well Depth (ft): 43.00	Screened/Open Interval Bottom (ft): 42.6			Well Diameter (in): 2
Pump/Tubing Type: QED Bladder Pump & TLPE/LDPE	GW Disposal: GW-11			Equipment Decon. Method: Alconox/DI Rinse SOP
Y Dedicated Tubing Present? (Y/N)	N New Dedicated Tubing Placed? (Y/N)			
Purge Start Time: 09:28				

Time	Temp. (°C)		pH (pH Units)		Conductivity (mS/cm)		DO (mg/L)		ORP (mV)		Turbidity (NTU)		Purge Rate (mL/min)	Depth to Water (ft)	Cum. Vol. Purged (mL)	Color/Odor
	READ	CHANGE*	READ	CHANGE*	READ	CHANGE*	READ	CHANGE*	READ	CHANGE*	READ	CHANGE*				
09:28	16.7		7.84		0.002		9.25		183.4		100.1		300	10.20		Clear/None
09:31	22.1		6.97		4.527		1.72		185.4		644.8		300	10.20	900	Clear/None
09:34	22.7		6.92		4.624		1.69		184.7		410.3		300	10.20	1800	Clear/None
09:37	22.9		6.91		4.645		1.63		184.3		220.5		300	10.20	2700	Clear/None
09:40	23.0		6.89		4.648		1.52		183.0		136.0		300	10.20	3600	Clear/None
09:43	23.0		6.89		4.639		1.44		182.6		95.0		300	10.20	4500	Clear/None
09:46	23.0	0%	6.88	0.0	4.639	0%	1.21	6%	181.1	1.3	73.9	25%	300	10.20	5400	Clear/None
09:49	22.8	0%	6.87	0.0	4.618	0%	1.09	4%	179.5	0.3	53.8	8%	300	10.20	6300	Clear/None
09:52	22.8	0%	6.88	0.0	4.610	0%	1.11	2%	178.7	1.1	48.9	16%	300	10.20	7200	Clear/None

Stop Purge Time: 09:53	Sample Time: 10:00	QA/QC Sample Time(s): n/a	*SWFTS-MW25*
	Sample ID: SWFTS-MW25-EM40	QA/QC Sample ID(s): n/a	

Observations/Comments: Well Condition: Good General Comments:

HACH Kit Sulfide: 0.0 mg/L Hach Kit Ferrous Iron: 0.0 mg/L

Bottle Set Summary

3 VOA w/ HCl	1 125 mL Plastic	500 mL Plastic	4 40 mL Amber VOA w/ HCl	250 mL Amber Glass w/ H2S04
1 125 mL w/ EDA	1 250 mL Plastic	250 mL Plastic w/ H2SO4	2 250 mL Plastic w/ HNO3	500 mL Amber Glass w/ H2S04

*INDICATOR PARAMETERS HAVE STABLIZED WHEN 3 CONSECUTIVE READINGS ARE WITHIN:

± 0.1 for pH; ± 3% for Cond and Temp; ± 10 mv for ORP; ± 10% or <0.5 mg/L for DO; ± 10% or <10 NTU Turbidity

Appendix B
Data Validation Summary Report

Data Validation Summary Report
(DVSR ID: TetraTech-M11-2023)
Seep Well Field Area Bioremediation Treatability Study - 2022 Annual Progress Report
Nevada Environmental Response Trust Site
Henderson, Nevada

PREPARED FOR

Nevada Environmental Response Trust
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PRESENTED BY

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August 9, 2024

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APPENDICES

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LIST OF ACRONYMS/ABBREVIATIONS

Acronyms/Abbreviations	Definition
BW	blank water
CCB	continuing calibration blank
CCV	continuing calibration verification
DL	detection limit
DMC	deuterated monitoring compound
DQO	data quality objectives
DUP	duplicate
DVSR	data validation summary report
EB	equipment blank
EDD	electronic data delivery
FB	field blank
FD	field duplicate
GC-MS	gas chromatography-mass spectroscopy
ICAL	initial calibration
ICB	initial calibration blank
ICS	interference check samples
ICV	initial calibration verification
LCS	laboratory control sample
MDL	method detection limit
MS/MSD	matrix spike/matrix spike duplicate
NORM	normal field sample
NDEP	Nevada Division of Environmental Protection
NERT	Nevada Environmental Response Trust
NFG	National Functional Guidelines
%C	percent completeness
%D	percent difference or drift
%R	percent recovery
%RSD	percent relative standard deviation
PARCCS	precision, accuracy, representativeness, comparability, completeness, sensitivity
PQL	practical quantitation limit
QA	quality assurance
QAPP	quality assurance project plan

Acronyms/Abbreviations	Definition
QC	quality control
RL	reporting limit
RPD	relative percent difference
RRF	relative response factor
SDG	sample delivery group
SQL	sample quantitation limit
Tetra Tech	Tetra Tech, Inc.
Treatability Study	Seep Well Field Area Bioremediation Treatability Study
USEPA	United States Environmental Protection Agency
µg/L	micrograms per liter
WG	groundwater
WQ	water quality assurance sample

1.0 INTRODUCTION

On behalf of the Nevada Environmental Response Trust (NERT), Tetra Tech, Inc. (Tetra Tech) has prepared this Data Validation Summary Report (DVSR) to assess the validity and usability of laboratory analytical data from the samples associated with the Seep Well Field Area Bioremediation Treatability Study (Treatability Study) for the NERT site, located in Clark County, Nevada. Sampling protocol can be found in *Final Seep Well Field Area Bioremediation Treatability Study Work Plan* (Tetra Tech, 2016). In 2022 Tetra Tech performed the treatability study extension work described in the NDEP-approved *Treatability/Pilot Study Modification No. 6 – Seep Well Field Area Bioremediation Treatability Study*, which included the collection and analyses of soil and groundwater samples to assess the effectiveness of the ongoing treatability study extension activities and additional quality assurance and quality control (QA/QC) samples to aid in assessing data quality. Tetra Tech collected and validated 141 groundwater, 110 soil, 13 equipment blank, and 8 field blank samples from March 2022 through December 2022 as part of the treatability study extension activities. Eurofins provided laboratory analytical services. The analyses were performed by the methods shown in Table 1.

The laboratory assigns job numbers, also called sample delivery groups (SDGs), to all samples. The samples associated with QA/QC are designed to document the data quality of the samples in each sampling round or within an SDG. Table 2 cross-references each validated sample with its laboratory analysis, SDG, collection date, client sample number, laboratory sample number, QC type, matrix, and stage of validation. Samples in Table 2 are submitted in the DVSR electronic data deliverable (EDD) along with associated, unvalidated field readings and microbial data. The EDD contains 272 samples consisting of 141 validated groundwater, 110 validated soil, 13 validated equipment blanks, 8 validated field blanks.

The laboratory analytical data were verified and validated in accordance with procedures described in the *Quality Assurance Project Plan, Revision 5* (Ramboll, 2020), *Quality Assurance Project Plan, Revision 6* (Ramboll, 2021), *NDEP Data Verification and Validation Requirements* (NDEP, 2018), and the references contained therein. The aqueous samples were validated to Stage 2A. Ninety percent of the soil samples were validated to Stage 2B. Ten percent were validated to Stage 4. The review process uses professional judgment and National Functional Guidelines (NFG) guidance to determine the final qualifiers, which are added to the database and presented in the DVSR tables.

The validation checklists are found in Appendix 1. Laboratory data packages may be found in Appendix 2. A database of the analytical results is provided in Appendix 3.

This report summarizes the QA/QC evaluation of the data using precision, accuracy, representativeness, comparability, completeness, and sensitivity (PARCCS) relative to the project data quality objectives (DQOs). This report provides a quantitative and qualitative assessment of the data and identifies potential sources of error, uncertainty, and bias that may affect the overall usability of the data.

2.0 PRECISION AND ACCURACY OF ENVIRONMENTAL DATA

Environmental data quality depends on sample collection procedures, analytical methods and instrumentation, documentation, and sample matrix properties. Both sampling procedures and laboratory analyses contain potential sources of uncertainty, error, and/or bias, which may affect the overall quality of a measurement. Errors for sample data may result from incomplete equipment decontamination, inappropriate sampling techniques, sample heterogeneity, improper filtering, and improper preservation. The accuracy of analytical results is dependent on selecting appropriate analytical methods, maintaining equipment properly, and complying with QC requirements. The sample matrix also is an important factor in the ability to obtain precise and accurate results within a given medium.

Environmental and laboratory QA/QC samples provide information on the effects of sampling procedures and evaluate laboratory contamination, laboratory performance, and matrix effects. Field QA/QC samples include equipment blanks (EBs), field blanks (FBs), field duplicates (FDs), and matrix spike/matrix spike duplicates (MS/MSDs). Laboratory QA/QC samples include method blanks, laboratory control samples (LCSs), laboratory duplicates (DUP), and additional MS/MSDs needed to meet method requirements.

2.1 PRECISION

Precision is a measure of the agreement of analytical results under a given set of conditions. It is a quantity that is not measured directly but is calculated from concentrations. Precision can be expressed as the relative percent difference (RPD) between two measurements:

$$RPD = \frac{(C1 - C2)*100}{(C1 + C2)/2}$$

where:
C1 = reported concentration for the sample
C2 = reported concentration for the duplicate

Precision can be expressed as the percent relative standard deviation (%RSD) between three or more measurements:

$$\%RSD = (s/\bar{a})*100$$

where:
%RSD = percent relative standard deviation
s = standard deviation
$\bar{a}$ = mean of replicate analyses

Precision is assessed by calculating %RSD during an initial calibration (ICAL) and RPD from the percent recoveries of the spiked compounds for each sample in the MS/MSD pair. In the absence of an MS/MSD pair, a laboratory duplicate can be analyzed as an alternative means of assessing precision. An additional measure of sampling precision is obtained by collecting and analyzing FD samples, which are compared using the RPD results as the evaluation criteria.

MS and MSD samples are field samples which have been spiked by the laboratory with target analytes prior to preparation and analysis. These samples measure the appropriateness of the analytical method and effectiveness in recovering target analytes from a specific environmental matrix. The LCS sample is spiked with the same target analytes as the MS/MSD using an interference-free matrix instead of a field sample aliquot. The LCS measures laboratory efficiency in recovering target analytes in the absence of matrix interferences. It is used to verify that the analyses are being performed in control.

The laboratory analyzes laboratory replicates. A field sample is analyzed and an unspiked duplicate of that sample is also analyzed. The data reviewer compares the reported results of the primary analysis and the laboratory duplicate and calculates RPDs to assess laboratory precision.

Calibration precision is determined by calculating %RSD. Laboratory and field sampling precision are evaluated by calculating RPDs for field sample duplicate pairs, if collected. The sampler collects two field samples at the same location and under identical conditions. The laboratory then analyzes the samples under identical conditions.

An RPD outside the allowed limit between MS/MSD samples or DUP samples indicates imprecision. Imprecision is the variance in the consistency with which the laboratory arrives at a reported result. The actual analyte concentration may be higher or lower than the reported result.

Possible causes of poor precision include sample heterogeneity, sample matrix interference, improper sample collection or handling, inconsistent sample preparation, instrument column fouling, and poor instrument stability. In duplicate pairs, results may be reported in either the primary or duplicate samples at levels below the practical quantitation limit (PQL) or non-detected. Since these values are estimated, RPD exceedances from these duplicate pairs do not suggest a significant impact to data quality.

2.2 ACCURACY

Accuracy is a measure of the closeness of agreement between a measured value and the true value of an analytical parameter. It may be used to identify bias in each measurement system. Recoveries outside acceptable QC limits may be caused by factors such as instrumentation, analyst error, or matrix interference. Accuracy is assessed through the analysis of continuing calibrations, MS, MSD, LCS, and surrogates. In some cases, samples from multiple SDGs were within one QC batch and therefore are associated with the same laboratory QC samples. Accuracy is determined using the percent recovery (%R) of MS and LCS analyses.

Percent recovery is calculated using the following equation:

$$\%R = (A-B)/C \times 100$$

where:
A = measured concentration in the spiked sample
B = measured native concentration in the unspiked sample
C = concentration of the spike

The percent recovery of each analyte spiked in MS/MSD samples and LCS is evaluated with the acceptance criteria specified by the QAPPs and laboratory limits. Spike recoveries outside the acceptable QC accuracy limits provide an indication of bias, where the reported data may overestimate or underestimate the actual concentration of compounds detected or quantitation limits reported for environmental samples.

2.3 REPRESENTATIVENESS

Representativeness is a qualitative parameter that expresses the degree to which the sample data are characteristic of a population. It is evaluated by reviewing the QC results of blanks, samples, and holding times. Positive detects of compounds in the blank samples identify compounds that may have been introduced into the samples during sample collection, transport, preparation, or analysis. The QA/QC blanks collected and analyzed are method blanks, calibration blanks, EBs, and FBs.

A method blank is a laboratory grade water or solid matrix that contains the method reagents and has undergone the same preparation and analysis as the environmental samples. The method blank provides a measure of the combined contamination derived from the laboratory source water, glassware, instruments, reagents, and sample

preparation steps. Method blanks are prepared for each sample of a similar matrix extracted by the same method at a similar concentration level.

Several methods require the use of initial calibration blanks (ICBs) and continuing calibration blanks (CCBs). ICBs and CCBs are laboratory-grade water samples that are analyzed at the beginning, during, and at the end of sample analysis runs. The frequency is dependent on the analytical method. These blanks estimate residual contaminants from the previous sample or standards analysis and measure baseline shifts that commonly occur in emission and absorption spectroscopy.

EBs consist of analyte-free water poured over or through the sample collection equipment. The water is collected in a sample container for laboratory analysis. These blanks are collected after the sampling equipment is decontaminated; they are used to measure effectiveness of the decontamination procedure. Equipment blanks are collected and analyzed for all target analytes.

FBs consist of analyte-free source water stored at the sample collection site. The water is collected from each source water used during each sampling event. Field blanks were collected and analyzed for all target analytes.

Contaminants found in both the environmental sample and the blank sample are assumed to be laboratory artifacts if one or both values are less than the PQL or if a sample result and blank contaminant value are greater than the PQL and the sample result is less than 10 times the blank contaminant value.

Holding times are evaluated to assure that the sample integrity is intact for accurate sample preparation and analysis. Holding times are specific for each method and matrix analyzed. Holding time exceedance can cause loss of sample constituents due to biodegradation, precipitation, volatilization, and chemical degradation. Sample results for analyses that were performed after the method holding time are qualified according to NDEP requirements using the qualifiers and bias recommendations found in the NFGs.

2.4 COMPARABILITY

Comparability is a qualitative characteristic that defines the extent to which the data for a chemical parameter measurement are consistent with, and may be compared with, data from other sampling events. Comparability is dependent upon the design of the sampling plans and execution of activities consistent with approved plans. Factors affecting comparability include sample collection and handling techniques, matrix type, and analytical method. Comparability is achieved through the use of standard techniques to collect representative samples, consistent application of analytical method protocols, and use of appropriate units in reporting analytical results. Comparability is also dependent upon other PARCCS criteria, because only when precision, accuracy, and representativeness are known can datasets be compared with confidence.

2.5 COMPLETENESS

Completeness is defined as the percentage of acceptable sample results compared to the total number of sample results. Completeness is evaluated to determine if an acceptable amount of usable data were obtained so that a valid scientific site assessment can be completed. Completeness equals the total number of sample results for each fraction minus the total number of rejected sample results divided by the total number of sample results multiplied by 100. As specified in the project DQOs, the goal for completeness for target analytes in each analytical fraction is 90 percent.

Percent completeness is calculated using the following equation:

$$\%C = (T - R)/T \times 100$$

where:
%C = percent completeness
T = total number of sample results
R = total number of rejected sample results

Completeness is also determined by comparing the planned number of samples per method and matrix as specified in the QAPPs, with the number determined above. In cases where multiple results are reported for a single analyte due to dilutions or re-analysis using a single method, the most technically sound value will be reported, and the other result will be qualified “R”. Data rejected in favor of alternate results are not used in the completion calculation.

2.6 SENSITIVITY

Sensitivity is the ability of an analytical method or instrument to discriminate between measurement responses representing different concentrations. It is generally used to describe the instrument detection limits (DLs) or PQLs established to meet project DQOs. The method detection limit (MDL) represents the minimum concentration of a substance that can be measured and reported with 99 percent confidence that the analyte concentration is greater than zero. Sample quantitation limits (SQLs) are adjusted MDL values that reflect sample-specific actions, such as dilutions or varying aliquot sizes. The laboratory data reports show MDL in place of the SQL. The MDL was adjusted to reflect the sample analysis conditions. The PQL is the minimum concentration that can be reported based on the analysis of a specific matrix. The PQL is often the lowest acceptable calibration point for the analyte.

For this project, the laboratory data reports show reporting limit (RL) in place of the PQL. The laboratory reported detected analytes down to the adjusted MDL/SQL. All results reported between the SQL and PQL were qualified “J” by the laboratory. Sample results are compared to method and field quality blank results to identify possible effects of laboratory background and field procedures on sensitivity.

3.0 VALIDATION RESULTS AND PARCCS

This section discusses the validation results and the associated PARCCS criteria. Before conducting the PARCCS evaluation, the analytical data were validated to Stage 2A.

Samples not meeting the acceptance criteria were denoted with a validation qualifier that indicates a deficiency with the data. Table 3 contains validation qualifiers used in data validation.

When more than one validation qualifier is applicable to a data point, the final validation qualifier applied is based on the following hierarchy:

R > J	R takes precedence over the J qualifier.
J+	The high bias (J+) qualifier is applied to detected results only.
J > J+ or J-	The unbiased (J) qualifier supersedes biased (J+ or J-) qualifiers since it is not possible to assess the direction of the potential bias.
J = J+ plus J-	Adding biased (J+ or J-) qualifiers with opposite signs results in an unbiased qualifier (J).
UJ = U plus J	The UJ qualifier is used when a non-detected (U) flag is added to a (J) flag.

Table 4 identifies the QC elements reviewed during validation. The actual elements are method-dependent.

Table 5 lists the reason codes used. Reason codes explain why data were qualified and identify possible limitations of data use. Reason codes are cumulative except when one of the flags is R. In that case, only the reason code associated with the R flag is used.

Table 6 presents the overall qualified results after the validation qualifiers and associated reason codes were applied.

3.1 PRECISION

3.1.1 Instrument Calibration

The objective of the ICAL is to ensure that an instrument can produce acceptable qualitative and quantitative data by determining the ratio of instrument response to analyte concentration. %RSD is used to evaluate ICAL results in RSK-175 and provides a means of evaluating precision within an analytical system. ICAL data are reviewed during Stage 2B and Stage 4 validation only.

No data were qualified for ICAL imprecision.

3.1.2 MS/MSD and Laboratory Duplicate Samples

Total organic carbon (TOC) in soil sample SWFTS-BH27-SO-28 was qualified “J” for a high RPD in the MS/MSD. The 23% RPD exceeded the 20% control limit. The TOC result is found in Table 6 with reason code “ld”.

No data were qualified for lab duplicate RPD outliers.

3.1.3 Field Duplicate Samples

For results > 5X the PQL, the FD samples were evaluated for acceptable precision with RPDs. If one or both results was < 5X the PQL, samples were evaluated by the difference between the two measurements. Table 7 includes results where RPDs exceeded 30 percent for water or 50 percent for soils, or the difference between the values was greater than the absolute value of the PQL. Eight results were qualified “J” for FD imprecision. Results qualified for FD imprecision are found in Table 6 with reason code “fd”.

3.2 ACCURACY

3.2.1 Calibration and Continuing Calibration

As stated previously, the objective of the ICAL is to ensure that an instrument is capable of producing acceptable qualitative and quantitative data by determining the ratio of instrument response to analyte concentrations. Typically, inorganic methods use regression models for ICALs. Regression may also be used in organic analyses. The correlation coefficient indicates the linearity of the calibration curve. The coefficient of determination is an overall measure of the accuracy of the regression calibration curve. The objective of continuing calibration verification (CCV) is to ensure that the instrument continues to meet the sensitivity and linearity criteria throughout each analytical sequence. Initial verification and CCV results provide a means of evaluating accuracy. Percent difference or drift (%D), percent recovery (%R), correlation coefficient, and coefficient of determination are the parameters used to measure the effectiveness of instrument calibration. %R and %D are used to verify the ongoing calibration acceptability of the analytical system. Calibration data are reviewed during Stage 2B and Stage 4 validation only.

In SDG 550-188805-1, the TOC analytical batch ran from 8/18/22 to 8/22/22. A CCV was reported for every 10 samples as required by the method; however, the CCV was not always analyzed immediately after the 10th sample or on the same day as the 10th sample. Technically, the CCV frequency requirement was met, but the opening and closing CCVs did not reflect the operating conditions during sample analysis. Using professional judgment, 16 TOC results were qualified as estimated and assigned “J”, “J+”, or “UJ” qualifiers depending on the presence of other quality issues. They are found in Table 6 with reason code “c”.

3.2.2 MS/MSD Samples

Several MS/MSD %Rs were outside of acceptance criteria shown in the QAPPs. MS/MSD %R exceedances can be found in Table 8. Analytes that were present in the parent sample in concentrations greater than 4 times the amount spiked were not qualified and are not shown in the table. In cases where the recoveries were high and the parent sample was non-detect, no qualification was applied. Qualifiers were applied to parent samples only, unless FD samples or samples of known similarity were analyzed in the same SDG. Table 8 contains the spiked parent sample only. Per the inorganic NFG, MS/MSD recoveries < 30 percent result in rejection of the non-detected data point. In cases where dilutions caused the low recoveries, the data were not rejected or qualified. The effect of dilution on matrix spike recoveries is determined on a case-by-case-basis using professional judgment, knowledge of the lab’s procedures, and input from the lab. For some analyses, the lab may dilute the sample prior to preparation for analyses and prior to addition of the matrix spike compounds. The lab also approaches this on a case-by-case basis. Twenty-three results were qualified “J-“, “J”, “J+”, and “UJ” for MS/MSD %Rs. The results qualified for MS/MSD recoveries can be found in Table 6 with reason code “m”.

3.2.3 LCS Samples

No data were qualified for LCS %R outliers.

3.2.4 Serial Dilutions

The serial dilution is used to determine whether physical or chemical interferences exist due to matrix. The serial dilution %Ds were less than 10 percent as required in the inorganic NFG. No data were qualified for outliers.

3.2.5 Interference Check Samples

Interference check samples (ICS) are analyzed in the following methods: EPA 314.0, SW-6010B, and SW-6020B. All interference check %Rs met acceptance criteria of 80 to 120 percent.

3.2.6 Surrogates

Surrogates are added to all samples analyzed by EPA 300.1B to measure the efficiency of the analytical method. The acceptance limits are 90 to 115 percent. No data were qualified for surrogate %R outliers.

3.2.7 Analyte Quantitation

Three hundred twelve results in all analyses were detected between the SQL and the PQL. All results were qualified “J”, estimated, and are shown with reason code “sp” in Table 6.

3.2.8 Other

Forty-one phosphorus results were qualified “J” or “UJ” because the lab did not use a spiking solution containing the analyte for associated lab LCS and MS/MSD samples as required by the method. They are shown with reason code “o” in Table 6.

3.3 REPRESENTATIVENESS

3.3.1 Sample Preservation

Sample preservation was evaluated to verify compliance with the analytical methods. Preservation is method-dependent and may include the use of chemical additives, lack of headspace in sample bottles, and temperature requirements.

One methane result was qualified “J-” because the sample vials contained headspace. The qualified result is shown with reason code “vh” in Table 6.

3.3.2 Holding Times

Holding times were evaluated to verify compliance with the analytical methods. They are method-dependent. No data were qualified for missed holding times.

3.3.3 Blanks

Method blanks, EBs, and FBs were analyzed to evaluate representativeness. The concentration of an analyte in any blank was used for data qualification. If contaminants were detected in a blank, the blank concentration was compared to the sample results. If the analyte was not detected in the sample, no qualification was applied to the sample. If the sample concentration was greater than 10 times the amount in the blank, after dilutions were considered, no qualification was applied.

For concentrations detected in the sample below the PQL, the sample result was qualified “J”. Based on hierarchy of validation qualification, the “J” qualifier, in this case applied to detected results below the PQL, supersedes the positive bias associated with blank contamination. For concentrations detected in the sample above the PQL and less than 10 times the amount in the blank, the sample result was qualified “J+”.

3.3.4 Laboratory Blanks

Metals and TOC were detected in multiple laboratory blanks. Forty-six water results were qualified “J” because of metals found in both the samples and the method blanks. The metals were detected below the PQL in the samples. Thirty-six TOC results were qualified “J” or “J+” in soil samples because of the presence of TOC in the blanks. Qualified results are shown in Table 6 with reason codes “bl”. Laboratory blank detections that resulted in qualification are shown in Table 9. Method blanks may have been reported in more than one SDG.

3.3.5 Equipment Blanks and Field Blanks

There were several detections in the EBs and FBs. Forty-nine results were qualified “J” or “J+” because of EB detections. The qualified results are shown in Table 6 with reason code “be”. Forty-nine results were qualified “J” or “J+” because of FB detections. Qualified results are shown in Table 6 with reason code “bf”.

EB and FB detections that resulted in qualification are shown in Table 10 with the associated samples. EB and FB detections were associated with all samples in the SDG in which they appear. Samples may be associated with more than one EB and FB.

3.4 COMPARABILITY

The laboratory used standard analytical methods for all analyses and appropriate units for reporting. Comparability is acceptable.

3.5 COMPLETENESS

The overall completeness level attained for the field samples, EBs, and FBs is 100 percent and meets the project goal of 90 percent. The percentage was calculated as the total number of accepted (non-rejected) sample results divided by the total number of sample results multiplied by 100.

3.6 SENSITIVITY

Instrument sensitivity was determined to be technically acceptable. Due to high analyte concentrations and matrix effects, many analytical runs were analyzed at dilutions. For diluted analyses, SQLs and PQLs were elevated. Thirty-nine results reported with elevated SQLs and PQLs were not detected.

4.0 CONCLUSIONS AND RECOMMENDATIONS

The sample data were qualified for multiple data issues. Sample results were qualified for imprecision between one MS and MSD and between samples and their field duplicates. Sample results were qualified for calibration outliers, %Rs of MS/MSD samples, and method non-compliance which may affect accuracy. Qualifications that affected representativeness include blank contamination and insufficient preservation. Comparability was achieved by using approved sampling and analytical methods. Project analytical completeness was met for groundwater and soil. The sensitivity of the analytical methods was affected by the matrix of the samples. Dilutions raised the associated SQLs and PQLs in many samples.

The analytical data quality assessment for the laboratory results generated during the Seep Well Field Area Bioremediation Treatability Study at the NERT site in Henderson, Nevada established that the overall project analytical requirements were met.

5.0 REFERENCES

Nevada Division of Environmental Protection (NDEP). (2018). *NDEP Data Verification and Validation Requirements*.

Ramboll. (2020). *Quality Assurance Project Plan, Revision 5, Nevada Environmental Response Trust Site, Henderson, Nevada.*

Ramboll. (2021). *Quality Assurance Project Plan, Revision 6, Nevada Environmental Response Trust Site, Henderson, Nevada.*

Tetra Tech. (2016). *Final Seep Well Field Area Bioremediation Treatability Study Work Plan.*

Tables

Table 1 Analytical Methods

Method	Parameters	Number of Water Samples	Number of Soil Samples
EPA 300.0	Nitrate [as N]	157	0
EPA 300.0	Sulfate	157	0
EPA 300.1B	Chlorate	157	0
EPA 314.0	Perchlorate	157	0
RSK175	Methane	41	0
SM5310B	Total Organic Carbon	162	0
SW-6010B	Dissolved Metals*	41	0
SW-6010B	Total Calcium	5	110
SW-6010B	Total Manganese	41	0
SW-6020B	Dissolved Antimony, Arsenic, Selenium, Thallium	41	0
SW-9060A	Total Organic Carbon	0	110
VFA-IC	Volatile Fatty Acids	5	110

*Dissolved metals include aluminum, barium, beryllium, boron, cadmium, calcium, chromium, cobalt, copper, iron, lead, magnesium, manganese, molybdenum, nickel, phosphorus, potassium, silicon, silver, sodium, strontium, tin, titanium, tungsten, vanadium, zinc

Table 2 Sample Cross-Reference

SDG	Sample ID	Lab Sample ID	Matrix	QC Type	Sample Date	Validation Stage	EPA 300.0	EPA 300.1B	EPA 314.0	RSK175	SM5310B	SW-6010B Dissolved	SW-6010B Total	SW-6020 Dissolved	SW-9060A	VFA-IC
550-180322-1	PC-58-EM37	550-180322-1	WG	NORM	3/7/22	Stage 2A	X	X	X		X					
550-180322-1	PC-91-EM37	550-180322-2	WG	NORM	3/7/22	Stage 2A	X	X	X		X					
550-180322-1	PC-92-EM37	550-180322-3	WG	NORM	3/7/22	Stage 2A	X	X	X		X					
550-180322-1	SWFTS-MW11-EM37	550-180322-4	WG	NORM	3/7/22	Stage 2A	X	X	X		X					
550-180322-1	SWFTS-MW11-EM37-FD	550-180322-5	WG	FD	3/7/22	Stage 2A	X	X	X		X					
550-180322-1	SWFTS-MW06A-EM37	550-180322-6	WG	NORM	3/7/22	Stage 2A	X	X	X		X					
550-180322-1	SWFTS-MW06A-EM37-FD	550-180322-7	WG	FD	3/7/22	Stage 2A	X	X	X		X					
550-180322-1	SWFTS-MW06B-EM37	550-180322-8	WG	NORM	3/7/22	Stage 2A	X	X	X		X					
550-180322-1	SWFTS-MW10A-EM37	550-180322-9	WG	NORM	3/7/22	Stage 2A	X	X	X		X					
550-180322-1	SWFTS-MW25-EM37	550-180322-10	WG	NORM	3/7/22	Stage 2A	X	X	X		X					
550-180322-1	SWFTS-MW23-EM37	550-180322-11	WG	NORM	3/7/22	Stage 2A	X	X	X		X					
550-180407-1	PC-88-EM37	550-180407-1	WG	NORM	3/8/22	Stage 2A	X	X	X		X					
550-180407-1	PC-88-EM37-FD	550-180407-2	WG	FD	3/8/22	Stage 2A	X	X	X		X					
550-180407-1	PC-94-EM37	550-180407-3	WG	NORM	3/8/22	Stage 2A	X	X	X		X					
550-180407-1	SWFTS-EM37-EB1	550-180407-4	BW	EB	3/8/22	Stage 2A	X	X	X		X					
550-180407-1	SWFTS-MW09A-EM37	550-180407-5	WG	NORM	3/8/22	Stage 2A	X	X	X		X					
550-180407-1	SWFTS-MW09B-EM37	550-180407-6	WG	NORM	3/8/22	Stage 2A	X	X	X		X					
550-180407-1	SWFTS-MW24-EM37	550-180407-7	WG	NORM	3/8/22	Stage 2A	X	X	X		X					
550-180407-1	SWFTS-EM37-FB2	550-180407-8	BW	FB	3/8/22	Stage 2A	X	X	X		X					
550-180407-1	SWFTS-MW22-EM37	550-180407-9	WG	NORM	3/8/22	Stage 2A	X	X	X		X					
550-180407-1	SWFTS-MW20-EM37	550-180407-10	WG	NORM	3/8/22	Stage 2A	X	X	X		X					
550-180407-1	SWFTS-MW21-EM37	550-180407-11	WG	NORM	3/8/22	Stage 2A	X	X	X		X					
550-180407-1	SWFTS-MW19-EM37	550-180407-12	WG	NORM	3/8/22	Stage 2A	X	X	X		X					
550-180407-1	SWFTS-MW19-EM37-FD	550-180407-13	WG	FD	3/8/22	Stage 2A	X	X	X		X					
550-180407-1	SWFTS-MW18-EM37	550-180407-14	WG	NORM	3/8/22	Stage 2A	X	X	X		X					
550-180407-1	SWFTS-MW14-EM37	550-180407-15	WG	NORM	3/8/22	Stage 2A	X	X	X		X					
550-180407-1	SWFTS-MW15-EM37	550-180407-16	WG	NORM	3/8/22	Stage 2A	X	X	X		X					
550-180407-1	SWFTS-MW07B-EM37	550-180407-17	WG	NORM	3/8/22	Stage 2A	X	X	X		X					
550-180407-1	SWFTS-MW07A-EM37	550-180407-18	WG	NORM	3/8/22	Stage 2A	X	X	X		X					
550-180407-1	SWFTS-MW12-EM37	550-180407-19	WG	NORM	3/8/22	Stage 2A	X	X	X		X					
550-180516-1	SWFTS-MW17-EM37	550-180516-1	WG	NORM	3/9/22	Stage 2A	X	X	X		X					
550-180516-1	SWFTS-MW16-EM37	550-180516-2	WG	NORM	3/9/22	Stage 2A	X	X	X		X					
550-180516-1	SWFTS-MW13-EM37	550-180516-3	WG	NORM	3/9/22	Stage 2A	X	X	X		X					
550-180516-1	SWFTS-EM37-EB2	550-180516-4	BW	EB	3/9/22	Stage 2A	X	X	X		X					
550-180516-1	SWFTS-MW04-EM37	550-180516-5	WG	NORM	3/9/22	Stage 2A	X	X	X		X					
550-180516-1	SWFTS-MW03-EM37	550-180516-6	WG	NORM	3/9/22	Stage 2A	X	X	X		X					
550-180516-1	SWFTS-MW01-EM37	550-180516-7	WG	NORM	3/9/22	Stage 2A	X	X	X		X					
550-180516-1	SWFTS-EM37-FB1	550-180516-8	BW	FB	3/9/22	Stage 2A	X	X	X		X					
550-180516-1	SWFTS-MW02-EM37	550-180516-9	WG	NORM	3/9/22	Stage 2A	X	X	X		X					

Table 2 Sample Cross-Reference

SDG	Sample ID	Lab Sample ID	Matrix	QC Type	Sample Date	Validation Stage	EPA 300.0	EPA 300.1B	EPA 314.0	RSK175	SM5310B	SW-6010B Dissolved	SW-6010B Total	SW-6020 Dissolved	SW-9060A	VFA-IC
550-186012-1	PC-58-EM38	550-186012-1	WG	NORM	6/21/22	Stage 2A	X	X	X		X					
550-186012-1	SWFTS-EM38-EB1	550-186012-2	BW	EB	6/21/22	Stage 2A	X	X	X		X					
550-186012-1	SWFTS-EM38-FB1	550-186012-3	BW	FB	6/21/22	Stage 2A	X	X	X		X					
550-186012-1	PC-88-EM38	550-186012-4	WG	NORM	6/21/22	Stage 2A	X	X	X		X					
550-186012-1	PC-88-EM38-FD	550-186012-5	WG	FD	6/21/22	Stage 2A	X	X	X		X					
550-186012-1	PC-91-EM38	550-186012-6	WG	NORM	6/21/22	Stage 2A	X	X	X		X					
550-186012-1	PC-92-EM38	550-186012-7	WG	NORM	6/21/22	Stage 2A	X	X	X		X					
550-186012-1	PC-94-EM38	550-186012-8	WG	NORM	6/21/22	Stage 2A	X	X	X		X					
550-186012-1	SWFTS-MW01-EM38	550-186012-9	WG	NORM	6/21/22	Stage 2A	X	X	X		X					
550-186012-1	SWFTS-MW25-EM38	550-186012-10	WG	NORM	6/21/22	Stage 2A	X	X	X		X					
550-186012-1	SWFTS-MW23-EM38	550-186012-11	WG	NORM	6/21/22	Stage 2A	X	X	X		X					
550-186012-1	SWFTS-MW24-EM38	550-186012-12	WG	NORM	6/21/22	Stage 2A	X	X	X		X					
550-186012-1	SWFTS-MW21-EM38	550-186012-13	WG	NORM	6/21/22	Stage 2A	X	X	X		X					
550-186012-1	SWFTS-MW22-EM38	550-186012-14	WG	NORM	6/21/22	Stage 2A	X	X	X		X					
550-186012-1	SWFTS-MW20-EM38	550-186012-15	WG	NORM	6/21/22	Stage 2A	X	X	X		X					
550-186069-1	SWFTS-MW19-EM38	550-186069-1	WG	NORM	6/22/22	Stage 2A	X	X	X		X					
550-186069-1	SWFTS-MW19-EM38-FD	550-186069-2	WG	FD	6/22/22	Stage 2A	X	X	X		X					
550-186069-1	SWFTS-MW18-EM38	550-186069-3	WG	NORM	6/22/22	Stage 2A	X	X	X		X					
550-186069-1	SWFTS-MW17-EM38	550-186069-4	WG	NORM	6/22/22	Stage 2A	X	X	X		X					
550-186069-1	SWFTS-MW16-EM38	550-186069-5	WG	NORM	6/22/22	Stage 2A	X	X	X		X					
550-186069-1	SWFTS-MW15-EM38	550-186069-6	WG	NORM	6/22/22	Stage 2A	X	X	X		X					
550-186069-1	SWFTS-MW14-EM38	550-186069-7	WG	NORM	6/22/22	Stage 2A	X	X	X		X					
550-186069-1	SWFTS-MW13-EM38	550-186069-8	WG	NORM	6/22/22	Stage 2A	X	X	X		X					
550-186069-1	SWFTS-MW02-EM38	550-186069-9	WG	NORM	6/22/22	Stage 2A	X	X	X		X					
550-186069-1	SWFTS-EM38-EB2	550-186069-10	BW	EB	6/22/22	Stage 2A	X	X	X		X					
550-186069-1	SWFTS-EM38-FB2	550-186069-11	BW	FB	6/22/22	Stage 2A	X	X	X		X					
550-186069-1	SWFTS-MW03-EM38	550-186069-12	WG	NORM	6/22/22	Stage 2A	X	X	X		X					
550-186069-1	SWFTS-MW04-EM38	550-186069-13	WG	NORM	6/22/22	Stage 2A	X	X	X		X					
550-186069-1	SWFTS-MW06A-EM38	550-186069-14	WG	NORM	6/22/22	Stage 2A	X	X	X		X					
550-186069-1	SWFTS-MW06A-EM38-FD	550-186069-15	WG	FD	6/22/22	Stage 2A	X	X	X		X					
550-186069-1	SWFTS-MW06B-EM38	550-186069-16	WG	NORM	6/22/22	Stage 2A	X	X	X		X					
550-186171-1	SWFTS-MW12-EM38	550-186171-1	WG	NORM	6/23/22	Stage 2A	X	X	X		X					
550-186171-1	SWFTS-MW10A-EM38	550-186171-2	WG	NORM	6/23/22	Stage 2A	X	X	X		X					
550-186171-1	SWFTS-MW09A-EM38	550-186171-3	WG	NORM	6/23/22	Stage 2A	X	X	X		X					
550-186171-1	SWFTS-MW09B-EM38	550-186171-4	WG	NORM	6/23/22	Stage 2A	X	X	X		X					
550-186171-1	SWFTS-MW09B-EM38-FD	550-186171-5	WG	FD	6/23/22	Stage 2A	X	X	X		X					
550-186171-1	SWFTS-MW07A-EM38	550-186171-6	WG	NORM	6/23/22	Stage 2A	X	X	X		X					
550-186171-1	SWFTS-MW07B-EM38	550-186171-7	WG	NORM	6/23/22	Stage 2A	X	X	X		X					
550-188805-1	SWFTS-BH11-15	550-188805-1	SO	NORM	8/10/22	Stage 2B							X		X	X

Table 2 Sample Cross-Reference

SDG	Sample ID	Lab Sample ID	Matrix	QC Type	Sample Date	Validation Stage	EPA 300.0	EPA 300.1B	EPA 314.0	RSK175	SM5310B	SW-6010B Dissolved	SW-6010B Total	SW-6020 Dissolved	SW-9060A	VFA-IC
550-188805-1	SWFTS-BH11-20	550-188805-2	SO	NORM	8/10/22	Stage 2B							X		X	X
550-188805-1	SWFTS-BH11-30	550-188805-3	SO	NORM	8/10/22	Stage 2B							X		X	X
550-188805-1	SWFTS-BH11-40	550-188805-4	SO	NORM	8/10/22	Stage 2B							X		X	X
550-188805-1	SWFTS-BH11-45	550-188805-5	SO	NORM	8/10/22	Stage 2B							X		X	X
550-188805-1	SWFTS-BH13-11	550-188805-6	SO	NORM	8/11/22	Stage 2B							X		X	X
550-188805-1	SWFTS-BH13-22	550-188805-7	SO	NORM	8/11/22	Stage 2B							X		X	X
550-188805-1	SWFTS-BH13-32.6	550-188805-8	SO	NORM	8/11/22	Stage 2B							X		X	X
550-188805-1	SWFTS-BH13-39	550-188805-9	SO	NORM	8/11/22	Stage 2B							X		X	X
550-188805-1	SWFTS-BH13-41	550-188805-10	SO	NORM	8/11/22	Stage 2B							X		X	X
550-188805-1	SWFTS-BH13-41-FD	550-188805-11	SO	FD	8/11/22	Stage 2B							X		X	X
550-188805-1	SWFTS-BH15-18.5	550-188805-12	SO	NORM	8/11/22	Stage 2B							X		X	X
550-188805-1	SWFTS-BH15-21	550-188805-13	SO	NORM	8/11/22	Stage 2B							X		X	X
550-188805-1	SWFTS-BH15-34.5	550-188805-14	SO	NORM	8/11/22	Stage 2B							X		X	X
550-188805-1	SWFTS-BH15-37.5	550-188805-15	SO	NORM	8/11/22	Stage 2B							X		X	X
550-188805-1	SWFTS-BH15-41	550-188805-16	SO	NORM	8/11/22	Stage 2B							X		X	X
550-188805-1	SWFTS-BH16-17.3	550-188805-17	SO	NORM	8/11/22	Stage 2B							X		X	X
550-188805-1	SWFTS-BH16-21.5	550-188805-18	SO	NORM	8/11/22	Stage 2B							X		X	X
550-188805-1	SWFTS-BH16-21.5-FD	550-188805-19	SO	FD	8/11/22	Stage 2B							X		X	X
550-188805-1	SWFTS-BH16-26.5	550-188805-20	SO	NORM	8/11/22	Stage 2B							X		X	X
550-188805-1	SWFTS-BH16-31	550-188805-21	SO	NORM	8/11/22	Stage 2B							X		X	X
550-188805-1	SWFTS-BH16-42.3	550-188805-22	SO	NORM	8/11/22	Stage 2B							X		X	X
550-188805-1	SWFTS-BH18-13	550-188805-23	SO	NORM	8/11/22	Stage 2B							X		X	X
550-188805-1	SWFTS-BH18-20	550-188805-24	SO	NORM	8/11/22	Stage 2B							X		X	X
550-188805-1	SWFTS-BH18-23	550-188805-25	SO	NORM	8/11/22	Stage 2B							X		X	X
550-188805-1	SWFTS-BH18-27.5	550-188805-26	SO	NORM	8/11/22	Stage 2B							X		X	X
550-188805-1	SWFTS-BH18-34.5	550-188805-27	SO	NORM	8/11/22	Stage 2B							X		X	X
550-188805-1	SWFTS-BH12-11	550-188805-28	SO	NORM	8/12/22	Stage 2B							X		X	X
550-188805-1	SWFTS-BH12-16	550-188805-29	SO	NORM	8/12/22	Stage 2B							X		X	X
550-188805-1	SWFTS-BH12-21	550-188805-30	SO	NORM	8/12/22	Stage 2B							X		X	X
550-188805-1	SWFTS-BH12-27	550-188805-31	SO	NORM	8/12/22	Stage 2B							X		X	X
550-188805-1	SWFTS-BH12-36	550-188805-32	SO	NORM	8/12/22	Stage 2B							X		X	X
550-189011-1	SWFTS-BH14-SO-12.8	550-189011-1	SO	NORM	8/15/22	Stage 2B							X		X	X
550-189011-1	SWFTS-BH14-SO-15.5	550-189011-2	SO	NORM	8/15/22	Stage 2B							X		X	X
550-189011-1	SWFTS-BH14-SO-18	550-189011-3	SO	NORM	8/15/22	Stage 2B							X		X	X
550-189011-1	SWFTS-BH14-SO-25.3	550-189011-4	SO	NORM	8/15/22	Stage 2B							X		X	X
550-189011-1	SWFTS-BH14-SO-29	550-189011-5	SO	NORM	8/15/22	Stage 2B							X		X	X
550-189011-1	SWFTS-BH19-SO-11	550-189011-6	SO	NORM	8/15/22	Stage 2B							X		X	X
550-189011-1	SWFTS-BH19-SO-15.5	550-189011-7	SO	NORM	8/15/22	Stage 2B							X		X	X
550-189011-1	SWFTS-BH19-SO-20.5	550-189011-8	SO	NORM	8/15/22	Stage 2B							X		X	X

Table 2 Sample Cross-Reference

SDG	Sample ID	Lab Sample ID	Matrix	QC Type	Sample Date	Validation Stage	EPA 300.0	EPA 300.1B	EPA 314.0	RSK175	SM5310B	SW-6010B Dissolved	SW-6010B Total	SW-6020 Dissolved	SW-9060A	VFA-IC
550-189011-1	SWFTS-BH19-SO-25	550-189011-9	SO	NORM	8/15/22	Stage 2B							X		X	X
550-189011-1	SWFTS-BH19-SO-28	550-189011-10	SO	NORM	8/15/22	Stage 2B							X		X	X
550-189011-1	SWFTS-BH24-SO-19	550-189011-11	SO	NORM	8/15/22	Stage 2B							X		X	X
550-189011-1	SWFTS-BH24-SO-24.5	550-189011-12	SO	NORM	8/15/22	Stage 2B							X		X	X
550-189011-1	SWFTS-BH24-SO-27	550-189011-13	SO	NORM	8/15/22	Stage 2B							X		X	X
550-189011-1	SWFTS-BH24-SO-29.3	550-189011-14	SO	NORM	8/15/22	Stage 2B							X		X	X
550-189011-1	SWFTS-BH24-SO-44.5	550-189011-15	SO	NORM	8/15/22	Stage 2B							X		X	X
550-189011-1	SWFTS-BH24-SO-44.5-FD	550-189011-16	SO	FD	8/15/22	Stage 2B							X		X	X
550-189011-1	SWFTS-BH23-SO-20.2	550-189011-17	SO	NORM	8/15/22	Stage 2B							X		X	X
550-189011-1	SWFTS-BH23-SO-24	550-189011-18	SO	NORM	8/15/22	Stage 2B							X		X	X
550-189011-1	SWFTS-BH23-SO-27	550-189011-19	SO	NORM	8/15/22	Stage 2B							X		X	X
550-189011-1	SWFTS-BH23-SO-31.3	550-189011-20	SO	NORM	8/15/22	Stage 2B							X		X	X
550-189011-1	SWFTS-BH23-SO-31.3-FD	550-189011-21	SO	FD	8/15/22	Stage 2B							X		X	X
550-189011-1	SWFTS-BH23-SO-36.7	550-189011-22	SO	NORM	8/15/22	Stage 2B							X		X	X
550-189011-1	SWFTS-BH25-SO-17	550-189011-23	SO	NORM	8/15/22	Stage 2B							X		X	X
550-189011-1	SWFTS-BH25-SO-19.8	550-189011-24	SO	NORM	8/15/22	Stage 2B							X		X	X
550-189011-1	SWFTS-BH25-SO-26.5	550-189011-25	SO	NORM	8/15/22	Stage 2B							X		X	X
550-189011-1	SWFTS-BH25-SO-29.2	550-189011-26	SO	NORM	8/15/22	Stage 2B							X		X	X
550-189011-1	SWFTS-BH25-SO-34.8	550-189011-27	SO	NORM	8/15/22	Stage 2B							X		X	X
550-189012-1	SWFTS-BH27-SO-11.8	550-189012-1	SO	NORM	8/16/22	Stage 2B							X		X	X
550-189012-1	SWFTS-BH27-SO-16.5	550-189012-2	SO	NORM	8/16/22	Stage 2B							X		X	X
550-189012-1	SWFTS-BH27-SO-16.5-FD	550-189012-3	SO	FD	8/16/22	Stage 2B							X		X	X
550-189012-1	SWFTS-BH27-SO-23	550-189012-4	SO	NORM	8/16/22	Stage 2B							X		X	X
550-189012-1	SWFTS-BH27-SO-28	550-189012-5	SO	NORM	8/16/22	Stage 2B							X		X	X
550-189012-1	SWFTS-BH27-SO-36.2	550-189012-6	SO	NORM	8/16/22	Stage 2B							X		X	X
550-189012-1	SWFTS-BH26-SO-16.3	550-189012-7	SO	NORM	8/16/22	Stage 2B							X		X	X
550-189012-1	SWFTS-BH26-SO-18.5	550-189012-8	SO	NORM	8/16/22	Stage 2B							X		X	X
550-189012-1	SWFTS-BH26-SO-22.3	550-189012-9	SO	NORM	8/16/22	Stage 2B							X		X	X
550-189012-1	SWFTS-BH26-SO-31	550-189012-10	SO	NORM	8/16/22	Stage 2B							X		X	X
550-189012-1	SWFTS-BH26-SO-48.5	550-189012-11	SO	NORM	8/16/22	Stage 2B							X		X	X
550-189012-1	SWFTS-BH30-SO-18	550-189012-12	SO	NORM	8/16/22	Stage 2B							X		X	X
550-189012-1	SWFTS-BH30-SO-22.8	550-189012-13	SO	NORM	8/16/22	Stage 2B							X		X	X
550-189012-1	SWFTS-BH30-SO-24	550-189012-14	SO	NORM	8/16/22	Stage 2B							X		X	X
550-189012-1	SWFTS-BH30-SO-29	550-189012-15	SO	NORM	8/16/22	Stage 2B							X		X	X
550-189012-1	SWFTS-BH30-SO-37	550-189012-16	SO	NORM	8/16/22	Stage 2B							X		X	X
550-189012-1	SWFTS-BH29-SO-24.5	550-189012-17	SO	NORM	8/16/22	Stage 2B							X		X	X
550-189012-1	SWFTS-BH29-SO-28	550-189012-18	SO	NORM	8/16/22	Stage 2B							X		X	X
550-189012-1	SWFTS-BH29-SO-36.5	550-189012-19	SO	NORM	8/16/22	Stage 2B							X		X	X
550-189012-1	SWFTS-BH29-SO-40	550-189012-20	SO	NORM	8/16/22	Stage 2B							X		X	X

Table 2 Sample Cross-Reference

SDG	Sample ID	Lab Sample ID	Matrix	QC Type	Sample Date	Validation Stage	EPA 300.0	EPA 300.1B	EPA 314.0	RSK175	SM5310B	SW-6010B Dissolved	SW-6010B Total	SW-6020 Dissolved	SW-9060A	VFA-IC
550-189012-1	SWFTS-BH29-SO-43.5	550-189012-21	SO	NORM	8/16/22	Stage 2B							X		X	X
550-189012-1	SWFTS-BH28-SO-17.3	550-189012-22	SO	NORM	8/16/22	Stage 2B							X		X	X
550-189012-1	SWFTS-BH28-SO-17.3-FD	550-189012-23	SO	FD	8/16/22	Stage 2B							X		X	X
550-189012-1	SWFTS-BH28-SO-21	550-189012-24	SO	NORM	8/16/22	Stage 2B							X		X	X
550-189012-1	SWFTS-BH28-SO-26	550-189012-25	SO	NORM	8/16/22	Stage 2B							X		X	X
550-189012-1	SWFTS-BH28-SO-32.5	550-189012-26	SO	NORM	8/16/22	Stage 2B							X		X	X
550-189012-1	SWFTS-BH28-SO-41	550-189012-27	SO	NORM	8/16/22	Stage 2B							X		X	X
550-189012-1	SWFTS-BH30-SO-37-FD	550-189012-28	SO	FD	8/16/22	Stage 2B							X		X	X
550-189013-1	SWFTS-BH20-SO-13.7	550-189013-1	SO	NORM	8/13/22	Stage 4							X		X	X
550-189013-1	SWFTS-BH20-SO-13.7-FD	550-189013-2	SO	FD	8/13/22	Stage 4							X		X	X
550-189013-1	SWFTS-BH20-SO-24.2	550-189013-3	SO	NORM	8/13/22	Stage 4							X		X	X
550-189013-1	SWFTS-BH20-SO-26	550-189013-4	SO	NORM	8/13/22	Stage 4							X		X	X
550-189013-1	SWFTS-BH20-SO-31	550-189013-5	SO	NORM	8/13/22	Stage 4							X		X	X
550-189013-1	SWFTS-BH20-SO-35.5	550-189013-6	SO	NORM	8/13/22	Stage 4							X		X	X
550-189013-1	SWFTS-BH22-SO-12.4	550-189013-7	SO	NORM	8/13/22	Stage 4							X		X	X
550-189013-1	SWFTS-BH22-SO-20.5	550-189013-8	SO	NORM	8/13/22	Stage 4							X		X	X
550-189013-1	SWFTS-BH22-SO-28.5	550-189013-9	SO	NORM	8/13/22	Stage 4							X		X	X
550-189013-1	SWFTS-BH22-SO-36	550-189013-10	SO	NORM	8/13/22	Stage 4							X		X	X
550-189013-1	SWFTS-BH22-SO-49	550-189013-11	SO	NORM	8/13/22	Stage 4							X		X	X
550-189013-1	SWFTS-BH21-SO-16.5	550-189013-12	SO	NORM	8/13/22	Stage 4							X		X	X
550-189013-1	SWFTS-BH21-SO-16.5-FD	550-189013-13	SO	FD	8/13/22	Stage 4							X		X	X
550-189013-1	SWFTS-BH21-SO-19.5	550-189013-14	SO	NORM	8/13/22	Stage 4							X		X	X
550-189013-1	SWFTS-BH21-SO-23.2	550-189013-15	SO	NORM	8/13/22	Stage 4							X		X	X
550-189013-1	SWFTS-BH21-SO-28	550-189013-16	SO	NORM	8/13/22	Stage 4							X		X	X
550-189013-1	SWFTS-BH21-SO-32	550-189013-17	SO	NORM	8/13/22	Stage 4							X		X	X
550-189014-1	SWFTS-BH-EB1-20220813	550-189014-1	BW	EB	8/13/22	Stage 2A					X		X			X
550-189014-1	SWFTS-BH-EB2-20220813	550-189014-2	BW	EB	8/13/22	Stage 2A					X		X			X
550-189014-1	SWFTS-BH-EB3-20220815	550-189014-3	BW	EB	8/15/22	Stage 2A					X		X			X
550-189014-1	SWFTS-BH-EB4-20220816	550-189014-4	BW	EB	8/16/22	Stage 2A					X		X			X
550-189014-1	SWFTS-BH-EB5-20220816	550-189014-5	BW	EB	8/16/22	Stage 2A					X		X			X
550-189088-1	SWFTS-BH17-SO-13	550-189088-1	SO	NORM	8/12/22	Stage 2B							X		X	X
550-189088-1	SWFTS-BH17-SO-17	550-189088-2	SO	NORM	8/12/22	Stage 2B							X		X	X
550-189088-1	SWFTS-BH17-SO-17-FD	550-189088-3	SO	FD	8/12/22	Stage 2B							X		X	X
550-189088-1	SWFTS-BH17-SO-23	550-189088-4	SO	NORM	8/12/22	Stage 2B							X		X	X
550-189088-1	SWFTS-BH17-SO-26	550-189088-5	SO	NORM	8/12/22	Stage 2B							X		X	X
550-189088-1	SWFTS-BH17-SO-40	550-189088-6	SO	NORM	8/12/22	Stage 2B							X		X	X
550-190412-1	SWFTS-MW09B-EM39	550-190412-1	WG	NORM	9/13/22	Stage 2A	X	X	X		X					
550-190412-1	SWFTS-MW10A-EM39	550-190412-2	WG	NORM	9/13/22	Stage 2A	X	X	X		X					
550-190412-1	SWFTS-MW11-EM39	550-190412-3	WG	NORM	9/13/22	Stage 2A	X	X	X		X					

Table 2 Sample Cross-Reference

SDG	Sample ID	Lab Sample ID	Matrix	QC Type	Sample Date	Validation Stage	EPA 300.0	EPA 300.1B	EPA 314.0	RSK175	SM5310B	SW-6010B Dissolved	SW-6010B Total	SW-6020 Dissolved	SW-9060A	VFA-IC
550-190412-1	SWFTS-MW11-EM39-FD	550-190412-4	WG	FD	9/13/22	Stage 2A	X	X	X		X					
550-190412-1	SWFTS-MW12-EM39	550-190412-5	WG	NORM	9/13/22	Stage 2A	X	X	X		X					
550-190412-1	SWFTS-MW13-EM39	550-190412-6	WG	NORM	9/13/22	Stage 2A	X	X	X		X					
550-190412-1	SWFTS-MW14-EM39	550-190412-7	WG	NORM	9/13/22	Stage 2A	X	X	X		X					
550-190412-1	SWFTS-MW03-EM39	550-190412-8	WG	NORM	9/13/22	Stage 2A	X	X	X		X					
550-190412-1	SWFTS-MW09A-EM39	550-190412-9	WG	NORM	9/13/22	Stage 2A	X	X	X		X					
550-190412-1	SWFTS-MW01-EM39	550-190412-10	WG	NORM	9/13/22	Stage 2A	X	X	X		X					
550-190412-1	SWFTS-EM39-FB1	550-190412-11	BW	FB	9/13/22	Stage 2A	X	X	X		X					
550-190412-1	SWFTS-EM39-EB1	550-190412-12	BW	EB	9/13/22	Stage 2A	X	X	X		X					
550-190504-1	SWFTS-MW15-EM39	550-190504-1	WG	NORM	9/14/22	Stage 2A	X	X	X		X					
550-190504-1	SWFTS-MW16-EM39	550-190504-2	WG	NORM	9/14/22	Stage 2A	X	X	X		X					
550-190504-1	SWFTS-MW17-EM39	550-190504-3	WG	NORM	9/14/22	Stage 2A	X	X	X		X					
550-190504-1	SWFTS-MW18-EM39	550-190504-4	WG	NORM	9/14/22	Stage 2A	X	X	X		X					
550-190504-1	SWFTS-MW19-EM39	550-190504-5	WG	NORM	9/14/22	Stage 2A	X	X	X		X					
550-190504-1	SWFTS-MW19-EM39-FD	550-190504-6	WG	FD	9/14/22	Stage 2A	X	X	X		X					
550-190504-1	SWFTS-EM39-FB2	550-190504-7	BW	FB	9/14/22	Stage 2A	X	X	X		X					
550-190504-1	SWFTS-EM39-EB2	550-190504-8	BW	EB	9/14/22	Stage 2A	X	X	X		X					
550-190504-1	SWFTS-MW20-EM39	550-190504-9	WG	NORM	9/14/22	Stage 2A	X	X	X		X					
550-190504-1	SWFTS-MW21-EM39	550-190504-10	WG	NORM	9/14/22	Stage 2A	X	X	X		X					
550-190504-1	PC-91-EM39	550-190504-11	WG	NORM	9/14/22	Stage 2A	X	X	X		X					
550-190504-1	PC-92-EM39	550-190504-12	WG	NORM	9/14/22	Stage 2A	X	X	X		X					
550-190504-1	SWFTS-MW06A-EM39	550-190504-13	WG	NORM	9/14/22	Stage 2A	X	X	X		X					
550-190504-1	SWFTS-MW06A-EM39-FD	550-190504-14	WG	FD	9/14/22	Stage 2A	X	X	X		X					
550-190504-1	SWFTS-MW06B-EM39	550-190504-15	WG	NORM	9/14/22	Stage 2A	X	X	X		X					
550-190504-1	SWFTS-MW04-EM39	550-190504-16	WG	NORM	9/14/22	Stage 2A	X	X	X		X					
550-190504-1	SWFTS-MW02-EM39	550-190504-17	WG	NORM	9/14/22	Stage 2A	X	X	X		X					
550-190504-1	SWFTS-MW07A-EM39	550-190504-18	WG	NORM	9/14/22	Stage 2A	X	X	X		X					
550-190504-1	SWFTS-MW07B-EM39	550-190504-19	WG	NORM	9/14/22	Stage 2A	X	X	X		X					
550-190504-1	SWFTS-MW22-EM39	550-190504-20	WG	NORM	9/14/22	Stage 2A	X	X	X		X					
550-190606-1	SWFTS-MW23-EM39	550-190606-1	WG	NORM	9/15/22	Stage 2A	X	X	X		X					
550-190606-1	SWFTS-MW24-EM39	550-190606-2	WG	NORM	9/15/22	Stage 2A	X	X	X		X					
550-190606-1	SWFTS-MW25-EM39	550-190606-3	WG	NORM	9/15/22	Stage 2A	X	X	X		X					
550-190606-1	PC-94-EM39	550-190606-4	WG	NORM	9/15/22	Stage 2A	X	X	X		X					
550-190606-1	PC-88-EM39	550-190606-5	WG	NORM	9/15/22	Stage 2A	X	X	X		X					
550-190606-1	PC-88-EM39-FD	550-190606-6	WG	FD	9/15/22	Stage 2A	X	X	X		X					
550-190606-1	PC-58-EM39	550-190606-7	WG	NORM	9/15/22	Stage 2A	X	X	X		X					
550-194841-1	PC-88-EM40	550-194841-1/2	WG	NORM	12/12/22	Stage 2A	X	X	X	X	X	X	X	X		
550-194841-1	PC-88-EM40-FD	550-194841-3/4	WG	FD	12/12/22	Stage 2A	X	X	X	X	X	X	X	X		
550-194841-1	PC-58-EM40	550-194841-5/6	WG	NORM	12/12/22	Stage 2A	X	X	X	X	X	X	X	X		

Table 2 Sample Cross-Reference

SDG	Sample ID	Lab Sample ID	Matrix	QC Type	Sample Date	Validation Stage	EPA 300.0	EPA 300.1B	EPA 314.0	RSK175	SM5310B	SW-6010B Dissolved	SW-6010B Total	SW-6020 Dissolved	SW-9060A	VFA-IC
550-194841-1	PC-91-EM40	550-194841-7/8	WG	NORM	12/12/22	Stage 2A	X	X	X	X	X	X	X	X		
550-194919-1	SWFTS-MW25-EM40	550-194919-1/2	WG	NORM	12/13/22	Stage 2A	X	X	X	X	X	X	X	X		
550-194919-1	SWFTS-MW24-EM40	550-194919-3/4	WG	NORM	12/13/22	Stage 2A	X	X	X	X	X	X	X	X		
550-194919-1	SWFTS-MW23-EM40	550-194919-5/6	WG	NORM	12/13/22	Stage 2A	X	X	X	X	X	X	X	X		
550-194919-1	SWFTS-MW20-EM40	550-194919-7/8	WG	NORM	12/13/22	Stage 2A	X	X	X	X	X	X	X	X		
550-194920-1	SWFTS-EM40-EB1	550-194920-11/12	BW	EB	12/13/22	Stage 2A	X	X	X	X	X	X	X	X		
550-194920-1	SWFTS-MW09B-EM40	550-194920-13/14	WG	NORM	12/13/22	Stage 2A	X	X	X	X	X	X	X	X		
550-194920-1	SWFTS-MW03-EM40	550-194920-15/16	WG	NORM	12/13/22	Stage 2A	X	X	X	X	X	X	X	X		
550-194920-1	PC-92-EM40	550-194920-1/2	WG	NORM	12/13/22	Stage 2A	X	X	X	X	X	X	X	X		
550-194920-1	SWFTS-MW01-EM40	550-194920-3/4	WG	NORM	12/13/22	Stage 2A	X	X	X	X	X	X	X	X		
550-194920-1	SWFTS-EM40-FB1	550-194920-5/6	BW	FB	12/13/22	Stage 2A	X	X	X	X	X	X	X	X		
550-194920-1	PC-94-EM40	550-194920-7/8	WG	NORM	12/13/22	Stage 2A	X	X	X	X	X	X	X	X		
550-194920-1	SWFTS-MW09A-EM40	550-194920-10/9	WG	NORM	12/13/22	Stage 2A	X	X	X	X	X	X	X	X		
550-195013-1	SWFTS-MW18-EM40	550-195013-11/12	WG	NORM	12/14/22	Stage 2A	X	X	X	X	X	X	X	X		
550-195013-1	SWFTS-MW17-EM40	550-195013-13/14	WG	NORM	12/14/22	Stage 2A	X	X	X	X	X	X	X	X		
550-195013-1	SWFTS-MW16-EM40	550-195013-15/16	WG	NORM	12/14/22	Stage 2A	X	X	X	X	X	X	X	X		
550-195013-1	SWFTS-MW22-EM40	550-195013-1/2	WG	NORM	12/14/22	Stage 2A	X	X	X	X	X	X	X	X		

Table 3 Validation Qualifiers and Definitions

Validation Qualifier	Definition
J-	The result is an estimated quantity, but the result may be biased low.
J	The result is an estimated quantity. The associated numerical value is the approximate concentration of the analyte in the sample.
J+	The result is an estimated quantity, but the result may be biased high.
NJ	The analyte has been “tentatively identified” or “presumptively” as present and the associated numerical value is the estimated concentration in the sample.
U	The analyte was analyzed for, but was not detected above the level of the reported sample quantitation limit.
UJ	The analyte was analyzed for, but was not detected. The reported quantitation limit is approximate and may be inaccurate or imprecise.
R	The data are unusable. The sample results are rejected due to serious deficiencies in meeting QC criteria. The analyte may or may not be present in the sample.

Table 4 Validation Checks and Stages

Verification and Validation Checks	Stage 2A	Stage 2B	Stage 4
Documentation identifies the laboratory receiving and conducting analyses, and includes documentation for all samples submitted by the project or requester for analyses.	X	X	X
Requested analytical methods were performed and the analysis dates are present.	X	X	X
Requested target analyte results are reported along with the original laboratory data qualifiers and data qualifier definitions for each reported result (and the uncertainty of each result and clear indication of the type of uncertainty reported if required, e.g., for radiochemical analyses).	X	X	X
Requested target analyte result units are reported (along with their associated uncertainty units if required, e.g., for radiochemical analyses).	X	X	X
Requested reporting limits for all samples are present and results at and below the requested (required) reporting limits are clearly identified (including sample detection limits if required).	X	X	X
Sampling dates (including times if needed), date and time of laboratory receipt of samples, and sample conditions upon receipt at the laboratory (including preservation, pH, and temperature) are documented.	X	X	X
For radiochemical analyses, the sample-specific critical values (sometimes called "critical level," "decision level," or "detection threshold") and sample-specific minimum detectable value, activity, or concentration for all samples are reported, and results at and below the requested (required) critical values are clearly identified.	X	X	X
For radiochemical analyses, the chemical yield (if applicable to the method) and reference date and time (especially for short lived isotopes) are reported for all samples (as appropriate).	X	X	X
Sample results are evaluated by comparing sample conditions upon receipt at the laboratory (e.g., preservation checks) and sample characteristics (e.g., percent moisture) to the requirements and guidelines present in national or regional data validation documents, analytical method(s), or contract.	X	X	X
Requested methods (handling, preparation, cleanup, and analytical) are performed.	X	X	X
Method dates (including dates, times and duration of analysis for radiation counting measurements and other methods, if needed) for handling (e.g., Toxicity Characteristic Leaching Procedure), preparation, cleanup and analysis are present, as appropriate.	X	X	X
Sample-related QC data and QC acceptance criteria (e.g., method blanks, surrogate recoveries, deuterated monitoring compound (DMC) recoveries, laboratory control sample (LCS) recoveries, duplicate analyses, matrix spike and matrix spike duplicate recoveries, serial dilutions, post digestion spikes, standard reference materials) are provided and linked to the reported field samples (including the field quality control samples such as trip and equipment blanks).	X	X	X
Requested spike analytes or compounds (e.g., surrogate, DMCs, LCS spikes, post digestion spikes) have been added, as appropriate.	X	X	X
Sample holding times (from sampling date to preparation and preparation to analysis) are evaluated.	X	X	X

Table 4 Validation Checks and Stages

Verification and Validation Checks	Stage 2A	Stage 2B	Stage 4
Frequency of QC samples is checked for appropriateness (e.g., one LCS per 20 samples in a preparation batch).	X	X	X
Sample results are evaluated by comparing holding times and sample-related QC data to the requirements and guidelines present in national or regional data validation documents, analytical method(s) or contract.	X	X	X
Initial calibration data (e.g., initial calibration standards, initial calibration verification [ICV] standards, initial calibration blanks [ICBs]) are provided for all requested analytes and linked to field samples reported. For each initial calibration, the calibration type used is present along with the initial calibration equation used including any weighting factor(s) applied and the associated correlation coefficients, as appropriate. Recalculations of the standard concentrations using the initial calibration curve are present, along with their associated percent recoveries, as appropriate (e.g., if required by the project, method, or contract). For the ICV standard, the associated percent recovery (or percent difference, as appropriate) is present.		X	X
Appropriate number and concentration of initial calibration standards are present.		X	X
Continuing calibration data (e.g., continuing calibration verification [CCV] standards and continuing calibration blanks [CCBs]) are provided for all requested analytes and linked to field samples reported, as appropriate. For the CCV standard(s), the associated percent recoveries (or percent differences, as appropriate) are present.		X	X
Reported samples are bracketed by CCV standards and CCB standards as appropriate.		X	X
Method specific instrument performance checks are present as appropriate (e.g., tunes for mass spectrometry methods, DDT/Endrin breakdown checks for pesticides and aroclors, instrument blanks and interference checks for ICP methods).		X	X
Frequency of instrument QC samples is checked for appropriateness (e.g., gas chromatography-mass spectroscopy [GC-MS] tunes have been run every 12 hours).		X	X
Sample results are evaluated by comparing instrument-related QC data to the requirements and guidelines present in national or regional data validation documents, analytical method(s), or contract.		X	X
Instrument response data (e.g., GC peak areas, ICP corrected intensities) are reported for requested analytes, surrogates, internal standards, and DMCs for all requested field samples, matrix spikes, matrix spike duplicates, LCS, and method blanks, as well as calibration data and instrument QC checks (e.g., tunes, DDT/Endrin breakdowns, interelement correction factors, and Florisil cartridge checks).			X
Reported target analyte instrument responses are associated with appropriate internal standard analyte(s) for each (or selected) analyte(s) (for methods using internal standard for calibration).			X

Table 4 Validation Checks and Stages

Verification and Validation Checks	Stage 2A	Stage 2B	Stage 4
Fit and appropriateness of the initial calibration curve used or required (e.g., mean calibration factor, regression analysis [linear or non-linear, with or without weighting factors, with or without forcing]) is checked with recalculation of the initial calibration curve for each (or selected) analyte(s) from the instrument response.			X
Comparison of instrument response to the minimum response requirements for each (or selected) analyte(s)			X
Recalculation of each (or selected) opening and closing CCV (and CCB) response from the peak data reported for each (or selected) analyte(s) from the instrument response, as appropriate			X
Compliance check of recalculated opening and/or closing CCV (and CCB) response to recalculated initial calibration response for each (or selected) analyte(s)			X
Recalculation of percent ratios for each (or selected) tune from the instrument response, as appropriate			X
Compliance check of recalculated percent ratio for each (or selected) tune from the instrument response.			X
Recalculation of each (or selected) instrument performance check (e.g., DDT/Endrin breakdown for pesticide analysis, instrument blanks, interference checks) from the instrument response			X
Recalculation and compliance check of retention time windows (for chromatographic methods) for each (or selected) analyte(s) from the laboratory reported retention times			X
Recalculation of reported results for each reported (or selected) target analyte(s) from the instrument response			X
Recalculation of each (or selected) reported spike recovery (surrogate recoveries, DMC recoveries, LCS recoveries, duplicate analyses, matrix spike and matrix spike duplicate recoveries, serial dilutions, post digestion spikes, standard reference materials, etc.) from the instrument response			X
Each (or selected) sample result(s) and spike recovery(ies) are evaluated by comparing the recalculated numbers to the laboratory reported numbers according to the requirements and guidelines present in national or regional data validation documents, analytical method(s) or contract.			X
All required instrument outputs (e.g., chromatograms, mass spectra, atomic emission spectra, instrument background corrections, and interference corrections) for evaluating sample and instrument performance are present.			X
Sample results are evaluated by checking each (or selected) instrument output (e.g., chromatograms, mass spectra, atomic emission spectra data, instrument background corrections, interference corrections) for correct identification and quantitation of analytes (e.g., peak integrations, use of appropriate internal standards for quantitation, elution order of analytes, and interferences).			X

Table 4 Validation Checks and Stages

Verification and Validation Checks	Stage 2A	Stage 2B	Stage 4
Each (or selected) instrument's output(s) is evaluated for confirmation of non-detected or tentatively identified analytes.			X

Table 5 Reason Codes

Reason Code	Description of Qualification
a	Qualified due to low abundance (radiochemical activity)
be	Qualified due to equipment blank contamination
bf	Qualified due to field blank contamination
bl	Qualified due to lab blank contamination
bt	Qualified due to trip blank contamination
bp	Qualified due to pump blank contamination (for wells without dedicated pumps)
br	Qualified due to filter blank contamination (aqueous hexavalent chromium and dissolved sample fractions)
brr	Better result was reported
c	Qualified due to calibration problems
cp	Qualified due to insufficient ingrowth (radiochemical only)
dc	Dual column confirmation % difference exceeded
e	Sample concentration exceeded the calibration range
fd	Qualified due to field duplicate imprecision
h	Qualified due to holding time exceedance
i	Qualified due to internal standard areas or retention times
k	Qualified as Estimated Maximum Possible Concentrations (dioxins and PCB congeners)
l	Qualified due to LCS recoveries
ld	Qualified due to lab duplicate imprecision (matrix duplicate, MSD, LCSD)
m	Qualified due to matrix spike recoveries
nb	Qualified due to negative lab blank contamination (nondetect results only)
nd	Qualified due to non-detected target analyte
o	Other
p	Qualified as a false positive due to contamination during shipping
pH	Sample preservation not within acceptance range
q	Qualified due to quantitation problem
s	Qualified due to surrogate recoveries
sd	Serial dilution did not meet control criteria
sp	Detected value reported between MDL/SQL and RL/PQL
st	Sample receipt temperature exceeded
t	Qualified due to elevated helium tracer concentrations
vh	Headspace detected in aqueous sample containers submitted for volatile analysis
x	Qualified due to low % solids
z	Qualified due to interference check sample results

Table 6 Results Qualified During Validation

SDG	Sample ID	Sample Date	Method	Total or Dissolved	Parameter	Result	Units	Lab Qualifier	SQL	PQL	Validator Qualifier	Reason Code	Reason Code Definition
550-180322-1	PC-91-EM37	3/7/22	EPA 300.0	Total	Nitrate [as N]	0.021	mg/L	J	0.014	0.05	J	sp	Detect < PQL
550-180322-1	SWFTS-MW10A-EM37	3/7/22	EPA 300.1B	Total	Chlorate	25000	ug/L	F1	490	2000	J+	m	MS Recovery
550-180322-1	SWFTS-MW10A-EM37	3/7/22	SM5310B	Total	Total Organic Carbon	1.8	mg/L	F1	0.26	0.5	J-	m	MS Recovery
550-180407-1	SWFTS-EM37-FB2	3/8/22	EPA 300.0	Total	Nitrate [as N]	0.024	mg/L	J	0.014	0.05	J	sp	Detect < PQL
550-180407-1	SWFTS-EM37-FB2	3/8/22	EPA 300.0	Total	Sulfate	0.65	mg/L	J	0.43	2	J	sp	Detect < PQL
550-180407-1	SWFTS-MW21-EM37	3/8/22	EPA 300.1B	Total	Chlorate	15	ug/L	J	9.8	40	J	sp	Detect < PQL
550-180407-1	SWFTS-MW15-EM37	3/8/22	EPA 300.1B	Total	Chlorate	42	ug/L	J	24	100	J	sp	Detect < PQL
550-180407-1	SWFTS-EM37-EB1	3/8/22	EPA 314.0	Total	Perchlorate	0.83	ug/L	J	0.31	1	J	sp	Detect < PQL
550-180407-1	PC-88-EM37	3/8/22	SM5310B	Total	Total Organic Carbon	3	mg/L		0.26	0.5	J+	bf	FB
550-180407-1	SWFTS-MW21-EM37	3/8/22	SM5310B	Total	Total Organic Carbon	1.7	mg/L		0.26	0.5	J+	bf	FB
550-180407-1	SWFTS-MW18-EM37	3/8/22	SM5310B	Total	Total Organic Carbon	2.3	mg/L	F1	0.26	0.5	J	bf,m	FB, MS Recovery
550-180407-1	SWFTS-MW14-EM37	3/8/22	SM5310B	Total	Total Organic Carbon	3	mg/L		0.26	0.5	J+	bf	FB
550-180407-1	SWFTS-MW15-EM37	3/8/22	SM5310B	Total	Total Organic Carbon	3	mg/L		0.26	0.5	J+	bf	FB
550-180407-1	SWFTS-MW07B-EM37	3/8/22	SM5310B	Total	Total Organic Carbon	1.8	mg/L		0.26	0.5	J+	bf	FB
550-180407-1	SWFTS-MW07A-EM37	3/8/22	SM5310B	Total	Total Organic Carbon	1.8	mg/L		0.26	0.5	J+	bf	FB
550-180407-1	PC-88-EM37-FD	3/8/22	SM5310B	Total	Total Organic Carbon	2.8	mg/L		0.26	0.5	J+	bf	FB
550-180407-1	PC-94-EM37	3/8/22	SM5310B	Total	Total Organic Carbon	2.2	mg/L		1	2	J+	bf	FB
550-180407-1	SWFTS-MW09A-EM37	3/8/22	SM5310B	Total	Total Organic Carbon	1.8	mg/L		0.26	0.5	J+	bf	FB
550-180407-1	SWFTS-MW09B-EM37	3/8/22	SM5310B	Total	Total Organic Carbon	1.8	mg/L		0.26	0.5	J+	bf	FB
550-180407-1	SWFTS-MW24-EM37	3/8/22	SM5310B	Total	Total Organic Carbon	1.5	mg/L		0.26	0.5	J+	bf	FB
550-180407-1	SWFTS-EM37-FB2	3/8/22	SM5310B	Total	Total Organic Carbon	0.34	mg/L	J	0.26	0.5	J	sp	Detect < PQL
550-180407-1	SWFTS-MW22-EM37	3/8/22	SM5310B	Total	Total Organic Carbon	3.9	mg/L	J	2.6	5	J	sp	Detect < PQL
550-180516-1	SWFTS-MW16-EM37	3/9/22	EPA 300.0	Total	Nitrate [as N]	0.14	mg/L		0.014	0.05	J+	be,bf	EB, FB
550-180516-1	SWFTS-EM37-EB2	3/9/22	EPA 300.0	Total	Nitrate [as N]	0.019	mg/L	J	0.014	0.05	J	sp	Detect < PQL
550-180516-1	SWFTS-EM37-FB1	3/9/22	EPA 300.0	Total	Nitrate [as N]	0.029	mg/L	J	0.014	0.05	J	sp	Detect < PQL
550-180516-1	SWFTS-MW02-EM37	3/9/22	EPA 300.0	Total	Nitrate [as N]	0.11	mg/L		0.014	0.05	J+	be,bf	EB, FB
550-180516-1	SWFTS-EM37-FB1	3/9/22	EPA 300.0	Total	Sulfate	0.48	mg/L	J	0.43	2	J	sp	Detect < PQL
550-180516-1	SWFTS-MW02-EM37	3/9/22	EPA 314.0	Total	Perchlorate	600	ug/L	F1	31	100	J-	m	MS Recovery
550-186012-1	SWFTS-MW20-EM38	6/21/22	EPA 300.0	Total	Nitrate [as N]	0.017	mg/L	J	0.014	0.05	J	sp	Detect < PQL
550-186012-1	SWFTS-MW21-EM38	6/21/22	EPA 300.1B	Total	Chlorate	42	ug/L	J	24	100	J	sp	Detect < PQL
550-186012-1	SWFTS-MW20-EM38	6/21/22	EPA 300.1B	Total	Chlorate	28	ug/L	J	24	100	J	sp	Detect < PQL
550-186012-1	SWFTS-MW01-EM38	6/21/22	EPA 300.1B	Total	Chlorate	6200	ug/L	F1	240	1000	J+	m	MS Recovery
550-186012-1	PC-91-EM38	6/21/22	EPA 314.0	Total	Perchlorate	0.82	ug/L	J	0.31	1	J	sp	Detect < PQL
550-186012-1	PC-58-EM38	6/21/22	SM5310B	Total	Total Organic Carbon	3.2	mg/L		0.26	0.5	J	be	EB
550-186012-1	SWFTS-MW25-EM38	6/21/22	SM5310B	Total	Total Organic Carbon	3.1	mg/L		1	2	J	be	EB
550-186012-1	SWFTS-MW23-EM38	6/21/22	SM5310B	Total	Total Organic Carbon	3.4	mg/L		0.26	0.5	J	be	EB
550-186012-1	SWFTS-MW24-EM38	6/21/22	SM5310B	Total	Total Organic Carbon	1.6	mg/L		0.26	0.5	J	be,bf	EB, FB
550-186012-1	SWFTS-MW21-EM38	6/21/22	SM5310B	Total	Total Organic Carbon	1.6	mg/L		0.26	0.5	J	be,bf	EB, FB
550-186012-1	SWFTS-MW22-EM38	6/21/22	SM5310B	Total	Total Organic Carbon	3	mg/L		1	2	J	be	EB
550-186012-1	SWFTS-EM38-EB1	6/21/22	SM5310B	Total	Total Organic Carbon	0.43	mg/L	J	0.26	0.5	J	sp	Detect < PQL
550-186012-1	SWFTS-EM38-FB1	6/21/22	SM5310B	Total	Total Organic Carbon	0.3	mg/L	J	0.26	0.5	J	sp	Detect < PQL
550-186012-1	PC-88-EM38	6/21/22	SM5310B	Total	Total Organic Carbon	2.8	mg/L		0.26	0.5	J	be,bf	EB, FB
550-186012-1	PC-88-EM38-FD	6/21/22	SM5310B	Total	Total Organic Carbon	3	mg/L		0.26	0.5	J	be	EB
550-186012-1	PC-92-EM38	6/21/22	SM5310B	Total	Total Organic Carbon	1.8	mg/L		0.26	0.5	J	be,bf	EB, FB
550-186012-1	PC-94-EM38	6/21/22	SM5310B	Total	Total Organic Carbon	2.1	mg/L		0.26	0.5	J	be,bf	EB, FB
550-186012-1	SWFTS-MW01-EM38	6/21/22	SM5310B	Total	Total Organic Carbon	2	mg/L		0.26	0.5	J	be,bf	EB, FB
550-186069-1	SWFTS-MW16-EM38	6/22/22	EPA 300.1B	Total	Chlorate	11	ug/L	J	9.8	40	J	sp	Detect < PQL
550-186069-1	SWFTS-MW19-EM38	6/22/22	SM5310B	Total	Total Organic Carbon	4.8	mg/L		0.26	0.5	J+	be	EB
550-186069-1	SWFTS-EM38-FB2	6/22/22	SM5310B	Total	Total Organic Carbon	0.39	mg/L	J	0.26	0.5	J	sp	Detect < PQL
550-186069-1	SWFTS-MW03-EM38	6/22/22	SM5310B	Total	Total Organic Carbon	2.2	mg/L		0.26	0.5	J+	be,bf	EB, FB
550-186069-1	SWFTS-MW04-EM38	6/22/22	SM5310B	Total	Total Organic Carbon	2.5	mg/L		0.26	0.5	J+	be,bf	EB, FB
550-186069-1	SWFTS-MW06A-EM38	6/22/22	SM5310B	Total	Total Organic Carbon	3.7	mg/L		0.26	0.5	J+	be,bf	EB, FB
550-186069-1	SWFTS-MW06A-EM38-FD	6/22/22	SM5310B	Total	Total Organic Carbon	3.8	mg/L		0.26	0.5	J+	be,bf	EB, FB
550-186069-1	SWFTS-MW06B-EM38	6/22/22	SM5310B	Total	Total Organic Carbon	4.6	mg/L		1	2	J+	be	EB
550-186069-1	SWFTS-MW19-EM38-FD	6/22/22	SM5310B	Total	Total Organic Carbon	4.8	mg/L		0.26	0.5	J+	be	EB
550-186069-1	SWFTS-MW18-EM38	6/22/22	SM5310B	Total	Total Organic Carbon	2.8	mg/L		0.26	0.5	J+	be,bf	EB, FB
550-186069-1	SWFTS-MW17-EM38	6/22/22	SM5310B	Total	Total Organic Carbon	1.3	mg/L		0.26	0.5	J+	be,bf	EB, FB

Table 6 Results Qualified During Validation

SDG	Sample ID	Sample Date	Method	Total or Dissolved	Parameter	Result	Units	Lab Qualifier	SQL	PQL	Validator Qualifier	Reason Code	Reason Code Definition
550-186069-1	SWFTS-MW16-EM38	6/22/22	SM5310B	Total	Total Organic Carbon	3	mg/L		0.26	0.5	J+	be,bf	EB, FB
550-186069-1	SWFTS-MW15-EM38	6/22/22	SM5310B	Total	Total Organic Carbon	3.6	mg/L		0.26	0.5	J+	be,bf	EB, FB
550-186069-1	SWFTS-MW14-EM38	6/22/22	SM5310B	Total	Total Organic Carbon	3.3	mg/L		0.26	0.5	J+	be,bf	EB, FB
550-186069-1	SWFTS-MW13-EM38	6/22/22	SM5310B	Total	Total Organic Carbon	0.95	mg/L		0.26	0.5	J+	be,bf	EB, FB
550-186069-1	SWFTS-MW02-EM38	6/22/22	SM5310B	Total	Total Organic Carbon	1.6	mg/L		0.26	0.5	J+	be,bf	EB, FB
550-186171-1	SWFTS-MW10A-EM38	6/23/22	EPA 300.1B	Total	Chlorate	18000	ug/L	F1	980	4000	J+	m	MS Recovery
550-186171-1	SWFTS-MW09B-EM38	6/23/22	EPA 300.1B	Total	Chlorate	36000	ug/L		490	2000	J+	m	MS Recovery
550-186171-1	SWFTS-MW09B-EM38-FD	6/23/22	EPA 300.1B	Total	Chlorate	33000	ug/L	F1	490	2000	J+	m	MS Recovery
550-188805-1	SWFTS-BH11-15	8/10/22	SW-9060A	Total	Total Organic Carbon	1.7	g/kg	JB	0.9	4	J	bl,c,sp	Lab Blank, Calibration, Detect < PQL
550-188805-1	SWFTS-BH13-41	8/11/22	SW-9060A	Total	Total Organic Carbon	2.6	g/kg	JB	0.9	4	J	bl,c,fd,sp	Lab Blank, Calibration, FD, Detect < PQL
550-188805-1	SWFTS-BH13-41-FD	8/11/22	SW-9060A	Total	Total Organic Carbon	8.4	g/kg	B	0.9	4	J	bl,c,fd	Lab Blank, Calibration, FD
550-188805-1	SWFTS-BH15-37.5	8/11/22	SW-9060A	Total	Total Organic Carbon	1.1	g/kg	JB	0.9	4	J	bl,sp	Lab Blank, Detect < PQL
550-188805-1	SWFTS-BH15-41	8/11/22	SW-9060A	Total	Total Organic Carbon	2.8	g/kg	JB	0.9	4	J	bl,sp	Lab Blank, Detect < PQL
550-188805-1	SWFTS-BH16-17.3	8/11/22	SW-9060A	Total	Total Organic Carbon	0.91	g/kg	JB	0.9	4	J	bl,sp	Lab Blank, Detect < PQL
550-188805-1	SWFTS-BH11-20	8/10/22	SW-9060A	Total	Total Organic Carbon	1.5	g/kg	JB	0.9	4	J	bl,sp	Lab Blank, Detect < PQL
550-188805-1	SWFTS-BH16-26.5	8/11/22	SW-9060A	Total	Total Organic Carbon	0.9	g/kg	U	0.9	4	UJ	c	Calibration
550-188805-1	SWFTS-BH16-31	8/11/22	SW-9060A	Total	Total Organic Carbon	1.5	g/kg	JB	0.9	4	J	bl,c,sp	Lab Blank, Calibration, Detect < PQL
550-188805-1	SWFTS-BH16-42.3	8/11/22	SW-9060A	Total	Total Organic Carbon	2.9	g/kg	JB	0.9	4	J	bl,c,sp	Lab Blank, Calibration, Detect < PQL
550-188805-1	SWFTS-BH18-13	8/11/22	SW-9060A	Total	Total Organic Carbon	0.9	g/kg	U	0.9	4	UJ	c	Calibration
550-188805-1	SWFTS-BH18-20	8/11/22	SW-9060A	Total	Total Organic Carbon	0.9	g/kg	U	0.9	4	UJ	c	Calibration
550-188805-1	SWFTS-BH18-23	8/11/22	SW-9060A	Total	Total Organic Carbon	0.9	g/kg	U	0.9	4	UJ	c	Calibration
550-188805-1	SWFTS-BH18-27.5	8/11/22	SW-9060A	Total	Total Organic Carbon	0.9	g/kg	U	0.9	4	UJ	c	Calibration
550-188805-1	SWFTS-BH18-34.5	8/11/22	SW-9060A	Total	Total Organic Carbon	0.9	g/kg	U	0.9	4	UJ	c	Calibration
550-188805-1	SWFTS-BH12-16	8/12/22	SW-9060A	Total	Total Organic Carbon	0.91	g/kg	JB	0.9	4	J	bl,sp	Lab Blank, Detect < PQL
550-188805-1	SWFTS-BH11-30	8/10/22	SW-9060A	Total	Total Organic Carbon	1.9	g/kg	JB	0.9	4	J	bl,sp	Lab Blank, Detect < PQL
550-188805-1	SWFTS-BH12-21	8/12/22	SW-9060A	Total	Total Organic Carbon	0.9	g/kg	JB	0.9	4	J	bl,sp	Lab Blank, Detect < PQL
550-188805-1	SWFTS-BH12-27	8/12/22	SW-9060A	Total	Total Organic Carbon	0.98	g/kg	JB	0.9	4	J	bl,sp	Lab Blank, Detect < PQL
550-188805-1	SWFTS-BH11-40	8/10/22	SW-9060A	Total	Total Organic Carbon	2.1	g/kg	JB	0.9	4	J	bl,sp	Lab Blank, Detect < PQL
550-188805-1	SWFTS-BH11-45	8/10/22	SW-9060A	Total	Total Organic Carbon	6.9	g/kg	B	0.9	4	J+	bl,c	Lab Blank, Calibration
550-188805-1	SWFTS-BH13-11	8/11/22	SW-9060A	Total	Total Organic Carbon	1.4	g/kg	JB	0.9	4	J	bl,c,sp	Lab Blank, Calibration, Detect < PQL
550-188805-1	SWFTS-BH13-22	8/11/22	SW-9060A	Total	Total Organic Carbon	1.9	g/kg	JB	0.9	4	J	bl,c,sp	Lab Blank, Calibration, Detect < PQL
550-188805-1	SWFTS-BH13-32.6	8/11/22	SW-9060A	Total	Total Organic Carbon	5.2	g/kg	B	0.9	4	J+	bl,c	Lab Blank, Calibration
550-188805-1	SWFTS-BH13-39	8/11/22	SW-9060A	Total	Total Organic Carbon	4.8	g/kg	B	0.9	4	J+	bl,c	Lab Blank, Calibration
550-188805-1	SWFTS-BH13-39	8/11/22	VFA-IC	Total	Acetic acid	6.4	mg/kg	J	1.6	11	J	sp	Detect < PQL
550-188805-1	SWFTS-BH13-41	8/11/22	VFA-IC	Total	Formic-acid	2.6	mg/kg	J	2.1	9.7	J	sp	Detect < PQL
550-188805-1	SWFTS-BH13-41-FD	8/11/22	VFA-IC	Total	Formic-acid	2.5	mg/kg	J	2.3	11	J	sp	Detect < PQL
550-188805-1	SWFTS-BH15-18.5	8/11/22	VFA-IC	Total	Formic-acid	2.7	mg/kg	J	2.4	11	J	sp	Detect < PQL
550-188805-1	SWFTS-BH16-17.3	8/11/22	VFA-IC	Total	Formic-acid	2.3	mg/kg	J	2	9.2	J	sp	Detect < PQL
550-188805-1	SWFTS-BH16-31	8/11/22	VFA-IC	Total	Formic-acid	2.6	mg/kg	J	2	9.3	J	sp	Detect < PQL
550-188805-1	SWFTS-BH13-22	8/11/22	VFA-IC	Total	Formic-acid	2.5	mg/kg	J	2.2	10	J	sp	Detect < PQL
550-188805-1	SWFTS-BH13-32.6	8/11/22	VFA-IC	Total	Formic-acid	2.4	mg/kg	J	2	9.3	J	sp	Detect < PQL
550-188805-1	SWFTS-BH13-39	8/11/22	VFA-IC	Total	Formic-acid	7.6	mg/kg	J	2.3	11	J	sp	Detect < PQL
550-188805-1	SWFTS-BH11-15	8/10/22	VFA-IC	Total	Lactic acid	7.8	mg/kg	J	2.7	9.1	J	sp	Detect < PQL
550-188805-1	SWFTS-BH13-41	8/11/22	VFA-IC	Total	Lactic acid	4.4	mg/kg	J	2.9	9.7	J	sp	Detect < PQL
550-188805-1	SWFTS-BH13-41-FD	8/11/22	VFA-IC	Total	Lactic acid	4.6	mg/kg	J	3.2	11	J	sp	Detect < PQL
550-188805-1	SWFTS-BH16-21.5	8/11/22	VFA-IC	Total	Lactic acid	3.7	mg/kg	J	2.9	9.7	J	sp	Detect < PQL
550-188805-1	SWFTS-BH16-21.5-FD	8/11/22	VFA-IC	Total	Lactic acid	3.9	mg/kg	J	3.1	10	J	sp	Detect < PQL
550-188805-1	SWFTS-BH16-26.5	8/11/22	VFA-IC	Total	Lactic acid	3.8	mg/kg	J	2.9	9.6	J	sp	Detect < PQL
550-188805-1	SWFTS-BH18-13	8/11/22	VFA-IC	Total	Lactic acid	4.8	mg/kg	J	2.8	9.2	J	sp	Detect < PQL
550-188805-1	SWFTS-BH18-34.5	8/11/22	VFA-IC	Total	Lactic acid	3.1	mg/kg	J	2.9	9.7	J	sp	Detect < PQL
550-188805-1	SWFTS-BH12-16	8/12/22	VFA-IC	Total	Lactic acid	8.8	mg/kg	J	3	9.9	J	sp	Detect < PQL
550-188805-1	SWFTS-BH12-21	8/12/22	VFA-IC	Total	Lactic acid	3.6	mg/kg	J	3	10	J	sp	Detect < PQL
550-188805-1	SWFTS-BH13-11	8/11/22	VFA-IC	Total	Lactic acid	5.5	mg/kg	J	2.9	9.7	J	sp	Detect < PQL
550-188805-1	SWFTS-BH13-32.6	8/11/22	VFA-IC	Total	Lactic acid	3.4	mg/kg	J	2.8	9.3	J	sp	Detect < PQL
550-188805-1	SWFTS-BH16-21.5-FD	8/11/22	VFA-IC	Total	Propionic acid	3.9	mg/kg	J	1.8	10	J	sp	Detect < PQL
550-188805-1	SWFTS-BH16-31	8/11/22	VFA-IC	Total	Propionic acid	3.7	mg/kg	J	1.6	9.3	J	sp	Detect < PQL
550-189011-1	SWFTS-BH24-SO-19	8/15/22	SW-9060A	Total	Total Organic Carbon	1.1	g/kg	J	0.9	4	J	sp	Detect < PQL

Table 6 Results Qualified During Validation

SDG	Sample ID	Sample Date	Method	Total or Dissolved	Parameter	Result	Units	Lab Qualifier	SQL	PQL	Validator Qualifier	Reason Code	Reason Code Definition
550-189011-1	SWFTS-BH24-SO-24.5	8/15/22	SW-9060A	Total	Total Organic Carbon	3.1	g/kg	J	0.9	4	J	sp	Detect < PQL
550-189011-1	SWFTS-BH24-SO-27	8/15/22	SW-9060A	Total	Total Organic Carbon	1.5	g/kg	J	0.9	4	J	sp	Detect < PQL
550-189011-1	SWFTS-BH24-SO-29.3	8/15/22	SW-9060A	Total	Total Organic Carbon	1.6	g/kg	J	0.9	4	J	sp	Detect < PQL
550-189011-1	SWFTS-BH24-SO-44.5	8/15/22	SW-9060A	Total	Total Organic Carbon	3	g/kg	J	0.9	4	J	sp	Detect < PQL
550-189011-1	SWFTS-BH24-SO-44.5-FD	8/15/22	SW-9060A	Total	Total Organic Carbon	2	g/kg	J	0.9	4	J	sp	Detect < PQL
550-189011-1	SWFTS-BH23-SO-27	8/15/22	SW-9060A	Total	Total Organic Carbon	1.3	g/kg	J	0.9	4	J	sp	Detect < PQL
550-189011-1	SWFTS-BH23-SO-31.3-FD	8/15/22	SW-9060A	Total	Total Organic Carbon	1	g/kg	J	0.9	4	J	sp	Detect < PQL
550-189011-1	SWFTS-BH23-SO-36.7	8/15/22	SW-9060A	Total	Total Organic Carbon	1.1	g/kg	J	0.9	4	J	sp	Detect < PQL
550-189011-1	SWFTS-BH25-SO-17	8/15/22	SW-9060A	Total	Total Organic Carbon	0.91	g/kg	J	0.9	4	J	sp	Detect < PQL
550-189011-1	SWFTS-BH25-SO-19.8	8/15/22	SW-9060A	Total	Total Organic Carbon	1.1	g/kg	J	0.9	4	J	sp	Detect < PQL
550-189011-1	SWFTS-BH25-SO-34.8	8/15/22	SW-9060A	Total	Total Organic Carbon	1	g/kg	J	0.9	4	J	sp	Detect < PQL
550-189011-1	SWFTS-BH24-SO-24.5	8/15/22	VFA-IC	Total	Formic-acid	3.4	mg/kg	J	2.2	10	J	sp	Detect < PQL
550-189011-1	SWFTS-BH24-SO-27	8/15/22	VFA-IC	Total	Formic-acid	2.5	mg/kg	J	2.2	10	J	sp	Detect < PQL
550-189011-1	SWFTS-BH19-SO-11	8/15/22	VFA-IC	Total	Lactic acid	7.8	mg/kg	J	3	9.8	J	be,sp	EB, Detect < PQL
550-189011-1	SWFTS-BH19-SO-11	8/15/22	VFA-IC	Total	Propionic acid	3.5	mg/kg	J	1.7	9.8	J	sp	Detect < PQL
550-189012-1	SWFTS-BH28-SO-17.3	8/16/22	SW-6010B	Total	Calcium	16000	mg/kg	B	0.85	9.9	J	fd	FD
550-189012-1	SWFTS-BH28-SO-17.3-FD	8/16/22	SW-6010B	Total	Calcium	44000	mg/kg	B	0.85	9.9	J	fd	FD
550-189012-1	SWFTS-BH28-SO-41	8/16/22	SW-9060A	Total	Total Organic Carbon	0.94	g/kg	J	0.9	4	J	sp	Detect < PQL
550-189012-1	SWFTS-BH27-SO-23	8/16/22	SW-9060A	Total	Total Organic Carbon	0.99	g/kg	JB	0.9	4	J	bl,sp	Lab Blank, Detect < PQL
550-189012-1	SWFTS-BH27-SO-28	8/16/22	SW-9060A	Total	Total Organic Carbon	1.7	g/kg	JBF2	0.9	4	J	bl,ld,sp	Lab Blank, MS/MSD RPD. Detect < PQL
550-189012-1	SWFTS-BH27-SO-36.2	8/16/22	SW-9060A	Total	Total Organic Carbon	1.8	g/kg	JB	0.9	4	J	bl,sp	Lab Blank, Detect < PQL
550-189012-1	SWFTS-BH26-SO-16.3	8/16/22	SW-9060A	Total	Total Organic Carbon	0.97	g/kg	J	0.9	4	J	sp	Detect < PQL
550-189012-1	SWFTS-BH29-SO-24.5	8/16/22	VFA-IC	Total	Acetic acid	1.5	mg/kg	UF1	1.5	9.8	UJ	m	MS Recovery
550-189012-1	SWFTS-BH29-SO-24.5	8/16/22	VFA-IC	Total	Formic-acid	2.2	mg/kg	UF1	2.2	9.8	UJ	m	MS Recovery
550-189012-1	SWFTS-BH28-SO-21	8/16/22	VFA-IC	Total	Formic-acid	2.2	mg/kg	UF1	2.2	10	UJ	m	MS Recovery
550-189012-1	SWFTS-BH29-SO-24.5	8/16/22	VFA-IC	Total	Lactic acid	3	mg/kg	UF1	3	9.8	UJ	m	MS Recovery
550-189012-1	SWFTS-BH28-SO-21	8/16/22	VFA-IC	Total	Lactic acid	3	mg/kg	UF1F2	3	10	UJ	m	MS Recovery
550-189012-1	SWFTS-BH29-SO-24.5	8/16/22	VFA-IC	Total	n-Butyric Acid	1.6	mg/kg	UF1	1.6	9.8	UJ	m	MS Recovery
550-189012-1	SWFTS-BH28-SO-21	8/16/22	VFA-IC	Total	n-Butyric Acid	1.6	mg/kg	UF1	1.6	10	UJ	m	MS Recovery
550-189013-1	SWFTS-BH20-SO-13.7	8/13/22	SW-6010B	Total	Calcium	8600	mg/kg	B	0.84	9.8	J	fd	FD
550-189013-1	SWFTS-BH20-SO-13.7-FD	8/13/22	SW-6010B	Total	Calcium	4900	mg/kg	B	0.85	9.9	J	fd	FD
550-189013-1	SWFTS-BH20-SO-13.7	8/13/22	SW-9060A	Total	Total Organic Carbon	1.3	g/kg	JB	0.9	4	J	bl,sp	Lab Blank, Detect < PQL
550-189013-1	SWFTS-BH22-SO-36	8/13/22	SW-9060A	Total	Total Organic Carbon	1.4	g/kg	JB	0.9	4	J	bl,sp	Lab Blank, Detect < PQL
550-189013-1	SWFTS-BH21-SO-19.5	8/13/22	SW-9060A	Total	Total Organic Carbon	1.1	g/kg	JB	0.9	4	J	bl,sp	Lab Blank, Detect < PQL
550-189013-1	SWFTS-BH21-SO-28	8/13/22	SW-9060A	Total	Total Organic Carbon	0.95	g/kg	JB	0.9	4	J	bl,sp	Lab Blank, Detect < PQL
550-189013-1	SWFTS-BH21-SO-32	8/13/22	SW-9060A	Total	Total Organic Carbon	0.98	g/kg	JB	0.9	4	J	bl,sp	Lab Blank, Detect < PQL
550-189013-1	SWFTS-BH20-SO-13.7-FD	8/13/22	SW-9060A	Total	Total Organic Carbon	1.3	g/kg	JB	0.9	4	J	bl,sp	Lab Blank, Detect < PQL
550-189013-1	SWFTS-BH20-SO-24.2	8/13/22	SW-9060A	Total	Total Organic Carbon	1.2	g/kg	JB	0.9	4	J	bl,sp	Lab Blank, Detect < PQL
550-189013-1	SWFTS-BH20-SO-26	8/13/22	SW-9060A	Total	Total Organic Carbon	0.98	g/kg	JB	0.9	4	J	bl,sp	Lab Blank, Detect < PQL
550-189013-1	SWFTS-BH20-SO-35.5	8/13/22	SW-9060A	Total	Total Organic Carbon	4.2	g/kg	B	0.9	4	J+	bl	Lab Blank
550-189013-1	SWFTS-BH22-SO-12.4	8/13/22	SW-9060A	Total	Total Organic Carbon	1.2	g/kg	JB	0.9	4	J	bl,sp	Lab Blank, Detect < PQL
550-189013-1	SWFTS-BH22-SO-20.5	8/13/22	SW-9060A	Total	Total Organic Carbon	1	g/kg	JB	0.9	4	J	bl,sp	Lab Blank, Detect < PQL
550-189013-1	SWFTS-BH22-SO-49	8/13/22	VFA-IC	Total	Lactic acid	3	mg/kg	UF1	3	9.9	UJ	m	MS Recovery
550-189014-1	SWFTS-BH-EB2-20220813	8/13/22	SM5310B	Total	Total Organic Carbon	0.47	mg/L	J	0.26	0.5	J	sp	Detect < PQL
550-189014-1	SWFTS-BH-EB5-20220816	8/16/22	SM5310B	Total	Total Organic Carbon	0.41	mg/L	J	0.26	0.5	J	sp	Detect < PQL
550-189014-1	SWFTS-BH-EB1-20220813	8/13/22	SW-6010B	Total	Calcium	0.15	mg/L	J	0.015	0.4	J	sp	Detect < PQL
550-189014-1	SWFTS-BH-EB2-20220813	8/13/22	SW-6010B	Total	Calcium	0.13	mg/L	J	0.015	0.4	J	sp	Detect < PQL
550-189014-1	SWFTS-BH-EB3-20220815	8/15/22	SW-6010B	Total	Calcium	0.11	mg/L	J	0.015	0.4	J	sp	Detect < PQL
550-189014-1	SWFTS-BH-EB5-20220816	8/16/22	SW-6010B	Total	Calcium	0.15	mg/L	J	0.015	0.4	J	sp	Detect < PQL
550-189014-1	SWFTS-BH-EB1-20220813	8/13/22	VFA-IC	Total	Lactic acid	5	mg/L	J	3.1	10	J	sp	Detect < PQL
550-189014-1	SWFTS-BH-EB2-20220813	8/13/22	VFA-IC	Total	Lactic acid	4.9	mg/L	J	3.1	10	J	sp	Detect < PQL
550-189014-1	SWFTS-BH-EB3-20220815	8/15/22	VFA-IC	Total	Lactic acid	4.3	mg/L	J	3.1	10	J	sp	Detect < PQL
550-189014-1	SWFTS-BH-EB5-20220816	8/16/22	VFA-IC	Total	Lactic acid	4.9	mg/L	J	3.1	10	J	sp	Detect < PQL
550-189088-1	SWFTS-BH17-SO-17-FD	8/12/22	SW-9060A	Total	Total Organic Carbon	1.1	g/kg	JB	0.9	4	J	bl,sp	Lab Blank, Detect < PQL
550-189088-1	SWFTS-BH17-SO-23	8/12/22	SW-9060A	Total	Total Organic Carbon	1	g/kg	JB	0.9	4	J	bl,sp	Lab Blank, Detect < PQL
550-189088-1	SWFTS-BH17-SO-26	8/12/22	SW-9060A	Total	Total Organic Carbon	1	g/kg	JB	0.9	4	J	bl,sp	Lab Blank, Detect < PQL
550-190412-1	SWFTS-EM39-FB1	9/13/22	EPA 300.0	Total	Sulfate	0.43	mg/L	J	0.43	2	J	sp	Detect < PQL

Table 6 Results Qualified During Validation

SDG	Sample ID	Sample Date	Method	Total or Dissolved	Parameter	Result	Units	Lab Qualifier	SQL	PQL	Validator Qualifier	Reason Code	Reason Code Definition
550-190412-1	SWFTS-MW10A-EM39	9/13/22	SM5310B	Total	Total Organic Carbon	2	mg/L	F1	0.26	0.5	J-	m	MS Recovery
550-190412-1	SWFTS-MW03-EM39	9/13/22	SM5310B	Total	Total Organic Carbon	1.4	mg/L	F1	0.26	0.5	J-	m	MS Recovery
550-190504-1	SWFTS-MW16-EM39	9/14/22	EPA 300.0	Total	Nitrate [as N]	0.016	mg/L	J	0.014	0.05	J	sp	Detect < PQL
550-190504-1	SWFTS-EM39-FB2	9/14/22	EPA 300.0	Total	Sulfate	0.61	mg/L	Jcn	0.43	2	J	sp	Detect < PQL
550-190504-1	SWFTS-EM39-EB2	9/14/22	EPA 300.0	Total	Sulfate	0.46	mg/L	Jcn	0.43	2	J	sp	Detect < PQL
550-190504-1	SWFTS-MW21-EM39	9/14/22	EPA 300.1B	Total	Chlorate	26	ug/L	J	9.8	40	J	sp	Detect < PQL
550-190504-1	SWFTS-MW06A-EM39	9/14/22	EPA 300.1B	Total	Chlorate	33	ug/L	J	24	100	J	sp	Detect < PQL
550-190504-1	SWFTS-MW06A-EM39-FD	9/14/22	EPA 300.1B	Total	Chlorate	33	ug/L	J	24	100	J	sp	Detect < PQL
550-190504-1	PC-91-EM39	9/14/22	EPA 314.0	Total	Perchlorate	10	ug/L		0.31	1	J+	be	EB
550-190504-1	SWFTS-MW20-EM39	9/14/22	EPA 314.0	Total	Perchlorate	10	ug/L		0.31	1	J+	be	EB
550-190606-1	SWFTS-MW25-EM39	9/15/22	SM5310B	Total	Total Organic Carbon	3.3	mg/L	J	2.6	5	J	sp	Detect < PQL
550-194841-1	PC-88-EM40	12/12/22	SW-6010B	Dissolved	Copper	0.0043	mg/L	J	0.0012	0.005	J	sp	Detect < PQL
550-194841-1	PC-88-EM40-FD	12/12/22	SW-6010B	Dissolved	Copper	0.0033	mg/L	J	0.0012	0.005	J	sp	Detect < PQL
550-194841-1	PC-58-EM40	12/12/22	SW-6010B	Dissolved	Copper	0.002	mg/L	J	0.0012	0.005	J	sp	Detect < PQL
550-194841-1	PC-88-EM40-FD	12/12/22	SW-6010B	Dissolved	Iron	0.31	mg/L	J	0.019	0.4	J	sp	Detect < PQL
550-194841-1	PC-58-EM40	12/12/22	SW-6010B	Dissolved	Manganese	0.014	mg/L	J	0.0083	0.02	J	sp	Detect < PQL
550-194841-1	PC-88-EM40	12/12/22	SW-6010B	Dissolved	Phosphorus, Total	0.045	mg/L	Jcn	0.011	0.4	J	o,sp	Other, Detect < PQL
550-194841-1	PC-88-EM40-FD	12/12/22	SW-6010B	Dissolved	Phosphorus, Total	0.045	mg/L	Jcn	0.011	0.4	J	o,sp	Other, Detect < PQL
550-194841-1	PC-58-EM40	12/12/22	SW-6010B	Dissolved	Phosphorus, Total	0.016	mg/L	Jcn	0.011	0.4	J	o,sp	Other, Detect < PQL
550-194841-1	PC-91-EM40	12/12/22	SW-6010B	Dissolved	Phosphorus, Total	0.077	mg/L	Jcn	0.011	0.4	J	o,sp	Other, Detect < PQL
550-194841-1	PC-88-EM40	12/12/22	SW-6010B	Dissolved	Titanium	0.028	mg/L		0.00028	0.005	J	fd	FD
550-194841-1	PC-88-EM40-FD	12/12/22	SW-6010B	Dissolved	Titanium	0.02	mg/L		0.00028	0.005	J	fd	FD
550-194841-1	PC-88-EM40	12/12/22	SW-6010B	Dissolved	Tungsten	0.0022	mg/L	J	0.0021	0.1	J	sp	Detect < PQL
550-194841-1	PC-88-EM40-FD	12/12/22	SW-6010B	Dissolved	Tungsten	0.0024	mg/L	J	0.0021	0.1	J	sp	Detect < PQL
550-194841-1	PC-91-EM40	12/12/22	SW-6010B	Dissolved	Tungsten	0.0056	mg/L	J	0.0021	0.1	J	sp	Detect < PQL
550-194841-1	PC-91-EM40	12/12/22	SW-6010B	Dissolved	Vanadium	0.0039	mg/L	J	0.00069	0.005	J	sp	Detect < PQL
550-194841-1	PC-88-EM40	12/12/22	SW-6020B	Dissolved	Antimony	0.39	ug/L	JB	0.043	1	J	bl,sp	Lab Blank, Detect < PQL
550-194841-1	PC-88-EM40-FD	12/12/22	SW-6020B	Dissolved	Antimony	0.29	ug/L	JB	0.043	1	J	bl,sp	Lab Blank, Detect < PQL
550-194841-1	PC-58-EM40	12/12/22	SW-6020B	Dissolved	Antimony	0.28	ug/L	JB	0.043	1	J	bl,sp	Lab Blank, Detect < PQL
550-194841-1	PC-91-EM40	12/12/22	SW-6020B	Dissolved	Antimony	0.17	ug/L	JB	0.043	1	J	bl,sp	Lab Blank, Detect < PQL
550-194841-1	PC-88-EM40	12/12/22	SW-6020B	Dissolved	Arsenic	110	ug/L		0.25	1	J+	m	MS Recovery
550-194841-1	PC-88-EM40-FD	12/12/22	SW-6020B	Dissolved	Arsenic	100	ug/L		0.25	1	J+	m	MS Recovery
550-194841-1	PC-91-EM40	12/12/22	SW-6020B	Dissolved	Selenium	0.38	ug/L	JB	0.074	0.5	J	bl,sp	Lab Blank, Detect < PQL
550-194841-1	PC-58-EM40	12/12/22	SW-6020B	Dissolved	Thallium	0.038	ug/L	J	0.013	0.1	J	sp	Detect < PQL
550-194919-1	SWFTS-MW20-EM40	12/13/22	EPA 300.0	Total	Nitrate [as N]	0.031	mg/L	J	0.014	0.05	J	sp	Detect < PQL
550-194919-1	SWFTS-MW20-EM40	12/13/22	EPA 314.0	Total	Perchlorate	3	ug/L	JD	1.3	4	J	sp	Detect < PQL
550-194919-1	SWFTS-MW20-EM40	12/13/22	RSK175	Total	Methane	680	ug/L		0.63	5	J-	vh	Head Space
550-194919-1	SWFTS-MW23-EM40	12/13/22	SW-6010B	Dissolved	Aluminum	0.15	mg/L	J	0.08	0.2	J	sp	Detect < PQL
550-194919-1	SWFTS-MW20-EM40	12/13/22	SW-6010B	Dissolved	Cadmium	0.00079	mg/L	J	0.00072	0.001	J	sp	Detect < PQL
550-194919-1	SWFTS-MW25-EM40	12/13/22	SW-6010B	Dissolved	Cobalt	0.0021	mg/L	J	0.00054	0.005	J	sp	Detect < PQL
550-194919-1	SWFTS-MW23-EM40	12/13/22	SW-6010B	Dissolved	Cobalt	0.0038	mg/L	J	0.00054	0.005	J	sp	Detect < PQL
550-194919-1	SWFTS-MW23-EM40	12/13/22	SW-6010B	Dissolved	Copper	0.0024	mg/L	J	0.0012	0.005	J	sp	Detect < PQL
550-194919-1	SWFTS-MW25-EM40	12/13/22	SW-6010B	Dissolved	Iron	0.036	mg/L	JB	0.019	0.4	J	bl,sp	Lab Blank, Detect < PQL
550-194919-1	SWFTS-MW24-EM40	12/13/22	SW-6010B	Dissolved	Iron	0.031	mg/L	JB	0.019	0.4	J	bl,sp	Lab Blank, Detect < PQL
550-194919-1	SWFTS-MW23-EM40	12/13/22	SW-6010B	Dissolved	Iron	0.019	mg/L	JB	0.019	0.4	J	bl,sp	Lab Blank, Detect < PQL
550-194919-1	SWFTS-MW20-EM40	12/13/22	SW-6010B	Dissolved	Iron	0.32	mg/L	JB	0.019	0.4	J	bl,sp	Lab Blank, Detect < PQL
550-194919-1	SWFTS-MW25-EM40	12/13/22	SW-6010B	Dissolved	Nickel	0.0043	mg/L	J	0.0028	0.005	J	sp	Detect < PQL
550-194919-1	SWFTS-MW25-EM40	12/13/22	SW-6010B	Dissolved	Phosphorus, Total	0.011	mg/L	Ucn	0.011	0.4	UJ	o	Other
550-194919-1	SWFTS-MW24-EM40	12/13/22	SW-6010B	Dissolved	Phosphorus, Total	0.011	mg/L	Ucn	0.011	0.4	UJ	o	Other
550-194919-1	SWFTS-MW23-EM40	12/13/22	SW-6010B	Dissolved	Phosphorus, Total	0.011	mg/L	Ucn	0.011	0.4	UJ	o	Other
550-194919-1	SWFTS-MW20-EM40	12/13/22	SW-6010B	Dissolved	Phosphorus, Total	0.011	mg/L	Ucn	0.011	0.4	UJ	o	Other
550-194919-1	SWFTS-MW25-EM40	12/13/22	SW-6010B	Dissolved	Tungsten	0.008	mg/L	J	0.0021	0.1	J	sp	Detect < PQL
550-194919-1	SWFTS-MW24-EM40	12/13/22	SW-6010B	Dissolved	Tungsten	0.0043	mg/L	J	0.0021	0.1	J	sp	Detect < PQL
550-194919-1	SWFTS-MW23-EM40	12/13/22	SW-6010B	Dissolved	Tungsten	0.0037	mg/L	J	0.0021	0.1	J	sp	Detect < PQL
550-194919-1	SWFTS-MW20-EM40	12/13/22	SW-6010B	Dissolved	Tungsten	0.01	mg/L	J	0.0021	0.1	J	sp	Detect < PQL
550-194919-1	SWFTS-MW25-EM40	12/13/22	SW-6020B	Dissolved	Antimony	0.024	ug/L	JB	0.0043	0.1	J	bl,sp	Lab Blank, Detect < PQL
550-194919-1	SWFTS-MW24-EM40	12/13/22	SW-6020B	Dissolved	Antimony	0.011	ug/L	JB	0.0043	0.1	J	bl,sp	Lab Blank, Detect < PQL

Table 6 Results Qualified During Validation

SDG	Sample ID	Sample Date	Method	Total or Dissolved	Parameter	Result	Units	Lab Qualifier	SQL	PQL	Validator Qualifier	Reason Code	Reason Code Definition
550-194919-1	SWFTS-MW23-EM40	12/13/22	SW-6020B	Dissolved	Antimony	0.015	ug/L	JB	0.0043	0.1	J	bl,sp	Lab Blank, Detect < PQL
550-194919-1	SWFTS-MW20-EM40	12/13/22	SW-6020B	Dissolved	Antimony	0.052	ug/L	JB	0.0043	0.1	J	bl,sp	Lab Blank, Detect < PQL
550-194919-1	SWFTS-MW23-EM40	12/13/22	SW-6020B	Dissolved	Thallium	0.0053	ug/L	J	0.0013	0.01	J	sp	Detect < PQL
550-194920-1	PC-92-EM40	12/13/22	EPA 300.0	Total	Sulfate	870	mg/L		21	100	J+	be,bf	EB, FB
550-194920-1	SWFTS-MW09B-EM40	12/13/22	EPA 300.0	Total	Sulfate	1600	mg/L		21	100	J+	be,bf	EB, FB
550-194920-1	SWFTS-MW03-EM40	12/13/22	EPA 300.0	Total	Sulfate	2100	mg/L		21	100	J+	be,bf	EB, FB
550-194920-1	SWFTS-MW01-EM40	12/13/22	EPA 300.0	Total	Sulfate	1400	mg/L		21	100	J+	be,bf	EB, FB
550-194920-1	PC-94-EM40	12/13/22	EPA 300.0	Total	Sulfate	1700	mg/L		21	100	J+	be,bf	EB, FB
550-194920-1	SWFTS-MW09A-EM40	12/13/22	EPA 300.0	Total	Sulfate	1600	mg/L		21	100	J+	be,bf	EB, FB
550-194920-1	PC-92-EM40	12/13/22	SW-6010B	Dissolved	Beryllium	0.00028	mg/L	J	0.00019	0.001	J	sp	Detect < PQL
550-194920-1	SWFTS-EM40-EB1	12/13/22	SW-6010B	Dissolved	Boron	0.0051	mg/L	JB	0.0024	0.05	J	bl,sp	Lab Blank, Detect < PQL
550-194920-1	SWFTS-EM40-FB1	12/13/22	SW-6010B	Dissolved	Boron	0.0049	mg/L	JB	0.0024	0.05	J	bl,sp	Lab Blank, Detect < PQL
550-194920-1	SWFTS-EM40-EB1	12/13/22	SW-6010B	Dissolved	Calcium	0.04	mg/L	J	0.015	0.4	J	sp	Detect < PQL
550-194920-1	SWFTS-EM40-FB1	12/13/22	SW-6010B	Dissolved	Calcium	0.12	mg/L	J	0.015	0.4	J	sp	Detect < PQL
550-194920-1	SWFTS-MW09B-EM40	12/13/22	SW-6010B	Dissolved	Chromium	0.0048	mg/L	J	0.0011	0.005	J	sp	Detect < PQL
550-194920-1	SWFTS-MW09A-EM40	12/13/22	SW-6010B	Dissolved	Cobalt	0.0022	mg/L	J	0.00054	0.005	J	sp	Detect < PQL
550-194920-1	SWFTS-MW09B-EM40	12/13/22	SW-6010B	Dissolved	Cobalt	0.0013	mg/L	J	0.00054	0.005	J	sp	Detect < PQL
550-194920-1	PC-92-EM40	12/13/22	SW-6010B	Dissolved	Cobalt	0.0025	mg/L	J	0.00054	0.005	J	sp	Detect < PQL
550-194920-1	SWFTS-MW01-EM40	12/13/22	SW-6010B	Dissolved	Cobalt	0.0014	mg/L	J	0.00054	0.005	J	sp	Detect < PQL
550-194920-1	PC-94-EM40	12/13/22	SW-6010B	Dissolved	Cobalt	0.0043	mg/L	J	0.00054	0.005	J	sp	Detect < PQL
550-194920-1	PC-92-EM40	12/13/22	SW-6010B	Dissolved	Copper	0.002	mg/L	J	0.0012	0.005	J	sp	Detect < PQL
550-194920-1	SWFTS-MW09A-EM40	12/13/22	SW-6010B	Dissolved	Iron	0.027	mg/L	JB	0.019	0.4	J	bl,sp	Lab Blank, Detect < PQL
550-194920-1	SWFTS-MW09B-EM40	12/13/22	SW-6010B	Dissolved	Iron	0.027	mg/L	JB	0.019	0.4	J	bl,sp	Lab Blank, Detect < PQL
550-194920-1	SWFTS-MW03-EM40	12/13/22	SW-6010B	Dissolved	Iron	0.037	mg/L	JB	0.019	0.4	J	bl,sp	Lab Blank, Detect < PQL
550-194920-1	SWFTS-MW01-EM40	12/13/22	SW-6010B	Dissolved	Iron	0.023	mg/L	JB	0.019	0.4	J	bl,sp	Lab Blank, Detect < PQL
550-194920-1	PC-94-EM40	12/13/22	SW-6010B	Dissolved	Iron	0.032	mg/L	JB	0.019	0.4	J	bl,sp	Lab Blank, Detect < PQL
550-194920-1	SWFTS-EM40-FB1	12/13/22	SW-6010B	Dissolved	Magnesium	0.056	mg/L	J	0.054	0.4	J	sp	Detect < PQL
550-194920-1	SWFTS-MW09B-EM40	12/13/22	SW-6010B	Dissolved	Nickel	0.0049	mg/L	J	0.0028	0.005	J	sp	Detect < PQL
550-194920-1	PC-94-EM40	12/13/22	SW-6010B	Dissolved	Nickel	0.0036	mg/L	J	0.0028	0.005	J	sp	Detect < PQL
550-194920-1	SWFTS-MW09A-EM40	12/13/22	SW-6010B	Dissolved	Phosphorus, Total	0.011	mg/L	Ucn	0.011	0.4	UJ	o	Other
550-194920-1	SWFTS-EM40-EB1	12/13/22	SW-6010B	Dissolved	Phosphorus, Total	0.011	mg/L	Ucn	0.011	0.4	UJ	o	Other
550-194920-1	SWFTS-MW09B-EM40	12/13/22	SW-6010B	Dissolved	Phosphorus, Total	0.011	mg/L	Ucn	0.011	0.4	UJ	o	Other
550-194920-1	SWFTS-MW03-EM40	12/13/22	SW-6010B	Dissolved	Phosphorus, Total	0.011	mg/L	Ucn	0.011	0.4	UJ	o	Other
550-194920-1	PC-92-EM40	12/13/22	SW-6010B	Dissolved	Phosphorus, Total	0.011	mg/L	Ucn	0.011	0.4	UJ	o	Other
550-194920-1	SWFTS-MW01-EM40	12/13/22	SW-6010B	Dissolved	Phosphorus, Total	0.011	mg/L	Ucn	0.011	0.4	UJ	o	Other
550-194920-1	SWFTS-EM40-FB1	12/13/22	SW-6010B	Dissolved	Phosphorus, Total	0.011	mg/L	Ucn	0.011	0.4	UJ	o	Other
550-194920-1	PC-94-EM40	12/13/22	SW-6010B	Dissolved	Phosphorus, Total	0.011	mg/L	Ucn	0.011	0.4	UJ	o	Other
550-194920-1	SWFTS-EM40-EB1	12/13/22	SW-6010B	Dissolved	Potassium	0.14	mg/L	J	0.081	1	J	sp	Detect < PQL
550-194920-1	SWFTS-EM40-FB1	12/13/22	SW-6010B	Dissolved	Potassium	0.21	mg/L	J	0.081	1	J	sp	Detect < PQL
550-194920-1	SWFTS-EM40-EB1	12/13/22	SW-6010B	Dissolved	Silicon	0.067	mg/L	J	0.016	0.1	J	sp	Detect < PQL
550-194920-1	SWFTS-EM40-FB1	12/13/22	SW-6010B	Dissolved	Silicon	0.078	mg/L	J	0.016	0.1	J	sp	Detect < PQL
550-194920-1	SWFTS-EM40-EB1	12/13/22	SW-6010B	Dissolved	Silver	0.00055	mg/L	JB	0.00049	0.008	J	bl,sp	Lab Blank, Detect < PQL
550-194920-1	SWFTS-EM40-EB1	12/13/22	SW-6010B	Dissolved	Sodium	0.19	mg/L	J	0.039	0.4	J	sp	Detect < PQL
550-194920-1	SWFTS-EM40-EB1	12/13/22	SW-6010B	Dissolved	Strontium	0.00072	mg/L	J	0.00032	0.01	J	sp	Detect < PQL
550-194920-1	SWFTS-EM40-FB1	12/13/22	SW-6010B	Dissolved	Strontium	0.0028	mg/L	J	0.00032	0.01	J	sp	Detect < PQL
550-194920-1	SWFTS-MW03-EM40	12/13/22	SW-6010B	Dissolved	Titanium	0.0012	mg/L	J	0.00028	0.005	J	sp	Detect < PQL
550-194920-1	PC-92-EM40	12/13/22	SW-6010B	Dissolved	Titanium	0.00034	mg/L	J	0.00028	0.005	J	sp	Detect < PQL
550-194920-1	SWFTS-MW09A-EM40	12/13/22	SW-6010B	Dissolved	Tungsten	0.0047	mg/L	J	0.0021	0.1	J	sp	Detect < PQL
550-194920-1	SWFTS-MW09B-EM40	12/13/22	SW-6010B	Dissolved	Tungsten	0.005	mg/L	J	0.0021	0.1	J	sp	Detect < PQL
550-194920-1	SWFTS-MW03-EM40	12/13/22	SW-6010B	Dissolved	Tungsten	0.012	mg/L	J	0.0021	0.1	J	sp	Detect < PQL
550-194920-1	PC-92-EM40	12/13/22	SW-6010B	Dissolved	Tungsten	0.0094	mg/L	J	0.0021	0.1	J	sp	Detect < PQL
550-194920-1	SWFTS-MW01-EM40	12/13/22	SW-6010B	Dissolved	Tungsten	0.0042	mg/L	J	0.0021	0.1	J	sp	Detect < PQL
550-194920-1	PC-94-EM40	12/13/22	SW-6010B	Dissolved	Tungsten	0.0055	mg/L	J	0.0021	0.1	J	sp	Detect < PQL
550-194920-1	SWFTS-MW09A-EM40	12/13/22	SW-6020B	Dissolved	Antimony	0.015	ug/L	JB	0.0043	0.1	J	bl,sp	Lab Blank, Detect < PQL
550-194920-1	SWFTS-MW09B-EM40	12/13/22	SW-6020B	Dissolved	Antimony	0.02	ug/L	JB	0.0043	0.1	J	bl,sp	Lab Blank, Detect < PQL
550-194920-1	SWFTS-MW03-EM40	12/13/22	SW-6020B	Dissolved	Antimony	0.023	ug/L	JB	0.0043	0.1	J	bl,sp	Lab Blank, Detect < PQL
550-194920-1	PC-92-EM40	12/13/22	SW-6020B	Dissolved	Antimony	0.023	ug/L	JB	0.0043	0.1	J	bl,sp	Lab Blank, Detect < PQL

Table 6 Results Qualified During Validation

SDG	Sample ID	Sample Date	Method	Total or Dissolved	Parameter	Result	Units	Lab Qualifier	SQL	PQL	Validator Qualifier	Reason Code	Reason Code Definition
550-194920-1	SWFTS-MW01-EM40	12/13/22	SW-6020B	Dissolved	Antimony	0.018	ug/L	JB	0.0043	0.1	J	bl,sp	Lab Blank, Detect < PQL
550-194920-1	PC-94-EM40	12/13/22	SW-6020B	Dissolved	Antimony	0.017	ug/L	JB	0.0043	0.1	J	bl,sp	Lab Blank, Detect < PQL
550-194920-1	SWFTS-EM40-EB1	12/13/22	SW-6020B	Dissolved	Arsenic	0.027	ug/L	J	0.025	0.1	J	sp	Detect < PQL
550-194920-1	SWFTS-MW03-EM40	12/13/22	SW-6020B	Dissolved	Arsenic	4.8	ug/L	F1	0.025	0.1	J+	m	MS Recovery
550-194920-1	SWFTS-MW03-EM40	12/13/22	SW-6020B	Dissolved	Selenium	4.6	ug/L	F1	0.0074	0.05	J+	m	MS Recovery
550-195013-1	SWFTS-MW22-EM40	12/14/22	EPA 300.0	Total	Sulfate	1500	mg/L		21	100	J+	be,bf	EB, FB
550-195013-1	SWFTS-MW18-EM40	12/14/22	EPA 300.0	Total	Sulfate	1800	mg/L		21	100	J+	be,bf	EB, FB
550-195013-1	SWFTS-MW17-EM40	12/14/22	EPA 300.0	Total	Sulfate	1900	mg/L		21	100	J+	be,bf	EB, FB
550-195013-1	SWFTS-MW16-EM40	12/14/22	EPA 300.0	Total	Sulfate	1600	mg/L		21	100	J+	be,bf	EB, FB
550-195013-1	SWFTS-MW19-EM40	12/14/22	EPA 300.0	Total	Sulfate	1100	mg/L		21	100	J+	be,bf	EB, FB
550-195013-1	SWFTS-MW19-EM40-FD	12/14/22	EPA 300.0	Total	Sulfate	1100	mg/L		21	100	J+	be,bf	EB, FB
550-195013-1	SWFTS-MW22-EM40	12/14/22	SM5310B	Total	Total Organic Carbon	1.5	mg/L	J	1	2	J	sp	Detect < PQL
550-195013-1	SWFTS-MW19-EM40	12/14/22	SW-6010B	Dissolved	Beryllium	0.00019	mg/L	J	0.00019	0.001	J	sp	Detect < PQL
550-195013-1	SWFTS-EM40-EB2	12/14/22	SW-6010B	Dissolved	Boron	0.0049	mg/L	JB	0.0024	0.05	J	bl,sp	Lab Blank, Detect < PQL
550-195013-1	SWFTS-EM40-FB2	12/14/22	SW-6010B	Dissolved	Boron	0.0063	mg/L	JB	0.0024	0.05	J	bl,sp	Lab Blank, Detect < PQL
550-195013-1	SWFTS-EM40-EB2	12/14/22	SW-6010B	Dissolved	Calcium	0.017	mg/L	JB	0.015	0.4	J	bl,sp	Lab Blank, Detect < PQL
550-195013-1	SWFTS-EM40-FB2	12/14/22	SW-6010B	Dissolved	Calcium	0.1	mg/L	JB	0.015	0.4	J	bl,sp	Lab Blank, Detect < PQL
550-195013-1	SWFTS-MW18-EM40	12/14/22	SW-6010B	Dissolved	Cobalt	0.0023	mg/L	J	0.00054	0.005	J	sp	Detect < PQL
550-195013-1	SWFTS-MW22-EM40	12/14/22	SW-6010B	Dissolved	Cobalt	0.001	mg/L	J	0.00054	0.005	J	sp	Detect < PQL
550-195013-1	SWFTS-MW19-EM40	12/14/22	SW-6010B	Dissolved	Cobalt	0.003	mg/L	J	0.00054	0.005	J	sp	Detect < PQL
550-195013-1	SWFTS-MW19-EM40-FD	12/14/22	SW-6010B	Dissolved	Cobalt	0.0031	mg/L	J	0.00054	0.005	J	sp	Detect < PQL
550-195013-1	SWFTS-MW17-EM40	12/14/22	SW-6010B	Dissolved	Copper	0.0023	mg/L	J	0.0012	0.005	J	sp	Detect < PQL
550-195013-1	SWFTS-MW18-EM40	12/14/22	SW-6010B	Dissolved	Iron	0.032	mg/L	J	0.019	0.4	J	sp	Detect < PQL
550-195013-1	SWFTS-MW17-EM40	12/14/22	SW-6010B	Dissolved	Iron	0.029	mg/L	J	0.019	0.4	J	sp	Detect < PQL
550-195013-1	SWFTS-MW22-EM40	12/14/22	SW-6010B	Dissolved	Iron	0.028	mg/L	J	0.019	0.4	J	sp	Detect < PQL
550-195013-1	SWFTS-MW19-EM40	12/14/22	SW-6010B	Dissolved	Iron	0.019	mg/L	J	0.019	0.4	J	sp	Detect < PQL
550-195013-1	SWFTS-EM40-EB2	12/14/22	SW-6010B	Dissolved	Phosphorus, Total	0.011	mg/L	Ucn	0.011	0.4	UJ	o	Other
550-195013-1	SWFTS-MW18-EM40	12/14/22	SW-6010B	Dissolved	Phosphorus, Total	0.011	mg/L	Ucn	0.011	0.4	UJ	o	Other
550-195013-1	SWFTS-MW17-EM40	12/14/22	SW-6010B	Dissolved	Phosphorus, Total	0.011	mg/L	Ucn	0.011	0.4	UJ	o	Other
550-195013-1	SWFTS-MW16-EM40	12/14/22	SW-6010B	Dissolved	Phosphorus, Total	0.011	mg/L	Ucn	0.011	0.4	UJ	o	Other
550-195013-1	SWFTS-MW22-EM40	12/14/22	SW-6010B	Dissolved	Phosphorus, Total	0.011	mg/L	Ucn	0.011	0.4	UJ	o	Other

Table 7 Field Duplicate Exceedances

SDG	Method	Parameter	Total or Dissolved	Units	Parent Sample ID	Result	FD Result	RPD (%)	Allowed RPD (%)	Difference >PQL
550-188805-1	SW-9060A	Total Organic Carbon	Total	g/kg	SWFTS-BH13-41	2.6	8.4	---	N/A	5.8
550-189012-1	SW-6010B	Calcium	Total	mg/kg	SWFTS-BH28-SO-17.3	16000	44000	93	50	---
550-189013-1	SW-6010B	Calcium	Total	mg/kg	SWFTS-BH20-SO-13.7	8600	4900	55	50	---
550-194841-1	SW-6010B	Titanium	Dissolved	mg/L	PC-88-EM40	0.028	0.02	33	30	---

Table 8 MS/MSD Recovery Exceedances

SDG	Spiked Sample	Lab Sample ID	Method	Total or Dissolved	Parameter	MS Recovery (%)	MSD Recovery (%)	Acceptance Range (%)
550-194841-1	PC-88-EM40	550-194841-2	SW-6020B	Dissolved	Arsenic	170	167	80-120
550-189013-1	SWFTS-BH22-SO-49	550-189013-11	VFA-IC	Total	Lactic acid	77	80	80-120
550-189012-1	SWFTS-BH28-SO-21	550-189012-24	VFA-IC	Total	n-Butyric Acid	84	79	80-120
550-189012-1	SWFTS-BH28-SO-21	550-189012-24	VFA-IC	Total	Formic-acid	66	66	80-120
550-189012-1	SWFTS-BH28-SO-21	550-189012-24	VFA-IC	Total	Lactic acid	12	6	80-120
550-189012-1	SWFTS-BH29-SO-24.5	550-189012-17	VFA-IC	Total	Acetic acid	59	Not Analyzed	80-120
550-189012-1	SWFTS-BH29-SO-24.5	550-189012-17	VFA-IC	Total	n-Butyric Acid	79	Not Analyzed	80-120
550-189012-1	SWFTS-BH29-SO-24.5	550-189012-17	VFA-IC	Total	Formic-acid	79	Not Analyzed	80-120
550-189012-1	SWFTS-BH29-SO-24.5	550-189012-17	VFA-IC	Total	Lactic acid	60	Not Analyzed	80-120
550-186012-1	SWFTS-MW01-EM38	550-186012-9	EPA 300.1B	Total	Chlorate	125	127	75-125
550-180516-1	SWFTS-MW02-EM37	550-180516-9	EPA 314.0	Total	Perchlorate	80	76	80-120
550-190412-1	SWFTS-MW03-EM39	550-190412-8	SM5310B	Total	Total Organic Carbon	91	89	90-110
550-194920-1	SWFTS-MW03-EM40	550-194920-16	SW-6020B	Dissolved	Arsenic	147	148	80-120
550-194920-1	SWFTS-MW03-EM40	550-194920-16	SW-6020B	Dissolved	Selenium	153	155	80-120
550-186171-1	SWFTS-MW09B-EM38-FD	550-186171-5	EPA 300.1B	Total	Chlorate	203	232	75-125
550-180322-1	SWFTS-MW10A-EM37	550-180322-9	EPA 300.1B	Total	Chlorate	112	153	75-125
550-180322-1	SWFTS-MW10A-EM37	550-180322-9	SM5310B	Total	Total Organic Carbon	89	88	90-110
550-186171-1	SWFTS-MW10A-EM38	550-186171-2	EPA 300.1B	Total	Chlorate	116	130	75-125
550-190412-1	SWFTS-MW10A-EM39	550-190412-2	SM5310B	Total	Total Organic Carbon	77	88	90-110
550-195103-1	SWFTS-MW10A-EM40	550-195103-1	SM5310B	Total	Total Organic Carbon	91	88	90-110
550-180407-1	SWFTS-MW18-EM37	550-180407-14	SM5310B	Total	Total Organic Carbon	91	89	90-110

Table 9 Laboratory Blank Detections

SDG	Blank ID	Method	Total or Dissolved	Parameter	Blank Result	Units	Associated Samples with Qualification
550-188805-1	MB 280-584714/5	SW-9060A	Total	Total Organic Carbon	1.73	g/kg	SWFTS-BH11-15, SWFTS-BH11-20, SWFTS-BH11-30, SWFTS-BH11-40, SWFTS-BH11-45, SWFTS-BH12-16, SWFTS-BH12-21, SWFTS-BH12-27, SWFTS-BH13-11, SWFTS-BH13-22, SWFTS-BH13-32.6, SWFTS-BH13-39, SWFTS-BH13-41, SWFTS-BH13-41-FD, SWFTS-BH15-37.5, SWFTS-BH15-41, SWFTS-BH16-17.3, SWFTS-BH16-31, SWFTS-BH16-42.3
550-189012-1	MB 280-586173/5	SW-9060A	Total	Total Organic Carbon	0.952	g/kg	SWFTS-BH27-SO-23, SWFTS-BH27-SO-28, SWFTS-BH27-SO-36.2
550-189013-1	MB 280-585252/4	SW-9060A	Total	Total Organic Carbon	1.19	g/kg	SWFTS-BH20-SO-13.7, SWFTS-BH20-SO-13.7-FD, SWFTS-BH20-SO-24.2, SWFTS-BH20-SO-26, SWFTS-BH20-SO-35.5, SWFTS-BH21-SO-19.5, SWFTS-BH21-SO-28, SWFTS-BH21-SO-32, SWFTS-BH22-SO-12.4, SWFTS-BH22-SO-20.5, SWFTS-BH22-SO-36
550-189088-1	MB 280-585252/4	SW-9060A	Total	Total Organic Carbon	1.19	g/kg	SWFTS-BH17-SO-17-FD, SWFTS-BH17-SO-23, SWFTS-BH17-SO-26
550-194841-1	MB 550-290699/1-A	SW-6020B	Dissolved	Antimony	0.138	ug/L	PC-58-EM40, PC-88-EM40, PC-88-EM40-FD, PC-91-EM40
550-194841-1	MB 550-290699/1-A	SW-6020B	Dissolved	Selenium	0.405	ug/L	PC-91-EM40
550-194919-1	MB 550-290824/1-A	SW-6020B	Dissolved	Antimony	0.044	ug/L	SWFTS-MW20-EM40, SWFTS-MW23-EM40, SWFTS-MW24-EM40, SWFTS-MW25-EM40
550-194919-1	MB 550-290825/1-A	SW-6010B	Dissolved	Iron	0.0757	mg/L	SWFTS-MW20-EM40, SWFTS-MW23-EM40, SWFTS-MW24-EM40, SWFTS-MW25-EM40
550-194920-1	MB 550-290824/1-A	SW-6020B	Dissolved	Antimony	0.044	ug/L	PC-92-EM40, PC-94-EM40, SWFTS-MW01-EM40, SWFTS-MW03-EM40, SWFTS-MW09A-EM40, SWFTS-MW09B-EM40
550-194920-1	MB 550-290825/1-A	SW-6010B	Dissolved	Boron	0.00502	mg/L	SWFTS-EM40-EB1, SWFTS-EM40-FB1
550-194920-1	MB 550-290825/1-A	SW-6010B	Dissolved	Iron	0.0757	mg/L	PC-94-EM40, SWFTS-MW01-EM40, SWFTS-MW03-EM40, SWFTS-MW09A-EM40, SWFTS-MW09B-EM40
550-194920-1	MB 550-290825/1-A	SW-6010B	Dissolved	Silver	0.00056	mg/L	SWFTS-EM40-EB1
550-195013-1	MB 550-290884/1-A	SW-6010B	Dissolved	Boron	0.00477	mg/L	SWFTS-EM40-EB2, SWFTS-EM40-FB2
550-195013-1	MB 550-290884/1-A	SW-6010B	Dissolved	Calcium	0.0266	mg/L	SWFTS-EM40-EB2, SWFTS-EM40-FB2
550-195013-1	MB 550-290884/1-A	SW-6010B	Dissolved	Potassium	0.142	mg/L	SWFTS-EM40-FB2
550-195013-1	MB 550-290884/1-A	SW-6010B	Dissolved	Silver	0.00067	mg/L	SWFTS-EM40-EB2
550-195013-1	MB 550-290884/1-A	SW-6010B	Dissolved	Sodium	0.289	mg/L	SWFTS-EM40-EB2, SWFTS-EM40-FB2
550-195013-1	MB 550-290884/1-A	SW-6010B	Dissolved	Strontium	0.00067	mg/L	SWFTS-EM40-EB2, SWFTS-EM40-FB2
550-195103-1	MB 550-291028/1-A	SW-6020B	Dissolved	Antimony	0.043	ug/L	SWFTS-MW10A-EM40, SWFTS-MW10C-EM40, SWFTS-MW11-EM40, SWFTS-MW11-EM40-FD, SWFTS-MW12-EM40
550-195106-1	MB 550-291028/1-A	SW-6020B	Dissolved	Antimony	0.043	ug/L	SWFTS-MW13-EM40, SWFTS-MW14-EM40, SWFTS-MW15-EM40, SWFTS-MW21-EM40

Note: Method blanks may have been reported in more than one SDG.

Table 10 Equipment Blank and Field Blank Detections

SDG	Blank ID	Blank Type	Sample Date	Method	Total or Dissolved	Parameter	Blank Result	Units	Associated Samples with Qualification*
550-180407-1	SWFTS-EM37-FB2	FB	3/8/2022	SM5310B	Total	Total Organic Carbon	0.34	mg/L	PC-88-EM37, PC-88-EM37-FD, PC-94-EM37, SWFTS-MW07A-EM37, SWFTS-MW07B-EM37, SWFTS-MW09A-EM37, SWFTS-MW09B-EM37, SWFTS-MW14-EM37, SWFTS-MW15-EM37, SWFTS-MW18-EM37, SWFTS-MW21-EM37, SWFTS-MW24-EM37
550-180516-1	SWFTS-EM37-EB2	EB	3/9/2022	EPA 300.0	Total	Nitrate [as N]	0.019	mg/L	SWFTS-MW02-EM37, SWFTS-MW16-EM37
550-180516-1	SWFTS-EM37-FB1	FB	3/9/2022	EPA 300.0	Total	Nitrate [as N]	0.029	mg/L	SWFTS-MW02-EM37, SWFTS-MW16-EM37
550-186012-1	SWFTS-EM38-EB1	EB	6/21/2022	SM5310B	Total	Total Organic Carbon	0.43	mg/L	PC-58-EM38, PC-88-EM38, PC-88-EM38-FD, PC-92-EM38, PC-94-EM38, SWFTS-MW01-EM38, SWFTS-MW21-EM38, SWFTS-MW22-EM38, SWFTS-MW23-EM38, SWFTS-MW24-EM38, SWFTS-MW25-EM38
550-186012-1	SWFTS-EM38-FB1	FB	6/21/2022	SM5310B	Total	Total Organic Carbon	0.3	mg/L	PC-88-EM38, PC-92-EM38, PC-94-EM38, SWFTS-MW01-EM38, SWFTS-MW21-EM38, SWFTS-MW24-EM38
550-186069-1	SWFTS-EM38-EB2	EB	6/22/2022	SM5310B	Total	Total Organic Carbon	0.53	mg/L	SWFTS-MW02-EM38, SWFTS-MW03-EM38, SWFTS-MW04-EM38, SWFTS-MW06A-EM38, SWFTS-MW06A-EM38-FD, SWFTS-MW06B-EM38, SWFTS-MW13-EM38, SWFTS-MW14-EM38, SWFTS-MW15-EM38, SWFTS-MW16-EM38, SWFTS-MW17-EM38, SWFTS-MW18-EM38, SWFTS-MW19-EM38, SWFTS-MW19-EM38-FD
550-186069-1	SWFTS-EM38-FB2	FB	6/22/2022	SM5310B	Total	Total Organic Carbon	0.39	mg/L	SWFTS-MW02-EM38, SWFTS-MW03-EM38, SWFTS-MW04-EM38, SWFTS-MW06A-EM38, SWFTS-MW06A-EM38-FD, SWFTS-MW13-EM38, SWFTS-MW14-EM38, SWFTS-MW15-EM38, SWFTS-MW16-EM38, SWFTS-MW17-EM38, SWFTS-MW18-EM38
550-189014-1	SWFTS-BH-EB3-20220815	EB	8/15/2022	VFA-IC	Total	Lactic acid	4.3	mg/L	SWFTS-BH19-SO-11
550-190504-1	SWFTS-EM39-EB2	EB	9/14/2022	EPA 314.0	Total	Perchlorate	1.2	ug/L	PC-91-EM39, SWFTS-MW20-EM39
550-194920-1	SWFTS-EM40-EB1	EB	12/13/2022	EPA 300.0	Total	Sulfate	6.5	mg/L	PC-92-EM40, PC-94-EM40, SWFTS-MW01-EM40, SWFTS-MW03-EM40, SWFTS-MW09A-EM40, SWFTS-MW09B-EM40
550-194920-1	SWFTS-EM40-FB1	FB	12/13/2022	EPA 300.0	Total	Sulfate	6.9	mg/L	PC-92-EM40, PC-94-EM40, SWFTS-MW01-EM40, SWFTS-MW03-EM40, SWFTS-MW09A-EM40, SWFTS-MW09B-EM40
550-195013-1	SWFTS-EM40-EB2	EB	12/14/2022	EPA 300.0	Total	Sulfate	7.9	mg/L	SWFTS-MW16-EM40, SWFTS-MW17-EM40, SWFTS-MW18-EM40, SWFTS-MW19-EM40, SWFTS-MW19-EM40-FD, SWFTS-MW22-EM40

Table 10 Equipment Blank and Field Blank Detections

SDG	Blank ID	Blank Type	Sample Date	Method	Total or Dissolved	Parameter	Blank Result	Units	Associated Samples with Qualification*
550-195013-1	SWFTS-EM40-EB2	EB	12/14/2022	SW-6020B	Dissolved	Antimony	0.093	ug/L	SWFTS-MW16-EM40, SWFTS-MW17-EM40, SWFTS-MW18-EM40, SWFTS-MW19-EM40, SWFTS-MW19-EM40-FD, SWFTS-MW22-EM40
550-195013-1	SWFTS-EM40-EB2	EB	12/14/2022	SW-6020B	Dissolved	Selenium	0.4	ug/L	SWFTS-MW16-EM40
550-195013-1	SWFTS-EM40-FB2	FB	12/14/2022	EPA 300.0	Total	Sulfate	7.5	mg/L	SWFTS-MW16-EM40, SWFTS-MW17-EM40, SWFTS-MW18-EM40, SWFTS-MW19-EM40, SWFTS-MW19-EM40-FD, SWFTS-MW22-EM40
550-195013-1	SWFTS-EM40-FB2	FB	12/14/2022	SW-6020B	Dissolved	Antimony	0.094	ug/L	SWFTS-MW16-EM40, SWFTS-MW17-EM40, SWFTS-MW18-EM40, SWFTS-MW19-EM40, SWFTS-MW19-EM40-FD, SWFTS-MW22-EM40

* Samples may be appear more than once. Samples were compared to all blanks within their SDG.

Appendix 1
Validation Checklists

Data Verification and Validation Summary

Project Name: SWF Area Treatability Study
Task No.: M11
No. of Samples: 13 with MS/MSD
SDG/Report No.: 550-180322-1
Lab ID: Eurofins TestAmerica
Matrix: Water

Area Reviewed	Anomalies		Qualification Required	Action Required
	Yes	No	Yes or No	
1. Sample Preservation, Handling, and Transport	X		No	None
2. Chain-of-Custody		X	No	None
3. Holding Times		X	No	None
4. Blanks		X	No	None
5. Surrogates/Monitoring Compounds		X	No	None
6. Matrix Spike/Matrix Spike Duplicate	X		Yes	SWFTS-MW10A-EM37: Qualify chlorate "J+" and TOC "J-".
7. Laboratory Control Samples		X	No	None
8. Duplicates		X	No	None
9. Compound Quantitation and Reporting Limits		X	Yes	All: Qualify results detected between the MDL/SQL and RL/PQL "J".
10. Data Package/EDD comparison (10%)		X	No	None
Verification and Validation Label	Stage_2A_Validation_Manual			
Verification and Validation Label Code	S2AVM			

Overall Assessment: Acceptable as qualified.
Usability: Sample results qualified as estimated (J-, J, J+) are considered valid and useable for limited purposes. All other results are considered valid and useable for all purposes.

Data Verification and Validation Summary

Sample Information:

Field Sample Number	Lab Sample ID	Date Collected	Cooler Temperature
PC-58-EM37	550-180322-1	3/7/22	3.5 °C
PC-91-EM37	550-180322-2	3/7/22	3.5 °C
PC-92-EM37	550-180322-3	3/7/22	3.5 °C
SWFTS-MW11-EM37	550-180322-4	3/7/22	3.5 °C
SWFTS-MW11-EM37-FD	550-180322-5	3/7/22	3.5 °C
SWFTS-MW06A-EM37	550-180322-6	3/7/22	3.5 °C
SWFTS-MW06A-EM37-FD	550-180322-7	3/7/22	3.5 °C
SWFTS-MW06B-EM37	550-180322-8	3/7/22	3.5 °C
SWFTS-MW10A-EM37	550-180322-9	3/7/22	3.5 °C
SWFTS-MW10A-EM37-MS	550-180322-9 MS	3/7/22	3.5 °C
SWFTS-MW10A-EM37-MSD	550-180322-9 MSD	3/7/22	3.5 °C
SWFTS-MW25-EM37	550-180322-10	3/7/22	3.5 °C
SWFTS-MW23-EM37	550-180322-11	3/7/22	3.5 °C

The following section is intended to specify areas evaluated and issues encountered. Only applicable methods are listed.

1. Sample Preservation, Handling, and Transport	
Were all samples preserved correctly? Were sample temperatures kept at ≤ 6 °C? Were samples received in proper condition?	Yes/No/Yes
The case narrative states that one cooler at receipt was at 20.5 °C. 20.5 °C was the temperature at the local service center shortly after sampling. Temperature at receipt at the lab was ≤ 6 °C.	

2. Chain-of-Custody (COC)	
Were samples recorded on the COCs? Were correct analyses performed on the samples?	Yes/Yes

3. Holding Times	
Were samples analyzed within acceptable holding times?	Yes

4. Blanks	
Does data package include a summary of blank results? Was a method blank extracted and/or analyzed for each batch? Were analytes detected in any blanks?	Yes/Yes/No

5. Surrogates/Monitoring Compounds	
Were samples spiked with the correct surrogate compounds? Were surrogate recoveries reported correctly on data forms? Were recoveries within laboratory limits?	Yes/Yes/Yes

6. Matrix Spike/Matrix Spike Duplicate	
Was a MS/MSD pair extracted and/or analyzed with each batch? Were recoveries/RPDs reported on data forms? Were recoveries/RPDs of project samples within laboratory established limits?	Yes/Yes/No
300.1B: Chlorate recovery was high in the MSD of SWFTS-MW10A-EM37.	
SM5310B: TOC recoveries were low in the MS/MSD of SWFTS-MW10A-EM37.	

7. Laboratory Control Samples (LCS)	
Was a LCS analyzed with each analytical batch? Were LCS recoveries reported correctly on data forms? Were LCS recoveries within laboratory established limits?	Yes/Yes/Yes

8. Duplicates	
Were any duplicate pairs analyzed in this SDG? For results > 5x the RL/PQL, were RPDs between parent sample and duplicates ≤ lab limits or ≤ 30% (water)/50% (soil) for field duplicates? For REG/FD results < 5x the RL/PQL, were differences between the two values < RL/PQL.	Yes/Yes/Yes
Two FD pairs were analyzed: SWFTS-MW11-EM37 and SWFTS-MW11-EM37-FD; SWFTS-MW06A-EM37 and SWFTS-MW06A-EM37-FD. Results agreed.	

9. Compound Quantitation and Reporting Limits	
Were quantitation limits (RLs/PQL) adjusted to reflect dilutions, cleanup, and other factors? If applicable, were reporting limit check recoveries within acceptable limits?	Yes/Yes

10. Data Package/EDD comparison (10%)	
Were 10% of the data package results compared to the electronic data? Did results match?	Yes/Yes

Validated by: Maureen McMyler 03/21/3022

Data Verification and Validation Summary

Project Name: SWF Area Treatability Study
Task No.: M11
No. of Samples: 19
SDG/Report No.: 550-180407-1
Lab ID: Eurofins TestAmerica
Matrix: Water

Area Reviewed	Anomalies		Qualification Required	Action Required
	Yes	No	Yes or No	
1. Sample Preservation, Handling, and Transport	X		No	None
2. Chain-of-Custody		X	No	None
3. Holding Times		X	No	None
4. Blanks	X		Yes	PC-88-EM37, PC-88-EM37-FD, PC-94-EM37, SWFTS-MW07A-EM37, SWFTS-MW07B-EM37, SWFTS-MW09A-EM37, SWFTS-MW09B-EM37, SWFTS-MW14-EM37, SWFTS-MW15-EM37, SWFTS-MW21-EM37, SWFTS-MW24-EM37: Qualify TOC "J+". SWFTS-MW18-EM37: Qualify TOC "J".
5. Surrogates/Monitoring Compounds	X		No	None
6. Matrix Spike/Matrix Spike Duplicate	X		Yes	SWFTS-MW18-EM37: Qualify TOC "J".
7. Laboratory Control Samples		X	No	None
8. Duplicates		X	No	None
9. Compound Quantitation and Reporting Limits		X	Yes	All: Qualify results detected between the MDL/SQL and RL/PQL "J".
10. Data Package/EDD comparison (10%)		X	No	None
Verification and Validation Label	Stage_2A_Validation_Manual			
Verification and Validation Label Code	S2AVM			

Overall Assessment: Acceptable as qualified.
Usability: Sample results qualified as estimated (J, J+) are considered valid and useable for limited purposes. All other results are considered valid and useable for all purposes.

Data Verification and Validation Summary

Sample Information:

Field Sample Number	Lab Sample ID	Date Collected	Cooler Temperature
PC-88-EM37	550-180407-1	3/8/2022	1.7 ºC/2.9 ºC/3.2 ºC
PC-88-EM37-FD	550-180407-2	3/8/2022	1.7 ºC/2.9 ºC/3.2 ºC
PC-94-EM37	550-180407-3	3/8/2022	1.7 ºC/2.9 ºC/3.2 ºC
SWFTS-EM37-EB1	550-180407-4	3/8/2022	1.7 ºC/2.9 ºC/3.2 ºC
SWFTS-MW09A-EM37	550-180407-5	3/8/2022	1.7 ºC/2.9 ºC/3.2 ºC
SWFTS-MW09B-EM37	550-180407-6	3/8/2022	1.7 ºC/2.9 ºC/3.2 ºC
SWFTS-MW24-EM37	550-180407-7	3/8/2022	1.7 ºC/2.9 ºC/3.2 ºC
SWFTS-EM37-FB2	550-180407-8	3/8/2022	1.7 ºC/2.9 ºC/3.2 ºC
SWFTS-MW22-EM37	550-180407-9	3/8/2022	1.7 ºC/2.9 ºC/3.2 ºC
SWFTS-MW20-EM37	550-180407-10	3/8/2022	1.7 ºC/2.9 ºC/3.2 ºC
SWFTS-MW21-EM37	550-180407-11	3/8/2022	1.7 ºC/2.9 ºC/3.2 ºC
SWFTS-MW19-EM37	550-180407-12	3/8/2022	1.7 ºC/2.9 ºC/3.2 ºC
SWFTS-MW19-EM37-FD	550-180407-13	3/8/2022	1.7 ºC/2.9 ºC/3.2 ºC
SWFTS-MW18-EM37	550-180407-14	3/8/2022	1.7 ºC/2.9 ºC/3.2 ºC
SWFTS-MW14-EM37	550-180407-15	3/8/2022	1.7 ºC/2.9 ºC/3.2 ºC
SWFTS-MW15-EM37	550-180407-16	3/8/2022	1.7 ºC/2.9 ºC/3.2 ºC
SWFTS-MW07B-EM37	550-180407-17	3/8/2022	1.7 ºC/2.9 ºC/3.2 ºC
SWFTS-MW07A-EM37	550-180407-18	3/8/2022	1.7 ºC/2.9 ºC/3.2 ºC
SWFTS-MW12-EM37	550-180407-19	3/8/2022	1.7 ºC/2.9 ºC/3.2 ºC

The following section is intended to specify areas evaluated and issues encountered. Only applicable methods are listed.

1. Sample Preservation, Handling, and Transport	
Were all samples preserved correctly? Were sample temperatures kept at ≤ 6 ºC? Were samples received in proper condition?	Yes/No/Yes
The case narrative states that one cooler at receipt was at 23.7 ºC. 23.7 ºC was the temperature at the local service center shortly after sampling. Temperature at receipt at the lab was ≤ 6 ºC.	

2. Chain-of-Custody (COC)	
Were samples recorded on the COCs? Were correct analyses performed on the samples?	Yes/Yes

3. Holding Times	
Were samples analyzed within acceptable holding times?	Yes

4. Blanks	
Does data package include a summary of blank results? Was a method blank extracted and/or analyzed for each batch? Were analytes detected in any blanks?	Yes/Yes/Yes
300.0: Nitrate and sulfate were detected in SWFTS-EM37-FB2. Concentrations in the associated samples were >10x the amounts in the blank.	
314.0: Perchlorate was detected in SWFTS-EM37-EB1. Concentrations in the associated samples were >10x the amount in the blank.	
SM5310B: TOC was detected in SWFTS-EM37-FB2. Samples with concentrations <10x the amount in the FB will be qualified.	

5. Surrogates/Monitoring Compounds	
Were samples spiked with the correct surrogate compounds? Were surrogate recoveries reported correctly on data forms? Were recoveries within laboratory limits?	Yes/Yes/No
300.1B: Surrogate recoveries were high in an MS and MSD of batch QC samples. Project data are not affected.	

6. Matrix Spike/Matrix Spike Duplicate	
Was a MS/MSD pair extracted and/or analyzed with each batch? Were recoveries/RPDs reported on data forms? Were recoveries/RPDs of project samples within laboratory established limits?	Yes/Yes/No
SM5310B: TOC recovery was low in the MSD of SWFTS-MW18-EM37.	

7. Laboratory Control Samples (LCS)	
Was a LCS analyzed with each analytical batch? Were LCS recoveries reported correctly on data forms? Were LCS recoveries within laboratory established limits?	Yes/Yes/Yes

8. Duplicates	
Were any duplicate pairs analyzed in this SDG? For results > 5x the RL/PQL, were RPDs between parent sample and duplicates ≤ lab limits or ≤ 30% (water)/50% (soil) for field duplicates? For REG/FD results < 5x the RL/PQL, were differences between the two values < RL/PQL.	Yes/Yes/N/A
Two FD pairs were analyzed: PC-88-EM37 and PC-88-EM37-FD; SWFTS-MW19-EM37 and SWFTS-MW19-EM37-FD. Results agreed.	

9. Compound Quantitation and Reporting Limits	
Were quantitation limits (RLs/PQL) adjusted to reflect dilutions, cleanup, and other factors? If applicable, were reporting limit check recoveries within acceptable limits?	Yes/Yes

10. Data Package/EDD comparison (10%)	
Were 10% of the data package results compared to the electronic data? Did results match?	Yes/Yes

Validated by: Maureen McMyler 03/28/3022

Data Verification and Validation Summary

Project Name: SWF Area Treatability Study
Task No.: M11
No. of Samples: 9
SDG/Report No.: 550-180516-1
Lab ID: Eurofins TestAmerica
Matrix: Water

Area Reviewed	Anomalies		Qualification Required	Action Required
	Yes	No	Yes or No	
1. Sample Preservation, Handling, and Transport	X		No	None
2. Chain-of-Custody		X	No	None
3. Holding Times		X	No	None
4. Blanks	X		Yes	SWFTS-MW02-EM37 and SWFTS-MW16-EM37: Qualify nitrate "J+".
5. Surrogates/Monitoring Compounds		X	No	None
6. Matrix Spike/Matrix Spike Duplicate	X		Yes	SWFTS-MW02-EM37: Qualify perchlorate "J-".
7. Laboratory Control Samples		X	No	None
8. Duplicates	---	---	---	---
9. Compound Quantitation and Reporting Limits		X	Yes	All: Qualify results detected between the MDL/SQL and RL/PQL "J".
10. Data Package/EDD comparison (10%)		X	No	None
Verification and Validation Label	Stage_2A_Validation_Manual			
Verification and Validation Label Code	S2AVM			

Overall Assessment: Acceptable as qualified.
Usability: Sample results qualified as estimated (J-, J, J+) are considered valid and useable for limited purposes. All other results are considered valid and useable for all purposes.

Data Verification and Validation Summary

Sample Information:

Field Sample Number	Lab Sample ID	Date Collected	Cooler Temperature
SWFTS-MW17-EM37	550-180516-1	3/9/2022	3.4 °C/3.7 °C/3.8 °C
SWFTS-MW16-EM37	550-180516-2	3/9/2022	3.4 °C/3.7 °C/3.8 °C
SWFTS-MW13-EM37	550-180516-3	3/9/2022	3.4 °C/3.7 °C/3.8 °C
SWFTS-EM37-EB2	550-180516-4	3/9/2022	3.4 °C/3.7 °C/3.8 °C
SWFTS-MW04-EM37	550-180516-5	3/9/2022	3.4 °C/3.7 °C/3.8 °C
SWFTS-MW03-EM37	550-180516-6	3/9/2022	3.4 °C/3.7 °C/3.8 °C
SWFTS-MW01-EM37	550-180516-7	3/9/2022	3.4 °C/3.7 °C/3.8 °C
SWFTS-EM37-FB1	550-180516-8	3/9/2022	3.4 °C/3.7 °C/3.8 °C
SWFTS-MW02-EM37	550-180516-9	3/9/2022	3.4 °C/3.7 °C/3.8 °C

The following section is intended to specify areas evaluated and issues encountered. Only applicable methods are listed.

1. Sample Preservation, Handling, and Transport	
Were all samples preserved correctly? Were sample temperatures kept at ≤ 6 °C? Were samples received in proper condition?	Yes/No/Yes
The case narrative states that one cooler at receipt was at 23.5 °C. 23.5 °C was the temperature at the local service center shortly after sampling. Temperature at receipt at the lab was ≤ 6 °C.	

2. Chain-of-Custody (COC)	
Were samples recorded on the COCs? Were correct analyses performed on the samples?	Yes/Yes

3. Holding Times	
Were samples analyzed within acceptable holding times?	Yes

4. Blanks	
Does data package include a summary of blank results? Was a method blank extracted and/or analyzed for each batch? Were analytes detected in any blanks?	Yes/Yes/Yes
300.0: Nitrate was detected in SWFTS-EM37-EB2 and SWFTS-EM37-FB1. Samples with concentrations <10x the amounts in the blanks will be qualified. Sulfate was detected in SWFTS-EM37-FB1. Concentrations in the associated samples were >10x the amount in the blank.	

5. Surrogates/Monitoring Compounds	
Were samples spiked with the correct surrogate compounds? Were surrogate recoveries reported correctly on data forms? Were recoveries within laboratory limits?	Yes/Yes/Yes

6. Matrix Spike/Matrix Spike Duplicate	
Was a MS/MSD pair extracted and/or analyzed with each batch? Were recoveries/RPDs reported on data forms? Were recoveries/RPDs of project samples within laboratory established limits?	Yes/Yes/No
314.0: Perchlorate recovery was low in the MSD of SWFTS-MW02-EM37.	

7. Laboratory Control Samples (LCS)	
Was a LCS analyzed with each analytical batch? Were LCS recoveries reported correctly on data forms? Were LCS recoveries within laboratory established limits?	Yes/Yes/Yes

8. Duplicates	
Were any duplicate pairs analyzed in this SDG? For results > 5x the RL/PQL, were RPDs between parent sample and duplicates ≤ lab limits or ≤ 30% (water)/50% (soil) for field duplicates? For REG/FD results < 5x the RL/PQL, were differences between the two values < RL/PQL.	No/N/A/N/A

9. Compound Quantitation and Reporting Limits	
Were quantitation limits (RLs/PQL) adjusted to reflect dilutions, cleanup, and other factors? If applicable, were reporting limit check recoveries within acceptable limits?	Yes/Yes

10. Data Package/EDD comparison (10%)	
Were 10% of the data package results compared to the electronic data? Did results match?	Yes/Yes

Validated by: Maureen McMyler 03/28/3022

Data Verification and Validation Summary

Project Name: SWF Area Treatability Study
Task No.: M11
No. of Samples: 17 with MS/MSD
SDG/Report No.: 550-186012-1
Lab ID: Eurofins Phoenix
Matrix: Water

Area Reviewed	Anomalies		Qualification Required	Action Required
	Yes	No	Yes or No	
1. Sample Preservation, Handling, and Transport	X		No	None
2. Chain-of-Custody		X	No	None
3. Holding Times		X	No	None
4. Blanks	X		Yes	Affected GW: Qualify TOC "J+".
5. Surrogates/Monitoring Compounds		X	No	None
6. Matrix Spike/Matrix Spike Duplicate	X		Yes	SWFTS-MW01-EM38: Qualify chlorate "J+".
7. Laboratory Control Samples		X	No	None
8. Duplicates		X	No	None
9. Compound Quantitation and Reporting Limits		X	Yes	All: Qualify results detected between the MDL/SQL and RL/PQL "J".
10. Data Package/EDD comparison (10%)		X	No	None
Verification and Validation Label	Stage_2A_Validation_Manual			
Verification and Validation Label Code	S2AVM			

Overall Assessment: Acceptable as qualified.
Usability: Sample results qualified as estimated (J, J+) are considered valid and useable for limited purposes. All other results are considered valid and useable for all purposes.

Data Verification and Validation Summary

Sample Information:

Field Sample Number	Lab Sample ID	Date Collected	Cooler Temperature
PC-58-EM38	550-186012-1	6/21/2022	0.3 ºC/1.3 ºC
SWFTS-EM38-EB1	550-186012-2	6/21/2022	0.3 ºC/1.3 ºC
SWFTS-EM38-FB1	550-186012-3	6/21/2022	0.3 ºC/1.3 ºC
PC-88-EM38	550-186012-4	6/21/2022	0.3 ºC/1.3 ºC
PC-88-EM38-FD	550-186012-5	6/21/2022	0.3 ºC/1.3 ºC
PC-91-EM38	550-186012-6	6/21/2022	0.3 ºC/1.3 ºC
PC-92-EM38	550-186012-7	6/21/2022	0.3 ºC/1.3 ºC
PC-94-EM38	550-186012-8	6/21/2022	0.3 ºC/1.3 ºC
SWFTS-MW01-EM38	550-186012-9	6/21/2022	0.3 ºC/1.3 ºC
SWFTS-MW01-EM38-MS	550-186012-9 MS	6/21/2022	0.3 ºC/1.3 ºC
SWFTS-MW01-EM38-MSD	550-186012-9 MSD	6/21/2022	0.3 ºC/1.3 ºC
SWFTS-MW25-EM38	550-186012-10	6/21/2022	0.3 ºC/1.3 ºC
SWFTS-MW23-EM38	550-186012-11	6/21/2022	0.3 ºC/1.3 ºC
SWFTS-MW24-EM38	550-186012-12	6/21/2022	0.3 ºC/1.3 ºC
SWFTS-MW21-EM38	550-186012-13	6/21/2022	0.3 ºC/1.3 ºC
SWFTS-MW22-EM38	550-186012-14	6/21/2022	0.3 ºC/1.3 ºC
SWFTS-MW20-EM38	550-186012-15	6/21/2022	0.3 ºC/1.3 ºC

The following section is intended to specify areas evaluated and issues encountered. Only applicable methods are listed.

1. Sample Preservation, Handling, and Transport	
Were all samples preserved correctly? Were sample temperatures kept at ≤ 6 ºC? Were samples received in proper condition?	Yes/No/Yes
The case narrative states that one cooler at receipt was at 26.6 ºC. 26.6 ºC was the temperature at pickup by the courier after sampling, but before shipping to the analytical lab. The samples were on ice. No qualification needed.	

2. Chain-of-Custody (COC)	
Were samples recorded on the COCs? Were correct analyses performed on the samples?	Yes/Yes

3. Holding Times	
Were samples analyzed within acceptable holding times?	Yes

4. Blanks	
Does data package include a summary of blank results? Was a method blank extracted and/or analyzed for each batch? Were analytes detected in any blanks?	Yes/Yes/Yes
SM5310B: TOC was detected in SWFTS-EM38-EB1 and SWFTS-EM38-FB1. GW results with TOC detections <10x the concentrations in the blanks will be qualified.	

5. Surrogates/Monitoring Compounds	
Were samples spiked with the correct surrogate compounds? Were surrogate recoveries reported correctly on data forms? Were recoveries within laboratory limits?	Yes/Yes/Yes

6. Matrix Spike/Matrix Spike Duplicate	
Was a MS/MSD pair extracted and/or analyzed with each batch? Were recoveries/RPDs reported on data forms? Were recoveries/RPDs of project samples within laboratory established limits?	Yes/Yes/No
300.1: Chlorate recovery was high in the MSD of SWFTS-MW01-EM38.	

7. Laboratory Control Samples (LCS)	
Was a LCS analyzed with each analytical batch? Were LCS recoveries reported correctly on data forms? Were LCS recoveries within laboratory established limits?	Yes/Yes/Yes

8. Duplicates	
Were any duplicate pairs analyzed in this SDG? For results > 5x the RL/PQL, were RPDs between parent sample and duplicates ≤ lab limits or ≤ 30% (water)/50% (soil) for field duplicates? For REG/FD results < 5x the RL/PQL, were differences between the two values < RL/PQL.	Yes/Yes/Yes
One FD pair was analyzed: PC-88-EM38 and PC-88-EM38-FD. Results agreed.	

9. Compound Quantitation and Reporting Limits	
Were quantitation limits (RLs/PQL) adjusted to reflect dilutions, cleanup, and other factors? If applicable, were reporting limit check recoveries within acceptable limits?	Yes/Yes

10. Data Package/EDD comparison (10%)	
Were 10% of the data package results compared to the electronic data? Did results match?	Yes/Yes

Validated by: Maureen McMyler 10/11/2022

Data Verification and Validation Summary

Project Name: SWF Area Treatability Study
Task No.: M11
No. of Samples: 16
SDG/Report No.: 550-186069-1
Lab ID: Eurofins Phoenix
Matrix: Water

Area Reviewed	Anomalies		Qualification Required	Action Required
	Yes	No	Yes or No	
1. Sample Preservation, Handling, and Transport	X		No	None
2. Chain-of-Custody		X	No	None
3. Holding Times		X	No	None
4. Blanks	X		Yes	All GW: Qualify TOC "J+".
5. Surrogates/Monitoring Compounds		X	No	None
6. Matrix Spike/Matrix Spike Duplicate		X	No	None
7. Laboratory Control Samples		X	No	None
8. Duplicates		X	No	None
9. Compound Quantitation and Reporting Limits		X	Yes	All: Qualify results detected between the MDL/SQL and RL/PQL "J".
10. Data Package/EDD comparison (10%)		X	No	None
Verification and Validation Label	Stage_2A_Validation_Manual			
Verification and Validation Label Code	S2AVM			

Overall Assessment: Acceptable as qualified.
Usability: Sample results qualified as estimated (J, J+) are considered valid and useable for limited purposes. All other results are considered valid and useable for all purposes.

Data Verification and Validation Summary

Sample Information:

Field Sample Number	Lab Sample ID	Date Collected	Cooler Temperature
SWFTS-MW19-EM38	550-186069-1	6/22/2022	3.5 °C/3.9 °C
SWFTS-MW19-EM38-FD	550-186069-2	6/22/2022	3.5 °C/3.9 °C
SWFTS-MW18-EM38	550-186069-3	6/22/2022	3.5 °C/3.9 °C
SWFTS-MW17-EM38	550-186069-4	6/22/2022	3.5 °C/3.9 °C
SWFTS-MW16-EM38	550-186069-5	6/22/2022	3.5 °C/3.9 °C
SWFTS-MW15-EM38	550-186069-6	6/22/2022	3.5 °C/3.9 °C
SWFTS-MW14-EM38	550-186069-7	6/22/2022	3.5 °C/3.9 °C
SWFTS-MW13-EM38	550-186069-8	6/22/2022	3.5 °C/3.9 °C
SWFTS-MW02-EM38	550-186069-9	6/22/2022	3.5 °C/3.9 °C
SWFTS-EM38-EB2	550-186069-10	6/22/2022	3.5 °C/3.9 °C
SWFTS-EM38-FB2	550-186069-11	6/22/2022	3.5 °C/3.9 °C
SWFTS-MW03-EM38	550-186069-12	6/22/2022	3.5 °C/3.9 °C
SWFTS-MW04-EM38	550-186069-13	6/22/2022	3.5 °C/3.9 °C
SWFTS-MW06A-EM38	550-186069-14	6/22/2022	3.5 °C/3.9 °C
SWFTS-MW06A-EM38-FD	550-186069-15	6/22/2022	3.5 °C/3.9 °C
SWFTS-MW06B-EM38	550-186069-16	6/22/2022	3.5 °C/3.9 °C

The following section is intended to specify areas evaluated and issues encountered. Only applicable methods are listed.

1. Sample Preservation, Handling, and Transport	
Were all samples preserved correctly? Were sample temperatures kept at ≤ 6 °C? Were samples received in proper condition?	Yes/No/Yes
The case narrative states that one cooler at receipt was at 19.9 °C. 19.9 °C was the temperature at the local service center shortly after sampling. Temperature at receipt at the lab was ≤ 6 °C.	

2. Chain-of-Custody (COC)	
Were samples recorded on the COCs? Were correct analyses performed on the samples?	Yes/Yes

3. Holding Times	
Were samples analyzed within acceptable holding times?	Yes

4. Blanks	
Does data package include a summary of blank results? Was a method blank extracted and/or analyzed for each batch? Were analytes detected in any blanks?	Yes/Yes/Yes
SM5310B: TOC was detected in SWFTS-EM38-EB2 and SWFTS-EM38-FB2. All GW results will be qualified.	

5. Surrogates/Monitoring Compounds	
Were samples spiked with the correct surrogate compounds? Were surrogate recoveries reported correctly on data forms? Were recoveries within laboratory limits?	Yes/Yes/Yes

6. Matrix Spike/Matrix Spike Duplicate	
Was a MS/MSD pair extracted and/or analyzed with each batch? Were recoveries/RPDs reported on data forms? Were recoveries/RPDs of project samples within laboratory established limits?	Yes/Yes/Yes

7. Laboratory Control Samples (LCS)	
Was a LCS analyzed with each analytical batch? Were LCS recoveries reported correctly on data forms? Were LCS recoveries within laboratory established limits?	Yes/Yes/Yes

8. Duplicates	
Were any duplicate pairs analyzed in this SDG? For results > 5x the RL/PQL, were RPDs between parent sample and duplicates ≤ lab limits or ≤ 30% (water)/50% (soil) for field duplicates? For REG/FD results < 5x the RL/PQL, were differences between the two values < RL/PQL.	Yes/Yes/Yes
Two FD pairs were analyzed: SWFTS-MW06A-EM38 and SWFTS-MW06A-EM38-FD; SWFTS-MW19-EM38 and SWFTS-MW19-EM38-FD. Results agreed.	

9. Compound Quantitation and Reporting Limits	
Were quantitation limits (RLs/PQL) adjusted to reflect dilutions, cleanup, and other factors? If applicable, were reporting limit check recoveries within acceptable limits?	Yes/Yes

10. Data Package/EDD comparison (10%)	
Were 10% of the data package results compared to the electronic data? Did results match?	Yes/Yes

Validated by: Maureen McMyler 07/15/2022

Data Verification and Validation Summary

Project Name: SWF Area Treatability Study
Task No.: M11
No. of Samples: 9 with MS/MSD
SDG/Report No.: 550-186171-1
Lab ID: Eurofins Phoenix
Matrix: Water

Area Reviewed	Anomalies		Qualification Required	Action Required
	Yes	No	Yes or No	
1. Sample Preservation, Handling, and Transport	X		No	None
2. Chain-of-Custody		X	No	None
3. Holding Times		X	No	None
4. Blanks		X	No	None
5. Surrogates/Monitoring Compounds		X	No	None
6. Matrix Spike/Matrix Spike Duplicate	X		Yes	SWFTS-MW10A-EM38, SWFTS-MW09B-EM38-FD, and SWFTS-MW09B-EM38: Qualify chlorate "J+".
7. Laboratory Control Samples		X	No	None
8. Duplicates		X	No	None
9. Compound Quantitation and Reporting Limits		X	No	None
10. Data Package/EDD comparison (10%)		X	No	None
Verification and Validation Label	Stage_2A_Validation_Manual			
Verification and Validation Label Code	S2AVM			

Overall Assessment: Acceptable as qualified.
Usability: Sample results qualified as estimated (J+) are considered valid and useable for limited purposes. All other results are considered valid and useable for all purposes.

Data Verification and Validation Summary

Sample Information:

Field Sample Number	Lab Sample ID	Date Collected	Cooler Temperature
SWFTS-MW12-EM38	550-186171-1	6/23/2022	3.0 °C/3.6 °C
SWFTS-MW10A-EM38	550-186171-2	6/23/2022	3.0 °C/3.6 °C
SWFTS-MW10A-EM38-MS	550-186171-2 MS	6/23/2022	3.0 °C/3.6 °C
SWFTS-MW10A-EM38-MSD	550-186171-2 MSD	6/23/2022	3.0 °C/3.6 °C
SWFTS-MW09A-EM38	550-186171-3	6/23/2022	3.0 °C/3.6 °C
SWFTS-MW09B-EM38	550-186171-4	6/23/2022	3.0 °C/3.6 °C
SWFTS-MW09B-EM38-FD	550-186171-5	6/23/2022	3.0 °C/3.6 °C
SWFTS-MW07A-EM38	550-186171-6	6/23/2022	3.0 °C/3.6 °C
SWFTS-MW07B-EM38	550-186171-7	6/23/2022	3.0 °C/3.6 °C

The following section is intended to specify areas evaluated and issues encountered. Only applicable methods are listed.

1. Sample Preservation, Handling, and Transport	
Were all samples preserved correctly? Were sample temperatures kept at ≤ 6 °C? Were samples received in proper condition?	Yes/No/Yes
The case narrative states that one cooler at receipt was at 27.2 °C. 27.2 °C was the temperature at the local service center shortly after sampling. Temperature at receipt at the lab was ≤ 6 °C.	

2. Chain-of-Custody (COC)	
Were samples recorded on the COCs? Were correct analyses performed on the samples?	Yes/Yes

3. Holding Times	
Were samples analyzed within acceptable holding times?	Yes

4. Blanks	
Does data package include a summary of blank results? Was a method blank extracted and/or analyzed for each batch? Were analytes detected in any blanks?	Yes/Yes/No

5. Surrogates/Monitoring Compounds	
Were samples spiked with the correct surrogate compounds? Were surrogate recoveries reported correctly on data forms? Were recoveries within laboratory limits?	Yes/Yes/Yes

6. Matrix Spike/Matrix Spike Duplicate	
Was a MS/MSD pair extracted and/or analyzed with each batch? Were recoveries/RPDs reported on data forms? Were recoveries/RPDs of project samples within laboratory established limits?	Yes/Yes/No
300.1B: Chlorate recoveries were high in the MSD of SWFTS-MW10A-EM38 and the MS/MSD of SWFTS-MW09B-EM38-FD. The parent sample of SWFTS-MW09B-EM38-FD will be qualified.	

7. Laboratory Control Samples (LCS)	
Was a LCS analyzed with each analytical batch? Were LCS recoveries reported correctly on data forms? Were LCS recoveries within laboratory established limits?	Yes/Yes/Yes

8. Duplicates	
Were any duplicate pairs analyzed in this SDG? For results > 5x the RL/PQL, were RPDs between parent sample and duplicates ≤ lab limits or ≤ 30% (water)/50% (soil) for field duplicates? For REG/FD results < 5x the RL/PQL, were differences between the two values < RL/PQL.	Yes/Yes/Yes
One FD pair was analyzed: SWFTS-MW09B-EM38 and SWFTS-MW09B-EM38-FD. Results agreed.	

9. Compound Quantitation and Reporting Limits	
Were quantitation limits (RLs/PQL) adjusted to reflect dilutions, cleanup, and other factors? If applicable, were reporting limit check recoveries within acceptable limits?	Yes/Yes

10. Data Package/EDD comparison (10%)	
Were 10% of the data package results compared to the electronic data? Did results match?	Yes/Yes

Validated by: Maureen McMyler 07/15/2022

Data Verification and Validation Summary

Project Name:	SWF Area Treatability Study	SDG/Report No.:	550-188805-1
Task No.:	M11	Lab ID:	Eurofins Phoenix
No. of Samples:	32	Matrix:	Soil

Area Reviewed	Anomalies		Qualification Required	Action Required
	Yes	No	Yes or No	
1. Sample Preservation, Handling, and Transport	X		No	None
2. Chain-of-Custody		X	No	None
3. Holding Times		X	No	None
4. Instrument Performance	---	---	---	---
5. Initial Calibration		X	No	None
6. Continuing Calibration Verification	X		Yes	Affected samples: Qualify TOC J" or "UJ".
7. Blanks	X		Yes	Affected samples: Qualify detections of TOC "J" or "J+".
8. Surrogates/Monitoring Compounds	---	---	---	---
9. Matrix Spike/Matrix Spike Duplicate	X		No	None
10. Serial Dilution		X	No	None
11. Laboratory Control Samples		X	No	None
12. Interference Check Samples		X	No	None
13. Internal Standards		X	No	None
14. Duplicates	X		Yes	BH13-41 and BH13-41-FD: Qualify TOC "J".
15. Compound Quantitation and Reporting Limits		X	Yes	Qualify all results detected between the MDL and RL "J".
16. Data Package/EDD comparison (10%)		X	No	None

Verification and Validation Label	Stage_2B_Validation_Manual
Verification and Validation Label Code	S2BVM

Overall Assessment: Results are acceptable as qualified.
Usability: Qualified sample results (UJ, J, J+) are considered useable for limited purposes. Other sample results are considered valid and useable for all purposes.

Sample Information:

Field Sample Number	Lab Sample ID	Date Collected	Cooler Temperature(s)
BH11-15	550-188805-1	8/10/2022	0.9 °C/2.4 °C/2.1 °C/3.1 °C
BH11-20	550-188805-2	8/10/2022	0.9 °C/2.4 °C/2.1 °C/3.1 °C
BH11-30	550-188805-3	8/10/2022	0.9 °C/2.4 °C/2.1 °C/3.1 °C
BH11-40	550-188805-4	8/10/2022	0.9 °C/2.4 °C/2.1 °C/3.1 °C
BH11-45	550-188805-5	8/10/2022	0.9 °C/2.4 °C/2.1 °C/3.1 °C
BH13-11	550-188805-6	8/11/2022	0.9 °C/2.4 °C/2.1 °C/3.1 °C
BH13-22	550-188805-7	8/11/2022	0.9 °C/2.4 °C/2.1 °C/3.1 °C
BH13-32.6	550-188805-8	8/11/2022	0.9 °C/2.4 °C/2.1 °C/3.1 °C
BH13-39	550-188805-9	8/11/2022	0.9 °C/2.4 °C/2.1 °C/3.1 °C
BH13-41	550-188805-10	8/11/2022	0.9 °C/2.4 °C/2.1 °C/3.1 °C
BH13-41-FD	550-188805-11	8/11/2022	0.9 °C/2.4 °C/2.1 °C/3.1 °C
BH15-18.5	550-188805-12	8/11/2022	0.9 °C/2.4 °C/2.1 °C/3.1 °C
BH15-21	550-188805-13	8/11/2022	0.9 °C/2.4 °C/2.1 °C/3.1 °C
BH15-34.5	550-188805-14	8/11/2022	0.9 °C/2.4 °C/2.1 °C/3.1 °C
BH15-37.5	550-188805-15	8/11/2022	0.9 °C/2.4 °C/2.1 °C/3.1 °C
BH15-41	550-188805-16	8/11/2022	0.9 °C/2.4 °C/2.1 °C/3.1 °C
BH16-17.3	550-188805-17	8/11/2022	0.9 °C/2.4 °C/2.1 °C/3.1 °C
BH16-21.5	550-188805-18	8/11/2022	0.9 °C/2.4 °C/2.1 °C/3.1 °C
BH16-21.5-FD	550-188805-19	8/11/2022	0.9 °C/2.4 °C/2.1 °C/3.1 °C
BH16-26.5	550-188805-20	8/11/2022	0.9 °C/2.4 °C/2.1 °C/3.1 °C
BH16-31	550-188805-21	8/11/2022	0.9 °C/2.4 °C/2.1 °C/3.1 °C
BH16-42.3	550-188805-22	8/11/2022	0.9 °C/2.4 °C/2.1 °C/3.1 °C
BH18-13	550-188805-23	8/11/2022	0.9 °C/2.4 °C/2.1 °C/3.1 °C
BH18-20	550-188805-24	8/11/2022	0.9 °C/2.4 °C/2.1 °C/3.1 °C
BH18-23	550-188805-25	8/11/2022	0.9 °C/2.4 °C/2.1 °C/3.1 °C
BH18-27.5	550-188805-26	8/11/2022	0.9 °C/2.4 °C/2.1 °C/3.1 °C
BH18-34.5	550-188805-27	8/11/2022	0.9 °C/2.4 °C/2.1 °C/3.1 °C
BH12-11	550-188805-28	8/12/2022	0.9 °C/2.4 °C/2.1 °C/3.1 °C
BH12-16	550-188805-29	8/12/2022	0.9 °C/2.4 °C/2.1 °C/3.1 °C
BH12-21	550-188805-30	8/12/2022	0.9 °C/2.4 °C/2.1 °C/3.1 °C
BH12-27	550-188805-31	8/12/2022	0.9 °C/2.4 °C/2.1 °C/3.1 °C
BH12-36	550-188805-32	8/12/2022	0.9 °C/2.4 °C/2.1 °C/3.1 °C

Data Verification and Validation Summary

The following section is intended to specify areas evaluated and issues encountered. Only applicable methods are listed.

1. Sample Preservation, Handling, and Transport	
Were all samples preserved correctly? Were sample temperatures ≤ 6 ºC? Were samples received in proper condition?	Yes/No/Yes
The temperature of the cooler at receipt in Las Vegas was 21.4 ºC. This was the temperature at pickup by the courier after sampling, but before shipping to the analytical lab. The samples were on ice. No qualification is needed.	

2. Chain-of-Custody (COC)	
Were samples recorded on the COCs? Were correct analyses performed on the samples?	Yes/Yes

3. Holding Times	
Were samples analyzed within acceptable holding times?	Yes

4. Instrument Performance	
Was BFB analyzed before and within 12 hours of sample analysis? Were mass assignments correct and normalized to m/z 95? Were ion abundance criteria met?	N/A

5. Initial Calibration (ICAL)	
Were the correct number of standards analyzed to establish the calibration curve for each analyte? Were Percent Relative Standard Deviations (%RSDs) of the Response Factors (RFs) ≤ method or national functional guideline (NFG) requirements or Coefficient of Correlation or Coefficient of Determination ≥ method or NFG requirements? Were Relative Response Factors (RRFs) and average RRFs ≥ method or NFG requirements?	Yes/Yes/N/A

6. Continuing Calibration Verification (CCV)	
Were CCVs analyzed at the beginning and end of sample analysis, if applicable? Were calibrations compared to the correct initial calibrations? Were Percent Differences (%D) ≤ method or NFG requirements? Did RRFs and average RRFs meet method or NFG requirements?	No/Yes/Yes/N/A
9060A: The TOC analytical batch ran from 8/18/22 to 8/22/22. A CCV was **reported** for every 10 samples; however, it wasn't always analyzed immediately after the 10th sample or even on the same day. Technically, the requirement was met, but the opening and closing CCVs did not reflect the operating conditions during sample analysis.	

7. Blanks	
Does data package include a summary of blank results? Was a method blank extracted and/or analyzed for each batch? Were calibration blanks analyzed at appropriate intervals? Were analytes detected in any blanks?	Yes/Yes/No/Yes
6010B: Calcium was detected in MB 550-281555/1-A and MB 550-281556/1-A. The concentrations in the associated samples were > 10x the amounts in the blanks. No qualification.	
9060A: TOC was detected in MB 280-584714/5 (1.73 g/kg). It was also detected in the ICB and 2 CCBs. Where detected, the concentrations in the associated samples were <10x the amounts in the blank. All detections were qualified. The lab did not analyze 1 blank per 20 samples as required by their SOP. A CCB was **reported** for every 10 samples; however, it wasn't always analyzed immediately after samples or even on the same day. Technically, the requirement was met.	

8. Surrogates/Monitoring Compounds	
Were samples spiked with the correct surrogate compounds? Were surrogate recoveries reported on data forms? Were recoveries within laboratory limits?	N/A

9. Matrix Spike/Matrix Spike Duplicate/MSI	
Was a MS/MSD pair or MSI extracted and/or analyzed with each batch? Were recoveries/RPDs reported on data forms? Were recoveries/RPDs within laboratory established limits?	Yes/Yes/No
6010B: Calcium recoveries were outside limits in the MS/MSDs of BH11-15 and BH16-42.3. The concentrations in the parent samples were >4x the amount spiked. Recovery criteria do not apply. No qualification.	
9060A: TOC RPD was high between the MS/MSD of BH16-21.5-FD. TOC was not detected in the sample, so RPD criteria do not apply.	
VFA-IC: Pyruvic acid recovery was high in the MS/MSD of BH12-36. It was not detected in the sample, so there can be no high bias.	

10. Serial Dilution	
Were serial dilutions analyzed at appropriate intervals? For results > 50x the MDL, were %Ds within acceptable limits of the true value?	N/A
6010B: Serial dilutions are only required when the MS/MSD fails.	

11. Laboratory Control Samples (LCS)	
Was a LCS analyzed with each analytical batch? Were LCS recoveries reported correctly on data forms? Were LCS recoveries within laboratory established limits?	Yes/Yes/Yes

12. Interference Check Sample (ICS)	
Were interference check samples (ICS) analyzed at appropriate intervals? Were ICS recoveries within acceptable limits of the true value? Were ICSA samples non-detect for analytes not in the solution?	Yes/Yes/Yes

13. Internal Standards (IS)	
Were ISs added to each sample in the run including calibrations, samples, and QC samples? Were area counts of the ISs for all samples within the acceptance range of its response in the CCV? Was the Retention Time of the IS within ±30 seconds from the RT of the IS in the associated CCV or mid-point standard from ICAL?	Yes/Yes/N/A

14. Duplicates	
Were any duplicate pairs analyzed in this SDG? For results > 5x the RL, were RPDs between parent sample and duplicates ≤ lab limits or ≤ 30% (water) or 50% (soil) for field duplicates? For REG/FD results < 5x the RL, were differences between the two values < RL.	Yes/Yes/No
Two FD pairs were analyzed: SWFTS-BH13-41 and SWFTS-BH13-41-FD; SWFTS-BH16-21.5 and SWFTS-BH16-21.5-FD.	

15. Compound Quantitation and Reporting Limits	
Were quantitation limits (RLs) adjusted to reflect dilutions, cleanup, and other factors? If applicable, were reporting limit check recoveries within acceptable limits?	Yes/Yes

16. Data Package/EDD comparison (10%)	
Were 10% of the data package results compared to the electronic data? Did results match?	Yes/Yes

Validated by: Maureen McMyler 10/13/2022

Data Verification and Validation Summary

Project Name:	SWF Area Treatability Study	SDG/Report No.:	550-189011-1
Task No.:	M11	Lab ID:	Eurofins Phoenix
No. of Samples:	27	Matrix:	Soil

Area Reviewed	Anomalies		Qualification Required	Action Required
	Yes	No	Yes or No	
1. Sample Preservation, Handling, and Transport	X		No	None
2. Chain-of-Custody	X		No	None
3. Holding Times		X	No	None
4. Instrument Performance	---	---	---	---
5. Initial Calibration		X	No	None
6. Continuing Calibration Verification		X	No	None
7. Blanks	X		Yes	SWFTS-BH19-SO-11: Qualify lactic acid "J".
8. Surrogates/Monitoring Compounds	---	---	---	---
9. Matrix Spike/Matrix Spike Duplicate/MSI	X		No	None
10. Serial Dilution		X	No	None
11. Laboratory Control Samples		X	No	None
12. Interference Check Samples		X	No	None
13. Internal Standards		X	No	None
14. Duplicates		X	No	None
15. Compound Quantitation and Reporting Limits		X	Yes	Qualify all results detected between the MDL and RL "J".
16. Data Package/EDD comparison (10%)		X	No	None

Verification and Validation Label	Stage_2B_Validation_Manual
Verification and Validation Label Code	S2BVM

Overall Assessment: Results are acceptable as qualified.
Usability: Qualified sample results (J) are considered useable for limited purposes. Other sample results are considered valid and useable for all purposes.

Data Verification and Validation Summary

Sample Information:

Field Sample Number	Lab Sample ID	Date Collected	Cooler Temperature(s)
SWFTS-BH14-SO-12.8	550-189011-1	8/15/2022	2.1 ºC/3.6 ºC/3.6 ºC/3.9 ºC/4.2 ºC/5.6 ºC/2.6 ºC
SWFTS-BH14-SO-15.5	550-189011-2	8/15/2022	2.1 ºC/3.6 ºC/3.6 ºC/3.9 ºC/4.2 ºC/5.6 ºC/2.6 ºC
SWFTS-BH14-SO-18	550-189011-3	8/15/2022	2.1 ºC/3.6 ºC/3.6 ºC/3.9 ºC/4.2 ºC/5.6 ºC/2.6 ºC
SWFTS-BH14-SO-25.3	550-189011-4	8/15/2022	2.1 ºC/3.6 ºC/3.6 ºC/3.9 ºC/4.2 ºC/5.6 ºC/2.6 ºC
SWFTS-BH14-SO-29	550-189011-5	8/15/2022	2.1 ºC/3.6 ºC/3.6 ºC/3.9 ºC/4.2 ºC/5.6 ºC/2.6 ºC
SWFTS-BH19-SO-11	550-189011-6	8/15/2022	2.1 ºC/3.6 ºC/3.6 ºC/3.9 ºC/4.2 ºC/5.6 ºC/2.6 ºC
SWFTS-BH19-SO-15.5	550-189011-7	8/15/2022	2.1 ºC/3.6 ºC/3.6 ºC/3.9 ºC/4.2 ºC/5.6 ºC/2.6 ºC
SWFTS-BH19-SO-20.5	550-189011-8	8/15/2022	2.1 ºC/3.6 ºC/3.6 ºC/3.9 ºC/4.2 ºC/5.6 ºC/2.6 ºC
SWFTS-BH19-SO-25	550-189011-9	8/15/2022	2.1 ºC/3.6 ºC/3.6 ºC/3.9 ºC/4.2 ºC/5.6 ºC/2.6 ºC
SWFTS-BH19-SO-28	550-189011-10	8/15/2022	2.1 ºC/3.6 ºC/3.6 ºC/3.9 ºC/4.2 ºC/5.6 ºC/2.6 ºC
SWFTS-BH24-SO-19	550-189011-11	8/15/2022	2.1 ºC/3.6 ºC/3.6 ºC/3.9 ºC/4.2 ºC/5.6 ºC/2.6 ºC
SWFTS-BH24-SO-24.5	550-189011-12	8/15/2022	2.1 ºC/3.6 ºC/3.6 ºC/3.9 ºC/4.2 ºC/5.6 ºC/2.6 ºC
SWFTS-BH24-SO-27	550-189011-13	8/15/2022	2.1 ºC/3.6 ºC/3.6 ºC/3.9 ºC/4.2 ºC/5.6 ºC/2.6 ºC
SWFTS-BH24-SO-29.3	550-189011-14	8/15/2022	2.1 ºC/3.6 ºC/3.6 ºC/3.9 ºC/4.2 ºC/5.6 ºC/2.6 ºC
SWFTS-BH24-SO-44.5	550-189011-15	8/15/2022	2.1 ºC/3.6 ºC/3.6 ºC/3.9 ºC/4.2 ºC/5.6 ºC/2.6 ºC
SWFTS-BH24-SO-44.5-FD	550-189011-16	8/15/2022	2.1 ºC/3.6 ºC/3.6 ºC/3.9 ºC/4.2 ºC/5.6 ºC/2.6 ºC
SWFTS-BH23-SO-20.2	550-189011-17	8/15/2022	2.1 ºC/3.6 ºC/3.6 ºC/3.9 ºC/4.2 ºC/5.6 ºC/2.6 ºC
SWFTS-BH23-SO-24	550-189011-18	8/15/2022	2.1 ºC/3.6 ºC/3.6 ºC/3.9 ºC/4.2 ºC/5.6 ºC/2.6 ºC
SWFTS-BH23-SO-27	550-189011-19	8/15/2022	2.1 ºC/3.6 ºC/3.6 ºC/3.9 ºC/4.2 ºC/5.6 ºC/2.6 ºC
SWFTS-BH23-SO-31.3	550-189011-20	8/15/2022	2.1 ºC/3.6 ºC/3.6 ºC/3.9 ºC/4.2 ºC/5.6 ºC/2.6 ºC
SWFTS-BH23-SO-31.3-FD	550-189011-21	8/15/2022	2.1 ºC/3.6 ºC/3.6 ºC/3.9 ºC/4.2 ºC/5.6 ºC/2.6 ºC
SWFTS-BH23-SO-36.7	550-189011-22	8/15/2022	2.1 ºC/3.6 ºC/3.6 ºC/3.9 ºC/4.2 ºC/5.6 ºC/2.6 ºC
SWFTS-BH25-SO-17	550-189011-23	8/15/2022	2.1 ºC/3.6 ºC/3.6 ºC/3.9 ºC/4.2 ºC/5.6 ºC/2.6 ºC
SWFTS-BH25-SO-19.8	550-189011-24	8/15/2022	2.1 ºC/3.6 ºC/3.6 ºC/3.9 ºC/4.2 ºC/5.6 ºC/2.6 ºC
SWFTS-BH25-SO-26.5	550-189011-25	8/15/2022	2.1 ºC/3.6 ºC/3.6 ºC/3.9 ºC/4.2 ºC/5.6 ºC/2.6 ºC
SWFTS-BH25-SO-29.2	550-189011-26	8/15/2022	2.1 ºC/3.6 ºC/3.6 ºC/3.9 ºC/4.2 ºC/5.6 ºC/2.6 ºC
SWFTS-BH25-SO-34.8	550-189011-27	8/15/2022	2.1 ºC/3.6 ºC/3.6 ºC/3.9 ºC/4.2 ºC/5.6 ºC/2.6 ºC

Data Verification and Validation Summary

The following section is intended to specify areas evaluated and issues encountered. Only applicable methods are listed.

1. Sample Preservation, Handling, and Transport	
Were all samples preserved correctly? Were sample temperatures ≤ 6 ºC? Were samples received in proper condition?	Yes/No/Yes
The temperature of the cooler at receipt in Las Vegas was 24.7 ºC. This was the temperature at pickup by the courier after sampling, but before shipping to the analytical lab. The samples were on ice. No qualification is needed.	

2. Chain-of-Custody (COC)	
Were samples recorded on the COCs? Were correct analyses performed on the samples?	Yes/Yes
Sample information on the COC and sample jars did not match. The client provided the correct information to the lab.	

3. Holding Times	
Were samples analyzed within acceptable holding times?	Yes

4. Instrument Performance	
Was BFB analyzed before and within 12 hours of sample analysis? Were mass assignments correct and normalized to m/z 95? Were ion abundance criteria met?	N/A

5. Initial Calibration (ICAL)	
Were the correct number of standards analyzed to establish the calibration curve for each analyte? Were Percent Relative Standard Deviations (%RSDs) of the Response Factors (RFs) ≤ method or national functional guideline (NFG) requirements or Coefficient of Correlation or Coefficient of Determination ≥ method or NFG requirements? Were Relative Response Factors (RRFs) and average RRFs ≥ method or NFG requirements?	Yes/Yes/N/A

6. Continuing Calibration Verification (CCV)	
Were CCVs analyzed at the beginning and end of sample analysis, if applicable? Were calibrations compared to the correct initial calibrations? Were Percent Differences (%D) ≤ method or NFG requirements? Did RRFs and average RRFs meet method or NFG requirements?	Yes/Yes/Yes/N/A

7. Blanks	
Does data package include a summary of blank results? Was a method blank extracted and/or analyzed for each batch? Were calibration blanks analyzed at appropriate intervals? Were analytes detected in any blanks?	Yes/Yes/No/Yes
6010B: Calcium was detected in MB 550-281980/1-A, MB 550-281981/1-A, SWFTS-BH-EB3-20220815, SWFTS-BH-EB4-20220816, and several CCBs. The concentrations in the associated samples were > 10x the amounts in the blanks. No qualification.	
9060A: TOC was detected SWFTS-BH-EB3-20220815 and SWFTS-BH-EB4-20220816. The concentrations in the associated samples were > 10x the amounts in the EBs. No qualification.	
VFA-IC: Lactic acid was detected in SWFTS-BH-EB3-20220815 and one other sample. It was qualified.	

8. Surrogates/Monitoring Compounds	
Were samples spiked with the correct surrogate compounds? Were surrogate recoveries reported on data forms? Were recoveries within laboratory limits?	N/A

9. Matrix Spike/Matrix Spike Duplicate	
Was a MS/MSD pair or MSI extracted and/or analyzed with each batch? Were recoveries/RPDs reported on data forms? Were recoveries/RPDs within laboratory established limits?	Yes/Yes/No
6010B: Calcium recoveries were outside limits in the MS/MSD of SWFTS-BH23-SO-27. The concentration in the parent sample was >4x the amount spiked. Recovery criteria do not apply. No qualification.	
9060A: TOC RPD was high between the MS/MSD of SWFTS-BH23-SO-31.3. TOC was not detected in the sample, so RPD criteria do not apply.	

10. Serial Dilution	
Were serial dilutions analyzed at appropriate intervals? For results > 50x the MDL, were %Ds within acceptable limits of the true value?	N/A

11. Laboratory Control Samples (LCS)	
Was a LCS analyzed with each analytical batch? Were LCS recoveries reported correctly on data forms? Were LCS recoveries within laboratory established limits?	Yes/Yes/Yes

12. Interference Check Sample (ICS)	
Were interference check samples (ICS) analyzed at appropriate intervals? Were ICS recoveries within acceptable limits of the true value? Were ICSA samples non-detect for analytes not in the solution?	Yes/Yes/Yes

13. Internal Standards (IS)	
Were ISs added to each sample in the run including calibrations, samples, and QC samples? Were area counts of the ISs for all samples within the acceptance range of its response in the CCV? Was the Retention Time of the IS within ±30 seconds from the RT of the IS in the associated CCV or mid-point standard from ICAL?	Yes/Yes/N/A

14. Duplicates	
Were any duplicate pairs analyzed in this SDG? For results > 5x the RL, were RPDs between parent sample and duplicates ≤ lab limits or ≤ 30% (water) or 50% (soil) for field duplicates? For REG/FD results < 5x the RL, were differences between the two values < RL.	Yes/Yes/Yes
Two FD pairs were analyzed: SWFTS-BH24-SO-44.5 and SWFTS-BH24-SO-44.5-FD; SWFTS-BH23-SO-31.3 and SWFTS-BH23-SO-31.3-FD.	

15. Compound Quantitation and Reporting Limits	
Were quantitation limits (RLs) adjusted to reflect dilutions, cleanup, and other factors? If applicable, were reporting limit check recoveries within acceptable limits?	Yes/Yes

16. Data Package/EDD comparison (10%)	
Were 10% of the data package results compared to the electronic data? Did results match?	Yes/Yes

Validated by: Maureen McMyler 10/13/2022

Data Verification and Validation Summary

Project Name:	SWF Area Treatability Study	SDG/Report No.:	550-189012-1
Task No.:	M11	Lab ID:	Eurofins Phoenix
No. of Samples:	28	Matrix:	Soil

Area Reviewed	Anomalies		Qualification Required	Action Required
	Yes	No	Yes or No	
1. Sample Preservation, Handling, and Transport	X		No	None
2. Chain-of-Custody	X		No	None
3. Holding Times		X	No	None
4. Instrument Performance	---	---	---	---
5. Initial Calibration		X	No	None
6. Continuing Calibration Verification		X	No	None
7. Blanks	X		Yes	SWFTS-BH27-SO-28, SWFTS-BH27-SO-23, and SWFTS-BH27-SO-36.2: Qualify TOC "J".
8. Surrogates/Monitoring Compounds	---	---	---	---
9. Matrix Spike/Matrix Spike Duplicate/MSI	X		Yes	SWFTS-BH29-SO-24.5: Qualify acetic acid, butyric acid, formic acid, and lactic acid "UJ". SWFTS-BH28-SO-21: Qualify butyric acid, formic acid, and lactic acid "UJ".
10. Serial Dilution		X	No	None
11. Laboratory Control Samples		X	No	None
12. Interference Check Samples		X	No	None
13. Internal Standards		X	No	None
14. Duplicates	X		Yes	SWFTS-BH28-SO-17.3 and SWFTS-BH28-SO-17.3-FD: Qualify calcium "J".
15. Compound Quantitation and Reporting Limits		X	Yes	Qualify all results detected between the MDL and RL "J".
16. Data Package/EDD comparison (10%)		X	No	None

Verification and Validation Label	Stage_2B_Validation_Manual
Verification and Validation Label Code	S2BVM

Overall Assessment: Results are acceptable as qualified.
Usability: Qualified sample results (UJ, J) are considered useable for limited purposes. Other sample results are considered valid and useable for all purposes.

Sample Information:

Field Sample Number	Lab Sample ID	Date Collected	Cooler Temperature(s)
SWFTS-BH27-SO-11.8	550-189012-1	8/16/2022	2.1 ºC/3.6 ºC/3.6 ºC/3.9 ºC/4.2 ºC/5.6 ºC/1.4 ºC /2.9 ºC
SWFTS-BH27-SO-16.5	550-189012-2	8/16/2022	2.1 ºC/3.6 ºC/3.6 ºC/3.9 ºC/4.2 ºC/5.6 ºC/1.4 ºC /2.9 ºC
SWFTS-BH27-SO-16.5-FD	550-189012-3	8/16/2022	2.1 ºC/3.6 ºC/3.6 ºC/3.9 ºC/4.2 ºC/5.6 ºC/1.4 ºC /2.9 ºC
SWFTS-BH27-SO-23	550-189012-4	8/16/2022	2.1 ºC/3.6 ºC/3.6 ºC/3.9 ºC/4.2 ºC/5.6 ºC/1.4 ºC /2.9 ºC
SWFTS-BH27-SO-28	550-189012-5	8/16/2022	2.1 ºC/3.6 ºC/3.6 ºC/3.9 ºC/4.2 ºC/5.6 ºC/1.4 ºC /2.9 ºC
SWFTS-BH27-SO-36.2	550-189012-6	8/16/2022	2.1 ºC/3.6 ºC/3.6 ºC/3.9 ºC/4.2 ºC/5.6 ºC/1.4 ºC /2.9 ºC
SWFTS-BH26-SO-16.3	550-189012-7	8/16/2022	2.1 ºC/3.6 ºC/3.6 ºC/3.9 ºC/4.2 ºC/5.6 ºC/1.4 ºC /2.9 ºC
SWFTS-BH26-SO-18.5	550-189012-8	8/16/2022	2.1 ºC/3.6 ºC/3.6 ºC/3.9 ºC/4.2 ºC/5.6 ºC/1.4 ºC /2.9 ºC
SWFTS-BH26-SO-22.3	550-189012-9	8/16/2022	2.1 ºC/3.6 ºC/3.6 ºC/3.9 ºC/4.2 ºC/5.6 ºC/1.4 ºC /2.9 ºC
SWFTS-BH26-SO-31	550-189012-10	8/16/2022	2.1 ºC/3.6 ºC/3.6 ºC/3.9 ºC/4.2 ºC/5.6 ºC/1.4 ºC /2.9 ºC
SWFTS-BH26-SO-48.5	550-189012-11	8/16/2022	2.1 ºC/3.6 ºC/3.6 ºC/3.9 ºC/4.2 ºC/5.6 ºC/1.4 ºC /2.9 ºC
SWFTS-BH30-SO-18	550-189012-12	8/16/2022	2.1 ºC/3.6 ºC/3.6 ºC/3.9 ºC/4.2 ºC/5.6 ºC/1.4 ºC /2.9 ºC
SWFTS-BH30-SO-22.8	550-189012-13	8/16/2022	2.1 ºC/3.6 ºC/3.6 ºC/3.9 ºC/4.2 ºC/5.6 ºC/1.4 ºC /2.9 ºC
SWFTS-BH30-SO-24	550-189012-14	8/16/2022	2.1 ºC/3.6 ºC/3.6 ºC/3.9 ºC/4.2 ºC/5.6 ºC/1.4 ºC /2.9 ºC
SWFTS-BH30-SO-29	550-189012-15	8/16/2022	2.1 ºC/3.6 ºC/3.6 ºC/3.9 ºC/4.2 ºC/5.6 ºC/1.4 ºC /2.9 ºC
SWFTS-BH30-SO-37	550-189012-16	8/16/2022	2.1 ºC/3.6 ºC/3.6 ºC/3.9 ºC/4.2 ºC/5.6 ºC/1.4 ºC /2.9 ºC
SWFTS-BH29-SO-24.5	550-189012-17	8/16/2022	2.1 ºC/3.6 ºC/3.6 ºC/3.9 ºC/4.2 ºC/5.6 ºC/1.4 ºC /2.9 ºC
SWFTS-BH29-SO-28	550-189012-18	8/16/2022	2.1 ºC/3.6 ºC/3.6 ºC/3.9 ºC/4.2 ºC/5.6 ºC/1.4 ºC /2.9 ºC
SWFTS-BH29-SO-36.5	550-189012-19	8/16/2022	2.1 ºC/3.6 ºC/3.6 ºC/3.9 ºC/4.2 ºC/5.6 ºC/1.4 ºC /2.9 ºC
SWFTS-BH29-SO-40	550-189012-20	8/16/2022	2.1 ºC/3.6 ºC/3.6 ºC/3.9 ºC/4.2 ºC/5.6 ºC/1.4 ºC /2.9 ºC
SWFTS-BH29-SO-43.5	550-189012-21	8/16/2022	2.1 ºC/3.6 ºC/3.6 ºC/3.9 ºC/4.2 ºC/5.6 ºC/1.4 ºC /2.9 ºC
SWFTS-BH28-SO-17.3	550-189012-22	8/16/2022	2.1 ºC/3.6 ºC/3.6 ºC/3.9 ºC/4.2 ºC/5.6 ºC/1.4 ºC /2.9 ºC
SWFTS-BH28-SO-17.3-FD	550-189012-23	8/16/2022	2.1 ºC/3.6 ºC/3.6 ºC/3.9 ºC/4.2 ºC/5.6 ºC/1.4 ºC /2.9 ºC
SWFTS-BH28-SO-21	550-189012-24	8/16/2022	2.1 ºC/3.6 ºC/3.6 ºC/3.9 ºC/4.2 ºC/5.6 ºC/1.4 ºC /2.9 ºC
SWFTS-BH28-SO-26	550-189012-25	8/16/2022	2.1 ºC/3.6 ºC/3.6 ºC/3.9 ºC/4.2 ºC/5.6 ºC/1.4 ºC /2.9 ºC
SWFTS-BH28-SO-32.5	550-189012-26	8/16/2022	2.1 ºC/3.6 ºC/3.6 ºC/3.9 ºC/4.2 ºC/5.6 ºC/1.4 ºC /2.9 ºC
SWFTS-BH28-SO-41	550-189012-27	8/16/2022	2.1 ºC/3.6 ºC/3.6 ºC/3.9 ºC/4.2 ºC/5.6 ºC/1.4 ºC /2.9 ºC
SWFTS-BH30-SO-37-FD	550-189012-28	8/16/2022	2.1 ºC/3.6 ºC/3.6 ºC/3.9 ºC/4.2 ºC/5.6 ºC/1.4 ºC /2.9 ºC

Data Verification and Validation Summary

The following section is intended to specify areas evaluated and issues encountered. Only applicable methods are listed.

1. Sample Preservation, Handling, and Transport	
Were all samples preserved correctly? Were sample temperatures ≤ 6 ºC? Were samples received in proper condition?	Yes/No/Yes
The temperature of the cooler at receipt in Las Vegas was 24.7 ºC. This was the temperature at pickup by the courier after sampling, but before shipping to the analytical lab. The samples were on ice. No qualification is needed.	

2. Chain-of-Custody (COC)	
Were samples recorded on the COCs? Were correct analyses performed on the samples?	No/Yes
SWFTS-BH30-SO-37-FD was submitted for analysis but was not on the client COC or Denver lab COC.	

3. Holding Times	
Were samples analyzed within acceptable holding times?	Yes

4. Instrument Performance	
Was BFB analyzed before and within 12 hours of sample analysis? Were mass assignments correct and normalized to m/z 95? Were ion abundance criteria met?	N/A

5. Initial Calibration (ICAL)	
Were the correct number of standards analyzed to establish the calibration curve for each analyte? Were Percent Relative Standard Deviations (%RSDs) of the Response Factors (RFs) ≤ method or national functional guideline (NFG) requirements or Coefficient of Correlation or Coefficient of Determination ≥ method or NFG requirements? Were Relative Response Factors (RRFs) and average RRFs ≥ method or NFG requirements?	Yes/Yes/N/A

6. Continuing Calibration Verification (CCV)	
Were CCVs analyzed at the beginning and end of sample analysis, if applicable? Were calibrations compared to the correct initial calibrations? Were Percent Differences (%D) ≤ method or NFG requirements? Did RRFs and average RRFs meet method or NFG requirements?	Yes/Yes/Yes/N/A

7. Blanks	
Does data package include a summary of blank results? Was a method blank extracted and/or analyzed for each batch? Were calibration blanks analyzed at appropriate intervals? Were analytes detected in any blanks?	Yes/Yes/No/Yes
6010B: Calcium was detected in MB 550-281980/1-A, MB 550-281981/1-A, MB 550-282626/1-A, SWFTS-BH-EB5-20220816, and several CCBs. The concentrations in the associated samples were > 10x the amounts in the blanks. No qualification.	
9060A: TOC was detected in MB 280-586173/5 and SWFTS-BH-EB5-20220816.	
VFA-IC: Lactic acid was detected in SWFTS-BH-EB5-20220816. It was not detected in any samples.	

8. Surrogates/Monitoring Compounds	
Were samples spiked with the correct surrogate compounds? Were surrogate recoveries reported on data forms? Were recoveries within laboratory limits?	N/A

9. Matrix Spike/Matrix Spike Duplicate	
Was a MS/MSD pair extracted and/or analyzed with each batch? Were recoveries/RPDs reported on data forms? Were recoveries/RPDs within laboratory established limits?	Yes/Yes/No
6010B: Calcium recoveries were outside limits in the MS/MSDs of SWFTS-BH27-SO-28 and SWFTS-BH28-SO-21. The concentrations in the parent samples were >4x the amount spiked. Recovery criteria do not apply. No qualification.	
9060A: TOC RPD was high between the MS/MSD of SWFTS-BH27-SO-28. TOC recoveries were high in the MS/MSD of SWFTS-BH28-SO-21. The sample was non-detect, so there can be no high bias.	
VFA-IC: Acetic acid, butyric acid, formic acid, and lactic acid recoveries were low in the MS of SWFTS-BH29-SO-24.5. Butyric acid, formic acid, and lactic acid recoveries were low in the MS/MSD of SWFTS-BH28-SO-21. Pyruvic acid recoveries and lactic acid RPD were high, but not detected in the parent. Parent samples will be qualified for low recoveries.	

10. Serial Dilution	
Were serial dilutions analyzed at appropriate intervals? For results > 50x the MDL, were %Ds within acceptable limits of the true value?	N/A

11. Laboratory Control Samples (LCS)	
Was a LCS analyzed with each analytical batch? Were LCS recoveries reported correctly on data forms? Were LCS recoveries within laboratory established limits?	Yes/Yes/Yes

12. Interference Check Sample (ICS)	
Were interference check samples (ICS) analyzed at appropriate intervals? Were ICS recoveries within acceptable limits of the true value? Were ICSA samples non-detect for analytes not in the solution?	Yes/Yes/Yes

13. Internal Standards (IS)	
Were ISs added to each sample in the run including calibrations, samples, and QC samples? Were area counts of the ISs for all samples within the acceptance range of its response in the CCV? Was the Retention Time of the IS within ±30 seconds from the RT of the IS in the associated CCV or mid-point standard from ICAL?	Yes/Yes/N/A

14. Duplicates	
Were any duplicate pairs analyzed in this SDG? For results > 5x the RL, were RPDs between parent sample and duplicates ≤ lab limits or ≤ 30% (water) or 50% (soil) for field duplicates? For REG/FD results < 5x the RL, were differences between the two values < RL.	Yes/No/Yes
Three FD pairs were analyzed: SWFTS-BH27-SO-16.5 and SWFTS-BH27-SO-16.5-FD; SWFTS-BH28-SO-17.3 and SWFTS-BH28-SO-17.3-FD; SWFTS-BH30-SO-37 and SWFTS-BH30-SO-37-FD.	

15. Compound Quantitation and Reporting Limits	
Were quantitation limits (RLs) adjusted to reflect dilutions, cleanup, and other factors? If applicable, were reporting limit check recoveries within acceptable limits?	Yes/Yes

16. Data Package/EDD comparison (10%)	
Were 10% of the data package results compared to the electronic data? Did results match?	Yes/Yes

Validated by: Maureen McMyler 10/14/2022

Data Verification and Validation Summary

Project Name:	SWF Area Treatability Study	SDG/Report No.:	550-189013-1
Task No.:	M11	Lab ID:	Eurofins Phoenix
No. of Samples:	19 with MS/MSD	Matrix:	Soil

Area Reviewed	Anomalies		Qualification Required	Action Required
	Yes	No	Yes or No	
1. Sample Preservation, Handling, and Transport	X		No	None
2. Chain-of-Custody		X	No	None
3. Holding Times		X	No	None
4. Instrument Performance	---	---	---	---
5. Initial Calibration		X	No	None
6. Continuing Calibration Verification		X	No	None
7. Blanks	X		Yes	Affected samples: Qualify TOC detections "J" or “J+”.
8. Surrogates/Monitoring Compounds	---	---	---	---
9. Matrix Spike/Matrix Spike Duplicate	X		Yes	SWFTS-BH22-SO-49: Qualify lactic acid “UJ”.
10. Serial Dilution		X	No	None
11. Laboratory Control Samples		X	No	None
12. Interference Check Samples		X	No	None
13. Internal Standards		X	No	None
14. Duplicates	X		Yes	SWFTS-BH20-SO-13.7 and SWFTS-BH20-SO-13.7-FD: Qualify calcium “J”.
15. Compound Quantitation and Reporting Limits		X	Yes	Qualify all results detected between the MDL and RL “J”.
16. Calculations and Raw Data		X	No	None
17. Data Package/EDD comparison (10%)		X	No	None

Verification and Validation Label	Stage_4_Validation_Manual
Verification and Validation Label Code	S4VM

Overall Assessment: Results are acceptable as qualified.
Usability: Qualified sample results (UJ, J, J+) are considered useable for limited purposes. Other sample results are considered valid and useable for all purposes.

Data Verification and Validation Summary

Sample Information:

Field Sample Number	Lab Sample ID	Date Collected	Cooler Temperature(s)
SWFTS-BH20-SO-13.7	550-189013-1	8/13/2022	2.1 ºC/3.6 ºC/3.6 ºC/3.9 ºC/4.2 ºC/5.6 ºC/1.7 ºC /3.1 ºC
SWFTS-BH20-SO-13.7-FD	550-189013-2	8/13/2022	2.1 ºC/3.6 ºC/3.6 ºC/3.9 ºC/4.2 ºC/5.6 ºC/1.7 ºC /3.1 ºC
SWFTS-BH20-SO-24.2	550-189013-3	8/13/2022	2.1 ºC/3.6 ºC/3.6 ºC/3.9 ºC/4.2 ºC/5.6 ºC/1.7 ºC /3.1 ºC
SWFTS-BH20-SO-24.2-MS	550-189013-3 MS	8/13/2022	2.1 ºC/3.6 ºC/3.6 ºC/3.9 ºC/4.2 ºC/5.6 ºC/1.7 ºC /3.1 ºC
SWFTS-BH20-SO-24.2-MSD	550-189013-3 MSD	8/13/2022	2.1 ºC/3.6 ºC/3.6 ºC/3.9 ºC/4.2 ºC/5.6 ºC/1.7 ºC /3.1 ºC
SWFTS-BH20-SO-26	550-189013-4	8/13/2022	2.1 ºC/3.6 ºC/3.6 ºC/3.9 ºC/4.2 ºC/5.6 ºC/1.7 ºC /3.1 ºC
SWFTS-BH20-SO-31	550-189013-5	8/13/2022	2.1 ºC/3.6 ºC/3.6 ºC/3.9 ºC/4.2 ºC/5.6 ºC/1.7 ºC /3.1 ºC
SWFTS-BH20-SO-35.5	550-189013-6	8/13/2022	2.1 ºC/3.6 ºC/3.6 ºC/3.9 ºC/4.2 ºC/5.6 ºC/1.7 ºC /3.1 ºC
SWFTS-BH22-SO-12.4	550-189013-7	8/13/2022	2.1 ºC/3.6 ºC/3.6 ºC/3.9 ºC/4.2 ºC/5.6 ºC/1.7 ºC /3.1 ºC
SWFTS-BH22-SO-20.5	550-189013-8	8/13/2022	2.1 ºC/3.6 ºC/3.6 ºC/3.9 ºC/4.2 ºC/5.6 ºC/1.7 ºC /3.1 ºC
SWFTS-BH22-SO-28.5	550-189013-9	8/13/2022	2.1 ºC/3.6 ºC/3.6 ºC/3.9 ºC/4.2 ºC/5.6 ºC/1.7 ºC /3.1 ºC
SWFTS-BH22-SO-36	550-189013-10	8/13/2022	2.1 ºC/3.6 ºC/3.6 ºC/3.9 ºC/4.2 ºC/5.6 ºC/1.7 ºC /3.1 ºC
SWFTS-BH22-SO-49	550-189013-11	8/13/2022	2.1 ºC/3.6 ºC/3.6 ºC/3.9 ºC/4.2 ºC/5.6 ºC/1.7 ºC /3.1 ºC
SWFTS-BH21-SO-16.5	550-189013-12	8/13/2022	2.1 ºC/3.6 ºC/3.6 ºC/3.9 ºC/4.2 ºC/5.6 ºC/1.7 ºC /3.1 ºC
SWFTS-BH21-SO-16.5-FD	550-189013-13	8/13/2022	2.1 ºC/3.6 ºC/3.6 ºC/3.9 ºC/4.2 ºC/5.6 ºC/1.7 ºC /3.1 ºC
SWFTS-BH21-SO-19.5	550-189013-14	8/13/2022	2.1 ºC/3.6 ºC/3.6 ºC/3.9 ºC/4.2 ºC/5.6 ºC/1.7 ºC /3.1 ºC
SWFTS-BH21-SO-23.2	550-189013-15	8/13/2022	2.1 ºC/3.6 ºC/3.6 ºC/3.9 ºC/4.2 ºC/5.6 ºC/1.7 ºC /3.1 ºC
SWFTS-BH21-SO-28	550-189013-16	8/13/2022	2.1 ºC/3.6 ºC/3.6 ºC/3.9 ºC/4.2 ºC/5.6 ºC/1.7 ºC /3.1 ºC
SWFTS-BH21-SO-32	550-189013-17	8/13/2022	2.1 ºC/3.6 ºC/3.6 ºC/3.9 ºC/4.2 ºC/5.6 ºC/1.7 ºC /3.1 ºC

The following section is intended to specify areas evaluated and issues encountered. Only applicable methods are listed.

1. Sample Preservation, Handling, and Transport	
Were all samples preserved correctly? Were sample temperatures ≤ 6 ºC? Were samples received in proper condition?	Yes/No/Yes
The temperature of the cooler at receipt in Las Vegas was 24.7 ºC. This was the temperature at pickup by the courier after sampling, but before shipping to the analytical lab. The samples were on ice. No qualification is needed.	

2. Chain-of-Custody (COC)	
Were samples recorded on the COCs? Were correct analyses performed on the samples?	Yes/Yes

3. Holding Times	
Were samples analyzed within acceptable holding times?	Yes

4. Instrument Performance	
Was BFB analyzed before and within 12 hours of sample analysis? Were mass assignments correct and normalized to m/z 95? Were ion abundance criteria met?	N/A

5. Initial Calibration (ICAL)	
Were the correct number of standards analyzed to establish the calibration curve for each analyte? Were Percent Relative Standard Deviations (%RSDs) of the Response Factors (RFs) ≤ method or national functional guideline (NFG) requirements or Coefficient of Correlation or Coefficient of Determination ≥ method or NFG requirements? Were Relative Response Factors (RRFs) and average RRFs ≥ method or NFG requirements?	Yes/Yes/N/A

6. Continuing Calibration Verification (CCV)	
Were CCVs analyzed at the beginning and end of sample analysis, if applicable? Were calibrations compared to the correct initial calibrations? Were Percent Differences (%D) ≤ method or NFG requirements? Did RRFs and average RRFs meet method or NFG requirements?	Yes/Yes/Yes/N/A

7. Blanks	
Does data package include a summary of blank results? Was a method blank extracted and/or analyzed for each batch? Were calibration blanks analyzed at appropriate intervals? Were analytes detected in any blanks?	Yes/Yes/No/Yes
6010B: Calcium was detected in MB 550-281982/1-A, MB 550-281983/1-A, SWFTS-BH-EB1-20220813, SWFTS-BH-EB2-20220813, and several CCBs. The concentrations in the associated samples were > 10x the amounts in the blanks. No qualification.	
9060A: TOC was detected in MB 280-585252/4, SWFTS-BH-EB1-20220813, and SWFTS-BH-EB2-20220813. The concentrations in the associated samples were > 10x the amounts in the EBs. Samples were qualified for the MB.	
VFA-IC: Lactic acid was detected in SWFTS-BH-EB1-20220813 and SWFTS-BH-EB2-20220813. It was not detected in the samples.	

8. Surrogates/Monitoring Compounds	
Were samples spiked with the correct surrogate compounds? Were surrogate recoveries reported on data forms? Were recoveries within laboratory limits?	N/A

9. Matrix Spike/Matrix Spike Duplicate	
Was a MS/MSD pair extracted and/or analyzed with each batch? Were recoveries/RPDs reported on data forms? Were recoveries/RPDs within laboratory established limits?	No/Yes/No
6010B: Calcium recoveries were outside limits in the MS/MSD of SWFTS-BH20-SO-24.2. The concentration in the parent sample was >4x the amount spiked. Recovery criteria do not apply. No qualification.	
9060A: TOC RPD was high between the MS/MSD of SWFTS-BH21-SO-23. TOC recovery was high in the MSD of SWFTS-BH21-SO-23.2. The sample was non-detect, so there can be no high bias or imprecision. No qualification.	
VFA-IC: Pyruvic acid recoveries were high in the MS/MSD of SWFTS-BH20-SO-24.2 and the MS of SWFTS-BH20-SO-31. The sample was non-detect, so there can be no high bias. No qualification Lactic acid recovery was low in the MS of SWFTS-BH22-SO-49.	

10. Serial Dilution	
Were serial dilutions analyzed at appropriate intervals? For results > 50x the MDL, were %Ds within acceptable limits of the true value?	N/A

11. Laboratory Control Samples (LCS)	
Was a LCS analyzed with each analytical batch? Were LCS recoveries reported correctly on data forms? Were LCS recoveries within laboratory established limits?	Yes/Yes/Yes

12. Interference Check Sample (ICS)	
Were interference check samples (ICS) analyzed at appropriate intervals? Were ICS recoveries within acceptable limits of the true value? Were ICSA samples non-detect for analytes not in the solution?	Yes/Yes/Yes

13. Internal Standards (IS)	
Were ISs added to each sample in the run including calibrations, samples, and QC samples? Were area counts of the ISs for all samples within the acceptance range of its response in the CCV? Was the Retention Time of the IS within ±30 seconds from the RT of the IS in the associated CCV or mid-point standard from ICAL?	Yes/Yes/N/A

14. Duplicates	
Were any duplicate pairs analyzed in this SDG? For results > 5x the RL, were RPDs between parent sample and duplicates ≤ lab limits or ≤ 30% (water) or 50% (soil) for field duplicates? For REG/FD results < 5x the RL, were differences between the two values < RL.	Yes/No/Yes
Two FD pairs were analyzed: SWFTS-BH20-SO-13.7 and SWFTS-BH20-SO-13.7-FD; SWFTS-BH21-SO-16.5 and SWFTS-BH21-SO-16.5-FD.	

15. Compound Quantitation and Reporting Limits	
Were quantitation limits (RLs) adjusted to reflect dilutions, cleanup, and other factors? If applicable, were reporting limit check recoveries within acceptable limits?	Yes/Yes

16. Calculations and Raw Data	
Did calculated results and raw data match the reported data?	Yes

17. Data Package/EDD comparison (10%)	
Were 10% of the data package results compared to the electronic data? Did results match?	Yes/Yes

Validated by: Maureen McMyler 10/17/2022

Data Verification and Validation Summary

Project Name: SWF Area Treatability Study
Task No.: M11
No. of Samples: 5
SDG/Report No.: 550-189014-1
Lab ID: Eurofins Phoenix
Matrix: Water

Area Reviewed	Anomalies		Qualification Required	Action Required
	Yes	No	Yes or No	
1. Sample Preservation, Handling, and Transport	X		No	None
2. Chain-of-Custody		X	No	None
3. Holding Times		X	No	None
4. Blanks	X		No	None
5. Surrogates/Monitoring Compounds		X	No	None
6. Matrix Spike/Matrix Spike Duplicate	X		No	None
7. Laboratory Control Samples		X	No	None
8. Duplicates	---	---	---	---
9. Compound Quantitation and Reporting Limits		X	Yes	All: Qualify results detected between the MDL/SQL and RL/PQL "J".
10. Data Package/EDD comparison (10%)		X	No	None
Verification and Validation Label	Stage_2A_Validation_Manual			
Verification and Validation Label Code	S2AVM			

Overall Assessment: Acceptable as qualified.
Usability: Sample results qualified as estimated (J) are considered valid and useable for limited purposes. All other results are considered valid and useable for all purposes.

Data Verification and Validation Summary

Sample Information:

Field Sample Number	Lab Sample ID	Date Collected	Cooler Temperature
SWFTS-BH-EB1-20220813	550-189014-1	8/13/2022	3.6 ºC
SWFTS-BH-EB2-20220813	550-189014-2	8/13/2022	3.6 ºC
SWFTS-BH-EB3-20220815	550-189014-3	8/15/2022	3.6 ºC
SWFTS-BH-EB4-20220816	550-189014-4	8/15/2022	3.6 ºC
SWFTS-BH-EB5-20220816	550-189014-5	8/16/2022	3.6 ºC

The following section is intended to specify areas evaluated and issues encountered. Only applicable methods are listed.

1. Sample Preservation, Handling, and Transport	
Were all samples preserved correctly? Were sample temperatures kept at ≤ 6 ºC? Were samples received in proper condition?	Yes/No/Yes
The temperature of the cooler at receipt in Las Vegas was 24.7 ºC. This was the temperature at pickup by the courier after sampling, but before shipping to the analytical lab. The samples were on ice. No qualification is needed.	

2. Chain-of-Custody (COC)	
Were samples recorded on the COCs? Were correct analyses performed on the samples?	Yes/Yes

3. Holding Times	
Were samples analyzed within acceptable holding times?	Yes

4. Blanks	
Does data package include a summary of blank results? Was a method blank extracted and/or analyzed for each batch? Were analytes detected in any blanks?	Yes/Yes/Yes
6010B: Calcium was detected in these five EBs. Associated samples are in other SDGs.	
SM5310B: TOC was detected in these five EBs. Associated samples are in other SDGs.	
VFA-IC: Lactic acid was detected in these five EBs. Associated samples are in other SDGs.	

5. Surrogates/Monitoring Compounds	
Were samples spiked with the correct surrogate compounds? Were surrogate recoveries reported correctly on data forms? Were recoveries within laboratory limits?	N/A

6. Matrix Spike/Matrix Spike Duplicate	
Was a MS/MSD pair extracted and/or analyzed with each batch? Were recoveries/RPDs reported on data forms? Were recoveries/RPDs of project samples within laboratory established limits?	Yes/Yes/No
VFA-IC: Propionic acid RPD was high between the MS and MSD of SWFTS-BH-EB5-20220816. It was not detected in the parent, so there can be no high bias.	

7. Laboratory Control Samples (LCS)	
Was a LCS analyzed with each analytical batch? Were LCS recoveries reported correctly on data forms? Were LCS recoveries within laboratory established limits?	Yes/Yes/Yes

8. Duplicates	
Were any duplicate pairs analyzed in this SDG? For results > 5x the RL/PQL, were RPDs between parent sample and duplicates ≤ lab limits or ≤ 30% (water)/50% (soil) for field duplicates? For REG/FD results < 5x the RL/PQL, were differences between the two values < RL/PQL.	N/A

9. Compound Quantitation and Reporting Limits	
Were quantitation limits (RLs/PQL) adjusted to reflect dilutions, cleanup, and other factors? If applicable, were reporting limit check recoveries within acceptable limits?	Yes/Yes

10. Data Package/EDD comparison (10%)	
Were 10% of the data package results compared to the electronic data? Did results match?	Yes/Yes

Validated by: Maureen McMyler 10/14/2022

Data Verification and Validation Summary

Project Name:	SWF Area Treatability Study	SDG/Report No.:	550-189088-1
Task No.:	M11	Lab ID:	Eurofins Phoenix
No. of Samples:	6	Matrix:	Soil

Area Reviewed	Anomalies		Qualification Required	Action Required
	Yes	No	Yes or No	
1. Sample Preservation, Handling, and Transport		X	No	None
2. Chain-of-Custody	X		No	None
3. Holding Times		X	No	None
4. Instrument Performance	---	---	---	---
5. Initial Calibration		X	No	None
6. Continuing Calibration Verification		X	No	None
7. Blanks	X		Yes	SWFTS-BH17-SO-17-FD, SWFTS-BH17-SO-23, and SWFTS-BH17-SO-26: Qualify TOC "J".
8. Surrogates/Monitoring Compounds	---	---	---	---
9. Matrix Spike/Matrix Spike Duplicate/MSI	X		No	None
10. Serial Dilution		X	No	None
11. Laboratory Control Samples		X	No	None
12. Interference Check Samples		X	No	None
13. Internal Standards		X	No	None
14. Duplicates		X	No	None
15. Compound Quantitation and Reporting Limits		X	Yes	Qualify all results detected between the MDL and RL “J”.
16. Data Package/EDD comparison (10%)		X	No	None

Verification and Validation Label	Stage_2B_Validation_Manual
Verification and Validation Label Code	S2BVM

Overall Assessment: Results are acceptable as qualified.
Usability: Qualified sample results (J) are considered useable for limited purposes. Other sample results are considered valid and useable for all purposes.

Data Verification and Validation Summary

Sample Information:

Field Sample Number	Lab Sample ID	Date Collected	Cooler Temperature(s)
SWFTS-BH17-SO-13	550-189088-1	8/12/2022	2.1 ºC/3.6 ºC/3.6 ºC/3.9 ºC/4.2 ºC/5.6 ºC/1.7 ºC /3.2 ºC
SWFTS-BH17-SO-17	550-189088-2	8/12/2022	2.1 ºC/3.6 ºC/3.6 ºC/3.9 ºC/4.2 ºC/5.6 ºC/1.7 ºC /3.2 ºC
SWFTS-BH17-SO-17-FD	550-189088-3	8/12/2022	2.1 ºC/3.6 ºC/3.6 ºC/3.9 ºC/4.2 ºC/5.6 ºC/1.7 ºC /3.2 ºC
SWFTS-BH17-SO-23	550-189088-4	8/12/2022	2.1 ºC/3.6 ºC/3.6 ºC/3.9 ºC/4.2 ºC/5.6 ºC/1.7 ºC /3.2 ºC
SWFTS-BH17-SO-26	550-189088-5	8/12/2022	2.1 ºC/3.6 ºC/3.6 ºC/3.9 ºC/4.2 ºC/5.6 ºC/1.7 ºC /3.2 ºC
SWFTS-BH17-SO-40	550-189088-6	8/12/2022	2.1 ºC/3.6 ºC/3.6 ºC/3.9 ºC/4.2 ºC/5.6 ºC/1.7 ºC /3.2 ºC

The following section is intended to specify areas evaluated and issues encountered. Only applicable methods are listed.

1. Sample Preservation, Handling, and Transport	
Were all samples preserved correctly? Were sample temperatures ≤ 6 ºC? Were samples received in proper condition?	Yes/Yes/Yes

2. Chain-of-Custody (COC)	
Were samples recorded on the COCs? Were correct analyses performed on the samples?	Yes/Yes
Login Sample Receipt Checklist from Buffalo is in the package but the COC from Phoenix to Buffalo is not.	

3. Holding Times	
Were samples analyzed within acceptable holding times?	Yes

4. Instrument Performance	
Was BFB analyzed before and within 12 hours of sample analysis? Were mass assignments correct and normalized to m/z 95? Were ion abundance criteria met?	N/A

5. Initial Calibration (ICAL)	
Were the correct number of standards analyzed to establish the calibration curve for each analyte? Were Percent Relative Standard Deviations (%RSDs) of the Response Factors (RFs) ≤ method or national functional guideline (NFG) requirements or Coefficient of Correlation or Coefficient of Determination ≥ method or NFG requirements? Were Relative Response Factors (RRFs) and average RRFs ≥ method or NFG requirements?	Yes/Yes/N/A

6. Continuing Calibration Verification (CCV)	
Were CCVs analyzed at the beginning and end of sample analysis, if applicable? Were calibrations compared to the correct initial calibrations? Were Percent Differences (%D) ≤ method or NFG requirements? Did RRFs and average RRFs meet method or NFG requirements?	Yes/Yes/Yes/N/A

7. Blanks	
Does data package include a summary of blank results? Was a method blank extracted and/or analyzed for each batch? Were calibration blanks analyzed at appropriate intervals? Were analytes detected in any blanks?	Yes/Yes/Yes/Yes
6010B: Calcium was detected in MB 550-281983/1-A, MB 550-282075/1-A, and several CCBs. The concentrations in the associated samples were > 10x the amounts in the blanks. No qualification.	
9060A: TOC was detected in MB 280-585252/4 and three samples at similar concentrations.	

8. Surrogates/Monitoring Compounds	
Were samples spiked with the correct surrogate compounds? Were surrogate recoveries reported on data forms? Were recoveries within laboratory limits?	N/A

9. Matrix Spike/Matrix Spike Duplicate	
Was a MS/MSD pair extracted and/or analyzed with each batch? Were recoveries/RPDs reported on data forms? Were recoveries/RPDs within laboratory established limits?	Yes/Yes/No
6010B: Calcium recoveries were outside limits in the MS/MSD of SWFTS-BH17-SO-40. The concentration in the parent sample was >4x the amount spiked. Recovery criteria do not apply. No qualification.	

10. Serial Dilution	
Were serial dilutions analyzed at appropriate intervals? For results > 50x the MDL, were %Ds within acceptable limits of the true value?	N/A

11. Laboratory Control Samples (LCS)	
Was a LCS analyzed with each analytical batch? Were LCS recoveries reported correctly on data forms? Were LCS recoveries within laboratory established limits?	Yes/Yes/Yes

12. Interference Check Sample (ICS)	
Were interference check samples (ICS) analyzed at appropriate intervals? Were ICS recoveries within acceptable limits of the true value? Were ICSA samples non-detect for analytes not in the solution?	Yes/Yes/Yes

13. Internal Standards (IS)	
Were ISs added to each sample in the run including calibrations, samples, and QC samples? Were area counts of the ISs for all samples within the acceptance range of its response in the CCV? Was the Retention Time of the IS within ±30 seconds from the RT of the IS in the associated CCV or mid-point standard from ICAL?	Yes/Yes/N/A

14. Duplicates	
Were any duplicate pairs analyzed in this SDG? For results > 5x the RL, were RPDs between parent sample and duplicates ≤ lab limits or ≤ 30% (water) or 50% (soil) for field duplicates? For REG/FD results < 5x the RL, were differences between the two values < RL.	Yes/Yes/Yes
One FD pair was analyzed: SWFTS-BH17-SO-17 and SWFTS-BH17-SO-17-FD. Results agree.	

15. Compound Quantitation and Reporting Limits	
Were quantitation limits (RLs) adjusted to reflect dilutions, cleanup, and other factors? If applicable, were reporting limit check recoveries within acceptable limits?	Yes/Yes

16. Data Package/EDD comparison (10%)	
Were 10% of the data package results compared to the electronic data? Did results match?	Yes/Yes

Validated by: Maureen McMyler 10/14/2022

Data Verification and Validation Summary

Project Name:	SWF Area Treatability Study	SDG/Report No.:	550-190412-1
Task No.:	M11	Lab ID:	Eurofins Phoenix
No. of Samples:	16 with MS/MSDs	Matrix:	Water

Area Reviewed	Anomalies		Qualification Required	Action Required
	Yes	No	Yes or No	
1. Sample Preservation, Handling, and Transport	X		No	None
2. Chain-of-Custody		X	No	None
3. Holding Times		X	No	None
4. Blanks	X		No	None
5. Surrogates/Monitoring Compounds		X	No	None
6. Matrix Spike/Matrix Spike Duplicate	X		Yes	SWFTS-MW03-EM39 and SWFTS-MW10A-EM39: Qualify TOC "J-".
7. Laboratory Control Samples		X	No	None
8. Duplicates		X	No	None
9. Compound Quantitation and Reporting Limits		X	Yes	All: Qualify results detected between the MDL/SQL and RL/PQL "J".
10. Data Package/EDD comparison (10%)		X	No	None
Verification and Validation Label	Stage_2A_Validation_Manual			
Verification and Validation Label Code	S2AVM			

Overall Assessment: Acceptable as qualified.
Usability: Sample results qualified as estimated (J-, J) are considered valid and useable for limited purposes. All other results are considered valid and useable for all purposes.

Data Verification and Validation Summary

Sample Information:

Field Sample Number	Lab Sample ID	Date Collected	Cooler Temperature
SWFTS-MW09B-EM39	550-190412-1	9/13/2022	1.6 ºC /2.6 ºC
SWFTS-MW10A-EM39	550-190412-2	9/13/2022	1.6 ºC /2.6 ºC
SWFTS-MW10A-EM39-MS	550-190412-2 MS	9/13/2022	1.6 ºC /2.6 ºC
SWFTS-MW10A-EM39-MSD	550-190412-2 MSD	9/13/2022	1.6 ºC /2.6 ºC
SWFTS-MW11-EM39	550-190412-3	9/13/2022	1.6 ºC /2.6 ºC
SWFTS-MW11-EM39-FD	550-190412-4	9/13/2022	1.6 ºC /2.6 ºC
SWFTS-MW12-EM39	550-190412-5	9/13/2022	1.6 ºC /2.6 ºC
SWFTS-MW13-EM39	550-190412-6	9/13/2022	1.6 ºC /2.6 ºC
SWFTS-MW14-EM39	550-190412-7	9/13/2022	1.6 ºC /2.6 ºC
SWFTS-MW03-EM39	550-190412-8	9/13/2022	1.6 ºC /2.6 ºC
SWFTS-MW03-EM39-MS	550-190412-8 MSD	9/13/2022	1.6 ºC /2.6 ºC
SWFTS-MW03-EM39-MS	550-190412-8 MSD	9/13/2022	1.6 ºC /2.6 ºC
SWFTS-MW09A-EM39	550-190412-9	9/13/2022	1.6 ºC /2.6 ºC
SWFTS-MW01-EM39	550-190412-10	9/13/2022	1.6 ºC /2.6 ºC
SWFTS-EM39-FB1	550-190412-11	9/13/2022	1.6 ºC /2.6 ºC
SWFTS-EM39-EB1	550-190412-12	9/13/2022	1.6 ºC /2.6 ºC

The following section is intended to specify areas evaluated and issues encountered. Only applicable methods are listed.

1. Sample Preservation, Handling, and Transport	
Were all samples preserved correctly? Were sample temperatures kept at ≤ 6 ºC? Were samples received in proper condition?	Yes/No/Yes
The temperatures of the coolers at receipt in Las Vegas were 23.9 ºC and 24.4 ºC. These were the temperatures at pickup by the courier after sampling, but before shipping to the analytical lab. The samples were on ice. No qualification is needed.	

2. Chain-of-Custody (COC)	
Were samples recorded on the COCs? Were correct analyses performed on the samples?	Yes/Yes

3. Holding Times	
Were samples analyzed within acceptable holding times?	Yes

4. Blanks	
Does data package include a summary of blank results? Was a method blank extracted and/or analyzed for each batch? Were analytes detected in any blanks?	Yes/Yes/Yes
300.0: Sulfate was detected in SWFTS-EM39-FB1. Concentrations in the samples were > 10x the amount in the blanks	

5. Surrogates/Monitoring Compounds	
Were samples spiked with the correct surrogate compounds? Were surrogate recoveries reported correctly on data forms? Were recoveries within laboratory limits?	Yes/Yes/Yes

6. Matrix Spike/Matrix Spike Duplicate	
Was a MS/MSD pair extracted and/or analyzed with each batch? Were recoveries/RPDs reported on data forms? Were recoveries/RPDs of project samples within laboratory established limits?	Yes/Yes/No
SM5310B: TOC recoveries were low in the MS/MSD of SWFTS-MW10A-EM39 and the MSD of SWFTS-MW03-EM39.	

7. Laboratory Control Samples (LCS)	
Was a LCS analyzed with each analytical batch? Were LCS recoveries reported correctly on data forms? Were LCS recoveries within laboratory established limits?	Yes/Yes/Yes

8. Duplicates	
Were any duplicate pairs analyzed in this SDG? For results > 5x the RL/PQL, were RPDs between parent sample and duplicates ≤ lab limits or ≤ 30% (water)/50% (soil) for field duplicates? For REG/FD results < 5x the RL/PQL, were differences between the two values < RL/PQL.	Yes/Yes/Yes
One FD pair was analyzed: SWFTS-MW11-EM39 and SWFTS-MW11-EM39-FD. Results agreed	

9. Compound Quantitation and Reporting Limits	
Were quantitation limits (RLs/PQL) adjusted to reflect dilutions, cleanup, and other factors? If applicable, were reporting limit check recoveries within acceptable limits?	Yes/Yes

10. Data Package/EDD comparison (10%)	
Were 10% of the data package results compared to the electronic data? Did results match?	Yes/Yes

Validated by: Maureen McMyler 11/30/2022

Data Verification and Validation Summary

Project Name: SWF Area Treatability Study
Task No.: M11
No. of Samples: 20
SDG/Report No.: 550-190504-1
Lab ID: Eurofins Phoenix
Matrix: Water

Area Reviewed	Anomalies		Qualification Required	Action Required
	Yes	No	Yes or No	
1. Sample Preservation, Handling, and Transport	X		No	None
2. Chain-of-Custody	X		No	None
3. Holding Times		X	No	None
4. Blanks	X		Yes	SWFTS-PC-91-EM39, SWFTS-MW20-EM39: Qualify perchlorate "J+".
5. Surrogates/Monitoring Compounds		X	No	None
6. Matrix Spike/Matrix Spike Duplicate		X	No	None
7. Laboratory Control Samples		X	No	None
8. Duplicates		X	No	None
9. Compound Quantitation and Reporting Limits		X	Yes	All: Qualify results detected between the MDL/SQL and RL/PQL "J".
10. Data Package/EDD comparison (10%)		X	No	None
Verification and Validation Label	Stage_2A_Validation_Manual			
Verification and Validation Label Code	S2AVM			

Overall Assessment: Acceptable as qualified.
Usability: Sample results qualified as estimated (J, J+) are considered valid and useable for limited purposes. All other results are considered valid and useable for all purposes.

Data Verification and Validation Summary

Sample Information:

Field Sample Number	Lab Sample ID	Date Collected	Cooler Temperature
SWFTS-MW15-EM39	550-190504-1	9/14/2022	2.4 ºC/3.1 ºC
SWFTS-MW16-EM39	550-190504-2	9/14/2022	2.4 ºC/3.1 ºC
SWFTS-MW17-EM39	550-190504-3	9/14/2022	2.4 ºC/3.1 ºC
SWFTS-MW18-EM39	550-190504-4	9/14/2022	2.4 ºC/3.1 ºC
SWFTS-MW19-EM39	550-190504-5	9/14/2022	2.4 ºC/3.1 ºC
SWFTS-MW19-EM39-FD	550-190504-6	9/14/2022	2.4 ºC/3.1 ºC
SWFTS-EM39-FB2	550-190504-7	9/14/2022	2.4 ºC/3.1 ºC
SWFTS-EM39-EB2	550-190504-8	9/14/2022	2.4 ºC/3.1 ºC
SWFTS-MW20-EM39	550-190504-9	9/14/2022	2.4 ºC/3.1 ºC
SWFTS-MW21-EM39	550-190504-10	9/14/2022	2.4 ºC/3.1 ºC
SWFTS-PC-91-EM39	550-190504-11	9/14/2022	2.4 ºC/3.1 ºC
SWFTS-PC-92-EM39	550-190504-12	9/14/2022	2.4 ºC/3.1 ºC
SWFTS-MW06A-EM39	550-190504-13	9/14/2022	2.4 ºC/3.1 ºC
SWFTS-MW06A-EM39-FD	550-190504-14	9/14/2022	2.4 ºC/3.1 ºC
SWFTS-MW06B-EM39	550-190504-15	9/14/2022	2.4 ºC/3.1 ºC
SWFTS-MW04-EM39	550-190504-16	9/14/2022	2.4 ºC/3.1 ºC
SWFTS-MW02-EM39	550-190504-17	9/14/2022	2.4 ºC/3.1 ºC
SWFTS-MW07A-EM39	550-190504-18	9/14/2022	2.4 ºC/3.1 ºC
SWFTS-MW07B-EM39	550-190504-19	9/14/2022	2.4 ºC/3.1 ºC
SWFTS-MW22-EM39	550-190504-20	9/14/2022	2.4 ºC/3.1 ºC

The following section is intended to specify areas evaluated and issues encountered. Only applicable methods are listed.

1. Sample Preservation, Handling, and Transport	
Were all samples preserved correctly? Were sample temperatures kept at ≤ 6 ºC? Were samples received in proper condition?	Yes/No/Yes
The temperature of the cooler at receipt in Las Vegas was 22.0 ºC. This was the temperature at pickup by the courier after sampling, but before shipping to the analytical lab. The samples were on ice. No qualification is needed.	

2. Chain-of-Custody (COC)	
Were samples recorded on the COCs? Were correct analyses performed on the samples?	Yes/Yes
Container labels and COC did not match for several samples. The sample date on the COC was used.	

3. Holding Times	
Were samples analyzed within acceptable holding times?	Yes

4. Blanks	
Does data package include a summary of blank results? Was a method blank extracted and/or analyzed for each batch? Were analytes detected in any blanks?	Yes/Yes/Yes
300.0: Sulfate was detected in SWFTS-EM39-EB2 and SWFTS-EM39-FB2. Concentrations in the samples were > 10x the amount in the blanks.	
314.0: Perchlorate was detected in SWFTS-EM39-EB2. Two samples were qualified.	

5. Surrogates/Monitoring Compounds	
Were samples spiked with the correct surrogate compounds? Were surrogate recoveries reported correctly on data forms? Were recoveries within laboratory limits?	Yes/Yes/Yes

6. Matrix Spike/Matrix Spike Duplicate	
Was a MS/MSD pair extracted and/or analyzed with each batch? Were recoveries/RPDs reported on data forms? Were recoveries/RPDs of project samples within laboratory established limits?	Yes/Yes/Yes

7. Laboratory Control Samples (LCS)	
Was a LCS analyzed with each analytical batch? Were LCS recoveries reported correctly on data forms? Were LCS recoveries within laboratory established limits?	Yes/Yes/Yes

8. Duplicates	
Were any duplicate pairs analyzed in this SDG? For results > 5x the RL/PQL, were RPDs between parent sample and duplicates ≤ lab limits or ≤ 30% (water)/50% (soil) for field duplicates? For REG/FD results < 5x the RL/PQL, were differences between the two values < RL/PQL.	Yes/Yes/Yes
Two FD pairs were analyzed: SWFTS-MW06A-EM39 and SWFTS-MW06A-EM39-FD; SWFTS-MW19-EM39 and SWFTS-MW19-EM39-FD. Results agreed	

9. Compound Quantitation and Reporting Limits	
Were quantitation limits (RLs/PQL) adjusted to reflect dilutions, cleanup, and other factors? If applicable, were reporting limit check recoveries within acceptable limits?	Yes/Yes

10. Data Package/EDD comparison (10%)	
Were 10% of the data package results compared to the electronic data? Did results match?	Yes/Yes

Validated by: Maureen McMyler 11/30/2022

Data Verification and Validation Summary

Project Name: SWF Area Treatability Study
Task No.: M11
No. of Samples: 16 with MS/MSDs
SDG/Report No.: 550-190606-1
Lab ID: Eurofins Phoenix
Matrix: Water

Area Reviewed	Anomalies		Qualification Required	Action Required
	Yes	No	Yes or No	
1. Sample Preservation, Handling, and Transport	X		No	None
2. Chain-of-Custody		X	No	None
3. Holding Times		X	No	None
4. Blanks		X	No	None
5. Surrogates/Monitoring Compounds		X	No	None
6. Matrix Spike/Matrix Spike Duplicate		X	No	None
7. Laboratory Control Samples		X	No	None
8. Duplicates		X	No	None
9. Compound Quantitation and Reporting Limits		X	Yes	All: Qualify results detected between the MDL/SQL and RL/PQL "J".
10. Data Package/EDD comparison (10%)		X	No	None
Verification and Validation Label	Stage_2A_Validation_Manual			
Verification and Validation Label Code	S2AVM			

Overall Assessment: Acceptable as qualified.
Usability: Sample results qualified as estimated (J) are considered valid and useable for limited purposes. All other results are considered valid and useable for all purposes.

Data Verification and Validation Summary

Sample Information:

Field Sample Number	Lab Sample ID	Date Collected	Cooler Temperature
SWFTS-MW23-EM39	550-190606-1	9/15/2022	0.5 ºC /0.9 ºC
SWFTS-MW24-EM39	550-190606-2	9/15/2022	0.5 ºC /0.9 ºC
SWFTS-MW25-EM39	550-190606-3	9/15/2022	0.5 ºC /0.9 ºC
PC-94-EM39	550-190606-4	9/15/2022	0.5 ºC /0.9 ºC
PC-88-EM39	550-190606-5	9/15/2022	0.5 ºC /0.9 ºC
PC-88-EM39-FD	550-190606-6	9/15/2022	0.5 ºC /0.9 ºC
PC-56-EM39	550-190606-7	9/15/2022	0.5 ºC /0.9 ºC

The following section is intended to specify areas evaluated and issues encountered. Only applicable methods are listed.

1. Sample Preservation, Handling, and Transport	
Were all samples preserved correctly? Were sample temperatures kept at ≤ 6 ºC? Were samples received in proper condition?	Yes/No/Yes
The temperatures of the coolers at receipt in Las Vegas were 18.5 ºC and 20.4 ºC. These were the temperatures at pickup by the courier after sampling, but before shipping to the analytical lab. The samples were on ice. No qualification is needed.	

2. Chain-of-Custody (COC)	
Were samples recorded on the COCs? Were correct analyses performed on the samples?	Yes/Yes

3. Holding Times	
Were samples analyzed within acceptable holding times?	Yes

4. Blanks	
Does data package include a summary of blank results? Was a method blank extracted and/or analyzed for each batch? Were analytes detected in any blanks?	Yes/Yes/No

5. Surrogates/Monitoring Compounds	
Were samples spiked with the correct surrogate compounds? Were surrogate recoveries reported correctly on data forms? Were recoveries within laboratory limits?	Yes/Yes/Yes

6. Matrix Spike/Matrix Spike Duplicate	
Was a MS/MSD pair extracted and/or analyzed with each batch? Were recoveries/RPDs reported on data forms? Were recoveries/RPDs of project samples within laboratory established limits?	Yes/Yes/Yes

7. Laboratory Control Samples (LCS)	
Was a LCS analyzed with each analytical batch? Were LCS recoveries reported correctly on data forms? Were LCS recoveries within laboratory established limits?	Yes/Yes/Yes

8. Duplicates	
Were any duplicate pairs analyzed in this SDG? For results > 5x the RL/PQL, were RPDs between parent sample and duplicates ≤ lab limits or ≤ 30% (water)/50% (soil) for field duplicates? For REG/FD results < 5x the RL/PQL, were differences between the two values < RL/PQL.	Yes/Yes/Yes
One FD pair was analyzed: PC-88-EM39 and PC-88-EM39-FD. Results agreed	

9. Compound Quantitation and Reporting Limits	
Were quantitation limits (RLs/PQL) adjusted to reflect dilutions, cleanup, and other factors? If applicable, were reporting limit check recoveries within acceptable limits?	Yes/Yes

10. Data Package/EDD comparison (10%)	
Were 10% of the data package results compared to the electronic data? Did results match?	Yes/Yes

Validated by: Maureen McMyler 11/30/2022

Data Verification and Validation Summary

Project Name: SWF Area Treatability Study
Task No.: M11
No. of Samples: 4
SDG/Report No.: 550-194841-1
Lab ID: Eurofins Phoenix
Matrix: Water

Area Reviewed	Anomalies		Qualification Required	Action Required
	Yes	No	Yes or No	
1. Sample Preservation, Handling, and Transport	X		No	None
2. Chain-of-Custody	X		No	None
3. Holding Times		X	No	None
4. Blanks	X		Yes	All: Qualify antimony "J". PC-91-EM40: Qualify selenium "J".
5. Surrogates/Monitoring Compounds		X	No	None
6. Matrix Spike/Matrix Spike Duplicate	X		Yes	PC-88-EM40 and PC-88-EM40-FD: Qualify arsenic "J+".
7. Laboratory Control Samples	X		Yes	All: Qualify phosphorus "J".
8. Duplicates	X		Yes	PC-88-EM40 and PC-88-EM40-FD: Qualify titanium "J".
9. Compound Quantitation and Reporting Limits		X	Yes	All: Qualify results detected between the MDL/SQL and RL/PQL "J".
10. Data Package/EDD comparison (10%)		X	No	None
Verification and Validation Label	Stage_2A_Validation_Manual			
Verification and Validation Label Code	S2AVM			

Overall Assessment: Acceptable as qualified.
Usability: Sample results qualified as estimated (J, J+) are considered valid and useable for limited purposes. All other results are considered valid and useable for all purposes.

Data Verification and Validation Summary

Sample Information:

Field Sample Number	Lab Sample ID	Date Collected	Cooler Temperature
PC-88-EM40	550-194841-1/550-194841-2	12/12/2022	3.2 °C
PC-88-EM40-FD	550-194841-3/550-194841-4	12/12/2022	3.2 °C
PC-58-EM40	550-194841-5/550-194841-6	12/12/2022	3.2 °C
PC-91-EM40	550-194841-7/550-194841-8	12/12/2022	3.2 °C

The following section is intended to specify areas evaluated and issues encountered. Only applicable methods are listed.

1. Sample Preservation, Handling, and Transport	
Were all samples preserved correctly? Were sample temperatures kept at ≤ 6 °C? Were samples received in proper condition?	Yes/Yes/Yes
Login Sample Receipt Checklist from Denver does not show temperature but indicates that samples were on ice and temperature was acceptable.	

2. Chain-of-Custody (COC)	
Were samples recorded on the COCs? Were correct analyses performed on the samples?	No/Yes
COC from Phoenix to Denver was not provided. Sample date was not listed for 3 samples.	

3. Holding Times	
Were samples analyzed within acceptable holding times?	Yes

4. Blanks	
Does data package include a summary of blank results? Was a method blank extracted and/or analyzed for each batch? Were analytes detected in any blanks?	Yes/Yes/Yes
6010B: Boron, potassium, and sodium were detected in MB 550-290687/1-A. Sample concentrations were > 10x the amount in the blank. No qualification is needed.	
6020B: Antimony (0.138 ug/L) and selenium (0.405 ug/L)were detected in MB 550-290699/1-A. Samples with concentrations < 10x the amount in the blank will be qualified.	

5. Surrogates/Monitoring Compounds	
Were samples spiked with the correct surrogate compounds? Were surrogate recoveries reported correctly on data forms? Were recoveries within laboratory limits?	Yes/Yes/Yes

6. Matrix Spike/Matrix Spike Duplicate	
Was a MS/MSD pair extracted and/or analyzed with each batch? Were recoveries/RPDs reported on data forms? Were recoveries/RPDs of project samples within laboratory established limits?	Yes/Yes/No
6010B: The lab did not analyze phosphorus in the MS/MSD. The spike solution did not contain it.	
6020B: Arsenic recoveries were high (170% and 167%) in the MS/MSD of PC-88-EM40 (550-194841-1). The sample and its FD will be qualified. The lab qualifier was not assigned to the reported sample.	

7. Laboratory Control Samples (LCS)	
Was a LCS analyzed with each analytical batch? Were LCS recoveries reported correctly on data forms? Were LCS recoveries within laboratory established limits?	Yes/Yes/Yes
6010B: The lab did not analyze for phosphorus in LCS 550-290687/2-A/LCSD 550-290687/3-A. The spiking solution did not contain it.	

8. Duplicates	
Were any duplicate pairs analyzed in this SDG? For results > 5x the RL/PQL, were RPDs between parent sample and duplicates ≤ lab limits or ≤ 30% (water)/50% (soil) for field duplicates? For REG/FD results < 5x the RL/PQL, were differences between the two values < RL/PQL.	Yes/No/Yes
One FD pair was analyzed: PC-88-EM40 and PC-88-EM40-FD. Titanium RPD was high.	

9. Compound Quantitation and Reporting Limits	
Were quantitation limits (RLs/PQL) adjusted to reflect dilutions, cleanup, and other factors? If applicable, were reporting limit check recoveries within acceptable limits?	Yes/Yes

10. Data Package/EDD comparison (10%)	
Were 10% of the data package results compared to the electronic data? Did results match?	Yes/Yes

Validated by: Maureen McMyler 03/21/2023

Data Verification and Validation Summary

Project Name: SWF Area Treatability Study
Task No.: M11
No. of Samples: 4
SDG/Report No.: 550-194919-1
Lab ID: Eurofins Phoenix
Matrix: Water

Area Reviewed	Anomalies		Qualification Required	Action Required
	Yes	No	Yes or No	
1. Sample Preservation, Handling, and Transport	X		Yes	SWFTS-MW20-EM40: Qualify methane "J-".
2. Chain-of-Custody		X	No	None
3. Holding Times		X	No	None
4. Blanks	X		Yes	All: Qualify iron and antimony "J".
5. Surrogates/Monitoring Compounds		X	No	None
6. Matrix Spike/Matrix Spike Duplicate	X		No	None
7. Laboratory Control Samples	X		Yes	All: Qualify phosphorus "UJ".
8. Duplicates		X	No	None
9. Compound Quantitation and Reporting Limits		X	Yes	All: Qualify results detected between the MDL/SQL and RL/PQL "J".
10. Data Package/EDD comparison (10%)		X	No	None
Verification and Validation Label	Stage_2A_Validation_Manual			
Verification and Validation Label Code	S2AVM			

Overall Assessment: Acceptable as qualified.
Usability: Sample results qualified as estimated (UJ, J, J-) are considered valid and useable for limited purposes. All other results are considered valid and useable for all purposes.

Data Verification and Validation Summary

Sample Information:

Field Sample Number	Lab Sample ID	Date Collected	Cooler Temperature
SWFTS-MW25-EM40	550-194919-1/550-194919-2	12/13/2022	2.1 ºC/0.8 ºC
SWFTS-MW24-EM40	550-194919-3/550-194919-4	12/13/2022	2.1 ºC/0.8 ºC
SWFTS-MW23-EM40	550-194919-5/550-194919-6	12/13/2022	2.1 ºC/0.8 ºC
SWFTS-MW20-EM40	550-194919-7/550-194919-8	12/13/2022	2.1 ºC/0.8 ºC

The following section is intended to specify areas evaluated and issues encountered. Only applicable methods are listed.

1. Sample Preservation, Handling, and Transport	
Were all samples preserved correctly? Were sample temperatures kept at ≤ 6 ºC? Were samples received in proper condition?	No/No/Yes
The temperature of the cooler at receipt in Las Vegas was 20.4 ºC. This was the temperature at pickup by the courier after sampling, but before shipping to the analytical lab. The samples were on ice. No qualification is needed.	
RSK-175: SWFTS-MW20-EM40 was received and analyzed with headspace.	

2. Chain-of-Custody (COC)	
Were samples recorded on the COCs? Were correct analyses performed on the samples?	Yes/Yes

3. Holding Times	
Were samples analyzed within acceptable holding times?	Yes

4. Blanks	
Does data package include a summary of blank results? Was a method blank extracted and/or analyzed for each batch? Were analytes detected in any blanks?	Yes/Yes/Yes
6010B: Boron, iron, and silver were detected in MB 550-290825/1-A. All samples had iron concentrations < 10x the amount in the blank and will be qualified.	
6020B: Antimony was detected in MB 550-290824/1-A. All samples had concentrations < 10x the amount in the blank and will be qualified.	

5. Surrogates/Monitoring Compounds	
Were samples spiked with the correct surrogate compounds? Were surrogate recoveries reported correctly on data forms? Were recoveries within laboratory limits?	Yes/Yes/Yes

6. Matrix Spike/Matrix Spike Duplicate	
Was a MS/MSD pair extracted and/or analyzed with each batch? Were recoveries/RPDs reported on data forms? Were recoveries/RPDs of project samples within laboratory established limits?	Yes/Yes/Yes
6010B: The lab did not analyze phosphorus in the MS/MSD. The spike solution did not contain it.	

7. Laboratory Control Samples (LCS)	
Was a LCS analyzed with each analytical batch? Were LCS recoveries reported correctly on data forms? Were LCS recoveries within laboratory established limits?	Yes/Yes/Yes
6010B: The lab did not analyze for phosphorus in LCS 550-290825/2-A, LCSD 550-290825/3-A. The spike solution did not contain it. All results are considered estimated.	

8. Duplicates	
Were any duplicate pairs analyzed in this SDG? For results > 5x the RL/PQL, were RPDs between parent sample and duplicates ≤ lab limits or ≤ 30% (water)/50% (soil) for field duplicates? For REG/FD results < 5x the RL/PQL, were differences between the two values < RL/PQL.	Yes/Yes/N/A
Lab duplicates	

9. Compound Quantitation and Reporting Limits	
Were quantitation limits (RLs/PQL) adjusted to reflect dilutions, cleanup, and other factors? If applicable, were reporting limit check recoveries within acceptable limits?	Yes/Yes

10. Data Package/EDD comparison (10%)	
Were 10% of the data package results compared to the electronic data? Did results match?	Yes/Yes

Validated by: Maureen McMyler 03/20/2023

Data Verification and Validation Summary

Project Name: SWF Area Treatability Study
Task No.: M11
No. of Samples: 10 with MS/MSD
SDG/Report No.: 550-194920-1
Lab ID: Eurofins Phoenix
Matrix: Water

Area Reviewed	Anomalies		Qualification Required	Action Required
	Yes	No	Yes or No	
1. Sample Preservation, Handling, and Transport	X		No	None
2. Chain-of-Custody		X	No	None
3. Holding Times		X	No	None
4. Blanks	X		Yes	All GW: Qualify sulfate "J+" and antimony "J". SWFTS-EM40-EB1: Qualify boron and silver "J". SWFTS-EM40-FB1: Qualify boron "J". PC-94-EM40, SWFTS-MW01-EM40, SWFTS-MW03-EM40, SWFTS-MW09A-EM40, and SWFTS-MW09B-EM40: Qualify iron "J".
5. Surrogates/Monitoring Compounds		X	No	None
6. Matrix Spike/Matrix Spike Duplicate	X		Yes	SWFTS-MW-03-EM40: Qualify arsenic and selenium "J+".
7. Laboratory Control Samples	X		Yes	All: Qualify phosphorus "UJ".
8. Duplicates		X	No	None
9. Compound Quantitation and Reporting Limits		X	Yes	All: Qualify results detected between the MDL/SQL and RL/PQL "J".
10. Data Package/EDD comparison (10%)		X	No	None
Verification and Validation Label	Stage_2A_Validation_Manual			
Verification and Validation Label Code	S2AVM			

Overall Assessment: Acceptable as qualified.
Usability: Sample results qualified as estimated (UJ, J, J+) are considered valid and useable for limited purposes. All other results are considered valid and useable for all purposes.

Data Verification and Validation Summary

Sample Information:

Field Sample Number	Lab Sample ID	Date Collected	Cooler Temperature
PC-92-EM40	550-194920-1/550-194920-2	12/13/2022	2.4 °C/2.4 °C/0.8 °C
SWFTS-MW-01-EM40	550-194920-3/550-194920-4	12/13/2022	2.4 °C/2.4 °C/0.8 °C
SWFTS-EM40-FB1	550-194920-5/550-194920-6	12/13/2022	2.4 °C/2.4 °C/0.8 °C
PC-94-EM40	550-194920-7/550-194920-8	12/13/2022	2.4 °C/2.4 °C/0.8 °C
SWFTS-MW-09A-EM40	550-194920-9/550-194920-10	12/13/2022	2.4 °C/2.4 °C/0.8 °C
SWFTS-EM40-EB1	550-194920-11/550-194920-12	12/13/2022	2.4 °C/2.4 °C/0.8 °C
SWFTS-MW-09B-EM40	550-194920-13/550-194920-14	12/13/2022	2.4 °C/2.4 °C/0.8 °C
SWFTS-MW-03-EM40	550-194920-15/550-194920-16	12/13/2022	2.4 °C/2.4 °C/0.8 °C
SWFTS-MW-03-EM40-MS	550-194920-15 MS/550-194920-16	12/13/2022	2.4 °C/2.4 °C/0.8 °C
SWFTS-MW-03-EM40-MSD	550-194920-15/550-194920-16	12/13/2022	2.4 °C/2.4 °C/0.8 °C

The following section is intended to specify areas evaluated and issues encountered. Only applicable methods are listed.

1. Sample Preservation, Handling, and Transport	
Were all samples preserved correctly? Were sample temperatures kept at ≤ 6 °C? Were samples received in proper condition?	Yes/No/Yes
The temperature of the cooler at receipt in Las Vegas was 16.6 °C. This was the temperature at pickup by the courier after sampling, but before shipping to the analytical lab. The samples were on ice. No qualification is needed.	

2. Chain-of-Custody (COC)	
Were samples recorded on the COCs? Were correct analyses performed on the samples?	Yes/Yes
The container label	

3. Holding Times	
Were samples analyzed within acceptable holding times?	Yes

4. Blanks	
Does data package include a summary of blank results? Was a method blank extracted and/or analyzed for each batch? Were analytes detected in any blanks?	Yes/Yes/Yes
300.0: Sulfate was detected in SWFTS-EM40-FB1 and SWFTS-EM40-EB1. Adjusted results were <10x the amounts in the EB and FB. Result was divided by dilution to determine adjusted concentration.	
6010B: Boron, calcium, magnesium, potassium, silicon, sodium, and strontium were detected in SWFTS-EM40-FB1. Boron, calcium, potassium, silicon, silver, sodium, and strontium were detected in SWFTS-EM40-FB1. Boron (0.00502), iron (0.0757), and silver (0.000560) were detected in MB 550-290825/1-A. Samples with concentrations < 10x the amounts in the blanks will be qualified.	
6020B: Arsenic was detected in SWFTS-EM40-EB1. Antimony (0.0440) was detected in MB 550-290824/1-A. Samples with concentrations < 10x the amounts in the blanks will be qualified.	

5. Surrogates/Monitoring Compounds	
Were samples spiked with the correct surrogate compounds? Were surrogate recoveries reported correctly on data forms? Were recoveries within laboratory limits?	Yes/Yes/Yes

6. Matrix Spike/Matrix Spike Duplicate	
Was a MS/MSD pair extracted and/or analyzed with each batch? Were recoveries/RPDs reported on data forms? Were recoveries/RPDs of project samples within laboratory established limits?	Yes/Yes/No
6010B: The lab did not analyze phosphorus in the MS/MSD. The spike solution did not contain it. The following recoveries were outside limits in the MS/MSD of SWFTS-MW-03-EM40: calcium, magnesium, silicon, sodium, and strontium. The concentrations in the parent sample were >4x the amount spiked, so recovery criteria do not apply. No qualification needed.	
6020B: Arsenic and selenium recoveries were high in the MS/MSD of SWFTS-MW-03-EM40.	

7. Laboratory Control Samples (LCS)	
Was a LCS analyzed with each analytical batch? Were LCS recoveries reported correctly on data forms? Were LCS recoveries within laboratory established limits?	Yes/Yes/Yes
6010B: The lab did not analyze for phosphorus in LCS 550-290825/2-A, LCSD 550-290825/3-A. The spike solution did not contain it.	

8. Duplicates	
Were any duplicate pairs analyzed in this SDG? For results > 5x the RL/PQL, were RPDs between parent sample and duplicates ≤ lab limits or ≤ 30% (water)/50% (soil) for field duplicates? For REG/FD results < 5x the RL/PQL, were differences between the two values < RL/PQL.	Yes/Yes/N/A
Lab Duplicates	

9. Compound Quantitation and Reporting Limits	
Were quantitation limits (RLs/PQL) adjusted to reflect dilutions, cleanup, and other factors? If applicable, were reporting limit check recoveries within acceptable limits?	Yes/Yes

10. Data Package/EDD comparison (10%)	
Were 10% of the data package results compared to the electronic data? Did results match?	Yes/Yes

Validated by: Maureen McMyler 03/28/2023

Data Verification and Validation Summary

Project Name: SWF Area Treatability Study
Task No.: M11
No. of Samples: 8
SDG/Report No.: 550-195013-1
Lab ID: Eurofins Phoenix
Matrix: Water

Area Reviewed	Anomalies		Qualification Required	Action Required
	Yes	No	Yes or No	
1. Sample Preservation, Handling, and Transport		X	No	None
2. Chain-of-Custody		X	No	None
3. Holding Times		X	No	None
4. Blanks	X		Yes	All GW: Qualify sulfate "J+" and antimony "J". SWFTS-MW16-EM40: Qualify selenium "J+". SWFTS-EM40-EB2: Qualify boron, calcium, silver, sodium, and strontium "J". SWFTS-EM40-FB2: Qualify boron, calcium, potassium, sodium, and strontium "J".
5. Surrogates/Monitoring Compounds		X	No	None
6. Matrix Spike/Matrix Spike Duplicate	X		No	None
7. Laboratory Control Samples	X		Yes	All: Qualify phosphorus "UJ".
8. Duplicates		X	No	None
9. Compound Quantitation and Reporting Limits		X	Yes	All: Qualify results detected between the MDL/SQL and RL/PQL "J".
10. Data Package/EDD comparison (10%)		X	No	None
Verification and Validation Label	Stage_2A_Validation_Manual			
Verification and Validation Label Code	S2AVM			

Overall Assessment: Acceptable as qualified.
Usability: Sample results qualified as estimated (UJ, J, J+) are considered valid and useable for limited purposes. All other results are considered valid and useable for all purposes.

Data Verification and Validation Summary

Sample Information:

Field Sample Number	Lab Sample ID	Date Collected	Cooler Temperature(s)
SWFTS-MW22-EM40	550-195013-1/550-195013-2	12/14/2022	3.0 °C /1.5 °C
SWFTS-MW19-EM40	550-195013-3/550-195013-4	12/14/2022	3.0 °C /1.5 °C
SWFTS-MW19-EM40-FD	550-195013-5/550-195013-6	12/14/2022	3.0 °C /1.5 °C
SWFTS-EM40-FB2	550-195013-7/550-195013-8	12/14/2022	3.0 °C /1.5 °C
SWFTS-EM40-EB2	550-195013-9/550-195013-10	12/14/2022	3.0 °C /1.5 °C
SWFTS-MW18-EM40	550-195013-11/550-195013-12	12/14/2022	3.0 °C /1.5 °C
SWFTS-MW17-EM40	550-195013-13/550-195013-14	12/14/2022	3.0 °C /1.5 °C
SWFTS-MW16-EM40	550-195013-15/550-195013-16	12/14/2022	3.0 °C /1.5 °C

The following section is intended to specify areas evaluated and issues encountered. Only applicable methods are listed.

1. Sample Preservation, Handling, and Transport	
Were all samples preserved correctly? Were sample temperatures kept at ≤ 6 °C? Were samples received in proper condition?	Yes/Yes/Yes

2. Chain-of-Custody (COC)	
Were samples recorded on the COCs? Were correct analyses performed on the samples?	Yes/Yes

3. Holding Times	
Were samples analyzed within acceptable holding times?	Yes

4. Blanks	
Does data package include a summary of blank results? Was a method blank extracted and/or analyzed for each batch? Were analytes detected in any blanks?	Yes/Yes/Yes
300.0: Sulfate was detected in SWFTS-EM40-FB2 and SWFTS-EM40-EB2. Adjusted results were <10x the amounts in the EB and FB. Result was divided by dilution to determine adjusted concentration.	
6010B: Boron, calcium, potassium, silicon, sodium, strontium, and zinc were detected in SWFTS-EM40-FB2. Boron, calcium, silicon, sodium, silver, and strontium were detected in SWFTS-EM40-EB2. Boron, calcium, potassium, silver, sodium, and strontium were detected in MB 550-290884/1-A	
6020B: Antimony and arsenic were detected in SWFTS-EM40-FB2. Antimony, arsenic, and selenium were detected in SWFTS-EM40-EB2.	

5. Surrogates/Monitoring Compounds	
Were samples spiked with the correct surrogate compounds? Were surrogate recoveries reported correctly on data forms? Were recoveries within laboratory limits?	Yes/Yes/Yes

6. Matrix Spike/Matrix Spike Duplicate	
Was a MS/MSD pair extracted and/or analyzed with each batch? Were recoveries/RPDs reported on data forms? Were recoveries/RPDs of project samples within laboratory established limits?	Yes/Yes/No
6010B: Sodium recovery was low in the MS of SWFTS-MW19-EM40-FD. The concentration in the parent sample was >4x the amount spiked, so recovery criteria do not apply. The spiking solution did not contain phosphorus.	

7. Laboratory Control Samples (LCS)	
Was a LCS analyzed with each analytical batch? Were LCS recoveries reported correctly on data forms? Were LCS recoveries within laboratory established limits?	Yes/Yes/Yes
6010B: The lab did not analyze for phosphorus in LCS 550-290884/2-A/LCSD 550-290884/3-A. The spiking solution did not contain it.	

8. Duplicates	
Were any duplicate pairs analyzed in this SDG? For results > 5x the RL/PQL, were RPDs between parent sample and duplicates ≤ lab limits or ≤ 30% (water)/50% (soil) for field duplicates? For REG/FD results < 5x the RL/PQL, were differences between the two values < RL/PQL.	Yes/Yes/Yes
One FD pair was analyzed: SWFTS-MW19-EM40 and SWFTS-MW19-EM40-FD. Results agreed	

9. Compound Quantitation and Reporting Limits	
Were quantitation limits (RLs/PQL) adjusted to reflect dilutions, cleanup, and other factors? If applicable, were reporting limit check recoveries within acceptable limits?	Yes/Yes

10. Data Package/EDD comparison (10%)	
Were 10% of the data package results compared to the electronic data? Did results match?	Yes/Yes

Validated by: Maureen McMyler 03/28/2023

Data Verification and Validation Summary

Project Name:	SWF Area Treatability Study	SDG/Report No.:	550-195015-1
Task No.:	M11	Lab ID:	Eurofins Phoenix
No. of Samples:	8	Matrix:	Water

Area Reviewed	Anomalies		Qualification Required	Action Required
	Yes	No	Yes or No	
1. Sample Preservation, Handling, and Transport		X	No	None
2. Chain-of-Custody		X	No	None
3. Holding Times		X	No	None
4. Blanks	X		No	None
5. Surrogates/Monitoring Compounds		X	No	None
6. Matrix Spike/Matrix Spike Duplicate	X		No	None
7. Laboratory Control Samples	X		Yes	All: Qualify phosphorus "J".
8. Duplicates		X	No	None
9. Compound Quantitation and Reporting Limits		X	Yes	All: Qualify results detected between the MDL/SQL and RL/PQL "J".
10. Data Package/EDD comparison (10%)		X	No	None
Verification and Validation Label	Stage_2A_Validation_Manual			
Verification and Validation Label Code	S2AVM			

Overall Assessment: Acceptable as qualified.
Usability: Sample results qualified as estimated (J) are considered valid and useable for limited purposes. All other results are considered valid and useable for all purposes.

Data Verification and Validation Summary

Sample Information:

Field Sample Number	Lab Sample ID	Date Collected	Cooler Temperature
SWFTS-MW-04-EM40	550-195015-1/550-195015-2	12/14/2022	2.6 °C /1.5 °C
SWFTS-MW-02-EM40	550-195015-3/550-195015-4	12/14/2022	2.6 °C /1.5 °C
SWFTS-MW06A-EM40	550-195015-5/550-195015-6	12/14/2022	2.6 °C /1.5 °C
SWFTS-MW-06A-EM40-FD	550-195015-7/550-195015-8	12/14/2022	2.6 °C /1.5 °C
SWFTS-MW-06B-EM40	550-195015-9/550-195015-10	12/14/2022	2.6 °C /1.5 °C
SWFTS-MW-07A-EM40	550-195015-11/550-195015-12	12/14/2022	2.6 °C /1.5 °C
SWFTS-MW-07B-EM40	550-195015-13/550-195015-14	12/14/2022	2.6 °C /1.5 °C
SWFTS-MW-08C-EM40	550-195015-15/550-195015-16	12/14/2022	2.6 °C /1.5 °C

The following section is intended to specify areas evaluated and issues encountered. Only applicable methods are listed.

1. Sample Preservation, Handling, and Transport	
Were all samples preserved correctly? Were sample temperatures kept at ≤ 6 °C? Were samples received in proper condition?	Yes/Yes/Yes

2. Chain-of-Custody (COC)	
Were samples recorded on the COCs? Were correct analyses performed on the samples?	Yes/Yes

3. Holding Times	
Were samples analyzed within acceptable holding times?	Yes

4. Blanks	
Does data package include a summary of blank results? Was a method blank extracted and/or analyzed for each batch? Were analytes detected in any blanks?	Yes/Yes/Yes
6010B: Boron, calcium, potassium, silver, sodium, and strontium were detected in MB 550-290884/1-A. Phosphorus and silver were detected in MB 550-290891/1-A. Where detected, concentrations in the samples were >10x the concentrations in the blanks.	

5. Surrogates/Monitoring Compounds	
Were samples spiked with the correct surrogate compounds? Were surrogate recoveries reported correctly on data forms? Were recoveries within laboratory limits?	Yes/Yes/Yes

6. Matrix Spike/Matrix Spike Duplicate	
Was a MS/MSD pair extracted and/or analyzed with each batch? Were recoveries/RPDs reported on data forms? Were recoveries/RPDs of project samples within laboratory established limits?	Yes/Yes/No
6010B: The lab did not analyze phosphorus in the MS/MSD. The spiking solution did not contain it. Calcium and sodium recoveries were low in the MS.MSD of SWFTS-MW06A-EM40. The concentrations in the parent sample were >4x the amount spiked so recovery criteria do not apply.	

7. Laboratory Control Samples (LCS)	
Was a LCS analyzed with each analytical batch? Were LCS recoveries reported correctly on data forms? Were LCS recoveries within laboratory established limits?	Yes/Yes/Yes
6010B: The lab did not analyze for phosphorus in LCS 550-290884/2-A/LCSD 550-290884/3-A or LCS 550-290891/2-A/LCSD 550-290891/3-A. The spiking solution did not contain it.	

8. Duplicates	
Were any duplicate pairs analyzed in this SDG? For results > 5x the RL/PQL, were RPDs between parent sample and duplicates ≤ lab limits or ≤ 30% (water)/50% (soil) for field duplicates? For REG/FD results < 5x the RL/PQL, were differences between the two values < RL/PQL.	Yes/Yes/Yes
One FD pair was analyzed: SWFTS-MW-06A-EM40 and SWFTS-MW-06A-EM40-FD. Results agreed.	

9. Compound Quantitation and Reporting Limits	
Were quantitation limits (RLs/PQL) adjusted to reflect dilutions, cleanup, and other factors? If applicable, were reporting limit check recoveries within acceptable limits?	Yes/Yes

10. Data Package/EDD comparison (10%)	
Were 10% of the data package results compared to the electronic data? Did results match?	Yes/Yes

Validated by: Maureen McMyler 03/31/2023

Data Verification and Validation Summary

Project Name: SWF Area Treatability Study
Task No.: M11
No. of Samples: 5
SDG/Report No.: 550-195103-1
Lab ID: Eurofins Phoenix
Matrix: Water

Area Reviewed	Anomalies		Qualification Required	Action Required
	Yes	No	Yes or No	
1. Sample Preservation, Handling, and Transport		X	No	None
2. Chain-of-Custody		X	No	None
3. Holding Times		X	No	None
4. Blanks	X		Yes	All: Qualify antimony "J".
5. Surrogates/Monitoring Compounds		X	No	None
6. Matrix Spike/Matrix Spike Duplicate	X		Yes	SWFTS-MW10A-EM40: Qualify TOC "J-".
7. Laboratory Control Samples	X		Yes	All: Qualify phosphorus "UJ".
8. Duplicates		X	No	None
9. Compound Quantitation and Reporting Limits		X	Yes	All: Qualify results detected between the MDL/SQL and RL/PQL "J".
10. Data Package/EDD comparison (10%)		X	No	None
Verification and Validation Label	Stage_2A_Validation_Manual			
Verification and Validation Label Code	S2AVM			

Overall Assessment: Acceptable as qualified.
Usability: Sample results qualified as estimated (UJ, J, J-) are considered valid and useable for limited purposes. All other results are considered valid and useable for all purposes.

Data Verification and Validation Summary

Sample Information:

Field Sample Number	Lab Sample ID	Date Collected	Cooler Temperature
SWFTS-MW-10A-EM40	550-195103-1/550-195103-2	12/15/2022	1.0 °C /3.7 °C
SWFTS-MW-10C-EM40	550-195103-3/550-195103-4	12/15/2022	1.0 °C /3.7 °C
SWFTS-MW-11-EM40	550-195103-5/550-195103-6	12/15/2022	1.0 °C /3.7 °C
SWFTS-MW-11-EM40-FD	550-195103-7/550-195103-8	12/15/2022	1.0 °C /3.7 °C
SWFTS-MW-12-EM40	550-195103-9/550-195103-10	12/15/2022	1.0 °C /3.7 °C

The following section is intended to specify areas evaluated and issues encountered. Only applicable methods are listed.

1. Sample Preservation, Handling, and Transport	
Were all samples preserved correctly? Were sample temperatures kept at ≤ 6 °C? Were samples received in proper condition?	Yes/Yes/Yes
COC shows temperature > 6 °C at pickup by the courier after sampling, but before shipping to the analytical lab. The samples were on ice. No qualification is needed.	

2. Chain-of-Custody (COC)	
Were samples recorded on the COCs? Were correct analyses performed on the samples?	Yes/Yes

3. Holding Times	
Were samples analyzed within acceptable holding times?	Yes

4. Blanks	
Does data package include a summary of blank results? Was a method blank extracted and/or analyzed for each batch? Were analytes detected in any blanks?	Yes/Yes/Yes
6010B: Boron and silver were detected in MB 550-291029/1-A.	
6020B: Antimony and arsenic were detected in MB 550-291028/1-A.	

5. Surrogates/Monitoring Compounds	
Were samples spiked with the correct surrogate compounds? Were surrogate recoveries reported correctly on data forms? Were recoveries within laboratory limits?	Yes/Yes/Yes

6. Matrix Spike/Matrix Spike Duplicate	
Was a MS/MSD pair extracted and/or analyzed with each batch? Were recoveries/RPDs reported on data forms? Were recoveries/RPDs of project samples within laboratory established limits?	Yes/Yes/Yes
6010B: The lab did not analyze phosphorus in the MS/MSD. The spiking solution did not contain it. Calcium, magnesium, silicon, strontium, and sodium recoveries were low in the MS.MSD of SWFTS-MW-10A-EM40. The concentrations in the parent sample were >4x the amount spiked so recovery criteria do not apply.	
SM5310B: TOC recovery was low in the MSD of SWFTS-MW10A-EM40.	

7. Laboratory Control Samples (LCS)	
Was a LCS analyzed with each analytical batch? Were LCS recoveries reported correctly on data forms? Were LCS recoveries within laboratory established limits?	Yes/Yes/Yes
6010B: The lab did not analyze for phosphorus in LCS 550-291029/2-A/LCSD 550-291029/3-A. The spiking solution did not contain it.	

8. Duplicates	
Were any duplicate pairs analyzed in this SDG? For results > 5x the RL/PQL, were RPDs between parent sample and duplicates ≤ lab limits or ≤ 30% (water)/50% (soil) for field duplicates? For REG/FD results < 5x the RL/PQL, were differences between the two values < RL/PQL.	Yes/Yes/Yes
One FD pair was analyzed: SWFTS-MW-11-EM40 and SWFTS-MW-11-EM40-FD. Results agreed.	

9. Compound Quantitation and Reporting Limits	
Were quantitation limits (RLs/PQL) adjusted to reflect dilutions, cleanup, and other factors? If applicable, were reporting limit check recoveries within acceptable limits?	Yes/Yes

10. Data Package/EDD comparison (10%)	
Were 10% of the data package results compared to the electronic data? Did results match?	Yes/Yes

Validated by: Maureen McMyler 03/31/2023

Data Verification and Validation Summary

Project Name:	SWF Area Treatability Study	SDG/Report No.:	550-195106-1
Task No.:	M11	Lab ID:	Eurofins Phoenix
No. of Samples:	4	Matrix:	Water

Area Reviewed	Anomalies		Qualification Required	Action Required
	Yes	No	Yes or No	
1. Sample Preservation, Handling, and Transport	X		No	None
2. Chain-of-Custody		X	No	None
3. Holding Times		X	No	None
4. Blanks	X		Yes	All: Qualify antimony "J".
5. Surrogates/Monitoring Compounds		X	No	None
6. Matrix Spike/Matrix Spike Duplicate	X		No	None
7. Laboratory Control Samples	X		Yes	All: Qualify phosphorus "UJ".
8. Duplicates		X	No	None
9. Compound Quantitation and Reporting Limits		X	Yes	All: Qualify results detected between the MDL/SQL and RL/PQL "J".
10. Data Package/EDD comparison (10%)		X	No	None
Verification and Validation Label	Stage_2A_Validation_Manual			
Verification and Validation Label Code	S2AVM			

Overall Assessment: Acceptable as qualified.
Usability: Sample results qualified as estimated (UJ, J) are considered valid and useable for limited purposes. All other results are considered valid and useable for all purposes.

Data Verification and Validation Summary

Sample Information:

Field Sample Number	Lab Sample ID	Date Collected	Cooler Temperature
SWFTS-MW15-EM40	550-195106-1/550-195106-2	12/15/2022	1.1 ºC/3.7 ºC
SWFTS-MW14-EM40	550-195106-3/550-195106-4	12/15/2022	1.1 ºC/3.7 ºC
SWFTS-MW21-EM40	550-195106-5/550-195106-6	12/15/2022	1.1 ºC/3.7 ºC
SWFTS-MW13-EM40	550-195106-7/550-195106-8	12/15/2022	1.1 ºC/3.7 ºC

The following section is intended to specify areas evaluated and issues encountered. Only applicable methods are listed.

1. Sample Preservation, Handling, and Transport	
Were all samples preserved correctly? Were sample temperatures kept at ≤ 6 ºC? Were samples received in proper condition?	Yes/Yes/Yes

2. Chain-of-Custody (COC)	
Were samples recorded on the COCs? Were correct analyses performed on the samples?	Yes/Yes

3. Holding Times	
Were samples analyzed within acceptable holding times?	Yes

4. Blanks	
Does data package include a summary of blank results? Was a method blank extracted and/or analyzed for each batch? Were analytes detected in any blanks?	Yes/Yes/Yes
6010B: Boron and silver were detected in MB 550-291029/1-A. Where detected, concentrations in the samples were >10x the concentrations in the blanks. No qualification is needed.	
6020B: Antimony and arsenic were detected in MB 550-291028/1-A. Antimony will be qualified in all samples.	

5. Surrogates/Monitoring Compounds	
Were samples spiked with the correct surrogate compounds? Were surrogate recoveries reported correctly on data forms? Were recoveries within laboratory limits?	Yes/Yes/Yes

6. Matrix Spike/Matrix Spike Duplicate	
Was a MS/MSD pair extracted and/or analyzed with each batch? Were recoveries/RPDs reported on data forms? Were recoveries/RPDs of project samples within laboratory established limits?	Yes/Yes/Yes

7. Laboratory Control Samples (LCS)	
Was a LCS analyzed with each analytical batch? Were LCS recoveries reported correctly on data forms? Were LCS recoveries within laboratory established limits?	Yes/Yes/Yes
6010B: The lab did not analyze for phosphorus in LCS 550-291029/2-A/LCSD 550-291029/3-A. The spiking solution did not contain it. All results are considered estimated and will be qualified.	

8. Duplicates	
Were any duplicate pairs analyzed in this SDG? For results > 5x the RL/PQL, were RPDs between parent sample and duplicates ≤ lab limits or ≤ 30% (water)/50% (soil) for field duplicates? For REG/FD results < 5x the RL/PQL, were differences between the two values < RL/PQL.	Yes/Yes/N/A
Lab duplicates	

9. Compound Quantitation and Reporting Limits	
Were quantitation limits (RLs/PQL) adjusted to reflect dilutions, cleanup, and other factors? If applicable, were reporting limit check recoveries within acceptable limits?	Yes/Yes

10. Data Package/EDD comparison (10%)	
Were 10% of the data package results compared to the electronic data? Did results match?	Yes/Yes

Validated by: Maureen McMyler 03/31/23

Appendix 2
Laboratory Data Packages

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ANALYTICAL REPORT

Eurofins Phoenix
4625 East Cotton Center Boulevard
Suite #189
Phoenix, AZ 85040
Tel: (602)437-3340

Laboratory Job ID: 550-180322-1
Laboratory Sample Delivery Group: SWFABTS
Client Project/Site: Tetra Tech M11 SWF Treatability Study

For:
Tetra Tech, Inc.
1093 Commerce Park Drive
Suite 100
Oak Ridge, Tennessee 37830

Attn: Dana Grady

Rachel E. Sester

Authorized for release by:
3/21/2022 3:57:10 PM

Rachel Sester, Project Manager I
(602)659-7615
Rachel.Sester@Eurofinset.com

LINKS

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This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.

Results relate only to the items tested and the sample(s) as received by the laboratory.

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Qualifiers

HPLC/IC

Qualifier	Qualifier Description
cn	Refer to Case Narrative for further detail
D	Sample results are obtained from a dilution; the surrogate or matrix spike recoveries reported are calculated from diluted samples.
E	Result exceeded calibration range.
F1	MS and/or MSD recovery exceeds control limits.
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

General Chemistry

Qualifier	Qualifier Description
F1	MS and/or MSD recovery exceeds control limits.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CFU	Colony Forming Unit
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MCL	EPA recommended "Maximum Contaminant Level"
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
MPN	Most Probable Number
MQL	Method Quantitation Limit
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
NEG	Negative / Absent
POS	Positive / Present
PQL	Practical Quantitation Limit
PRES	Presumptive
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)
TNTC	Too Numerous To Count

Job ID: 550-180322-1

Laboratory: Eurofins Phoenix

Narrative

Job Narrative
550-180322-1

Comments
No additional comments.

Receipt
The samples were received on 3/8/2022 6:30 AM. Unless otherwise noted below, the samples arrived in good condition, and where required, properly preserved and on ice. The temperatures of the 2 coolers at receipt time were 3.5º C and 20.5º C.

HPLC/IC
Method 300.1B: Spike compounds were inadvertently omitted during the preparation process for the matrix spike/matrix spike duplicate (MS/MSD) for method 300.1; therefore, matrix spike recoveries did not provide useful information for analytical batch 550-268735. The associated laboratory control sample (LCS) met acceptance criteria.

Method 300.1B: The following samples were diluted for Chlorate by method EPA 300.1B due to an abundance of non-target analytes present within the sample matrix: PC-91-EM37 (550-180322-2), SWFTS-MW06A-EM37 (550-180322-6) and SWFTS-MW06A-EM37-FD (550-180322-7). In the diluted samples this analyte was not detected or was beneath the lowest calibration limit. As such, elevated reporting limits (RLs) have been provided.

Method 300.1B: The matrix spike duplicate (MSD) recovery for analytical batch 550-268735 was outside control limits for Chlorate. Sample matrix interference was suspected because the associated laboratory control sample (LCS) recovery was within acceptance limits.

Method 300.0: The results for the source sample and the matrix spike / matrix spike duplicate (MS/MSD) associated with analytical batch 550-268346 for Sulfate by method EPA 300.0 could not be reported due to the analyte exceeding the high end of the instrument calibration range. As such, reanalysis at a dilution was required and a result could not be reported for the associated source sample. The results for the batch laboratory control sample / laboratory sample control duplicate (LCS/LCSD) met method acceptance criteria and may be used to verify accuracy and precision. Therefore, the following sample results have been reported and qualified with cn flags.

PC-58-EM37 (550-180322-1), PC-92-EM37 (550-180322-3), SWFTS-MW11-EM37 (550-180322-4), SWFTS-MW06A-EM37 (550-180322-6), SWFTS-MW06A-EM37-FD (550-180322-7), SWFTS-MW06B-EM37 (550-180322-8), SWFTS-MW25-EM37 (550-180322-10) and SWFTS-MW23-EM37 (550-180322-11)

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

General Chemistry
Method SM 5310B: The matrix spike / matrix spike duplicate (MS/MSD) recoveries for 550-269343 were beneath control limits for TOC. Sample matrix interference was suspected because the associated laboratory control sample (LCS) recovery was within acceptance limits.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

Sample Summary

Client: Tetra Tech, Inc.
Project/Site: Tetra Tech M11 SWF Treatability Study

Job ID: 550-180322-1
SDG: SWFABTS

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
550-180322-1	PC-58-EM37	Water	03/07/22 11:54	03/07/22 18:21
550-180322-2	PC-91-EM37	Water	03/07/22 13:09	03/07/22 18:21
550-180322-3	PC-92-EM37	Water	03/07/22 14:02	03/07/22 18:21
550-180322-4	SWFTS-MW11-EM37	Water	03/07/22 11:10	03/07/22 18:21
550-180322-5	SWFTS-MW11-EM37-FD	Water	03/07/22 11:10	03/07/22 18:21
550-180322-6	SWFTS-MW06A-EM37	Water	03/07/22 12:15	03/07/22 18:21
550-180322-7	SWFTS-MW06A-EM37-FD	Water	03/07/22 12:15	03/07/22 18:21
550-180322-8	SWFTS-MW06B-EM37	Water	03/07/22 13:15	03/07/22 18:21
550-180322-9	SWFTS-MW10A-EM37	Water	03/07/22 14:20	03/07/22 18:21
550-180322-10	SWFTS-MW25-EM37	Water	03/07/22 13:00	03/07/22 18:21
550-180322-11	SWFTS-MW23-EM37	Water	03/07/22 13:45	03/07/22 18:21

Detection Summary

Client: Tetra Tech, Inc.
Project/Site: Tetra Tech M11 SWF Treatability Study

Job ID: 550-180322-1
SDG: SWFABTS

Client Sample ID: PC-58-EM37 — Lab Sample ID: 550-180322-1

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Nitrate as N	14		0.050	0.014	mg/L	1		300.0	Total/NA
Sulfate	1300	cn	100	21	mg/L	50		300.0	Total/NA
Chlorate	27000		4000	980	ug/L	200		300.1B	Total/NA
Perchlorate	4500		200	63	ug/L	200		314.0	Total/NA
Total Organic Carbon	2.3		0.50	0.26	mg/L	1		SM 5310B	Total/NA

Client Sample ID: PC-91-EM37 — Lab Sample ID: 550-180322-2

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Nitrate as N	0.021	J	0.050	0.014	mg/L	1		300.0	Total/NA
Sulfate	150		10	2.1	mg/L	5		300.0	Total/NA
Perchlorate	2.3		1.0	0.31	ug/L	1		314.0	Total/NA
Total Organic Carbon	11		2.0	1.0	mg/L	4		SM 5310B	Total/NA

Client Sample ID: PC-92-EM37 — Lab Sample ID: 550-180322-3

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Nitrate as N	9.4		0.050	0.014	mg/L	1		300.0	Total/NA
Sulfate	1300	cn	100	21	mg/L	50		300.0	Total/NA
Chlorate	37000		20000	4900	ug/L	1000		300.1B	Total/NA
Perchlorate	15000		500	160	ug/L	500		314.0	Total/NA
Total Organic Carbon	1.9		0.50	0.26	mg/L	1		SM 5310B	Total/NA

Client Sample ID: SWFTS-MW11-EM37 — Lab Sample ID: 550-180322-4

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Nitrate as N	25		0.10	0.028	mg/L	2		300.0	Total/NA
Sulfate	3000	cn	100	21	mg/L	50		300.0	Total/NA
Chlorate	33000		2000	490	ug/L	100		300.1B	Total/NA
Perchlorate	17000		500	160	ug/L	500		314.0	Total/NA
Total Organic Carbon	2.2		0.50	0.26	mg/L	1		SM 5310B	Total/NA

Client Sample ID: SWFTS-MW11-EM37-FD — Lab Sample ID: 550-180322-5

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Nitrate as N	24		0.10	0.028	mg/L	2		300.0	Total/NA
Sulfate	2900		100	21	mg/L	50		300.0	Total/NA
Chlorate	32000		2000	490	ug/L	100		300.1B	Total/NA
Perchlorate	16000		500	160	ug/L	500		314.0	Total/NA
Total Organic Carbon	2.2		0.50	0.26	mg/L	1		SM 5310B	Total/NA

Client Sample ID: SWFTS-MW06A-EM37 — Lab Sample ID: 550-180322-6

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Nitrate as N	0.089		0.050	0.014	mg/L	1		300.0	Total/NA
Sulfate	590	cn	100	21	mg/L	50		300.0	Total/NA
Perchlorate	590		100	31	ug/L	100		314.0	Total/NA
Total Organic Carbon	3.1		0.50	0.26	mg/L	1		SM 5310B	Total/NA

Client Sample ID: SWFTS-MW06A-EM37-FD — Lab Sample ID: 550-180322-7

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Nitrate as N	0.081		0.050	0.014	mg/L	1		300.0	Total/NA
Sulfate	590	cn	100	21	mg/L	50		300.0	Total/NA

This Detection Summary does not include radiochemical test results.

Eurofins Phoenix

Client Sample ID: SWFTS-MW06A-EM37-FD (Continued) — Lab Sample ID: 550-180322-7

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Perchlorate	530		100	31	ug/L	100		314.0	Total/NA
Total Organic Carbon	3.1		0.50	0.26	mg/L	1		SM 5310B	Total/NA

Client Sample ID: SWFTS-MW06B-EM37 — Lab Sample ID: 550-180322-8

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Nitrate as N	0.11		0.050	0.014	mg/L	1		300.0	Total/NA
Sulfate	660	cn	100	21	mg/L	50		300.0	Total/NA
Chlorate	100		100	24	ug/L	5		300.1B	Total/NA
Perchlorate	1000		100	31	ug/L	100		314.0	Total/NA
Total Organic Carbon	3.5		2.0	1.0	mg/L	4		SM 5310B	Total/NA

Client Sample ID: SWFTS-MW10A-EM37 — Lab Sample ID: 550-180322-9

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Nitrate as N	11		0.050	0.014	mg/L	1		300.0	Total/NA
Sulfate	1500		100	21	mg/L	50		300.0	Total/NA
Chlorate	25000	F1	2000	490	ug/L	100		300.1B	Total/NA
Perchlorate	15000		500	160	ug/L	500		314.0	Total/NA
Total Organic Carbon	1.8	F1	0.50	0.26	mg/L	1		SM 5310B	Total/NA

Client Sample ID: SWFTS-MW25-EM37 — Lab Sample ID: 550-180322-10

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Nitrate as N	9.3		0.050	0.014	mg/L	1		300.0	Total/NA
Sulfate	1600	cn	100	21	mg/L	50		300.0	Total/NA
Chlorate	240		20	4.9	ug/L	1		300.1B	Total/NA
Perchlorate	13000		500	160	ug/L	500		314.0	Total/NA
Total Organic Carbon	1.8		0.50	0.26	mg/L	1		SM 5310B	Total/NA

Client Sample ID: SWFTS-MW23-EM37 — Lab Sample ID: 550-180322-11

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Nitrate as N	0.43		0.050	0.014	mg/L	1		300.0	Total/NA
Sulfate	740	cn	100	21	mg/L	50		300.0	Total/NA
Chlorate	350		40	9.8	ug/L	2		300.1B	Total/NA
Perchlorate	1100		100	31	ug/L	100		314.0	Total/NA
Total Organic Carbon	2.8		0.50	0.26	mg/L	1		SM 5310B	Total/NA

This Detection Summary does not include radiochemical test results.

Client Sample Results

Client: Tetra Tech, Inc.
Project/Site: Tetra Tech M11 SWF Treatability Study

Job ID: 550-180322-1
SDG: SWFABTS

Client Sample ID: PC-58-EM37

Lab Sample ID: 550-180322-1
Date Collected: 03/07/22 11:54
Matrix: Water
Date Received: 03/07/22 18:21

Method: 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Nitrate as N	14		0.050	0.014	mg/L			03/08/22 13:04	1
Sulfate	1300	cn	100	21	mg/L			03/08/22 16:26	50

Method: 300.1B - Disinfection By-Products, (IC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chlorate	27000		4000	980	ug/L			03/14/22 00:06	200

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Dichloroacetic acid(Surr)	*105*		*90 - 115*		*03/14/22 00:06*	*200*

Method: 314.0 - Perchlorate (IC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perchlorate	4500		200	63	ug/L			03/09/22 13:22	200

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon	2.3		0.50	0.26	mg/L			03/18/22 18:31	1

Client Sample ID: PC-91-EM37

Lab Sample ID: 550-180322-2
Date Collected: 03/07/22 13:09
Matrix: Water
Date Received: 03/07/22 18:21

Method: 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Nitrate as N	0.021	J	0.050	0.014	mg/L			03/08/22 14:36	1
Sulfate	150		10	2.1	mg/L			03/10/22 19:42	5

Method: 300.1B - Disinfection By-Products, (IC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chlorate	ND	D	100	24	ug/L			03/14/22 00:36	5

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Dichloroacetic acid(Surr)	*104*		*90 - 115*		*03/14/22 00:36*	*5*

Method: 314.0 - Perchlorate (IC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perchlorate	2.3		1.0	0.31	ug/L			03/08/22 20:03	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon	11		2.0	1.0	mg/L			03/18/22 18:42	4

Client Sample ID: PC-92-EM37

Lab Sample ID: 550-180322-3
Date Collected: 03/07/22 14:02
Matrix: Water
Date Received: 03/07/22 18:21

Method: 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Nitrate as N	9.4		0.050	0.014	mg/L			03/08/22 12:09	1
Sulfate	1300	cn	100	21	mg/L			03/08/22 16:45	50

Client Sample ID: PC-92-EM37

Lab Sample ID: 550-180322-3
Date Collected: 03/07/22 14:02
Matrix: Water
Date Received: 03/07/22 18:21

Method: 300.1B - Disinfection By-Products, (IC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chlorate	37000		20000	4900	ug/L			03/14/22 03:33	1000

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Dichloroacetic acid(Surr)	*115*		*90 - 115*		*03/14/22 03:33*	*1000*

Method: 314.0 - Perchlorate (IC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perchlorate	15000		500	160	ug/L			03/09/22 14:29	500

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon	1.9		0.50	0.26	mg/L			03/18/22 19:20	1

Client Sample ID: SWFTS-MW11-EM37

Lab Sample ID: 550-180322-4
Date Collected: 03/07/22 11:10
Matrix: Water
Date Received: 03/07/22 18:21

Method: 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Nitrate as N	25		0.10	0.028	mg/L			03/08/22 13:22	2
Sulfate	3000	cn	100	21	mg/L			03/08/22 17:03	50

Method: 300.1B - Disinfection By-Products, (IC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chlorate	33000		2000	490	ug/L			03/14/22 04:02	100

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Dichloroacetic acid(Surr)	*100*		*90 - 115*		*03/14/22 04:02*	*100*

Method: 314.0 - Perchlorate (IC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perchlorate	17000		500	160	ug/L			03/09/22 14:51	500

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon	2.2		0.50	0.26	mg/L			03/18/22 19:34	1

Client Sample ID: SWFTS-MW11-EM37-FD

Lab Sample ID: 550-180322-5
Date Collected: 03/07/22 11:10
Matrix: Water
Date Received: 03/07/22 18:21

Method: 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Nitrate as N	24		0.10	0.028	mg/L			03/08/22 17:47	2
Sulfate	2900		100	21	mg/L			03/08/22 18:15	50

Method: 300.1B - Disinfection By-Products, (IC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chlorate	32000		2000	490	ug/L			03/14/22 04:32	100

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Dichloroacetic acid(Surr)	*104*		*90 - 115*		*03/14/22 04:32*	*100*

Client Sample ID: SWFTS-MW11-EM37-FD

Lab Sample ID: 550-180322-5

Date Collected: 03/07/22 11:10
Matrix: Water
Date Received: 03/07/22 18:21

Method: 314.0 - Perchlorate (IC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perchlorate	16000		500	160	ug/L			03/09/22 15:14	500

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon	2.2		0.50	0.26	mg/L			03/18/22 19:47	1

Client Sample ID: SWFTS-MW06A-EM37

Lab Sample ID: 550-180322-6

Date Collected: 03/07/22 12:15
Matrix: Water
Date Received: 03/07/22 18:21

Method: 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Nitrate as N	0.089		0.050	0.014	mg/L			03/08/22 13:41	1
Sulfate	590	cn	100	21	mg/L			03/08/22 17:21	50

Method: 300.1B - Disinfection By-Products, (IC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chlorate	ND	D	100	24	ug/L			03/14/22 05:01	5

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Dichloroacetic acid(Surr)	*112*		*90 - 115*		*03/14/22 05:01*	*5*

Method: 314.0 - Perchlorate (IC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perchlorate	590		100	31	ug/L			03/08/22 19:01	100

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon	3.1		0.50	0.26	mg/L			03/18/22 20:03	1

Client Sample ID: SWFTS-MW06A-EM37-FD

Lab Sample ID: 550-180322-7

Date Collected: 03/07/22 12:15
Matrix: Water
Date Received: 03/07/22 18:21

Method: 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Nitrate as N	0.081		0.050	0.014	mg/L			03/08/22 13:59	1
Sulfate	590	cn	100	21	mg/L			03/08/22 17:40	50

Method: 300.1B - Disinfection By-Products, (IC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chlorate	ND	D	100	24	ug/L			03/14/22 05:30	5

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Dichloroacetic acid(Surr)	*111*		*90 - 115*		*03/14/22 05:30*	*5*

Method: 314.0 - Perchlorate (IC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perchlorate	530		100	31	ug/L			03/08/22 19:23	100

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon	3.1		0.50	0.26	mg/L			03/18/22 20:15	1

Client Sample ID: SWFTS-MW06B-EM37

Lab Sample ID: 550-180322-8
Date Collected: 03/07/22 13:15
Matrix: Water
Date Received: 03/07/22 18:21

Method: 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Nitrate as N	0.11		0.050	0.014	mg/L			03/08/22 14:17	1
Sulfate	660	cn	100	21	mg/L			03/08/22 17:58	50

Method: 300.1B - Disinfection By-Products, (IC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chlorate	100		100	24	ug/L			03/14/22 06:00	5

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Dichloroacetic acid(Surr)	*106*		*90 - 115*		*03/14/22 06:00*	*5*

Method: 314.0 - Perchlorate (IC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perchlorate	1000		100	31	ug/L			03/08/22 19:45	100

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon	3.5		2.0	1.0	mg/L			03/18/22 20:31	4

Client Sample ID: SWFTS-MW10A-EM37

Lab Sample ID: 550-180322-9
Date Collected: 03/07/22 14:20
Matrix: Water
Date Received: 03/07/22 18:21

Method: 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Nitrate as N	11		0.050	0.014	mg/L			03/08/22 14:59	1
Sulfate	1500		100	21	mg/L			03/08/22 16:23	50

Method: 300.1B - Disinfection By-Products, (IC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chlorate	25000	F1	2000	490	ug/L			03/14/22 02:04	100

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Dichloroacetic acid(Surr)	*114*		*90 - 115*		*03/14/22 02:04*	*100*

Method: 314.0 - Perchlorate (IC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perchlorate	15000		500	160	ug/L			03/08/22 12:17	500

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon	1.8	F1	0.50	0.26	mg/L			03/18/22 16:27	1

Client Sample ID: SWFTS-MW25-EM37

Lab Sample ID: 550-180322-10
Date Collected: 03/07/22 13:00
Matrix: Water
Date Received: 03/07/22 18:21

Method: 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Nitrate as N	9.3		0.050	0.014	mg/L			03/08/22 15:49	1
Sulfate	1600	cn	100	21	mg/L			03/08/22 18:17	50

Client Sample ID: SWFTS-MW25-EM37

Lab Sample ID: 550-180322-10
Date Collected: 03/07/22 13:00
Matrix: Water
Date Received: 03/07/22 18:21

Method: 300.1B - Disinfection By-Products, (IC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chlorate	240		20	4.9	ug/L			03/14/22 06:29	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Dichloroacetic acid(Surr)	*115*		*90 - 115*		*03/14/22 06:29*	*1*

Method: 314.0 - Perchlorate (IC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perchlorate	13000		500	160	ug/L			03/08/22 12:48	500

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon	1.8		0.50	0.26	mg/L			03/18/22 20:44	1

Client Sample ID: SWFTS-MW23-EM37

Lab Sample ID: 550-180322-11
Date Collected: 03/07/22 13:45
Matrix: Water
Date Received: 03/07/22 18:21

Method: 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Nitrate as N	0.43		0.050	0.014	mg/L			03/08/22 16:08	1
Sulfate	740	cn	100	21	mg/L			03/08/22 19:30	50

Method: 300.1B - Disinfection By-Products, (IC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chlorate	350		40	9.8	ug/L			03/14/22 10:54	2

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Dichloroacetic acid(Surr)	*104*		*90 - 115*		*03/14/22 10:54*	*2*

Method: 314.0 - Perchlorate (IC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perchlorate	1100		100	31	ug/L			03/08/22 13:57	100

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon	2.8		0.50	0.26	mg/L			03/18/22 20:55	1

Surrogate Summary

Client: Tetra Tech, Inc.
Project/Site: Tetra Tech M11 SWF Treatability Study

Job ID: 550-180322-1
SDG: SWFABTS

Method: 300.1B - Disinfection By-Products, (IC)

Matrix: Water — **Prep Type: Total/NA**

		Percent Surrogate Recovery (Acceptance Limits)
Lab Sample ID	Client Sample ID	DCAA (90-115)
550-180281-A-1 MS ^2	Matrix Spike	104
550-180281-A-1 MSD ^2	Matrix Spike Duplicate	107
550-180322-1	PC-58-EM37	105
550-180322-2	PC-91-EM37	104
550-180322-3	PC-92-EM37	115
550-180322-4	SWFTS-MW11-EM37	100
550-180322-5	SWFTS-MW11-EM37-FD	104
550-180322-6	SWFTS-MW06A-EM37	112
550-180322-7	SWFTS-MW06A-EM37-FD	111
550-180322-8	SWFTS-MW06B-EM37	106
550-180322-9	SWFTS-MW10A-EM37	114
550-180322-9 MS	SWFTS-MW10A-EM37	104
550-180322-9 MSD	SWFTS-MW10A-EM37	105
550-180322-10	SWFTS-MW25-EM37	115
550-180322-11	SWFTS-MW23-EM37	104
550-180322-11 MS	SWFTS-MW23-EM37	103
550-180322-11 MSD	SWFTS-MW23-EM37	103
LCS 550-268735/5	Lab Control Sample	102
LCS 550-268752/5	Lab Control Sample	103
LCSD 550-268735/6	Lab Control Sample Dup	103
LCSD 550-268752/6	Lab Control Sample Dup	103
MB 550-268735/4	Method Blank	114
MB 550-268752/4	Method Blank	113

Surrogate Legend

DCAA = Dichloroacetic acid(Surr)

Method: 300.1B - Disinfection By-Products, (IC)

Matrix: Water — **Prep Type: Total/NA**

		Percent Surrogate Recovery (Acceptance Limits)
Lab Sample ID	Client Sample ID	DCAA (50-150)
MRL 550-268735/1002	Lab Control Sample	102
MRL 550-268752/1002	Lab Control Sample	101

Surrogate Legend

DCAA = Dichloroacetic acid(Surr)

Method: 300.0 - Anions, Ion Chromatography

Lab Sample ID: MB 550-268345/2
Matrix: Water
Analysis Batch: 268345

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Nitrate as N	ND		0.050	0.014	mg/L			03/08/22 11:16	1
Sulfate	ND		2.0	0.43	mg/L			03/08/22 11:16	1

Lab Sample ID: LCS 550-268345/5
Matrix: Water
Analysis Batch: 268345

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
Nitrate as N			4.00	4.07		mg/L		102	90 - 110		
Sulfate			20.0	20.9		mg/L		105	90 - 110		

Lab Sample ID: LCSD 550-268345/6
Matrix: Water
Analysis Batch: 268345

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Nitrate as N			4.00	4.07		mg/L		102	90 - 110	0	20
Sulfate			20.0	20.7		mg/L		104	90 - 110	1	20

Lab Sample ID: 550-180322-9 MS
Matrix: Water
Analysis Batch: 268345

Client Sample ID: SWFTS-MW10A-EM37
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits		
Nitrate as N	11		4.00	14.6		mg/L		93	80 - 120		

Lab Sample ID: 550-180322-9 MS
Matrix: Water
Analysis Batch: 268345

Client Sample ID: SWFTS-MW10A-EM37
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits		
Sulfate	1500		1000	2560		mg/L		103	80 - 120		

Lab Sample ID: 550-180322-9 MSD
Matrix: Water
Analysis Batch: 268345

Client Sample ID: SWFTS-MW10A-EM37
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Nitrate as N	11		4.00	14.6		mg/L		93	80 - 120	0	20

Lab Sample ID: 550-180322-9 MSD
Matrix: Water
Analysis Batch: 268345

Client Sample ID: SWFTS-MW10A-EM37
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Sulfate	1500		1000	2570		mg/L		105	80 - 120	1	20

Method: 300.0 - Anions, Ion Chromatography (Continued)

Lab Sample ID: MB 550-268346/2
Matrix: Water
Analysis Batch: 268346

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Nitrate as N	ND		0.050	0.014	mg/L			03/08/22 10:37	1
Sulfate	ND		2.0	0.43	mg/L			03/08/22 10:37	1

Lab Sample ID: LCS 550-268346/5
Matrix: Water
Analysis Batch: 268346

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Nitrate as N	4.00	4.17		mg/L		104	90 - 110
Sulfate	20.0	21.3		mg/L		106	90 - 110

Lab Sample ID: LCSD 550-268346/6
Matrix: Water
Analysis Batch: 268346

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Nitrate as N	4.00	4.19		mg/L		105	90 - 110	0	20
Sulfate	20.0	21.1		mg/L		105	90 - 110	1	20

Lab Sample ID: 550-180322-3 MS
Matrix: Water
Analysis Batch: 268346

Client Sample ID: PC-92-EM37
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Nitrate as N	9.4		4.00	13.2		mg/L		96	80 - 120

Lab Sample ID: 550-180322-3 MSD
Matrix: Water
Analysis Batch: 268346

Client Sample ID: PC-92-EM37
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Nitrate as N	9.4		4.00	13.2		mg/L		96	80 - 120	0	20

Lab Sample ID: MB 550-268581/2
Matrix: Water
Analysis Batch: 268581

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Nitrate as N	ND		0.050	0.014	mg/L			03/10/22 10:48	1
Sulfate	ND		2.0	0.43	mg/L			03/10/22 10:48	1

Lab Sample ID: LCS 550-268581/5
Matrix: Water
Analysis Batch: 268581

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Nitrate as N	4.00	4.17		mg/L		104	90 - 110
Sulfate	20.0	21.0		mg/L		105	90 - 110

Method: 300.0 - Anions, Ion Chromatography (Continued)

Lab Sample ID: LCSD 550-268581/6
Matrix: Water
Analysis Batch: 268581

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Nitrate as N			4.00	4.18		mg/L		104	90 - 110	0	20
Sulfate			20.0	21.1		mg/L		105	90 - 110	0	20

Lab Sample ID: 550-180516-F-2 MS
Matrix: Water
Analysis Batch: 268581

Client Sample ID: Matrix Spike
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits		
Nitrate as N	0.14		4.00	4.35		mg/L		105	80 - 120		

Lab Sample ID: 550-180516-F-2 MS ^100
Matrix: Water
Analysis Batch: 268581

Client Sample ID: Matrix Spike
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits		
Sulfate	1600		2000	3770		mg/L		108	80 - 120		

Lab Sample ID: 550-180516-F-2 MSD
Matrix: Water
Analysis Batch: 268581

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Nitrate as N	0.14		4.00	4.37		mg/L		106	80 - 120	0	20

Lab Sample ID: 550-180516-F-2 MSD ^100
Matrix: Water
Analysis Batch: 268581

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Sulfate	1600		2000	3740		mg/L		107	80 - 120	1	20

Method: 300.1B - Disinfection By-Products, (IC)

Lab Sample ID: MB 550-268735/4
Matrix: Water
Analysis Batch: 268735

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chlorate	ND		20	4.9	ug/L			03/13/22 18:42	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Dichloroacetic acid(Surr)	*114*		*90 - 115*		*03/13/22 18:42*	*1*

Lab Sample ID: LCS 550-268735/5
Matrix: Water
Analysis Batch: 268735

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
Chlorate			200	197		ug/L		99	75 - 125		

Method: 300.1B - Disinfection By-Products, (IC) (Continued)

Lab Sample ID: LCS 550-268735/5
Matrix: Water
Analysis Batch: 268735

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Surrogate	LCS %Recovery	LCS Qualifier	Limits
Dichloroacetic acid(Surr)	102		90 - 115

Lab Sample ID: LCSD 550-268735/6
Matrix: Water
Analysis Batch: 268735

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Chlorate			200	197		ug/L		98	75 - 125	0	25

Surrogate	LCSD %Recovery	LCSD Qualifier	Limits
Dichloroacetic acid(Surr)	103		90 - 115

Lab Sample ID: MRL 550-268735/1002
Matrix: Water
Analysis Batch: 268735

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte			Spike Added	MRL Result	MRL Qualifier	Unit	D	%Rec	%Rec. Limits		
Chlorate			20.0	21.4		ug/L		107	50 - 150		

Surrogate	MRL %Recovery	MRL Qualifier	Limits
Dichloroacetic acid(Surr)	102		50 - 150

Lab Sample ID: 550-180281-A-1 MS ^2
Matrix: Water
Analysis Batch: 268735

Client Sample ID: Matrix Spike
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits		
Chlorate	110	F1	200	120	F1	ug/L		3	75 - 125		

Surrogate	MS %Recovery	MS Qualifier	Limits
Dichloroacetic acid(Surr)	104		90 - 115

Lab Sample ID: 550-180281-A-1 MSD ^2
Matrix: Water
Analysis Batch: 268735

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Chlorate	110	F1	200	121	F1	ug/L		4	75 - 125	1	25

Surrogate	MSD %Recovery	MSD Qualifier	Limits
Dichloroacetic acid(Surr)	107		90 - 115

Method: 300.1B - Disinfection By-Products, (IC) (Continued)

Lab Sample ID: 550-180322-9 MS
Matrix: Water
Analysis Batch: 268735

Client Sample ID: SWFTS-MW10A-EM37
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits		
Chlorate	25000	F1	10000	36200		ug/L		112	75 - 125		

Surrogate	*MS %Recovery*	*MS Qualifier*	*Limits*
Dichloroacetic acid(Surr)	*104*		*90 - 115*

Lab Sample ID: 550-180322-9 MSD
Matrix: Water
Analysis Batch: 268735

Client Sample ID: SWFTS-MW10A-EM37
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Chlorate	25000	F1	10000	40300	E F1	ug/L		153	75 - 125	11	25

Surrogate	*MSD %Recovery*	*MSD Qualifier*	*Limits*
Dichloroacetic acid(Surr)	*105*		*90 - 115*

Lab Sample ID: MB 550-268752/4
Matrix: Water
Analysis Batch: 268752

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chlorate	ND		20	4.9	ug/L			03/14/22 09:26	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Dichloroacetic acid(Surr)	*113*		*90 - 115*		*03/14/22 09:26*	*1*

Lab Sample ID: LCS 550-268752/5
Matrix: Water
Analysis Batch: 268752

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
Chlorate			100	100		ug/L		100	75 - 125		

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
Dichloroacetic acid(Surr)	*103*		*90 - 115*

Lab Sample ID: LCSD 550-268752/6
Matrix: Water
Analysis Batch: 268752

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Chlorate			100	104		ug/L		104	75 - 125	4	25

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
Dichloroacetic acid(Surr)	*103*		*90 - 115*

Method: 300.1B - Disinfection By-Products, (IC) (Continued)

Lab Sample ID: MRL 550-268752/1002
Matrix: Water
Analysis Batch: 268752

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte			Spike Added	MRL Result	MRL Qualifier	Unit	D	%Rec	%Rec. Limits		
Chlorate			20.0	20.2		ug/L		101	50 - 150		

Surrogate	*MRL %Recovery*	*MRL Qualifier*	*Limits*
Dichloroacetic acid(Surr)	*101*		*50 - 150*

Lab Sample ID: 550-180322-11 MS
Matrix: Water
Analysis Batch: 268752

Client Sample ID: SWFTS-MW23-EM37
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits		
Chlorate	350		200	539		ug/L		94	75 - 125		

Surrogate	*MS %Recovery*	*MS Qualifier*	*Limits*
Dichloroacetic acid(Surr)	*103*		*90 - 115*

Lab Sample ID: 550-180322-11 MSD
Matrix: Water
Analysis Batch: 268752

Client Sample ID: SWFTS-MW23-EM37
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Chlorate	350		200	554		ug/L		102	75 - 125	3	25

Surrogate	*MSD %Recovery*	*MSD Qualifier*	*Limits*
Dichloroacetic acid(Surr)	*103*		*90 - 115*

Method: 314.0 - Perchlorate (IC)

Lab Sample ID: MB 550-268299/1002
Matrix: Water
Analysis Batch: 268299

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perchlorate	ND		1.0	0.31	ug/L			03/08/22 10:48	1

Lab Sample ID: LCS 550-268299/4
Matrix: Water
Analysis Batch: 268299

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
Perchlorate			25.0	27.3		ug/L		109	85 - 115		

Lab Sample ID: LCSD 550-268299/5
Matrix: Water
Analysis Batch: 268299

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Perchlorate			25.0	27.5		ug/L		110	85 - 115	1	15

Method: 314.0 - Perchlorate (IC) (Continued)

Lab Sample ID: MRL 550-268299/1003
Matrix: Water
Analysis Batch: 268299

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte			Spike Added	MRL Result	MRL Qualifier	Unit	D	%Rec	%Rec. Limits		
Perchlorate			1.00	1.17		ug/L		117	75 - 125		

Lab Sample ID: 550-180322-10 MS
Matrix: Water
Analysis Batch: 268299

Client Sample ID: SWFTS-MW25-EM37
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits		
Perchlorate	13000		12500	24800		ug/L		95	80 - 120		

Lab Sample ID: 550-180322-10 MSD
Matrix: Water
Analysis Batch: 268299

Client Sample ID: SWFTS-MW25-EM37
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Perchlorate	13000		12500	24700		ug/L		95	80 - 120	0	15

Lab Sample ID: MB 550-268300/15
Matrix: Water
Analysis Batch: 268300

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perchlorate	ND		1.0	0.31	ug/L			03/08/22 16:14	1

Lab Sample ID: LCS 550-268300/16
Matrix: Water
Analysis Batch: 268300

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
Perchlorate			25.0	26.5		ug/L		106	85 - 115		

Lab Sample ID: LCSD 550-268300/17
Matrix: Water
Analysis Batch: 268300

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Perchlorate			25.0	26.0		ug/L		104	85 - 115	2	15

Lab Sample ID: MRL 550-268300/1003
Matrix: Water
Analysis Batch: 268300

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte			Spike Added	MRL Result	MRL Qualifier	Unit	D	%Rec	%Rec. Limits		
Perchlorate			1.00	1.17		ug/L		117	75 - 125		

Lab Sample ID: 550-179885-A-1 MS
Matrix: Water
Analysis Batch: 268300

Client Sample ID: Matrix Spike
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits		
Perchlorate	0.91	J	25.0	26.8		ug/L		104	80 - 120		

Method: 314.0 - Perchlorate (IC)

Lab Sample ID: 550-179885-A-1 MSD
Matrix: Water
Analysis Batch: 268300

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Perchlorate	0.91	J	25.0	25.7		ug/L		99	80 - 120	4	15

Lab Sample ID: MB 550-268304/1002
Matrix: Water
Analysis Batch: 268304

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perchlorate	ND		1.0	0.31	ug/L			03/08/22 10:48	1

Lab Sample ID: LCS 550-268304/4
Matrix: Water
Analysis Batch: 268304

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Perchlorate	25.0	26.9		ug/L		108	85 - 115

Lab Sample ID: LCSD 550-268304/5
Matrix: Water
Analysis Batch: 268304

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Perchlorate	25.0	27.3		ug/L		109	85 - 115	1	15

Lab Sample ID: MRL 550-268304/1003
Matrix: Water
Analysis Batch: 268304

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	MRL Result	MRL Qualifier	Unit	D	%Rec	%Rec. Limits
Perchlorate	1.00	1.01		ug/L		101	75 - 125

Lab Sample ID: 550-180322-9 MS
Matrix: Water
Analysis Batch: 268304

Client Sample ID: SWFTS-MW10A-EM37
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Perchlorate	15000		12500	26300	E	ug/L		93	80 - 120

Lab Sample ID: 550-180322-9 MSD
Matrix: Water
Analysis Batch: 268304

Client Sample ID: SWFTS-MW10A-EM37
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Perchlorate	15000		12500	26900	E	ug/L		97	80 - 120	2	15

Lab Sample ID: MB 550-268445/1002
Matrix: Water
Analysis Batch: 268445

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perchlorate	ND		1.0	0.31	ug/L			03/09/22 11:52	1

Method: 314.0 - Perchlorate (IC)

Lab Sample ID: LCS 550-268445/4
Matrix: Water
Analysis Batch: 268445

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Perchlorate	25.0	25.8		ug/L		103	85 - 115

Lab Sample ID: LCSD 550-268445/5
Matrix: Water
Analysis Batch: 268445

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Perchlorate	25.0	25.7		ug/L		103	85 - 115	0	15

Lab Sample ID: MRL 550-268445/1003
Matrix: Water
Analysis Batch: 268445

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	MRL Result	MRL Qualifier	Unit	D	%Rec	%Rec. Limits
Perchlorate	1.00	1.14		ug/L		114	75 - 125

Lab Sample ID: 550-180322-1 MS
Matrix: Water
Analysis Batch: 268445

Client Sample ID: PC-58-EM37
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Perchlorate	4500		5000	9200		ug/L		94	80 - 120

Lab Sample ID: 550-180322-1 MSD
Matrix: Water
Analysis Batch: 268445

Client Sample ID: PC-58-EM37
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Perchlorate	4500		5000	9060		ug/L		91	80 - 120	2	15

Method: SM 5310B - Organic Carbon, Total (TOC)

Lab Sample ID: MB 550-269343/5
Matrix: Water
Analysis Batch: 269343

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon	ND		0.50	0.26	mg/L			03/18/22 15:49	1

Lab Sample ID: LCS 550-269343/6
Matrix: Water
Analysis Batch: 269343

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Total Organic Carbon	20.0	18.4		mg/L		92	90 - 110

Method: SM 5310B - Organic Carbon, Total (TOC) (Continued)

Lab Sample ID: LCSD 550-269343/7
Matrix: Water
Analysis Batch: 269343

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Total Organic Carbon			20.0	18.7		mg/L		93	90 - 110	1	20

Lab Sample ID: 550-180322-9 MS
Matrix: Water
Analysis Batch: 269343

Client Sample ID: SWFTS-MW10A-EM37
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits		
Total Organic Carbon	1.8	F1	20.0	19.6	F1	mg/L		89	90 - 110		

Lab Sample ID: 550-180322-9 MSD
Matrix: Water
Analysis Batch: 269343

Client Sample ID: SWFTS-MW10A-EM37
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Total Organic Carbon	1.8	F1	20.0	19.5	F1	mg/L		88	90 - 110	0	20

HPLC/IC

Analysis Batch: 268299

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
550-180322-10	SWFTS-MW25-EM37	Total/NA	Water	314.0	
550-180322-11	SWFTS-MW23-EM37	Total/NA	Water	314.0	
MB 550-268299/1002	Method Blank	Total/NA	Water	314.0	
LCS 550-268299/4	Lab Control Sample	Total/NA	Water	314.0	
LCSD 550-268299/5	Lab Control Sample Dup	Total/NA	Water	314.0	
MRL 550-268299/1003	Lab Control Sample	Total/NA	Water	314.0	
550-180322-10 MS	SWFTS-MW25-EM37	Total/NA	Water	314.0	
550-180322-10 MSD	SWFTS-MW25-EM37	Total/NA	Water	314.0	

Analysis Batch: 268300

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
550-180322-2	PC-91-EM37	Total/NA	Water	314.0	
MB 550-268300/15	Method Blank	Total/NA	Water	314.0	
LCS 550-268300/16	Lab Control Sample	Total/NA	Water	314.0	
LCSD 550-268300/17	Lab Control Sample Dup	Total/NA	Water	314.0	
MRL 550-268300/1003	Lab Control Sample	Total/NA	Water	314.0	
550-179885-A-1 MS	Matrix Spike	Total/NA	Water	314.0	
550-179885-A-1 MSD	Matrix Spike Duplicate	Total/NA	Water	314.0	

Analysis Batch: 268304

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
550-180322-6	SWFTS-MW06A-EM37	Total/NA	Water	314.0	
550-180322-7	SWFTS-MW06A-EM37-FD	Total/NA	Water	314.0	
550-180322-8	SWFTS-MW06B-EM37	Total/NA	Water	314.0	
550-180322-9	SWFTS-MW10A-EM37	Total/NA	Water	314.0	
MB 550-268304/1002	Method Blank	Total/NA	Water	314.0	
LCS 550-268304/4	Lab Control Sample	Total/NA	Water	314.0	
LCSD 550-268304/5	Lab Control Sample Dup	Total/NA	Water	314.0	
MRL 550-268304/1003	Lab Control Sample	Total/NA	Water	314.0	
550-180322-9 MS	SWFTS-MW10A-EM37	Total/NA	Water	314.0	
550-180322-9 MSD	SWFTS-MW10A-EM37	Total/NA	Water	314.0	

Analysis Batch: 268345

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
550-180322-5	SWFTS-MW11-EM37-FD	Total/NA	Water	300.0	
550-180322-5	SWFTS-MW11-EM37-FD	Total/NA	Water	300.0	
550-180322-9	SWFTS-MW10A-EM37	Total/NA	Water	300.0	
550-180322-9	SWFTS-MW10A-EM37	Total/NA	Water	300.0	
MB 550-268345/2	Method Blank	Total/NA	Water	300.0	
LCS 550-268345/5	Lab Control Sample	Total/NA	Water	300.0	
LCSD 550-268345/6	Lab Control Sample Dup	Total/NA	Water	300.0	
550-180322-9 MS	SWFTS-MW10A-EM37	Total/NA	Water	300.0	
550-180322-9 MS	SWFTS-MW10A-EM37	Total/NA	Water	300.0	
550-180322-9 MSD	SWFTS-MW10A-EM37	Total/NA	Water	300.0	
550-180322-9 MSD	SWFTS-MW10A-EM37	Total/NA	Water	300.0	

Analysis Batch: 268346

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
550-180322-1	PC-58-EM37	Total/NA	Water	300.0	
550-180322-1	PC-58-EM37	Total/NA	Water	300.0	
550-180322-2	PC-91-EM37	Total/NA	Water	300.0	

HPLC/IC (Continued)

Analysis Batch: 268346 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
550-180322-3	PC-92-EM37	Total/NA	Water	300.0	
550-180322-3	PC-92-EM37	Total/NA	Water	300.0	
550-180322-4	SWFTS-MW11-EM37	Total/NA	Water	300.0	
550-180322-4	SWFTS-MW11-EM37	Total/NA	Water	300.0	
550-180322-6	SWFTS-MW06A-EM37	Total/NA	Water	300.0	
550-180322-6	SWFTS-MW06A-EM37	Total/NA	Water	300.0	
550-180322-7	SWFTS-MW06A-EM37-FD	Total/NA	Water	300.0	
550-180322-7	SWFTS-MW06A-EM37-FD	Total/NA	Water	300.0	
550-180322-8	SWFTS-MW06B-EM37	Total/NA	Water	300.0	
550-180322-8	SWFTS-MW06B-EM37	Total/NA	Water	300.0	
550-180322-10	SWFTS-MW25-EM37	Total/NA	Water	300.0	
550-180322-10	SWFTS-MW25-EM37	Total/NA	Water	300.0	
550-180322-11	SWFTS-MW23-EM37	Total/NA	Water	300.0	
550-180322-11	SWFTS-MW23-EM37	Total/NA	Water	300.0	
MB 550-268346/2	Method Blank	Total/NA	Water	300.0	
LCS 550-268346/5	Lab Control Sample	Total/NA	Water	300.0	
LCSD 550-268346/6	Lab Control Sample Dup	Total/NA	Water	300.0	
550-180322-3 MS	PC-92-EM37	Total/NA	Water	300.0	
550-180322-3 MSD	PC-92-EM37	Total/NA	Water	300.0	

Analysis Batch: 268445

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
550-180322-1	PC-58-EM37	Total/NA	Water	314.0	
550-180322-3	PC-92-EM37	Total/NA	Water	314.0	
550-180322-4	SWFTS-MW11-EM37	Total/NA	Water	314.0	
550-180322-5	SWFTS-MW11-EM37-FD	Total/NA	Water	314.0	
MB 550-268445/1002	Method Blank	Total/NA	Water	314.0	
LCS 550-268445/4	Lab Control Sample	Total/NA	Water	314.0	
LCSD 550-268445/5	Lab Control Sample Dup	Total/NA	Water	314.0	
MRL 550-268445/1003	Lab Control Sample	Total/NA	Water	314.0	
550-180322-1 MS	PC-58-EM37	Total/NA	Water	314.0	
550-180322-1 MSD	PC-58-EM37	Total/NA	Water	314.0	

Analysis Batch: 268581

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
550-180322-2	PC-91-EM37	Total/NA	Water	300.0	
MB 550-268581/2	Method Blank	Total/NA	Water	300.0	
LCS 550-268581/5	Lab Control Sample	Total/NA	Water	300.0	
LCSD 550-268581/6	Lab Control Sample Dup	Total/NA	Water	300.0	
550-180516-F-2 MS	Matrix Spike	Total/NA	Water	300.0	
550-180516-F-2 MS ^100	Matrix Spike	Total/NA	Water	300.0	
550-180516-F-2 MSD	Matrix Spike Duplicate	Total/NA	Water	300.0	
550-180516-F-2 MSD ^100	Matrix Spike Duplicate	Total/NA	Water	300.0	

Analysis Batch: 268735

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
550-180322-1	PC-58-EM37	Total/NA	Water	300.1B	
550-180322-2	PC-91-EM37	Total/NA	Water	300.1B	
550-180322-3	PC-92-EM37	Total/NA	Water	300.1B	
550-180322-4	SWFTS-MW11-EM37	Total/NA	Water	300.1B	
550-180322-5	SWFTS-MW11-EM37-FD	Total/NA	Water	300.1B	

HPLC/IC (Continued)

Analysis Batch: 268735 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
550-180322-6	SWFTS-MW06A-EM37	Total/NA	Water	300.1B	
550-180322-7	SWFTS-MW06A-EM37-FD	Total/NA	Water	300.1B	
550-180322-8	SWFTS-MW06B-EM37	Total/NA	Water	300.1B	
550-180322-9	SWFTS-MW10A-EM37	Total/NA	Water	300.1B	
550-180322-10	SWFTS-MW25-EM37	Total/NA	Water	300.1B	
MB 550-268735/4	Method Blank	Total/NA	Water	300.1B	
LCS 550-268735/5	Lab Control Sample	Total/NA	Water	300.1B	
LCSD 550-268735/6	Lab Control Sample Dup	Total/NA	Water	300.1B	
MRL 550-268735/1002	Lab Control Sample	Total/NA	Water	300.1B	
550-180281-A-1 MS ^2	Matrix Spike	Total/NA	Water	300.1B	
550-180281-A-1 MSD ^2	Matrix Spike Duplicate	Total/NA	Water	300.1B	
550-180322-9 MS	SWFTS-MW10A-EM37	Total/NA	Water	300.1B	
550-180322-9 MSD	SWFTS-MW10A-EM37	Total/NA	Water	300.1B	

Analysis Batch: 268752

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
550-180322-11	SWFTS-MW23-EM37	Total/NA	Water	300.1B	
MB 550-268752/4	Method Blank	Total/NA	Water	300.1B	
LCS 550-268752/5	Lab Control Sample	Total/NA	Water	300.1B	
LCSD 550-268752/6	Lab Control Sample Dup	Total/NA	Water	300.1B	
MRL 550-268752/1002	Lab Control Sample	Total/NA	Water	300.1B	
550-180322-11 MS	SWFTS-MW23-EM37	Total/NA	Water	300.1B	
550-180322-11 MSD	SWFTS-MW23-EM37	Total/NA	Water	300.1B	

General Chemistry

Analysis Batch: 269343

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
550-180322-1	PC-58-EM37	Total/NA	Water	SM 5310B	
550-180322-2	PC-91-EM37	Total/NA	Water	SM 5310B	
550-180322-3	PC-92-EM37	Total/NA	Water	SM 5310B	
550-180322-4	SWFTS-MW11-EM37	Total/NA	Water	SM 5310B	
550-180322-5	SWFTS-MW11-EM37-FD	Total/NA	Water	SM 5310B	
550-180322-6	SWFTS-MW06A-EM37	Total/NA	Water	SM 5310B	
550-180322-7	SWFTS-MW06A-EM37-FD	Total/NA	Water	SM 5310B	
550-180322-8	SWFTS-MW06B-EM37	Total/NA	Water	SM 5310B	
550-180322-9	SWFTS-MW10A-EM37	Total/NA	Water	SM 5310B	
550-180322-10	SWFTS-MW25-EM37	Total/NA	Water	SM 5310B	
550-180322-11	SWFTS-MW23-EM37	Total/NA	Water	SM 5310B	
MB 550-269343/5	Method Blank	Total/NA	Water	SM 5310B	
LCS 550-269343/6	Lab Control Sample	Total/NA	Water	SM 5310B	
LCSD 550-269343/7	Lab Control Sample Dup	Total/NA	Water	SM 5310B	
550-180322-9 MS	SWFTS-MW10A-EM37	Total/NA	Water	SM 5310B	
550-180322-9 MSD	SWFTS-MW10A-EM37	Total/NA	Water	SM 5310B	

Lab Chronicle

Client: Tetra Tech, Inc.
Project/Site: Tetra Tech M11 SWF Treatability Study

Job ID: 550-180322-1
SDG: SWFABTS

Client Sample ID: PC-58-EM37
Date Collected: 03/07/22 11:54
Date Received: 03/07/22 18:21

Lab Sample ID: 550-180322-1
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	300.0		1	268346	03/08/22 13:04	AS1	TAL PHX
Total/NA	Analysis	300.0		50	268346	03/08/22 16:26	AS1	TAL PHX
Total/NA	Analysis	300.1B		200	268735	03/14/22 00:06	SLS	TAL PHX
Total/NA	Analysis	314.0		200	268445	03/09/22 13:22	RDC	TAL PHX
Total/NA	Analysis	SM 5310B		1	269343	03/18/22 18:31	MEG	TAL PHX

Client Sample ID: PC-91-EM37
Date Collected: 03/07/22 13:09
Date Received: 03/07/22 18:21

Lab Sample ID: 550-180322-2
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	300.0		1	268346	03/08/22 14:36	AS1	TAL PHX
Total/NA	Analysis	300.0		5	268581	03/10/22 19:42	AS1	TAL PHX
Total/NA	Analysis	300.1B		5	268735	03/14/22 00:36	SLS	TAL PHX
Total/NA	Analysis	314.0		1	268300	03/08/22 20:03	RDC	TAL PHX
Total/NA	Analysis	SM 5310B		4	269343	03/18/22 18:42	MEG	TAL PHX

Client Sample ID: PC-92-EM37
Date Collected: 03/07/22 14:02
Date Received: 03/07/22 18:21

Lab Sample ID: 550-180322-3
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	300.0		1	268346	03/08/22 12:09	AS1	TAL PHX
Total/NA	Analysis	300.0		50	268346	03/08/22 16:45	AS1	TAL PHX
Total/NA	Analysis	300.1B		1000	268735	03/14/22 03:33	SLS	TAL PHX
Total/NA	Analysis	314.0		500	268445	03/09/22 14:29	RDC	TAL PHX
Total/NA	Analysis	SM 5310B		1	269343	03/18/22 19:20	MEG	TAL PHX

Client Sample ID: SWFTS-MW11-EM37
Date Collected: 03/07/22 11:10
Date Received: 03/07/22 18:21

Lab Sample ID: 550-180322-4
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	300.0		2	268346	03/08/22 13:22	AS1	TAL PHX
Total/NA	Analysis	300.0		50	268346	03/08/22 17:03	AS1	TAL PHX
Total/NA	Analysis	300.1B		100	268735	03/14/22 04:02	SLS	TAL PHX
Total/NA	Analysis	314.0		500	268445	03/09/22 14:51	RDC	TAL PHX
Total/NA	Analysis	SM 5310B		1	269343	03/18/22 19:34	MEG	TAL PHX

Client Sample ID: SWFTS-MW11-EM37-FD
Lab Sample ID: 550-180322-5

Date Collected: 03/07/22 11:10
Matrix: Water
Date Received: 03/07/22 18:21

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	300.0		2	268345	03/08/22 17:47	AS1	TAL PHX
Total/NA	Analysis	300.0		50	268345	03/08/22 18:15	AS1	TAL PHX
Total/NA	Analysis	300.1B		100	268735	03/14/22 04:32	SLS	TAL PHX
Total/NA	Analysis	314.0		500	268445	03/09/22 15:14	RDC	TAL PHX
Total/NA	Analysis	SM 5310B		1	269343	03/18/22 19:47	MEG	TAL PHX

Client Sample ID: SWFTS-MW06A-EM37
Lab Sample ID: 550-180322-6

Date Collected: 03/07/22 12:15
Matrix: Water
Date Received: 03/07/22 18:21

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	300.0		1	268346	03/08/22 13:41	AS1	TAL PHX
Total/NA	Analysis	300.0		50	268346	03/08/22 17:21	AS1	TAL PHX
Total/NA	Analysis	300.1B		5	268735	03/14/22 05:01	SLS	TAL PHX
Total/NA	Analysis	314.0		100	268304	03/08/22 19:01	RDC	TAL PHX
Total/NA	Analysis	SM 5310B		1	269343	03/18/22 20:03	MEG	TAL PHX

Client Sample ID: SWFTS-MW06A-EM37-FD
Lab Sample ID: 550-180322-7

Date Collected: 03/07/22 12:15
Matrix: Water
Date Received: 03/07/22 18:21

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	300.0		1	268346	03/08/22 13:59	AS1	TAL PHX
Total/NA	Analysis	300.0		50	268346	03/08/22 17:40	AS1	TAL PHX
Total/NA	Analysis	300.1B		5	268735	03/14/22 05:30	SLS	TAL PHX
Total/NA	Analysis	314.0		100	268304	03/08/22 19:23	RDC	TAL PHX
Total/NA	Analysis	SM 5310B		1	269343	03/18/22 20:15	MEG	TAL PHX

Client Sample ID: SWFTS-MW06B-EM37
Lab Sample ID: 550-180322-8

Date Collected: 03/07/22 13:15
Matrix: Water
Date Received: 03/07/22 18:21

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	300.0		1	268346	03/08/22 14:17	AS1	TAL PHX
Total/NA	Analysis	300.0		50	268346	03/08/22 17:58	AS1	TAL PHX
Total/NA	Analysis	300.1B		5	268735	03/14/22 06:00	SLS	TAL PHX
Total/NA	Analysis	314.0		100	268304	03/08/22 19:45	RDC	TAL PHX
Total/NA	Analysis	SM 5310B		4	269343	03/18/22 20:31	MEG	TAL PHX

Lab Chronicle

Client: Tetra Tech, Inc.
Project/Site: Tetra Tech M11 SWF Treatability Study

Job ID: 550-180322-1
SDG: SWFABTS

Client Sample ID: SWFTS-MW10A-EM37

Lab Sample ID: 550-180322-9

Date Collected: 03/07/22 14:20

Matrix: Water

Date Received: 03/07/22 18:21

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	300.0		1	268345	03/08/22 14:59	AS1	TAL PHX
Total/NA	Analysis	300.0		50	268345	03/08/22 16:23	AS1	TAL PHX
Total/NA	Analysis	300.1B		100	268735	03/14/22 02:04	SLS	TAL PHX
Total/NA	Analysis	314.0		500	268304	03/08/22 12:17	RDC	TAL PHX
Total/NA	Analysis	SM 5310B		1	269343	03/18/22 16:27	MEG	TAL PHX

Client Sample ID: SWFTS-MW25-EM37

Lab Sample ID: 550-180322-10

Date Collected: 03/07/22 13:00

Matrix: Water

Date Received: 03/07/22 18:21

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	300.0		1	268346	03/08/22 15:49	AS1	TAL PHX
Total/NA	Analysis	300.0		50	268346	03/08/22 18:17	AS1	TAL PHX
Total/NA	Analysis	300.1B		1	268735	03/14/22 06:29	SLS	TAL PHX
Total/NA	Analysis	314.0		500	268299	03/08/22 12:48	RDC	TAL PHX
Total/NA	Analysis	SM 5310B		1	269343	03/18/22 20:44	MEG	TAL PHX

Client Sample ID: SWFTS-MW23-EM37

Lab Sample ID: 550-180322-11

Date Collected: 03/07/22 13:45

Matrix: Water

Date Received: 03/07/22 18:21

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	300.0		1	268346	03/08/22 16:08	AS1	TAL PHX
Total/NA	Analysis	300.0		50	268346	03/08/22 19:30	AS1	TAL PHX
Total/NA	Analysis	300.1B		2	268752	03/14/22 10:54	SLS	TAL PHX
Total/NA	Analysis	314.0		100	268299	03/08/22 13:57	RDC	TAL PHX
Total/NA	Analysis	SM 5310B		1	269343	03/18/22 20:55	MEG	TAL PHX

Laboratory References:

TAL PHX = Eurofins Phoenix, 4625 East Cotton Center Boulevard, Suite #189, Phoenix, AZ 85040, TEL (602)437-3340

Accreditation/Certification Summary

Client: Tetra Tech, Inc.
Project/Site: Tetra Tech M11 SWF Treatability Study

Job ID: 550-180322-1
SDG: SWFABTS

Laboratory: Eurofins Phoenix

All accreditations/certifications held by this laboratory are listed. Not all accreditations/certifications are applicable to this report.

Authority	Program	Identification Number	Expiration Date
AIHA-LAP, LLC	Environmental Lead Laboratory Accreditation Program (ELLAP)	154268	11-01-23
AIHA-LAP, LLC	Industrial Hygiene Laboratory Accreditation Program (IHLAP)	154268	11-01-23
Arizona	State	AZ0728	06-10-22
California	State	2941	06-10-22
Nevada	State	AZ1030	07-31-22
USDA	US Federal Programs	P330-19-00227	08-27-22

Method Summary

Client: Tetra Tech, Inc.
Project/Site: Tetra Tech M11 SWF Treatability Study

Job ID: 550-180322-1
SDG: SWFABTS

Method	Method Description	Protocol	Laboratory
300.0	Anions, Ion Chromatography	MCAWW	TAL PHX
300.1B	Disinfection By-Products, (IC)	EPA	TAL PHX
314.0	Perchlorate (IC)	EPA	TAL PHX
SM 5310B	Organic Carbon, Total (TOC)	SM	TAL PHX

Protocol References:

EPA = US Environmental Protection Agency

MCAWW = "Methods For Chemical Analysis Of Water And Wastes", EPA-600/4-79-020, March 1983 And Subsequent Revisions.

SM = "Standard Methods For The Examination Of Water And Wastewater"

Laboratory References:

TAL PHX = Eurofins Phoenix, 4625 East Cotton Center Boulevard, Suite #189, Phoenix, AZ 85040, TEL (602)437-3340

TestAmerica
Las Vegas
219

Tetra Tech
1093 Commerce Park Drive
Oak Ridge, TN37830
(865)483-9900

180322

CHAIN-OF-CUSTODY

NERT-M11
Groundwater Sampling

Laboratory Name: Eurofins TestAmerica, Phoenix (602) 437-3340 | Address: 4625 East Cotton Ctr Blvd, Suite 189, Phoenix, AZ 85040 | Contact: Mary Charlson 602-659-7627 | Page 1 of 3

Project Name: Tetra Tech M11 SWF Treatability Study | Sampler: Aaron Pettley | Sampler Phone: 801-971-9997

Project No. M11-CWP-04
NERT - Seep Well Field Area Bioremediation Treatability Study | Project Contact: Maureen McMyler | Site Telephone No.: (702) 966-8340

Report to: Maureen McMyler, 1093 Commerce Park Dr. (865)220-4762
Bill to: Sunshine Pryor, 350 Indiana St., Golden, CO 80401 (303) 217-5700
Project Manager/Supervisor: Dana Grady

Analysis and Method Requested

Remarks
Preservation Codes:
A- HCL
D-Nitric Acid
L-EDA
N-None
S-H2SO4
Other:

Item No.	Sample Number	Date	Time	G=Grab C=Comp	Matrix	Sample Description, Location	Number of Containers	Perchlorate E314.0	TOC SM5310B	Chlorate E300.1	Sulfate/Nitrate E300.0 SHORT HOLD NITRATE!	Total Manganese SW846 6010B	Dissolved Metals SW6010/6020 (Field Filtered)		Notes
						Preservation Code:	-	N	A	L	N	D	D		
1	PC-58-EM37	3/7/2022	1154	G	WG		7	X	X	X	X			-01	
2	PC-91-EM37	3/7/2022	1309	G	WG		7	X	X	X	X			-02	
3	PC-92-EM37	3/7/2022	1402	G	WG		7	X	X	X	X			-03	
4															
5															
6															
7															
8															
9															
10															

550-180322 Chain of Custody

Transfers Relinquished By (Signature)	Date/Time	Transfers Accepted By (Signature)	Date/Time
[signature]	3/7/22 1500	DAM TALVS	3-7-22 1500
DAM TALVS	3-7-22 1600 SAS	[signature] 3/8/22	
	Drop Box	Laboratory: EETA-PHX 6:30	

Special Instructions:

FedEx Airbill No.:
Sampler's Signature: (REQUIRED)
FedEx Airbill No.:
Sampler's Signature: [signature]

TAT ___ Standard ___ Rush Due ___
Received Good Condition ___ Y ___ N ___ Cold

TH243 20.6 / 20.5

3.5: PH
C.S.

Tetra Tech
1093 Commerce Park Drive
Oak Ridge, TN37830
(865)483-9900

180322

CHAIN-OF-CUSTODY

TestAmerica
Las Vegas
219

NERT-M11
Groundwater Sampling

3/21/2022

Laboratory Name: Eurofins TestAmerica, Phoenix (602) 437-3340 | Address: 4625 East Cotton Ctr Blvd Suite 189 Phoenix, AZ 85040 | Contact: Mary Charlson 602-659-7627 | Page 2 of 3

Project Name: Tetra Tech M11 SWF Treatability Study
Project No. M11-CWP-04
NERT - Seep Well Field Area Bioremediation Treatability Study

Sampler: G. Schuler | Sampler Phone: 480 620 5186
Project Contact: **Maureen McMyler** | Site Telephone No: (702) 966-8340
Project Manager/Supervisor: **Dana Grady**

Report to: Maureen McMyler, 1093 Commerce Park Dr. (865)220-4762
Bill to: Sunshine Pryor, 350 Indiana St., Golden, CO 80401 (303) 217-5700

Analysis and Method Requested

Remarks
Preservation Codes:
A- HCL
D-Nitric Acid
L-EDA
N-None
S-H2SO4
Other:

Item No	Sample Number	Date	Time	G=Grab C=Comp	Matrix	Sample Description, Location	Number of Containers	Perchlorate E314.0	TOC SM5310B	Chlorate E300.1	Sulfate/Nitrate E300.0 SHORT HOLD NITRATE!	Total Manganese SW846 6010B	Dissolved Metals SW6010/6020 (Field Filtered)	Notes
						Preservation Code:	-	N	A	L	N	D	D	
1	SWFTS-MW11-EM37	3/7/22	1110	G	WG	—	7	X	X	X	X			-04
2	SWFTS-MW11-EM37-FD		1110			—	7	X	X	X	X			-05
3	SWFTS-MW06A-EM37		1215			—	7	X	X	X	X			-06
4	SWFTS-~~MW11~~ MW06A EM37-FD		1215			—	7	X	X	X	X			-07
5	SWFTS-MW06B-EM37		1315			—	7	X	X	X	X			-08
6	SWFTS-MW10A-EM37		1420			—	7	X	X	X	X			-09
7	SWFTS-MW10A-EM37MS/MSD		1420			—	7	X	X	X	X			-09
8														
9														
10														

Transfers Relinquished By (Signature)	Date/Time	Transfers Accepted By (Signature)	Date/Time	Special Instructions:
G. Schuler	3/7/22 1500 SDT	TALVS	3-7-22 1500	
TALVS 3-7-22 1600				
		FedEx Airbill No.	FedEx Airbill No.	
	Laboratory	Sampler's Signature (REQUIRED)	Sampler's Signature	

TAT ___Standard ___Rush Due _____ | Received Good Condition ____ Y ____ N ____ Cold

TH243 20.6/205

3.5 C.S
pH—

Tetra Tech
1093 Commerce Park Drive
Oak Ridge, TN37830
(865)483-9900

180322

CHAIN-OF-CUSTODY

TestAmerica
Las Vegas
219

NERT-M11
Groundwater Sampling

Laboratory Name: Eurofins TestAmerica, Phoenix (602) 437-3340 | Address: 4625 East Cotton Ctr Blvd Suite 189 Phoenix, AZ 85040 | Contact: Mary Charlson 602-659-7627 | Page 3 of 3

Project Name: Tetra Tech M11 SWF Treatability Study
Project No. M11-CWP-04
NERT - Seep Well Field Area Bioremediation Treatability Study

Sampler: J. Bunkers | Sampler Phone: 7027677055
Project Contact: **Maureen McMyler** | Site Telephone No.: (702) 966-8340
Project Manager/Supervisor: **Dana Grady**

Report to: Maureen McMyler, 1093 Commerce Park Dr. (865)220-4762
Bill to: Sunshine Pryor, 350 Indiana St., Golden, CO 80401 (303) 217-5700

Item No	Sample Number	Date	Time	G=Grab C=Comp	Matrix	Sample Description, Location	Number of Containers	Perchlorate E314.0	TOC SM5310B	Chlorate E300.1	Sulfate/Nitrate E300.0 (SHORT HOLD NITRATE!)	Total Manganese SW846 6010B	Dissolved Metals SW6010/6020 (Field Filtered)	Remarks
	Preservation Code:						-	N	A	L	N	D	D	**Notes**
1	SWFTS-MW25-EM37	3/7/22	1300	G	W		7	X	X	X	X			-10
2	SWFTS-MW23-EM37	3/7/22	1345	G	W		7	X	X	X	X			-11
3														
4														
5														
6														
7														
8														
9														
10														

Preservation Codes:
A- HCL
D-Nitric Acid
L-EDA
N-None
S-H2SO4
Other:

Transfers Relinquished By (Signature)	Date/Time	Transfers Accepted By (Signature)	Date/Time	Special Instructions:
[signature] TAL LVS	3/7/22 1500	[signature] TAL LVS	3-7-22 1500	
[signature] TAL LVS	3-7-22 1600	[signature]	3/8/22	FedEx Airbill No.:
DropBox		Laboratory: EETA-PHL	Sampler's Signature (REQUIRED)	Sampler's Signature: [signature]

TAT ___Standard ___Rush Due _____ | Received Good Condition ___Y ___N ___Cold

TA 943 20.6/20.5

3 5 C.S. Ptlx

Login Sample Receipt Checklist

Client: Tetra Tech, Inc.

Job Number: 550-180322-1
SDG Number: SWFABTS

Login Number: 180322
List Number: 1
Creator: Maycock, Lisa

List Source: Eurofins Phoenix

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	True	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	False	Check done at department level as required.

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ANALYTICAL REPORT

Eurofins Phoenix
4625 East Cotton Center Boulevard
Suite #189
Phoenix, AZ 85040
Tel: (602)437-3340

Laboratory Job ID: 550-180407-1
Laboratory SDG: NERT - Seep Well Field Area Bioremediation Treatability Study
Client Project/Site: Tetra Tech M11 SWF Treatability Study

For:
Tetra Tech, Inc.
1093 Commerce Park Drive
Suite 100
Oak Ridge, Tennessee 37830

Attn: Dana Grady

Rachel E. Sester

Authorized for release by:
3/24/2022 6:13:46 PM

Rachel Sester, Project Manager I
(602)659-7615
Rachel.Sester@Eurofinset.com

LINKS

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Have a Question? Ask The Expert

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www.eurofinsus.com/Env

This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.

Results relate only to the items tested and the sample(s) as received by the laboratory.

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Definitions/Glossary

Client: Tetra Tech, Inc.
Project/Site: Tetra Tech M11 SWF Treatability Study

Job ID: 550-180407-1
SDG: NERT - Seep Well Field Area Bioremediation Treatability Study

Qualifiers

HPLC/IC

Qualifier	Qualifier Description
4	MS, MSD: The analyte present in the original sample is greater than 4 times the matrix spike concentration; therefore, control limits are not applicable.
E	Result exceeded calibration range.
F1	MS and/or MSD recovery exceeds control limits.
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.
S1+	Surrogate recovery exceeds control limits, high biased.

General Chemistry

Qualifier	Qualifier Description
F1	MS and/or MSD recovery exceeds control limits.
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CFU	Colony Forming Unit
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MCL	EPA recommended "Maximum Contaminant Level"
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
MPN	Most Probable Number
MQL	Method Quantitation Limit
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
NEG	Negative / Absent
POS	Positive / Present
PQL	Practical Quantitation Limit
PRES	Presumptive
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)
TNTC	Too Numerous To Count

Job ID: 550-180407-1

Laboratory: Eurofins Phoenix

Narrative

Job Narrative
550-180407-1

Comments
No additional comments.

Receipt
The samples were received on 3/9/2022 6:30 AM. Unless otherwise noted below, the samples arrived in good condition, and where required, properly preserved and on ice. The temperatures of the 4 coolers at receipt time were 1.7º C, 2.9º C, 3.2º C and 23.7º C.

HPLC/IC
Method 300.1B: Surrogate recovery was outside acceptance limits for the following matrix spike (MS) sample: (550-180406-E-6 MS ^2). The parent sample surrogate recovery was within limits. The MS sample has been qualified and reported.

Method 300.1B: The following sample was diluted for Chlorate by method EPA 300.1B due to an abundance of non-target analytes present within the sample matrix: SWFTS-MW21-EM37 (550-180407-11). In the diluted sample this analyte was not detected or was beneath the lowest calibration limit. As such, an elevated reporting limit (RL) has been provided.

Method 300.1B: The following sample was diluted for Chlorate by method EPA 300.1B due to an abundance of non-target analytes present within the sample matrix: (550-180526-V-6 ^5). In the diluted samples this analyte was not detected or was beneath the lowest calibration limit. As such, an elevated reporting limit (RL) has been provided.

Method 300.1B: The following samples were diluted for Chlorate by method EPA 300.1B due to an abundance of non-target analytes present within the sample matrix: SWFTS-MW15-EM37 (550-180407-16) and (550-180632-I-15 ^5). In the diluted samples this analyte was not detected or was beneath the lowest calibration limit. As such, an elevated reporting limit (RL) has been provided.

Method 300.1B: Surrogate recovery was above acceptance limits for the following matrix spike duplicate (MSD) sample: (550-180632-G-15 MSD ^5). The parent sample's surrogate recovery was within limits. The MSD sample has been qualified and reported.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

General Chemistry
Method SM 5310B: The continuing calibration blank (CCB) for analytical batch 550-269343 contained TOC above the 1/2 the reporting limit (RL). All reported samples associated with this CCB contained this analyte at a concentration greater than 10X the value found in the CCB; therefore, re-analysis of samples was not performed.

SWFTS-MW12-EM37 (550-180407-19) and (CCB 550-269343/79)

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

Sample Summary

Client: Tetra Tech, Inc.
Job ID: 550-180407-1
Project/Site: Tetra Tech M11 SWF Treatability Study
SDG: NERT - Seep Well Field Area Bioremediation Treatability Study

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
550-180407-1	PC-88-EM37	Water	03/08/22 09:26	03/09/22 06:30
550-180407-2	PC-88-EM37-FD	Water	03/08/22 09:26	03/09/22 06:30
550-180407-3	PC-94-EM37	Water	03/08/22 11:24	03/09/22 06:30
550-180407-4	SWFTS-EM37-EB1	Water	03/08/22 11:45	03/09/22 06:30
550-180407-5	SWFTS-MW09A-EM37	Water	03/08/22 12:38	03/09/22 06:30
550-180407-6	SWFTS-MW09B-EM37	Water	03/08/22 13:32	03/09/22 06:30
550-180407-7	SWFTS-MW24-EM37	Water	03/08/22 09:35	03/09/22 06:30
550-180407-8	SWFTS-EM37-FB2	Water	03/08/22 09:40	03/09/22 06:30
550-180407-9	SWFTS-MW22-EM37	Water	03/08/22 10:50	03/09/22 06:30
550-180407-10	SWFTS-MW20-EM37	Water	03/08/22 11:25	03/09/22 06:30
550-180407-11	SWFTS-MW21-EM37	Water	03/08/22 12:05	03/09/22 06:30
550-180407-12	SWFTS-MW19-EM37	Water	03/08/22 12:50	03/09/22 06:30
550-180407-13	SWFTS-MW19-EM37-FD	Water	03/08/22 12:50	03/09/22 06:30
550-180407-14	SWFTS-MW18-EM37	Water	03/08/22 13:45	03/09/22 06:30
550-180407-15	SWFTS-MW14-EM37	Water	03/08/22 09:45	03/09/22 06:30
550-180407-16	SWFTS-MW15-EM37	Water	03/08/22 11:00	03/09/22 06:30
550-180407-17	SWFTS-MW07B-EM37	Water	03/08/22 12:10	03/09/22 06:30
550-180407-18	SWFTS-MW07A-EM37	Water	03/08/22 12:55	03/09/22 06:30
550-180407-19	SWFTS-MW12-EM37	Water	03/08/22 14:00	03/09/22 06:30

Detection Summary

Client: Tetra Tech, Inc.
Project/Site: Tetra Tech M11 SWF Treatability Study

Job ID: 550-180407-1
SDG: NERT - Seep Well Field Area Bioremediation Treatability Study

Client Sample ID: PC-88-EM37 — Lab Sample ID: 550-180407-1

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Nitrate as N	22		0.050	0.014	mg/L	1		300.0	Total/NA
Sulfate	690		100	21	mg/L	50		300.0	Total/NA
Chlorate	5200		400	98	ug/L	20		300.1B	Total/NA
Perchlorate	3300		200	63	ug/L	200		314.0	Total/NA
Total Organic Carbon	3.0		0.50	0.26	mg/L	1		SM 5310B	Total/NA

Client Sample ID: PC-88-EM37-FD — Lab Sample ID: 550-180407-2

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Nitrate as N	22		0.050	0.014	mg/L	1		300.0	Total/NA
Sulfate	700		100	21	mg/L	50		300.0	Total/NA
Chlorate	5300		400	98	ug/L	20		300.1B	Total/NA
Perchlorate	3400		200	63	ug/L	200		314.0	Total/NA
Total Organic Carbon	2.8		0.50	0.26	mg/L	1		SM 5310B	Total/NA

Client Sample ID: PC-94-EM37 — Lab Sample ID: 550-180407-3

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Nitrate as N	9.6		0.050	0.014	mg/L	1		300.0	Total/NA
Sulfate	1600		200	43	mg/L	100		300.0	Total/NA
Chlorate	29000		2000	490	ug/L	100		300.1B	Total/NA
Perchlorate	15000		500	160	ug/L	500		314.0	Total/NA
Total Organic Carbon	2.2		2.0	1.0	mg/L	4		SM 5310B	Total/NA

Client Sample ID: SWFTS-EM37-EB1 — Lab Sample ID: 550-180407-4

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Perchlorate	0.83	J	1.0	0.31	ug/L	1		314.0	Total/NA

Client Sample ID: SWFTS-MW09A-EM37 — Lab Sample ID: 550-180407-5

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Nitrate as N	8.6		0.050	0.014	mg/L	1		300.0	Total/NA
Sulfate	1600		200	43	mg/L	100		300.0	Total/NA
Chlorate	20000		2000	490	ug/L	100		300.1B	Total/NA
Perchlorate	14000		500	160	ug/L	500		314.0	Total/NA
Total Organic Carbon	1.8		0.50	0.26	mg/L	1		SM 5310B	Total/NA

Client Sample ID: SWFTS-MW09B-EM37 — Lab Sample ID: 550-180407-6

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Nitrate as N	14		0.050	0.014	mg/L	1		300.0	Total/NA
Sulfate	1700		200	43	mg/L	100		300.0	Total/NA
Chlorate	37000		2000	490	ug/L	100		300.1B	Total/NA
Perchlorate	18000		500	160	ug/L	500		314.0	Total/NA
Total Organic Carbon	1.8		0.50	0.26	mg/L	1		SM 5310B	Total/NA

Client Sample ID: SWFTS-MW24-EM37 — Lab Sample ID: 550-180407-7

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Nitrate as N	5.2		0.050	0.014	mg/L	1		300.0	Total/NA
Sulfate	1700		200	43	mg/L	100		300.0	Total/NA
Chlorate	9900		2000	490	ug/L	100		300.1B	Total/NA

This Detection Summary does not include radiochemical test results.

Eurofins Phoenix

Client Sample ID: SWFTS-MW24-EM37 (Continued) — Lab Sample ID: 550-180407-7

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Perchlorate	5300		200	63	ug/L	200		314.0	Total/NA
Total Organic Carbon	1.5		0.50	0.26	mg/L	1		SM 5310B	Total/NA

Client Sample ID: SWFTS-EM37-FB2 — Lab Sample ID: 550-180407-8

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Nitrate as N	0.024	J	0.050	0.014	mg/L	1		300.0	Total/NA
Sulfate	0.65	J	2.0	0.43	mg/L	1		300.0	Total/NA
Total Organic Carbon	0.34	J	0.50	0.26	mg/L	1		SM 5310B	Total/NA

Client Sample ID: SWFTS-MW22-EM37 — Lab Sample ID: 550-180407-9

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Nitrate as N	2.2		0.050	0.014	mg/L	1		300.0	Total/NA
Sulfate	920		200	43	mg/L	100		300.0	Total/NA
Chlorate	4800		2000	490	ug/L	100		300.1B	Total/NA
Perchlorate	3700		200	63	ug/L	200		314.0	Total/NA
Total Organic Carbon	3.9	J	5.0	2.6	mg/L	10		SM 5310B	Total/NA

Client Sample ID: SWFTS-MW20-EM37 — Lab Sample ID: 550-180407-10

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Nitrate as N	0.72		0.050	0.014	mg/L	1		300.0	Total/NA
Sulfate	2500		200	43	mg/L	100		300.0	Total/NA
Chlorate	790		100	24	ug/L	5		300.1B	Total/NA
Perchlorate	730		50	16	ug/L	50		314.0	Total/NA
Total Organic Carbon	6.1		0.50	0.26	mg/L	1		SM 5310B	Total/NA

Client Sample ID: SWFTS-MW21-EM37 — Lab Sample ID: 550-180407-11

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Nitrate as N	7.6		0.050	0.014	mg/L	1		300.0	Total/NA
Sulfate	2000		200	43	mg/L	100		300.0	Total/NA
Chlorate	15	J	40	9.8	ug/L	2		300.1B	Total/NA
Perchlorate	4100		100	31	ug/L	100		314.0	Total/NA
Total Organic Carbon	1.7		0.50	0.26	mg/L	1		SM 5310B	Total/NA

Client Sample ID: SWFTS-MW19-EM37 — Lab Sample ID: 550-180407-12

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Nitrate as N	6.7		0.050	0.014	mg/L	1		300.0	Total/NA
Sulfate	2200		200	43	mg/L	100		300.0	Total/NA
Chlorate	5300		2000	490	ug/L	100		300.1B	Total/NA
Perchlorate	7100		200	63	ug/L	200		314.0	Total/NA
Total Organic Carbon	7.5		0.50	0.26	mg/L	1		SM 5310B	Total/NA

Client Sample ID: SWFTS-MW19-EM37-FD — Lab Sample ID: 550-180407-13

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Nitrate as N	7.1		0.050	0.014	mg/L	1		300.0	Total/NA
Sulfate	2400		200	43	mg/L	100		300.0	Total/NA
Chlorate	5400		2000	490	ug/L	100		300.1B	Total/NA
Perchlorate	7100		200	63	ug/L	200		314.0	Total/NA

This Detection Summary does not include radiochemical test results.

Client Sample ID: SWFTS-MW19-EM37-FD (Continued) — Lab Sample ID: 550-180407-13

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Total Organic Carbon	7.5		0.50	0.26	mg/L	1		SM 5310B	Total/NA

Client Sample ID: SWFTS-MW18-EM37 — Lab Sample ID: 550-180407-14

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Nitrate as N	4.3		0.050	0.014	mg/L	1		300.0	Total/NA
Sulfate	1500		200	43	mg/L	100		300.0	Total/NA
Chlorate	16000		1000	240	ug/L	50		300.1B	Total/NA
Perchlorate	7300		200	63	ug/L	200		314.0	Total/NA
Total Organic Carbon	2.3	F1	0.50	0.26	mg/L	1		SM 5310B	Total/NA

Client Sample ID: SWFTS-MW14-EM37 — Lab Sample ID: 550-180407-15

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Nitrate as N	1.7		0.050	0.014	mg/L	1		300.0	Total/NA
Sulfate	1400		200	43	mg/L	100		300.0	Total/NA
Chlorate	2900		200	49	ug/L	10		300.1B	Total/NA
Perchlorate	4800		200	63	ug/L	200		314.0	Total/NA
Total Organic Carbon	3.0		0.50	0.26	mg/L	1		SM 5310B	Total/NA

Client Sample ID: SWFTS-MW15-EM37 — Lab Sample ID: 550-180407-16

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Nitrate as N	13		0.050	0.014	mg/L	1		300.0	Total/NA
Sulfate	2300		200	43	mg/L	100		300.0	Total/NA
Chlorate	42	J	100	24	ug/L	5		300.1B	Total/NA
Perchlorate	14000		500	160	ug/L	500		314.0	Total/NA
Total Organic Carbon	3.0		0.50	0.26	mg/L	1		SM 5310B	Total/NA

Client Sample ID: SWFTS-MW07B-EM37 — Lab Sample ID: 550-180407-17

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Nitrate as N	13		0.050	0.014	mg/L	1		300.0	Total/NA
Sulfate	1400		100	21	mg/L	50		300.0	Total/NA
Chlorate	43000		4000	980	ug/L	200		300.1B	Total/NA
Perchlorate	21000		500	160	ug/L	500		314.0	Total/NA
Total Organic Carbon	1.8		0.50	0.26	mg/L	1		SM 5310B	Total/NA

Client Sample ID: SWFTS-MW07A-EM37 — Lab Sample ID: 550-180407-18

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Nitrate as N	13		0.050	0.014	mg/L	1		300.0	Total/NA
Sulfate	1300		100	21	mg/L	50		300.0	Total/NA
Chlorate	35000		2000	490	ug/L	100		300.1B	Total/NA
Perchlorate	21000		500	160	ug/L	500		314.0	Total/NA
Total Organic Carbon	1.8		0.50	0.26	mg/L	1		SM 5310B	Total/NA

Client Sample ID: SWFTS-MW12-EM37 — Lab Sample ID: 550-180407-19

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Nitrate as N	0.44		0.050	0.014	mg/L	1		300.0	Total/NA
Sulfate	1600		100	21	mg/L	50		300.0	Total/NA
Chlorate	1200		200	49	ug/L	10		300.1B	Total/NA

This Detection Summary does not include radiochemical test results.

Client Sample ID: SWFTS-MW12-EM37 (Continued)

Lab Sample ID: 550-180407-19

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Perchlorate	940		20	6.3	ug/L	20		314.0	Total/NA
Total Organic Carbon	7.8		2.0	1.0	mg/L	4		SM 5310B	Total/NA

This Detection Summary does not include radiochemical test results.

Client Sample ID: PC-88-EM37
Lab Sample ID: 550-180407-1
Date Collected: 03/08/22 09:26
Matrix: Water
Date Received: 03/09/22 06:30

Method: 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Nitrate as N	22		0.050	0.014	mg/L			03/09/22 16:27	1
Sulfate	690		100	21	mg/L			03/10/22 03:38	50

Method: 300.1B - Disinfection By-Products, (IC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chlorate	5200		400	98	ug/L			03/16/22 02:36	20

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Dichloroacetic acid(Surr)	*101*		*90 - 115*		*03/16/22 02:36*	*20*

Method: 314.0 - Perchlorate (IC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perchlorate	3300		200	63	ug/L			03/09/22 16:20	200

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon	3.0		0.50	0.26	mg/L			03/19/22 00:29	1

Client Sample ID: PC-88-EM37-FD
Lab Sample ID: 550-180407-2
Date Collected: 03/08/22 09:26
Matrix: Water
Date Received: 03/09/22 06:30

Method: 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Nitrate as N	22		0.050	0.014	mg/L			03/09/22 16:55	1
Sulfate	700		100	21	mg/L			03/10/22 04:06	50

Method: 300.1B - Disinfection By-Products, (IC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chlorate	5300		400	98	ug/L			03/16/22 03:05	20

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Dichloroacetic acid(Surr)	*101*		*90 - 115*		*03/16/22 03:05*	*20*

Method: 314.0 - Perchlorate (IC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perchlorate	3400		200	63	ug/L			03/09/22 16:42	200

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon	2.8		0.50	0.26	mg/L			03/19/22 00:41	1

Client Sample ID: PC-94-EM37
Lab Sample ID: 550-180407-3
Date Collected: 03/08/22 11:24
Matrix: Water
Date Received: 03/09/22 06:30

Method: 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Nitrate as N	9.6		0.050	0.014	mg/L			03/09/22 13:40	1
Sulfate	1600		200	43	mg/L			03/09/22 15:04	100

Client Sample ID: PC-94-EM37

Lab Sample ID: 550-180407-3
Date Collected: 03/08/22 11:24
Matrix: Water
Date Received: 03/09/22 06:30

Method: 300.1B - Disinfection By-Products, (IC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chlorate	29000		2000	490	ug/L			03/18/22 03:24	100

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Dichloroacetic acid(Surr)	*101*		*90 - 115*		*03/18/22 03:24*	*100*

Method: 314.0 - Perchlorate (IC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perchlorate	15000		500	160	ug/L			03/10/22 15:12	500

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon	2.2		2.0	1.0	mg/L			03/19/22 00:56	4

Client Sample ID: SWFTS-EM37-EB1

Lab Sample ID: 550-180407-4
Date Collected: 03/08/22 11:45
Matrix: Water
Date Received: 03/09/22 06:30

Method: 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Nitrate as N	ND		0.050	0.014	mg/L			03/09/22 17:23	1
Sulfate	ND		2.0	0.43	mg/L			03/09/22 17:23	1

Method: 300.1B - Disinfection By-Products, (IC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chlorate	ND		20	4.9	ug/L			03/18/22 03:53	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Dichloroacetic acid(Surr)	*110*		*90 - 115*		*03/18/22 03:53*	*1*

Method: 314.0 - Perchlorate (IC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perchlorate	0.83	J	1.0	0.31	ug/L			03/09/22 18:14	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon	ND		0.50	0.26	mg/L			03/19/22 01:33	1

Client Sample ID: SWFTS-MW09A-EM37

Lab Sample ID: 550-180407-5
Date Collected: 03/08/22 12:38
Matrix: Water
Date Received: 03/09/22 06:30

Method: 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Nitrate as N	8.6		0.050	0.014	mg/L			03/09/22 13:57	1
Sulfate	1600		200	43	mg/L			03/09/22 21:19	100

Method: 300.1B - Disinfection By-Products, (IC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chlorate	20000		2000	490	ug/L			03/18/22 04:23	100

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Dichloroacetic acid(Surr)	*98*		*90 - 115*		*03/18/22 04:23*	*100*

Client Sample ID: SWFTS-MW09A-EM37

Lab Sample ID: 550-180407-5
Date Collected: 03/08/22 12:38
Matrix: Water
Date Received: 03/09/22 06:30

Method: 314.0 - Perchlorate (IC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perchlorate	14000		500	160	ug/L			03/10/22 15:34	500

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon	1.8		0.50	0.26	mg/L			03/19/22 01:44	1

Client Sample ID: SWFTS-MW09B-EM37

Lab Sample ID: 550-180407-6
Date Collected: 03/08/22 13:32
Matrix: Water
Date Received: 03/09/22 06:30

Method: 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Nitrate as N	14		0.050	0.014	mg/L			03/09/22 14:15	1
Sulfate	1700		200	43	mg/L			03/09/22 21:37	100

Method: 300.1B - Disinfection By-Products, (IC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chlorate	37000		2000	490	ug/L			03/18/22 04:52	100

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Dichloroacetic acid(Surr)	*100*		*90 - 115*		*03/18/22 04:52*	*100*

Method: 314.0 - Perchlorate (IC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perchlorate	18000		500	160	ug/L			03/09/22 19:00	500

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon	1.8		0.50	0.26	mg/L			03/19/22 01:55	1

Client Sample ID: SWFTS-MW24-EM37

Lab Sample ID: 550-180407-7
Date Collected: 03/08/22 09:35
Matrix: Water
Date Received: 03/09/22 06:30

Method: 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Nitrate as N	5.2		0.050	0.014	mg/L			03/09/22 12:07	1
Sulfate	1700		200	43	mg/L			03/09/22 13:02	100

Method: 300.1B - Disinfection By-Products, (IC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chlorate	9900		2000	490	ug/L			03/18/22 06:21	100

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Dichloroacetic acid(Surr)	*102*		*90 - 115*		*03/18/22 06:21*	*100*

Method: 314.0 - Perchlorate (IC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perchlorate	5300		200	63	ug/L			03/10/22 15:56	200

Client Sample ID: SWFTS-MW24-EM37
Lab Sample ID: 550-180407-7
Date Collected: 03/08/22 09:35
Matrix: Water
Date Received: 03/09/22 06:30

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon	1.5		0.50	0.26	mg/L			03/19/22 02:08	1

Client Sample ID: SWFTS-EM37-FB2
Lab Sample ID: 550-180407-8
Date Collected: 03/08/22 09:40
Matrix: Water
Date Received: 03/09/22 06:30

Method: 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Nitrate as N	0.024	J	0.050	0.014	mg/L			03/09/22 14:34	1
Sulfate	0.65	J	2.0	0.43	mg/L			03/09/22 14:34	1

Method: 300.1B - Disinfection By-Products, (IC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chlorate	ND		20	4.9	ug/L			03/18/22 07:49	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Dichloroacetic acid(Surr)	*100*		*90 - 115*		*03/18/22 07:49*	*1*

Method: 314.0 - Perchlorate (IC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perchlorate	ND		1.0	0.31	ug/L			03/09/22 19:46	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon	0.34	J	0.50	0.26	mg/L			03/19/22 02:21	1

Client Sample ID: SWFTS-MW22-EM37
Lab Sample ID: 550-180407-9
Date Collected: 03/08/22 10:50
Matrix: Water
Date Received: 03/09/22 06:30

Method: 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Nitrate as N	2.2		0.050	0.014	mg/L			03/09/22 13:12	1
Sulfate	920		200	43	mg/L			03/09/22 14:36	100

Method: 300.1B - Disinfection By-Products, (IC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chlorate	4800		2000	490	ug/L			03/18/22 08:19	100

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Dichloroacetic acid(Surr)	*110*		*90 - 115*		*03/18/22 08:19*	*100*

Method: 314.0 - Perchlorate (IC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perchlorate	3700		200	63	ug/L			03/09/22 20:08	200

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon	3.9	J	5.0	2.6	mg/L			03/19/22 02:33	10

Client Sample ID: SWFTS-MW20-EM37

Lab Sample ID: 550-180407-10
Date Collected: 03/08/22 11:25
Matrix: Water
Date Received: 03/09/22 06:30

Method: 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Nitrate as N	0.72		0.050	0.014	mg/L			03/09/22 16:00	1
Sulfate	2500		200	43	mg/L			03/10/22 03:38	100

Method: 300.1B - Disinfection By-Products, (IC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chlorate	790		100	24	ug/L			03/22/22 19:35	5

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Dichloroacetic acid(Surr)	*95*		*90 - 115*		*03/22/22 19:35*	*5*

Method: 314.0 - Perchlorate (IC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perchlorate	730		50	16	ug/L			03/10/22 16:19	50

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon	6.1		0.50	0.26	mg/L			03/19/22 02:46	1

Client Sample ID: SWFTS-MW21-EM37

Lab Sample ID: 550-180407-11
Date Collected: 03/08/22 12:05
Matrix: Water
Date Received: 03/09/22 06:30

Method: 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Nitrate as N	7.6		0.050	0.014	mg/L			03/09/22 16:28	1
Sulfate	2000		200	43	mg/L			03/10/22 04:06	100

Method: 300.1B - Disinfection By-Products, (IC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chlorate	15	J	40	9.8	ug/L			03/18/22 09:18	2

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Dichloroacetic acid(Surr)	*105*		*90 - 115*		*03/18/22 09:18*	*2*

Method: 314.0 - Perchlorate (IC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perchlorate	4100		100	31	ug/L			03/09/22 20:54	100

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon	1.7		0.50	0.26	mg/L			03/19/22 02:57	1

Client Sample ID: SWFTS-MW19-EM37

Lab Sample ID: 550-180407-12
Date Collected: 03/08/22 12:50
Matrix: Water
Date Received: 03/09/22 06:30

Method: 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Nitrate as N	6.7		0.050	0.014	mg/L			03/09/22 16:55	1
Sulfate	2200		200	43	mg/L			03/10/22 05:58	100

Client Sample ID: SWFTS-MW19-EM37

Lab Sample ID: 550-180407-12
Date Collected: 03/08/22 12:50
Matrix: Water
Date Received: 03/09/22 06:30

Method: 300.1B - Disinfection By-Products, (IC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chlorate	5300		2000	490	ug/L			03/22/22 20:05	100

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Dichloroacetic acid(Surr)	*91*		*90 - 115*		*03/22/22 20:05*	*100*

Method: 314.0 - Perchlorate (IC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perchlorate	7100		200	63	ug/L			03/11/22 12:59	200

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon	7.5		0.50	0.26	mg/L			03/19/22 03:11	1

Client Sample ID: SWFTS-MW19-EM37-FD

Lab Sample ID: 550-180407-13
Date Collected: 03/08/22 12:50
Matrix: Water
Date Received: 03/09/22 06:30

Method: 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Nitrate as N	7.1		0.050	0.014	mg/L			03/09/22 15:47	1
Sulfate	2400		200	43	mg/L			03/09/22 21:56	100

Method: 300.1B - Disinfection By-Products, (IC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chlorate	5400		2000	490	ug/L			03/22/22 20:34	100

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Dichloroacetic acid(Surr)	*95*		*90 - 115*		*03/22/22 20:34*	*100*

Method: 314.0 - Perchlorate (IC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perchlorate	7100		200	63	ug/L			03/11/22 13:22	200

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon	7.5		0.50	0.26	mg/L			03/19/22 03:23	1

Client Sample ID: SWFTS-MW18-EM37

Lab Sample ID: 550-180407-14
Date Collected: 03/08/22 13:45
Matrix: Water
Date Received: 03/09/22 06:30

Method: 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Nitrate as N	4.3		0.050	0.014	mg/L			03/09/22 16:06	1
Sulfate	1500		200	43	mg/L			03/09/22 23:09	100

Method: 300.1B - Disinfection By-Products, (IC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chlorate	16000		1000	240	ug/L			03/18/22 10:46	50

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Dichloroacetic acid(Surr)	*100*		*90 - 115*		*03/18/22 10:46*	*50*

Client Sample ID: SWFTS-MW18-EM37

Lab Sample ID: 550-180407-14
Date Collected: 03/08/22 13:45
Matrix: Water
Date Received: 03/09/22 06:30

Method: 314.0 - Perchlorate (IC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perchlorate	7300		200	63	ug/L			03/10/22 18:11	200

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon	2.3	F1	0.50	0.26	mg/L			03/19/22 15:50	1

Client Sample ID: SWFTS-MW14-EM37

Lab Sample ID: 550-180407-15
Date Collected: 03/08/22 09:45
Matrix: Water
Date Received: 03/09/22 06:30

Method: 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Nitrate as N	1.7		0.050	0.014	mg/L			03/09/22 16:24	1
Sulfate	1400		200	43	mg/L			03/09/22 23:28	100

Method: 300.1B - Disinfection By-Products, (IC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chlorate	2900		200	49	ug/L			03/22/22 21:04	10

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Dichloroacetic acid(Surr)	*102*		*90 - 115*		*03/22/22 21:04*	*10*

Method: 314.0 - Perchlorate (IC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perchlorate	4800		200	63	ug/L			03/10/22 18:33	200

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon	3.0		0.50	0.26	mg/L			03/19/22 16:29	1

Client Sample ID: SWFTS-MW15-EM37

Lab Sample ID: 550-180407-16
Date Collected: 03/08/22 11:00
Matrix: Water
Date Received: 03/09/22 06:30

Method: 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Nitrate as N	13		0.050	0.014	mg/L			03/09/22 19:15	1
Sulfate	2300		200	43	mg/L			03/10/22 04:34	100

Method: 300.1B - Disinfection By-Products, (IC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chlorate	42	J	100	24	ug/L			03/23/22 23:34	5

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Dichloroacetic acid(Surr)	*101*		*90 - 115*		*03/23/22 23:34*	*5*

Method: 314.0 - Perchlorate (IC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perchlorate	14000		500	160	ug/L			03/10/22 18:56	500

Client Sample ID: SWFTS-MW15-EM37

Lab Sample ID: 550-180407-16
Date Collected: 03/08/22 11:00
Matrix: Water
Date Received: 03/09/22 06:30

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon	3.0		0.50	0.26	mg/L			03/19/22 16:42	1

Client Sample ID: SWFTS-MW07B-EM37

Lab Sample ID: 550-180407-17
Date Collected: 03/08/22 12:10
Matrix: Water
Date Received: 03/09/22 06:30

Method: 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Nitrate as N	13		0.050	0.014	mg/L			03/09/22 18:47	1
Sulfate	1400		100	21	mg/L			03/10/22 06:26	50

Method: 300.1B - Disinfection By-Products, (IC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chlorate	43000		4000	980	ug/L			03/19/22 17:36	200

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Dichloroacetic acid(Surr)	*100*		*90 - 115*		*03/19/22 17:36*	*200*

Method: 314.0 - Perchlorate (IC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perchlorate	21000		500	160	ug/L			03/10/22 19:18	500

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon	1.8		0.50	0.26	mg/L			03/19/22 16:58	1

Client Sample ID: SWFTS-MW07A-EM37

Lab Sample ID: 550-180407-18
Date Collected: 03/08/22 12:55
Matrix: Water
Date Received: 03/09/22 06:30

Method: 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Nitrate as N	13		0.050	0.014	mg/L			03/09/22 19:15	1
Sulfate	1300		100	21	mg/L			03/10/22 06:54	50

Method: 300.1B - Disinfection By-Products, (IC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chlorate	35000		2000	490	ug/L			03/19/22 18:05	100

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Dichloroacetic acid(Surr)	*111*		*90 - 115*		*03/19/22 18:05*	*100*

Method: 314.0 - Perchlorate (IC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perchlorate	21000		500	160	ug/L			03/10/22 19:41	500

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon	1.8		0.50	0.26	mg/L			03/19/22 17:14	1

Client Sample Results

Client: Tetra Tech, Inc.
Project/Site: Tetra Tech M11 SWF Treatability Study

Job ID: 550-180407-1
SDG: NERT - Seep Well Field Area Bioremediation Treatability Study

Client Sample ID: SWFTS-MW12-EM37

Date Collected: 03/08/22 14:00
Date Received: 03/09/22 06:30

Lab Sample ID: 550-180407-19

Matrix: Water

Method: 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Nitrate as N	0.44		0.050	0.014	mg/L			03/09/22 19:43	1
Sulfate	1600		100	21	mg/L			03/10/22 07:21	50

Method: 300.1B - Disinfection By-Products, (IC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chlorate	1200		200	49	ug/L			03/23/22 00:01	10

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Dichloroacetic acid(Surr)	*101*		*90 - 115*		*03/23/22 00:01*	*10*

Method: 314.0 - Perchlorate (IC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perchlorate	940		20	6.3	ug/L			03/10/22 20:03	20

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon	7.8		2.0	1.0	mg/L			03/19/22 06:06	4

Surrogate Summary

Client: Tetra Tech, Inc.
Project/Site: Tetra Tech M11 SWF Treatability Study

Job ID: 550-180407-1
SDG: NERT - Seep Well Field Area Bioremediation Treatability Study

Method: 300.1B - Disinfection By-Products, (IC)

Matrix: Water **Prep Type: Total/NA**

		Percent Surrogate Recovery (Acceptance Limits)
Lab Sample ID	Client Sample ID	DCAA (90-115)
550-180406-E-6 MS ^2	Matrix Spike	116 S1+
550-180406-E-6 MSD ^2	Matrix Spike Duplicate	108
550-180407-1	PC-88-EM37	101
550-180407-2	PC-88-EM37-FD	101
550-180407-3	PC-94-EM37	101
550-180407-4	SWFTS-EM37-EB1	110
550-180407-5	SWFTS-MW09A-EM37	98
550-180407-6	SWFTS-MW09B-EM37	100
550-180407-7	SWFTS-MW24-EM37	102
550-180407-7 MS	SWFTS-MW24-EM37	113
550-180407-7 MSD	SWFTS-MW24-EM37	100
550-180407-8	SWFTS-EM37-FB2	100
550-180407-9	SWFTS-MW22-EM37	110
550-180407-10	SWFTS-MW20-EM37	95
550-180407-11	SWFTS-MW21-EM37	105
550-180407-12	SWFTS-MW19-EM37	91
550-180407-13	SWFTS-MW19-EM37-FD	95
550-180407-14	SWFTS-MW18-EM37	100
550-180407-15	SWFTS-MW14-EM37	102
550-180407-16	SWFTS-MW15-EM37	101
550-180407-17	SWFTS-MW07B-EM37	100
550-180407-18	SWFTS-MW07A-EM37	111
550-180407-19	SWFTS-MW12-EM37	101
550-180526-T-6 MS ^5	Matrix Spike	102
550-180526-T-6 MSD ^5	Matrix Spike Duplicate	100
550-180632-G-15 MS ^5	Matrix Spike	114
550-180632-G-15 MSD ^5	Matrix Spike Duplicate	118 S1+
LCS 550-268943/6	Lab Control Sample	111
LCS 550-269263/6	Lab Control Sample	110
LCS 550-269352/6	Lab Control Sample	101
LCS 550-269569/6	Lab Control Sample	98
LCS 550-269725/6	Lab Control Sample	110
LCSD 550-268943/7	Lab Control Sample Dup	101
LCSD 550-269263/7	Lab Control Sample Dup	97
LCSD 550-269352/7	Lab Control Sample Dup	101
LCSD 550-269569/7	Lab Control Sample Dup	99
LCSD 550-269725/7	Lab Control Sample Dup	109
MB 550-268943/5	Method Blank	101
MB 550-269263/5	Method Blank	100
MB 550-269352/5	Method Blank	110
MB 550-269569/5	Method Blank	108
MB 550-269725/5	Method Blank	114

Surrogate Legend

DCAA = Dichloroacetic acid(Surr)

Surrogate Summary

Client: Tetra Tech, Inc.
Project/Site: Tetra Tech M11 SWF Treatability Study

Job ID: 550-180407-1
SDG: NERT - Seep Well Field Area Bioremediation Treatability Study

Method: 300.1B - Disinfection By-Products, (IC)

Matrix: Water **Prep Type: Total/NA**

		Percent Surrogate Recovery (Acceptance Limits)							
Lab Sample ID	Client Sample ID	DCAA (50-150)							
MRL 550-268943/1003	Lab Control Sample	115							
MRL 550-269263/1003	Lab Control Sample	113							
MRL 550-269352/1003	Lab Control Sample	101							
MRL 550-269569/1003	Lab Control Sample	104							
MRL 550-269725/1003	Lab Control Sample	114							

Surrogate Legend

DCAA = Dichloroacetic acid(Surr)

Method: 300.0 - Anions, Ion Chromatography

Lab Sample ID: MB 550-268466/2
Matrix: Water
Analysis Batch: 268466

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Nitrate as N	ND		0.050	0.014	mg/L			03/09/22 10:34	1
Sulfate	ND		2.0	0.43	mg/L			03/09/22 10:34	1

Lab Sample ID: LCS 550-268466/5
Matrix: Water
Analysis Batch: 268466

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Nitrate as N	4.00	4.17		mg/L		104	90 - 110
Sulfate	20.0	21.1		mg/L		105	90 - 110

Lab Sample ID: LCSD 550-268466/6
Matrix: Water
Analysis Batch: 268466

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Nitrate as N	4.00	4.16		mg/L		104	90 - 110	0	20
Sulfate	20.0	20.9		mg/L		105	90 - 110	1	20

Lab Sample ID: 550-180407-7 MS
Matrix: Water
Analysis Batch: 268466

Client Sample ID: SWFTS-MW24-EM37
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Nitrate as N	5.2		4.00	9.30		mg/L		104	80 - 120

Lab Sample ID: 550-180407-7 MS
Matrix: Water
Analysis Batch: 268466

Client Sample ID: SWFTS-MW24-EM37
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Sulfate	1700		2000	3900		mg/L		110	80 - 120

Lab Sample ID: 550-180407-7 MSD
Matrix: Water
Analysis Batch: 268466

Client Sample ID: SWFTS-MW24-EM37
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Nitrate as N	5.2		4.00	9.28		mg/L		103	80 - 120	0	20

Lab Sample ID: 550-180407-7 MSD
Matrix: Water
Analysis Batch: 268466

Client Sample ID: SWFTS-MW24-EM37
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Sulfate	1700		2000	3880		mg/L		109	80 - 120	1	20

Method: 300.0 - Anions, Ion Chromatography (Continued)

Lab Sample ID: MB 550-268467/2
Matrix: Water
Analysis Batch: 268467

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Nitrate as N	ND		0.050	0.014	mg/L			03/09/22 11:20	1
Sulfate	ND		2.0	0.43	mg/L			03/09/22 11:20	1

Lab Sample ID: LCS 550-268467/5
Matrix: Water
Analysis Batch: 268467

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
Nitrate as N			4.00	4.08		mg/L		102	90 - 110		
Sulfate			20.0	20.6		mg/L		103	90 - 110		

Lab Sample ID: LCSD 550-268467/6
Matrix: Water
Analysis Batch: 268467

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Nitrate as N			4.00	4.10		mg/L		103	90 - 110	1	20
Sulfate			20.0	20.7		mg/L		103	90 - 110	0	20

Lab Sample ID: 550-180407-3 MS
Matrix: Water
Analysis Batch: 268467

Client Sample ID: PC-94-EM37
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits		
Nitrate as N	9.6		4.00	13.6		mg/L		102	80 - 120		

Lab Sample ID: 550-180407-3 MS
Matrix: Water
Analysis Batch: 268467

Client Sample ID: PC-94-EM37
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits		
Sulfate	1600		2000	3580		mg/L		99	80 - 120		

Lab Sample ID: 550-180407-3 MSD
Matrix: Water
Analysis Batch: 268467

Client Sample ID: PC-94-EM37
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Nitrate as N	9.6		4.00	13.6		mg/L		102	80 - 120	0	20

Lab Sample ID: 550-180407-3 MSD
Matrix: Water
Analysis Batch: 268467

Client Sample ID: PC-94-EM37
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Sulfate	1600		2000	3550		mg/L		97	80 - 120	1	20

Method: 300.0 - Anions, Ion Chromatography (Continued)

Lab Sample ID: MB 550-268468/2
Matrix: Water
Analysis Batch: 268468

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Nitrate as N	ND		0.050	0.014	mg/L			03/09/22 10:52	1
Sulfate	ND		2.0	0.43	mg/L			03/09/22 10:52	1

Lab Sample ID: LCS 550-268468/5
Matrix: Water
Analysis Batch: 268468

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Nitrate as N	4.00	3.98		mg/L		99	90 - 110
Sulfate	20.0	20.6		mg/L		103	90 - 110

Lab Sample ID: LCSD 550-268468/6
Matrix: Water
Analysis Batch: 268468

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Nitrate as N	4.00	3.98		mg/L		99	90 - 110	0	20
Sulfate	20.0	20.5		mg/L		102	90 - 110	1	20

Lab Sample ID: 550-180407-9 MS
Matrix: Water
Analysis Batch: 268468

Client Sample ID: SWFTS-MW22-EM37
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Nitrate as N	2.2		4.00	6.14		mg/L		100	80 - 120

Lab Sample ID: 550-180407-9 MS
Matrix: Water
Analysis Batch: 268468

Client Sample ID: SWFTS-MW22-EM37
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Sulfate	920		2000	2930		mg/L		101	80 - 120

Lab Sample ID: 550-180407-9 MSD
Matrix: Water
Analysis Batch: 268468

Client Sample ID: SWFTS-MW22-EM37
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Nitrate as N	2.2		4.00	6.42		mg/L		107	80 - 120	4	20

Lab Sample ID: 550-180407-9 MSD
Matrix: Water
Analysis Batch: 268468

Client Sample ID: SWFTS-MW22-EM37
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Sulfate	920		2000	2990		mg/L		103	80 - 120	2	20

Method: 300.1B - Disinfection By-Products, (IC)

Lab Sample ID: MB 550-268943/5
Matrix: Water
Analysis Batch: 268943

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chlorate	ND		20	4.9	ug/L			03/15/22 15:18	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Dichloroacetic acid(Surr)	*101*		*90 - 115*		*03/15/22 15:18*	*1*

Lab Sample ID: LCS 550-268943/6
Matrix: Water
Analysis Batch: 268943

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
Chlorate			100	90.5		ug/L		90	75 - 125		

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
Dichloroacetic acid(Surr)	*111*		*90 - 115*

Lab Sample ID: LCSD 550-268943/7
Matrix: Water
Analysis Batch: 268943

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Chlorate			100	95.8		ug/L		96	75 - 125	6	25

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
Dichloroacetic acid(Surr)	*101*		*90 - 115*

Lab Sample ID: MRL 550-268943/1003
Matrix: Water
Analysis Batch: 268943

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte			Spike Added	MRL Result	MRL Qualifier	Unit	D	%Rec	%Rec. Limits		
Chlorate			20.0	20.7		ug/L		104	50 - 150		

Surrogate	*MRL %Recovery*	*MRL Qualifier*	*Limits*
Dichloroacetic acid(Surr)	*115*		*50 - 150*

Lab Sample ID: 550-180406-E-6 MS ^2
Matrix: Water
Analysis Batch: 268943

Client Sample ID: Matrix Spike
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits		
Chlorate	1600	E	200	1800	E 4	ug/L		121	75 - 125		

Surrogate	*MS %Recovery*	*MS Qualifier*	*Limits*
Dichloroacetic acid(Surr)	*116*	*S1+*	*90 - 115*

Method: 300.1B - Disinfection By-Products, (IC) (Continued)

Lab Sample ID: 550-180406-E-6 MSD ^2
Matrix: Water
Analysis Batch: 268943

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Chlorate	1600	E	200	1780	E 4	ug/L		109	75 - 125	1	25

Surrogate	*MSD %Recovery*	*MSD Qualifier*	*Limits*
Dichloroacetic acid(Surr)	*108*		*90 - 115*

Lab Sample ID: MB 550-269263/5
Matrix: Water
Analysis Batch: 269263

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chlorate	ND		20	4.9	ug/L			03/17/22 22:59	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Dichloroacetic acid(Surr)	*100*		*90 - 115*		*03/17/22 22:59*	*1*

Lab Sample ID: LCS 550-269263/6
Matrix: Water
Analysis Batch: 269263

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
Chlorate			100	88.9		ug/L		89	75 - 125		

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
Dichloroacetic acid(Surr)	*110*		*90 - 115*

Lab Sample ID: LCSD 550-269263/7
Matrix: Water
Analysis Batch: 269263

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Chlorate			100	93.5		ug/L		93	75 - 125	5	25

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
Dichloroacetic acid(Surr)	*97*		*90 - 115*

Lab Sample ID: MRL 550-269263/1003
Matrix: Water
Analysis Batch: 269263

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte			Spike Added	MRL Result	MRL Qualifier	Unit	D	%Rec	%Rec. Limits		
Chlorate			20.0	16.9	J	ug/L		85	50 - 150		

Surrogate	*MRL %Recovery*	*MRL Qualifier*	*Limits*
Dichloroacetic acid(Surr)	*113*		*50 - 150*

Method: 300.1B - Disinfection By-Products, (IC) (Continued)

Lab Sample ID: 550-180407-7 MS
Matrix: Water
Analysis Batch: 269263

Client Sample ID: SWFTS-MW24-EM37
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits		
Chlorate	9900		10000	19400		ug/L		95	75 - 125		

Surrogate	*MS %Recovery*	*MS Qualifier*	*Limits*
Dichloroacetic acid(Surr)	*113*		*90 - 115*

Lab Sample ID: 550-180407-7 MSD
Matrix: Water
Analysis Batch: 269263

Client Sample ID: SWFTS-MW24-EM37
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Chlorate	9900		10000	19300		ug/L		95	75 - 125	0	25

Surrogate	*MSD %Recovery*	*MSD Qualifier*	*Limits*
Dichloroacetic acid(Surr)	*100*		*90 - 115*

Lab Sample ID: MB 550-269352/5
Matrix: Water
Analysis Batch: 269352

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chlorate	ND		20	4.9	ug/L			03/19/22 12:12	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Dichloroacetic acid(Surr)	*110*		*90 - 115*		*03/19/22 12:12*	*1*

Lab Sample ID: LCS 550-269352/6
Matrix: Water
Analysis Batch: 269352

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
Chlorate			100	96.4		ug/L		96	75 - 125		

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
Dichloroacetic acid(Surr)	*101*		*90 - 115*

Lab Sample ID: LCSD 550-269352/7
Matrix: Water
Analysis Batch: 269352

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Chlorate			100	95.8		ug/L		96	75 - 125	1	25

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
Dichloroacetic acid(Surr)	*101*		*90 - 115*

Method: 300.1B - Disinfection By-Products, (IC) (Continued)

Lab Sample ID: MRL 550-269352/1003
Matrix: Water
Analysis Batch: 269352

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte			Spike Added	MRL Result	MRL Qualifier	Unit	D	%Rec	%Rec. Limits		
Chlorate			20.0	20.7		ug/L		103	50 - 150		

Surrogate	*MRL %Recovery*	*MRL Qualifier*	*Limits*
Dichloroacetic acid(Surr)	*101*		*50 - 150*

Lab Sample ID: MB 550-269569/5
Matrix: Water
Analysis Batch: 269569

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chlorate	ND		20	4.9	ug/L			03/22/22 15:10	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Dichloroacetic acid(Surr)	*108*		*90 - 115*		*03/22/22 15:10*	*1*

Lab Sample ID: LCS 550-269569/6
Matrix: Water
Analysis Batch: 269569

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
Chlorate			100	95.2		ug/L		95	75 - 125		

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
Dichloroacetic acid(Surr)	*98*		*90 - 115*

Lab Sample ID: LCSD 550-269569/7
Matrix: Water
Analysis Batch: 269569

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Chlorate			100	94.2		ug/L		94	75 - 125	1	25

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
Dichloroacetic acid(Surr)	*99*		*90 - 115*

Lab Sample ID: MRL 550-269569/1003
Matrix: Water
Analysis Batch: 269569

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte			Spike Added	MRL Result	MRL Qualifier	Unit	D	%Rec	%Rec. Limits		
Chlorate			20.0	20.7		ug/L		104	50 - 150		

Surrogate	*MRL %Recovery*	*MRL Qualifier*	*Limits*
Dichloroacetic acid(Surr)	*104*		*50 - 150*

Method: 300.1B - Disinfection By-Products, (IC) (Continued)

Lab Sample ID: 550-180526-T-6 MS ^5
Matrix: Water
Analysis Batch: 269569

Client Sample ID: Matrix Spike
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits		
Chlorate	ND	D	500	512		ug/L		102	75 - 125		

Surrogate	*MS %Recovery*	*MS Qualifier*	*Limits*
Dichloroacetic acid(Surr)	*102*		*90 - 115*

Lab Sample ID: 550-180526-T-6 MSD ^5
Matrix: Water
Analysis Batch: 269569

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Chlorate	ND	D	500	504		ug/L		101	75 - 125	2	25

Surrogate	*MSD %Recovery*	*MSD Qualifier*	*Limits*
Dichloroacetic acid(Surr)	*100*		*90 - 115*

Lab Sample ID: MB 550-269725/5
Matrix: Water
Analysis Batch: 269725

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chlorate	ND		20	4.9	ug/L			03/23/22 20:38	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Dichloroacetic acid(Surr)	*114*		*90 - 115*		*03/23/22 20:38*	*1*

Lab Sample ID: LCS 550-269725/6
Matrix: Water
Analysis Batch: 269725

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
Chlorate			100	104		ug/L		104	75 - 125		

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
Dichloroacetic acid(Surr)	*110*		*90 - 115*

Lab Sample ID: LCSD 550-269725/7
Matrix: Water
Analysis Batch: 269725

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Chlorate			100	105		ug/L		105	75 - 125	1	25

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
Dichloroacetic acid(Surr)	*109*		*90 - 115*

Method: 300.1B - Disinfection By-Products, (IC) (Continued)

Lab Sample ID: MRL 550-269725/1003
Matrix: Water
Analysis Batch: 269725

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte			Spike Added	MRL Result	MRL Qualifier	Unit	D	%Rec	%Rec. Limits		
Chlorate			20.0	22.3		ug/L		111	50 - 150		

Surrogate	*MRL %Recovery*	*MRL Qualifier*	*Limits*
Dichloroacetic acid(Surr)	*114*		*50 - 150*

Lab Sample ID: 550-180632-G-15 MS ^5
Matrix: Water
Analysis Batch: 269725

Client Sample ID: Matrix Spike
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits		
Chlorate	ND	D	500	545		ug/L		109	75 - 125		

Surrogate	*MS %Recovery*	*MS Qualifier*	*Limits*
Dichloroacetic acid(Surr)	*114*		*90 - 115*

Lab Sample ID: 550-180632-G-15 MSD ^5
Matrix: Water
Analysis Batch: 269725

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Chlorate	ND	D	500	550		ug/L		110	75 - 125	1	25

Surrogate	*MSD %Recovery*	*MSD Qualifier*	*Limits*
Dichloroacetic acid(Surr)	*118*	*S1+*	*90 - 115*

Method: 314.0 - Perchlorate (IC)

Lab Sample ID: MB 550-268439/1002
Matrix: Water
Analysis Batch: 268439

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perchlorate	ND		1.0	0.31	ug/L			03/09/22 11:52	1

Lab Sample ID: LCS 550-268439/4
Matrix: Water
Analysis Batch: 268439

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
Perchlorate			25.0	26.4		ug/L		106	85 - 115		

Lab Sample ID: LCSD 550-268439/5
Matrix: Water
Analysis Batch: 268439

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Perchlorate			25.0	26.4		ug/L		105	85 - 115	0	15

Method: 314.0 - Perchlorate (IC) (Continued)

Lab Sample ID: MRL 550-268439/1003
Matrix: Water
Analysis Batch: 268439

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte			Spike Added	MRL Result	MRL Qualifier	Unit	D	%Rec	%Rec. Limits		
Perchlorate			1.00	1.25		ug/L		125	75 - 125		

Lab Sample ID: 550-180406-A-5 MS ^100
Matrix: Water
Analysis Batch: 268439

Client Sample ID: Matrix Spike
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits		
Perchlorate	3300		2500	5660	E	ug/L		94	80 - 120		

Lab Sample ID: 550-180406-A-5 MSD ^100
Matrix: Water
Analysis Batch: 268439

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Perchlorate	3300		2500	5670	E	ug/L		94	80 - 120	0	15

Lab Sample ID: MB 550-268555/1002
Matrix: Water
Analysis Batch: 268555

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perchlorate	ND		1.0	0.31	ug/L			03/10/22 10:59	1

Lab Sample ID: LCS 550-268555/4
Matrix: Water
Analysis Batch: 268555

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
Perchlorate			25.0	27.0		ug/L		108	85 - 115		

Lab Sample ID: LCSD 550-268555/5
Matrix: Water
Analysis Batch: 268555

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Perchlorate			25.0	26.9		ug/L		107	85 - 115	1	15

Lab Sample ID: MRL 550-268555/1003
Matrix: Water
Analysis Batch: 268555

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte			Spike Added	MRL Result	MRL Qualifier	Unit	D	%Rec	%Rec. Limits		
Perchlorate			1.00	0.928	J	ug/L		93	75 - 125		

Method: 314.0 - Perchlorate (IC) (Continued)

Lab Sample ID: 550-180516-E-9 MS ^100
Matrix: Water
Analysis Batch: 268555

Client Sample ID: Matrix Spike
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits		
Perchlorate	600	F1	2500	2590		ug/L		80	80 - 120		

Lab Sample ID: 550-180516-E-9 MSD ^100
Matrix: Water
Analysis Batch: 268555

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Perchlorate	600	F1	2500	2490	F1	ug/L		76	80 - 120	4	15

Lab Sample ID: MB 550-268660/1002
Matrix: Water
Analysis Batch: 268660

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perchlorate	ND		1.0	0.31	ug/L			03/11/22 09:33	1

Lab Sample ID: LCS 550-268660/4
Matrix: Water
Analysis Batch: 268660

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
Perchlorate			25.0	25.5		ug/L		102	85 - 115		

Lab Sample ID: LCSD 550-268660/5
Matrix: Water
Analysis Batch: 268660

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Perchlorate			25.0	25.2		ug/L		101	85 - 115	1	15

Lab Sample ID: MRL 550-268660/1003
Matrix: Water
Analysis Batch: 268660

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte			Spike Added	MRL Result	MRL Qualifier	Unit	D	%Rec	%Rec. Limits		
Perchlorate			1.00	1.01		ug/L		101	75 - 125		

Lab Sample ID: 550-180633-F-1 MS ^10
Matrix: Water
Analysis Batch: 268660

Client Sample ID: Matrix Spike
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits		
Perchlorate	3.7	J	250	247		ug/L		97	80 - 120		

Method: 314.0 - Perchlorate (IC) (Continued)

Lab Sample ID: 550-180633-F-1 MSD ^10
Matrix: Water
Analysis Batch: 268660

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Perchlorate	3.7	J	250	249		ug/L		98	80 - 120	1	15

Method: SM 5310B - Organic Carbon, Total (TOC)

Lab Sample ID: MB 550-269343/34
Matrix: Water
Analysis Batch: 269343

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon	ND		0.50	0.26	mg/L			03/18/22 22:03	1

Lab Sample ID: LCS 550-269343/35
Matrix: Water
Analysis Batch: 269343

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Total Organic Carbon	20.0	18.6		mg/L		93	90 - 110

Lab Sample ID: LCSD 550-269343/36
Matrix: Water
Analysis Batch: 269343

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Total Organic Carbon	20.0	18.7		mg/L		93	90 - 110	0	20

Lab Sample ID: 550-180686-A-2 MSD
Matrix: Water
Analysis Batch: 269343

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Total Organic Carbon	35	F1	20.0	53.5		mg/L		92	90 - 110	2	20

Lab Sample ID: 550-180686-D-2 MS
Matrix: Water
Analysis Batch: 269343

Client Sample ID: Matrix Spike
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Total Organic Carbon	35	F1	20.0	52.6	F1	mg/L		87	90 - 110

Lab Sample ID: MB 550-269361/5
Matrix: Water
Analysis Batch: 269361

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon	ND		0.50	0.26	mg/L			03/19/22 15:12	1

Method: SM 5310B - Organic Carbon, Total (TOC) (Continued)

Lab Sample ID: LCS 550-269361/6
Matrix: Water
Analysis Batch: 269361

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
Total Organic Carbon			20.0	18.6		mg/L		93	90 - 110		

Lab Sample ID: LCSD 550-269361/7
Matrix: Water
Analysis Batch: 269361

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Total Organic Carbon			20.0	18.6		mg/L		93	90 - 110	0	20

Lab Sample ID: 550-180407-14 MS
Matrix: Water
Analysis Batch: 269361

Client Sample ID: SWFTS-MW18-EM37
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits		
Total Organic Carbon	2.3	F1	20.0	20.5		mg/L		91	90 - 110		

Lab Sample ID: 550-180407-14 MSD
Matrix: Water
Analysis Batch: 269361

Client Sample ID: SWFTS-MW18-EM37
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Total Organic Carbon	2.3	F1	20.0	20.2	F1	mg/L		89	90 - 110	2	20

HPLC/IC

Analysis Batch: 268439

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
550-180407-1	PC-88-EM37	Total/NA	Water	314.0	
550-180407-2	PC-88-EM37-FD	Total/NA	Water	314.0	
550-180407-4	SWFTS-EM37-EB1	Total/NA	Water	314.0	
550-180407-6	SWFTS-MW09B-EM37	Total/NA	Water	314.0	
550-180407-8	SWFTS-EM37-FB2	Total/NA	Water	314.0	
550-180407-9	SWFTS-MW22-EM37	Total/NA	Water	314.0	
550-180407-11	SWFTS-MW21-EM37	Total/NA	Water	314.0	
MB 550-268439/1002	Method Blank	Total/NA	Water	314.0	
LCS 550-268439/4	Lab Control Sample	Total/NA	Water	314.0	
LCSD 550-268439/5	Lab Control Sample Dup	Total/NA	Water	314.0	
MRL 550-268439/1003	Lab Control Sample	Total/NA	Water	314.0	
550-180406-A-5 MS ^100	Matrix Spike	Total/NA	Water	314.0	
550-180406-A-5 MSD ^100	Matrix Spike Duplicate	Total/NA	Water	314.0	

Analysis Batch: 268466

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
550-180407-5	SWFTS-MW09A-EM37	Total/NA	Water	300.0	
550-180407-5	SWFTS-MW09A-EM37	Total/NA	Water	300.0	
550-180407-6	SWFTS-MW09B-EM37	Total/NA	Water	300.0	
550-180407-6	SWFTS-MW09B-EM37	Total/NA	Water	300.0	
550-180407-7	SWFTS-MW24-EM37	Total/NA	Water	300.0	
550-180407-7	SWFTS-MW24-EM37	Total/NA	Water	300.0	
550-180407-8	SWFTS-EM37-FB2	Total/NA	Water	300.0	
550-180407-13	SWFTS-MW19-EM37-FD	Total/NA	Water	300.0	
550-180407-13	SWFTS-MW19-EM37-FD	Total/NA	Water	300.0	
550-180407-14	SWFTS-MW18-EM37	Total/NA	Water	300.0	
550-180407-14	SWFTS-MW18-EM37	Total/NA	Water	300.0	
550-180407-15	SWFTS-MW14-EM37	Total/NA	Water	300.0	
550-180407-15	SWFTS-MW14-EM37	Total/NA	Water	300.0	
MB 550-268466/2	Method Blank	Total/NA	Water	300.0	
LCS 550-268466/5	Lab Control Sample	Total/NA	Water	300.0	
LCSD 550-268466/6	Lab Control Sample Dup	Total/NA	Water	300.0	
550-180407-7 MS	SWFTS-MW24-EM37	Total/NA	Water	300.0	
550-180407-7 MS	SWFTS-MW24-EM37	Total/NA	Water	300.0	
550-180407-7 MSD	SWFTS-MW24-EM37	Total/NA	Water	300.0	
550-180407-7 MSD	SWFTS-MW24-EM37	Total/NA	Water	300.0	

Analysis Batch: 268467

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
550-180407-1	PC-88-EM37	Total/NA	Water	300.0	
550-180407-1	PC-88-EM37	Total/NA	Water	300.0	
550-180407-2	PC-88-EM37-FD	Total/NA	Water	300.0	
550-180407-2	PC-88-EM37-FD	Total/NA	Water	300.0	
550-180407-3	PC-94-EM37	Total/NA	Water	300.0	
550-180407-3	PC-94-EM37	Total/NA	Water	300.0	
550-180407-4	SWFTS-EM37-EB1	Total/NA	Water	300.0	
550-180407-16	SWFTS-MW15-EM37	Total/NA	Water	300.0	
550-180407-16	SWFTS-MW15-EM37	Total/NA	Water	300.0	
MB 550-268467/2	Method Blank	Total/NA	Water	300.0	
LCS 550-268467/5	Lab Control Sample	Total/NA	Water	300.0	

HPLC/IC (Continued)

Analysis Batch: 268467 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
LCSD 550-268467/6	Lab Control Sample Dup	Total/NA	Water	300.0	
550-180407-3 MS	PC-94-EM37	Total/NA	Water	300.0	
550-180407-3 MS	PC-94-EM37	Total/NA	Water	300.0	
550-180407-3 MSD	PC-94-EM37	Total/NA	Water	300.0	
550-180407-3 MSD	PC-94-EM37	Total/NA	Water	300.0	

Analysis Batch: 268468

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
550-180407-9	SWFTS-MW22-EM37	Total/NA	Water	300.0	
550-180407-9	SWFTS-MW22-EM37	Total/NA	Water	300.0	
550-180407-10	SWFTS-MW20-EM37	Total/NA	Water	300.0	
550-180407-10	SWFTS-MW20-EM37	Total/NA	Water	300.0	
550-180407-11	SWFTS-MW21-EM37	Total/NA	Water	300.0	
550-180407-11	SWFTS-MW21-EM37	Total/NA	Water	300.0	
550-180407-12	SWFTS-MW19-EM37	Total/NA	Water	300.0	
550-180407-12	SWFTS-MW19-EM37	Total/NA	Water	300.0	
550-180407-17	SWFTS-MW07B-EM37	Total/NA	Water	300.0	
550-180407-17	SWFTS-MW07B-EM37	Total/NA	Water	300.0	
550-180407-18	SWFTS-MW07A-EM37	Total/NA	Water	300.0	
550-180407-18	SWFTS-MW07A-EM37	Total/NA	Water	300.0	
550-180407-19	SWFTS-MW12-EM37	Total/NA	Water	300.0	
550-180407-19	SWFTS-MW12-EM37	Total/NA	Water	300.0	
MB 550-268468/2	Method Blank	Total/NA	Water	300.0	
LCS 550-268468/5	Lab Control Sample	Total/NA	Water	300.0	
LCSD 550-268468/6	Lab Control Sample Dup	Total/NA	Water	300.0	
550-180407-9 MS	SWFTS-MW22-EM37	Total/NA	Water	300.0	
550-180407-9 MS	SWFTS-MW22-EM37	Total/NA	Water	300.0	
550-180407-9 MSD	SWFTS-MW22-EM37	Total/NA	Water	300.0	
550-180407-9 MSD	SWFTS-MW22-EM37	Total/NA	Water	300.0	

Analysis Batch: 268555

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
550-180407-3	PC-94-EM37	Total/NA	Water	314.0	
550-180407-5	SWFTS-MW09A-EM37	Total/NA	Water	314.0	
550-180407-7	SWFTS-MW24-EM37	Total/NA	Water	314.0	
550-180407-10	SWFTS-MW20-EM37	Total/NA	Water	314.0	
550-180407-14	SWFTS-MW18-EM37	Total/NA	Water	314.0	
550-180407-15	SWFTS-MW14-EM37	Total/NA	Water	314.0	
550-180407-16	SWFTS-MW15-EM37	Total/NA	Water	314.0	
550-180407-17	SWFTS-MW07B-EM37	Total/NA	Water	314.0	
550-180407-18	SWFTS-MW07A-EM37	Total/NA	Water	314.0	
550-180407-19	SWFTS-MW12-EM37	Total/NA	Water	314.0	
MB 550-268555/1002	Method Blank	Total/NA	Water	314.0	
LCS 550-268555/4	Lab Control Sample	Total/NA	Water	314.0	
LCSD 550-268555/5	Lab Control Sample Dup	Total/NA	Water	314.0	
MRL 550-268555/1003	Lab Control Sample	Total/NA	Water	314.0	
550-180516-E-9 MS ^100	Matrix Spike	Total/NA	Water	314.0	
550-180516-E-9 MSD ^100	Matrix Spike Duplicate	Total/NA	Water	314.0	

HPLC/IC

Analysis Batch: 268660

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
550-180407-12	SWFTS-MW19-EM37	Total/NA	Water	314.0	
550-180407-13	SWFTS-MW19-EM37-FD	Total/NA	Water	314.0	
MB 550-268660/1002	Method Blank	Total/NA	Water	314.0	
LCS 550-268660/4	Lab Control Sample	Total/NA	Water	314.0	
LCSD 550-268660/5	Lab Control Sample Dup	Total/NA	Water	314.0	
MRL 550-268660/1003	Lab Control Sample	Total/NA	Water	314.0	
550-180633-F-1 MS ^10	Matrix Spike	Total/NA	Water	314.0	
550-180633-F-1 MSD ^10	Matrix Spike Duplicate	Total/NA	Water	314.0	

Analysis Batch: 268943

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
550-180407-1	PC-88-EM37	Total/NA	Water	300.1B	
550-180407-2	PC-88-EM37-FD	Total/NA	Water	300.1B	
MB 550-268943/5	Method Blank	Total/NA	Water	300.1B	
LCS 550-268943/6	Lab Control Sample	Total/NA	Water	300.1B	
LCSD 550-268943/7	Lab Control Sample Dup	Total/NA	Water	300.1B	
MRL 550-268943/1003	Lab Control Sample	Total/NA	Water	300.1B	
550-180406-E-6 MS ^2	Matrix Spike	Total/NA	Water	300.1B	
550-180406-E-6 MSD ^2	Matrix Spike Duplicate	Total/NA	Water	300.1B	

Analysis Batch: 269263

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
550-180407-3	PC-94-EM37	Total/NA	Water	300.1B	
550-180407-4	SWFTS-EM37-EB1	Total/NA	Water	300.1B	
550-180407-5	SWFTS-MW09A-EM37	Total/NA	Water	300.1B	
550-180407-6	SWFTS-MW09B-EM37	Total/NA	Water	300.1B	
550-180407-7	SWFTS-MW24-EM37	Total/NA	Water	300.1B	
550-180407-8	SWFTS-EM37-FB2	Total/NA	Water	300.1B	
550-180407-9	SWFTS-MW22-EM37	Total/NA	Water	300.1B	
550-180407-11	SWFTS-MW21-EM37	Total/NA	Water	300.1B	
550-180407-14	SWFTS-MW18-EM37	Total/NA	Water	300.1B	
MB 550-269263/5	Method Blank	Total/NA	Water	300.1B	
LCS 550-269263/6	Lab Control Sample	Total/NA	Water	300.1B	
LCSD 550-269263/7	Lab Control Sample Dup	Total/NA	Water	300.1B	
MRL 550-269263/1003	Lab Control Sample	Total/NA	Water	300.1B	
550-180407-7 MS	SWFTS-MW24-EM37	Total/NA	Water	300.1B	
550-180407-7 MSD	SWFTS-MW24-EM37	Total/NA	Water	300.1B	

Analysis Batch: 269352

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
550-180407-17	SWFTS-MW07B-EM37	Total/NA	Water	300.1B	
550-180407-18	SWFTS-MW07A-EM37	Total/NA	Water	300.1B	
MB 550-269352/5	Method Blank	Total/NA	Water	300.1B	
LCS 550-269352/6	Lab Control Sample	Total/NA	Water	300.1B	
LCSD 550-269352/7	Lab Control Sample Dup	Total/NA	Water	300.1B	
MRL 550-269352/1003	Lab Control Sample	Total/NA	Water	300.1B	

Analysis Batch: 269569

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
550-180407-10	SWFTS-MW20-EM37	Total/NA	Water	300.1B	

HPLC/IC (Continued)

Analysis Batch: 269569 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
550-180407-12	SWFTS-MW19-EM37	Total/NA	Water	300.1B	
550-180407-13	SWFTS-MW19-EM37-FD	Total/NA	Water	300.1B	
550-180407-15	SWFTS-MW14-EM37	Total/NA	Water	300.1B	
550-180407-19	SWFTS-MW12-EM37	Total/NA	Water	300.1B	
MB 550-269569/5	Method Blank	Total/NA	Water	300.1B	
LCS 550-269569/6	Lab Control Sample	Total/NA	Water	300.1B	
LCSD 550-269569/7	Lab Control Sample Dup	Total/NA	Water	300.1B	
MRL 550-269569/1003	Lab Control Sample	Total/NA	Water	300.1B	
550-180526-T-6 MS ^5	Matrix Spike	Total/NA	Water	300.1B	
550-180526-T-6 MSD ^5	Matrix Spike Duplicate	Total/NA	Water	300.1B	

Analysis Batch: 269725

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
550-180407-16	SWFTS-MW15-EM37	Total/NA	Water	300.1B	
MB 550-269725/5	Method Blank	Total/NA	Water	300.1B	
LCS 550-269725/6	Lab Control Sample	Total/NA	Water	300.1B	
LCSD 550-269725/7	Lab Control Sample Dup	Total/NA	Water	300.1B	
MRL 550-269725/1003	Lab Control Sample	Total/NA	Water	300.1B	
550-180632-G-15 MS ^5	Matrix Spike	Total/NA	Water	300.1B	
550-180632-G-15 MSD ^5	Matrix Spike Duplicate	Total/NA	Water	300.1B	

General Chemistry

Analysis Batch: 269343

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
550-180407-1	PC-88-EM37	Total/NA	Water	SM 5310B	
550-180407-2	PC-88-EM37-FD	Total/NA	Water	SM 5310B	
550-180407-3	PC-94-EM37	Total/NA	Water	SM 5310B	
550-180407-4	SWFTS-EM37-EB1	Total/NA	Water	SM 5310B	
550-180407-5	SWFTS-MW09A-EM37	Total/NA	Water	SM 5310B	
550-180407-6	SWFTS-MW09B-EM37	Total/NA	Water	SM 5310B	
550-180407-7	SWFTS-MW24-EM37	Total/NA	Water	SM 5310B	
550-180407-8	SWFTS-EM37-FB2	Total/NA	Water	SM 5310B	
550-180407-9	SWFTS-MW22-EM37	Total/NA	Water	SM 5310B	
550-180407-10	SWFTS-MW20-EM37	Total/NA	Water	SM 5310B	
550-180407-11	SWFTS-MW21-EM37	Total/NA	Water	SM 5310B	
550-180407-12	SWFTS-MW19-EM37	Total/NA	Water	SM 5310B	
550-180407-13	SWFTS-MW19-EM37-FD	Total/NA	Water	SM 5310B	
550-180407-19	SWFTS-MW12-EM37	Total/NA	Water	SM 5310B	
MB 550-269343/34	Method Blank	Total/NA	Water	SM 5310B	
LCS 550-269343/35	Lab Control Sample	Total/NA	Water	SM 5310B	
LCSD 550-269343/36	Lab Control Sample Dup	Total/NA	Water	SM 5310B	
550-180686-A-2 MSD	Matrix Spike Duplicate	Total/NA	Water	SM 5310B	
550-180686-D-2 MS	Matrix Spike	Total/NA	Water	SM 5310B	

Analysis Batch: 269361

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
550-180407-14	SWFTS-MW18-EM37	Total/NA	Water	SM 5310B	
550-180407-15	SWFTS-MW14-EM37	Total/NA	Water	SM 5310B	
550-180407-16	SWFTS-MW15-EM37	Total/NA	Water	SM 5310B	

General Chemistry (Continued)

Analysis Batch: 269361 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
550-180407-17	SWFTS-MW07B-EM37	Total/NA	Water	SM 5310B	
550-180407-18	SWFTS-MW07A-EM37	Total/NA	Water	SM 5310B	
MB 550-269361/5	Method Blank	Total/NA	Water	SM 5310B	
LCS 550-269361/6	Lab Control Sample	Total/NA	Water	SM 5310B	
LCSD 550-269361/7	Lab Control Sample Dup	Total/NA	Water	SM 5310B	
550-180407-14 MS	SWFTS-MW18-EM37	Total/NA	Water	SM 5310B	
550-180407-14 MSD	SWFTS-MW18-EM37	Total/NA	Water	SM 5310B	

Lab Chronicle

Client: Tetra Tech, Inc.
Project/Site: Tetra Tech M11 SWF Treatability Study

Job ID: 550-180407-1
SDG: NERT - Seep Well Field Area Bioremediation Treatability Study

Client Sample ID: PC-88-EM37
Lab Sample ID: 550-180407-1
Date Collected: 03/08/22 09:26
Matrix: Water
Date Received: 03/09/22 06:30

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	300.0		1	268467	03/09/22 16:27	AS1	TAL PHX
Total/NA	Analysis	300.0		50	268467	03/10/22 03:38	AS1	TAL PHX
Total/NA	Analysis	300.1B		20	268943	03/16/22 02:36	MEG	TAL PHX
Total/NA	Analysis	314.0		200	268439	03/09/22 16:20	RDC	TAL PHX
Total/NA	Analysis	SM 5310B		1	269343	03/19/22 00:29	MEG	TAL PHX

Client Sample ID: PC-88-EM37-FD
Lab Sample ID: 550-180407-2
Date Collected: 03/08/22 09:26
Matrix: Water
Date Received: 03/09/22 06:30

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	300.0		1	268467	03/09/22 16:55	AS1	TAL PHX
Total/NA	Analysis	300.0		50	268467	03/10/22 04:06	AS1	TAL PHX
Total/NA	Analysis	300.1B		20	268943	03/16/22 03:05	MEG	TAL PHX
Total/NA	Analysis	314.0		200	268439	03/09/22 16:42	RDC	TAL PHX
Total/NA	Analysis	SM 5310B		1	269343	03/19/22 00:41	MEG	TAL PHX

Client Sample ID: PC-94-EM37
Lab Sample ID: 550-180407-3
Date Collected: 03/08/22 11:24
Matrix: Water
Date Received: 03/09/22 06:30

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	300.0		1	268467	03/09/22 13:40	AS1	TAL PHX
Total/NA	Analysis	300.0		100	268467	03/09/22 15:04	AS1	TAL PHX
Total/NA	Analysis	300.1B		100	269263	03/18/22 03:24	MEG	TAL PHX
Total/NA	Analysis	314.0		500	268555	03/10/22 15:12	RDC	TAL PHX
Total/NA	Analysis	SM 5310B		4	269343	03/19/22 00:56	MEG	TAL PHX

Client Sample ID: SWFTS-EM37-EB1
Lab Sample ID: 550-180407-4
Date Collected: 03/08/22 11:45
Matrix: Water
Date Received: 03/09/22 06:30

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	300.0		1	268467	03/09/22 17:23	AS1	TAL PHX
Total/NA	Analysis	300.1B		1	269263	03/18/22 03:53	MEG	TAL PHX
Total/NA	Analysis	314.0		1	268439	03/09/22 18:14	RDC	TAL PHX
Total/NA	Analysis	SM 5310B		1	269343	03/19/22 01:33	MEG	TAL PHX

Lab Chronicle

Client: Tetra Tech, Inc.
Project/Site: Tetra Tech M11 SWF Treatability Study

Job ID: 550-180407-1
SDG: NERT - Seep Well Field Area Bioremediation Treatability Study

Client Sample ID: SWFTS-MW09A-EM37
Lab Sample ID: 550-180407-5
Date Collected: 03/08/22 12:38
Matrix: Water
Date Received: 03/09/22 06:30

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	300.0		1	268466	03/09/22 13:57	AS1	TAL PHX
Total/NA	Analysis	300.0		100	268466	03/09/22 21:19	AS1	TAL PHX
Total/NA	Analysis	300.1B		100	269263	03/18/22 04:23	MEG	TAL PHX
Total/NA	Analysis	314.0		500	268555	03/10/22 15:34	RDC	TAL PHX
Total/NA	Analysis	SM 5310B		1	269343	03/19/22 01:44	MEG	TAL PHX

Client Sample ID: SWFTS-MW09B-EM37
Lab Sample ID: 550-180407-6
Date Collected: 03/08/22 13:32
Matrix: Water
Date Received: 03/09/22 06:30

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	300.0		1	268466	03/09/22 14:15	AS1	TAL PHX
Total/NA	Analysis	300.0		100	268466	03/09/22 21:37	AS1	TAL PHX
Total/NA	Analysis	300.1B		100	269263	03/18/22 04:52	MEG	TAL PHX
Total/NA	Analysis	314.0		500	268439	03/09/22 19:00	RDC	TAL PHX
Total/NA	Analysis	SM 5310B		1	269343	03/19/22 01:55	MEG	TAL PHX

Client Sample ID: SWFTS-MW24-EM37
Lab Sample ID: 550-180407-7
Date Collected: 03/08/22 09:35
Matrix: Water
Date Received: 03/09/22 06:30

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	300.0		1	268466	03/09/22 12:07	AS1	TAL PHX
Total/NA	Analysis	300.0		100	268466	03/09/22 13:02	AS1	TAL PHX
Total/NA	Analysis	300.1B		100	269263	03/18/22 06:21	MEG	TAL PHX
Total/NA	Analysis	314.0		200	268555	03/10/22 15:56	RDC	TAL PHX
Total/NA	Analysis	SM 5310B		1	269343	03/19/22 02:08	MEG	TAL PHX

Client Sample ID: SWFTS-EM37-FB2
Lab Sample ID: 550-180407-8
Date Collected: 03/08/22 09:40
Matrix: Water
Date Received: 03/09/22 06:30

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	300.0		1	268466	03/09/22 14:34	AS1	TAL PHX
Total/NA	Analysis	300.1B		1	269263	03/18/22 07:49	MEG	TAL PHX
Total/NA	Analysis	314.0		1	268439	03/09/22 19:46	RDC	TAL PHX
Total/NA	Analysis	SM 5310B		1	269343	03/19/22 02:21	MEG	TAL PHX

Lab Chronicle

Client: Tetra Tech, Inc.
Project/Site: Tetra Tech M11 SWF Treatability Study

Job ID: 550-180407-1
SDG: NERT - Seep Well Field Area Bioremediation Treatability Study

Client Sample ID: SWFTS-MW22-EM37
Lab Sample ID: 550-180407-9
Date Collected: 03/08/22 10:50
Matrix: Water
Date Received: 03/09/22 06:30

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	300.0		1	268468	03/09/22 13:12	AS1	TAL PHX
Total/NA	Analysis	300.0		100	268468	03/09/22 14:36	AS1	TAL PHX
Total/NA	Analysis	300.1B		100	269263	03/18/22 08:19	MEG	TAL PHX
Total/NA	Analysis	314.0		200	268439	03/09/22 20:08	RDC	TAL PHX
Total/NA	Analysis	SM 5310B		10	269343	03/19/22 02:33	MEG	TAL PHX

Client Sample ID: SWFTS-MW20-EM37
Lab Sample ID: 550-180407-10
Date Collected: 03/08/22 11:25
Matrix: Water
Date Received: 03/09/22 06:30

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	300.0		1	268468	03/09/22 16:00	AS1	TAL PHX
Total/NA	Analysis	300.0		100	268468	03/10/22 03:38	AS1	TAL PHX
Total/NA	Analysis	300.1B		5	269569	03/22/22 19:35	MEG	TAL PHX
Total/NA	Analysis	314.0		50	268555	03/10/22 16:19	RDC	TAL PHX
Total/NA	Analysis	SM 5310B		1	269343	03/19/22 02:46	MEG	TAL PHX

Client Sample ID: SWFTS-MW21-EM37
Lab Sample ID: 550-180407-11
Date Collected: 03/08/22 12:05
Matrix: Water
Date Received: 03/09/22 06:30

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	300.0		1	268468	03/09/22 16:28	AS1	TAL PHX
Total/NA	Analysis	300.0		100	268468	03/10/22 04:06	AS1	TAL PHX
Total/NA	Analysis	300.1B		2	269263	03/18/22 09:18	MEG	TAL PHX
Total/NA	Analysis	314.0		100	268439	03/09/22 20:54	RDC	TAL PHX
Total/NA	Analysis	SM 5310B		1	269343	03/19/22 02:57	MEG	TAL PHX

Client Sample ID: SWFTS-MW19-EM37
Lab Sample ID: 550-180407-12
Date Collected: 03/08/22 12:50
Matrix: Water
Date Received: 03/09/22 06:30

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	300.0		1	268468	03/09/22 16:55	AS1	TAL PHX
Total/NA	Analysis	300.0		100	268468	03/10/22 05:58	AS1	TAL PHX
Total/NA	Analysis	300.1B		100	269569	03/22/22 20:05	MEG	TAL PHX
Total/NA	Analysis	314.0		200	268660	03/11/22 12:59	RDC	TAL PHX
Total/NA	Analysis	SM 5310B		1	269343	03/19/22 03:11	MEG	TAL PHX

Client Sample ID: SWFTS-MW19-EM37-FD

Lab Sample ID: 550-180407-13

Date Collected: 03/08/22 12:50

Matrix: Water

Date Received: 03/09/22 06:30

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	300.0		1	268466	03/09/22 15:47	AS1	TAL PHX
Total/NA	Analysis	300.0		100	268466	03/09/22 21:56	AS1	TAL PHX
Total/NA	Analysis	300.1B		100	269569	03/22/22 20:34	MEG	TAL PHX
Total/NA	Analysis	314.0		200	268660	03/11/22 13:22	RDC	TAL PHX
Total/NA	Analysis	SM 5310B		1	269343	03/19/22 03:23	MEG	TAL PHX

Client Sample ID: SWFTS-MW18-EM37

Lab Sample ID: 550-180407-14

Date Collected: 03/08/22 13:45

Matrix: Water

Date Received: 03/09/22 06:30

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	300.0		1	268466	03/09/22 16:06	AS1	TAL PHX
Total/NA	Analysis	300.0		100	268466	03/09/22 23:09	AS1	TAL PHX
Total/NA	Analysis	300.1B		50	269263	03/18/22 10:46	MEG	TAL PHX
Total/NA	Analysis	314.0		200	268555	03/10/22 18:11	RDC	TAL PHX
Total/NA	Analysis	SM 5310B		1	269361	03/19/22 15:50	MEG	TAL PHX

Client Sample ID: SWFTS-MW14-EM37

Lab Sample ID: 550-180407-15

Date Collected: 03/08/22 09:45

Matrix: Water

Date Received: 03/09/22 06:30

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	300.0		1	268466	03/09/22 16:24	AS1	TAL PHX
Total/NA	Analysis	300.0		100	268466	03/09/22 23:28	AS1	TAL PHX
Total/NA	Analysis	300.1B		10	269569	03/22/22 21:04	MEG	TAL PHX
Total/NA	Analysis	314.0		200	268555	03/10/22 18:33	RDC	TAL PHX
Total/NA	Analysis	SM 5310B		1	269361	03/19/22 16:29	MEG	TAL PHX

Client Sample ID: SWFTS-MW15-EM37

Lab Sample ID: 550-180407-16

Date Collected: 03/08/22 11:00

Matrix: Water

Date Received: 03/09/22 06:30

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	300.0		1	268467	03/09/22 19:15	AS1	TAL PHX
Total/NA	Analysis	300.0		100	268467	03/10/22 04:34	AS1	TAL PHX
Total/NA	Analysis	300.1B		5	269725	03/23/22 23:34	MEG	TAL PHX
Total/NA	Analysis	314.0		500	268555	03/10/22 18:56	RDC	TAL PHX
Total/NA	Analysis	SM 5310B		1	269361	03/19/22 16:42	MEG	TAL PHX

Lab Chronicle

Client: Tetra Tech, Inc.
Project/Site: Tetra Tech M11 SWF Treatability Study

Job ID: 550-180407-1
SDG: NERT - Seep Well Field Area Bioremediation Treatability Study

Client Sample ID: SWFTS-MW07B-EM37
Lab Sample ID: 550-180407-17
Date Collected: 03/08/22 12:10
Matrix: Water
Date Received: 03/09/22 06:30

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	300.0		1	268468	03/09/22 18:47	AS1	TAL PHX
Total/NA	Analysis	300.0		50	268468	03/10/22 06:26	AS1	TAL PHX
Total/NA	Analysis	300.1B		200	269352	03/19/22 17:36	MEG	TAL PHX
Total/NA	Analysis	314.0		500	268555	03/10/22 19:18	RDC	TAL PHX
Total/NA	Analysis	SM 5310B		1	269361	03/19/22 16:58	MEG	TAL PHX

Client Sample ID: SWFTS-MW07A-EM37
Lab Sample ID: 550-180407-18
Date Collected: 03/08/22 12:55
Matrix: Water
Date Received: 03/09/22 06:30

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	300.0		1	268468	03/09/22 19:15	AS1	TAL PHX
Total/NA	Analysis	300.0		50	268468	03/10/22 06:54	AS1	TAL PHX
Total/NA	Analysis	300.1B		100	269352	03/19/22 18:05	MEG	TAL PHX
Total/NA	Analysis	314.0		500	268555	03/10/22 19:41	RDC	TAL PHX
Total/NA	Analysis	SM 5310B		1	269361	03/19/22 17:14	MEG	TAL PHX

Client Sample ID: SWFTS-MW12-EM37
Lab Sample ID: 550-180407-19
Date Collected: 03/08/22 14:00
Matrix: Water
Date Received: 03/09/22 06:30

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	300.0		1	268468	03/09/22 19:43	AS1	TAL PHX
Total/NA	Analysis	300.0		50	268468	03/10/22 07:21	AS1	TAL PHX
Total/NA	Analysis	300.1B		10	269569	03/23/22 00:01	MEG	TAL PHX
Total/NA	Analysis	314.0		20	268555	03/10/22 20:03	RDC	TAL PHX
Total/NA	Analysis	SM 5310B		4	269343	03/19/22 06:06	MEG	TAL PHX

Laboratory References:
TAL PHX = Eurofins Phoenix, 4625 East Cotton Center Boulevard, Suite #189, Phoenix, AZ 85040, TEL (602)437-3340

Accreditation/Certification Summary

Client: Tetra Tech, Inc.
Project/Site: Tetra Tech M11 SWF Treatability Study

Job ID: 550-180407-1
SDG: NERT - Seep Well Field Area Bioremediation Treatability Study

Laboratory: Eurofins Phoenix

All accreditations/certifications held by this laboratory are listed. Not all accreditations/certifications are applicable to this report.

Authority	Program	Identification Number	Expiration Date
AIHA-LAP, LLC	Environmental Lead Laboratory Accreditation Program (ELLAP)	154268	11-01-23
AIHA-LAP, LLC	Industrial Hygiene Laboratory Accreditation Program (IHLAP)	154268	11-01-23
Arizona	State	AZ0728	06-10-22
California	State	2941	06-10-22
Nevada	State	AZ1030	07-31-22
USDA	US Federal Programs	P330-19-00227	08-27-22

Method Summary

Client: Tetra Tech, Inc.
Project/Site: Tetra Tech M11 SWF Treatability Study

Job ID: 550-180407-1
SDG: NERT - Seep Well Field Area Bioremediation Treatability Study

Method	Method Description	Protocol	Laboratory
300.0	Anions, Ion Chromatography	MCAWW	TAL PHX
300.1B	Disinfection By-Products, (IC)	EPA	TAL PHX
314.0	Perchlorate (IC)	EPA	TAL PHX
SM 5310B	Organic Carbon, Total (TOC)	SM	TAL PHX

Protocol References:

EPA = US Environmental Protection Agency

MCAWW = "Methods For Chemical Analysis Of Water And Wastes", EPA-600/4-79-020, March 1983 And Subsequent Revisions.

SM = "Standard Methods For The Examination Of Water And Wastewater"

Laboratory References:

TAL PHX = Eurofins Phoenix, 4625 East Cotton Center Boulevard, Suite #189, Phoenix, AZ 85040, TEL (602)437-3340

180407

Tetra Tech
1093 Commerce Park Drive
Oak Ridge, TN37830
(865)483-9900

TestAmerica Las Vegas 219

CHAIN-OF-CUSTODY

TestAmerica Las Vegas 219

NERT-M11
Groundwater Sampling

3/24/2022

Laboratory Name: Eurofins TestAmerica, Phoenix (602) 437-3340 | Address: 4625 East Cotton Ctr Blvd Suite 189 Phoenix, AZ 85040 | Contact: Mary Charlson 602-659-7627 | Page 1 of 3

Project Name: Tetra Tech M11 SWF Treatability Study	Sampler: Aaron Pettley	Sampler Phone: 801-971-9997
Project No. M11-CWP-04	Project Contact: Maureen McMyler	Site Telephone No.: (702) 966-8340
NERT - Seep Well Field Area Bioremediation Treatability Study		
Report to: Maureen McMyler, 1093 Commerce Park Dr. (865)220-4762	Project Manager/Supervisor: Dana Grady	
Bill to: Sunshine Pryor, 350 Indiana St., Golden, CO 80401 (303) 217-5700		

Analysis and Method Requested

Item No.	Sample Number	Date	Time	G=Grab C=Comp	Matrix	Sample Description, Location	Number of Containers	Perchlorate E314.0	TOC SM5310B	Chlorate E300.1	Sulfate/Nitrate E300.0 SHORT HOLD NITRATE!	Total Manganese SW846 6010B	Dissolved Metals SW6010/6020 (Field Filtered)	Remarks
						Preservation Code:	-	N	A	L	N	D	D	Notes
1	PC-88-EM37	3/8/2022	0926	G	WG		7	X	X	X	X			-01
2	PC-88-EM37-FD	3/8/2022	0926	G	WG		7	X	X	X	X			-02
3	PC-94-EM37	3/8/2022	1124	G	WG		7	X	X	X	X			-03
4	SWFTS-EM37-EB1	3/8/2022	1145	G	WQ		7	X	X	X	X			-04
5	SWFTS-MW09A-EM37	3/8/2022	1238	G	WG		7	X	X	X	X			-05
6	SWFTS-MW09B-EM37	3/8/2022	1332	G	WG		7	X	X	X	X			-06
7														
8														
9														
10														

550-180407 Chain of Custody

Transfers Relinquished By (Signature)	Date/Time	Transfers Accepted By (Signature)	Date/Time	Special Instructions:
	3/8/2022 1440	TAM TALVS	3-8-22 2300	
TAM TALVS	3-8-22 1620			
			FedEx Airbill No.:	FedEx Airbill No.
Drop Off		Laboratory: EETA-PHX	Sampler's Signature: (REQUIRED)	Sampler's Signature

TAT ___Standard ___Rush Due _____ | Received Good Condition ___Y ___N ___Cold

3/9/22 6:30

TH243 23.8/23.7

PH2 C.S. 3.2/1.7=1.9

TestAmerica Las Vegas 219

180407

3/24/2022

Tetra Tech
1093 Commerce Park Drive
Oak Ridge, TN37830
(865)483-9900

CHAIN-OF-CUSTODY

NERT-M11
Groundwater Sampling

Laboratory Name: Eurofins TestAmerica, Phoenix (602) 437-3340 | Address: 4625 East Cotton Ctr Blvd Suite 189 Phoenix, AZ 85040 | Contact: Mary Charlson 602-659-7627 | Page 2 of 3

Project Name: Tetra Tech M11 SWF Treatability Study
Project No. M11-CWP-04
NERT - Seep Well Field Area Bioremediation Treatability Study

Sampler: J. Bunkers | Sampler Phone: 702-767-2053
Project Contact: Maureen McMyler | Site Telephone No.: (702) 966-8340

Report to: Maureen McMyler, 1093 Commerce Park Dr. (865)220-4762
Bill to: Sunshine Pryor, 350 Indiana St., Golden, CO 80401 (303) 217-5700
Project Manager/Supervisor: Dana Grady

Analysis and Method Requested

Remarks
Preservation Codes:
A- HCL
D-Nitric Acid
L-EDA
N-None
S-H2SO4
Other:

Item No	Sample Number	Date	Time	G=Grab C=Comp	Matrix	Sample Description, Location	Number of Containers	Perchlorate E314.0	TOC SM5310B	Chlorate E300.1	Sulfate/Nitrate E300.0 SHORT HOLD NITRATE!	Total Manganese SW846 6010B	Dissolved Metals SW6010/6020 (Field Filtered)	Notes
	Preservation Code:						-	N	A	L	N	D	D	
1	SWFTS-MW24-EM37	3/8/22	0935	G	W		7	X	X	X	X			-07
2	SWFTS-EM37-FB2		0940	G	W		7	X	X	X	X			-08
3	SWFTS-MW22-EM37		1050	G	W		7	X	X	X	X			-09
4	SWFTS-MW20-EM37		1125	G	W		7	X	X	X	X			-10
5	SWFTS-MW21-EM37		1205	G	W		7	X	X	X	X			-11
6	SWFTS-MW19-EM37		1250	G	W		7	X	X	X	X			-12
7	SWFTS-MW19-EM37-FD		1250	G	W		7	X	X	X	X			-13
8	SWFTS-MW18-EM37		1345	G	W		7	X	X	X	X			-14
9														
10														

Transfers Relinquished By (Signature)	Date/Time	Transfers Accepted By (Signature)	Date/Time	Special Instructions:
[signature]	3/8/22 1500	[signature] TALVS	3-8-22 1500	
[signature] TALVS	3-8-22 1600 SRS	[signature]		
		[signature]	3/9/22	FedEx Airbill No.: / FedEx Airbill No.
Drop Box		Laboratory: EETA PHX	6:30	Sampler's Signature (REQUIRED): / Sampler's Signature: [signature]

TAT ___Standard ___Rush Due _____ | Received Good Condition ___Y ___N ___Cold

TA543 23.8/23.7

Tetra Tech
1093 Commerce Park Drive
Oak Ridge, TN37830
(865)483-9900

180407

CHAIN-OF-CUSTODY

TestAmerica
Las Vegas
219

NERT-M11
Groundwater Sampling

Laboratory Name: Eurofins TestAmerica, Phoenix (602) 437-3340 | Address: 4625 East Cotton Ctr Blvd Suite 189 Phoenix, AZ 85040 | Contact: Mary Charlson 602-659-7627 | Page 3 of 3

Project Name: Tetra Tech M11 SWF Treatability Study
Project No. M11-CWP-04
NERT - Seep Well Field Area Bioremediation Treatability Study

Sampler: G. Schuler | Sampler Phone: 4806205186
Project Contact: Maureen McMyler | Site Telephone No.: (702) 966-8340

Report to: Maureen McMyler, 1093 Commerce Park Dr. (865)220-4762
Bill to: Sunshine Pryor, 350 Indiana St., Golden, CO 80401 (303) 217-5700
Project Manager/Supervisor: Dana Grady

Analysis and Method Requested

Item No	Sample Number	Date	Time	G=Grab C=Comp	Matrix	Sample Description, Location	Number of Containers	Perchlorate E314.0	TOC SM5310B	Chlorate E300.1	Sulfate/Nitrate E300.0 SHORT HOLD NITRATE!	Total Manganese SW846 6010B	Dissolved Metals SW6010/6020 (Field Filtered)	Remarks
						Preservation Code:	-	N	A	L	N	D	D	Notes
1	SWFTS-MW14-EM37	3/8/22	0945	G	W	—	7	X	X	X	X			-15
2	SWFTS-MW15-EM37		1100			—								-16
3	SWFTS-MW07B-EM37		1210			—								-17
4	SWFTS-MW07A-EM37		1255			—								-18
5	SWFTS-MW12-EM37		1400			—								-19
6														
7														
8														
9														
10														

Preservation Codes: A- HCL, D-Nitric Acid, L-EDA, N-None, S-H2SO4, Other:

Transfers Relinquished By (Signature)	Date/Time	Transfers Accepted By (Signature)	Date/Time	Special Instructions:
G. Schuler	3/8/22 1500	TALS	3-8-22 1500	
TALS	3-8-22 1600			
			3/9/22	FedEx Airbill No.:
Drop Box		Laboratory: EETA-Phx	6:30	Sampler's Signature: (REQUIRED)

TAT: ___Standard ___ Rush Due: _____ | Received Good Condition ____ Y ____ N ____ Cold

TALS 23.8 / 25.7

Login Sample Receipt Checklist

Client: Tetra Tech, Inc.

Job Number: 550-180407-1

SDG Number: NERT - Seep Well Field Area Bioremediation Treatability Study

Login Number: 180407

List Source: Eurofins Phoenix

List Number: 1

Creator: Maycock, Lisa

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	True	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	False	Check done at department level as required.

eurofins | Environment Testing America

ANALYTICAL REPORT

Eurofins Phoenix
4625 East Cotton Center Boulevard
Suite #189
Phoenix, AZ 85040
Tel: (602)437-3340

Laboratory Job ID: 550-180516-1
Laboratory Sample Delivery Group: SWFABTS
Client Project/Site: Tetra Tech M11 SWF Treatability Study

For:
Tetra Tech, Inc.
1093 Commerce Park Drive
Suite 100
Oak Ridge, Tennessee 37830

Attn: Dana Grady

Rachel F. Sester

Authorized for release by:
3/24/2022 6:46:33 PM

Rachel Sester, Project Manager I
(602)659-7615
Rachel.Sester@Eurofinset.com

LINKS

Review your project results through TotalAccess

Have a Question? Ask The Expert

Visit us at: www.eurofinsus.com/Env

This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.

Results relate only to the items tested and the sample(s) as received by the laboratory.

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Definitions/Glossary

Client: Tetra Tech, Inc.
Project/Site: Tetra Tech M11 SWF Treatability Study

Job ID: 550-180516-1
SDG: SWFABTS

Qualifiers

HPLC/IC

Qualifier	Qualifier Description
4	MS, MSD: The analyte present in the original sample is greater than 4 times the matrix spike concentration; therefore, control limits are not applicable.
D	Sample results are obtained from a dilution; the surrogate or matrix spike recoveries reported are calculated from diluted samples.
F1	MS and/or MSD recovery exceeds control limits.
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

General Chemistry

Qualifier	Qualifier Description
F1	MS and/or MSD recovery exceeds control limits.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CFU	Colony Forming Unit
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MCL	EPA recommended "Maximum Contaminant Level"
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
MPN	Most Probable Number
MQL	Method Quantitation Limit
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
NEG	Negative / Absent
POS	Positive / Present
PQL	Practical Quantitation Limit
PRES	Presumptive
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)
TNTC	Too Numerous To Count

Case Narrative

Client: Tetra Tech, Inc.
Project/Site: Tetra Tech M11 SWF Treatability Study

Job ID: 550-180516-1
SDG: SWFABTS

Job ID: 550-180516-1

Laboratory: Eurofins Phoenix

Narrative

Job Narrative
550-180516-1

Comments
No additional comments.

Receipt
The samples were received on 3/10/2022 6:30 AM. Unless otherwise noted below, the samples arrived in good condition, and where required, properly preserved and on ice. The temperatures of the 4 coolers at receipt time were 3.4º C, 3.7º C, 3.8º C and 23.5º C.

HPLC/IC
Method 300.1B: The following samples were diluted for Chlorate by method EPA 300.1B due to an abundance of non-target analytes present within the sample matrix: SWFTS-MW16-EM37 (550-180516-2) and SWFTS-MW01-EM37 (550-180516-7). In the diluted samples this analyte was not detected or was beneath the lowest calibration limit. As such, an elevated reporting limit (RL) has been provided.

Method 300.1B: The following sample was diluted for Chlorate by method EPA 300.1B due to an abundance of non-target analytes present within the sample matrix: (550-180526-V-6 ^5). In the diluted samples this analyte was not detected or was beneath the lowest calibration limit. As such, an elevated reporting limit (RL) has been provided.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

General Chemistry
Method SM 5310B: The matrix spike / matrix spike duplicate (MS/MSD) recoveries for Total Organic Carbon (TOC) 550-269647 were outside control limits. Sample matrix interference was suspected because the associated laboratory control sample (LCS) recovery was within acceptance limits.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

Sample Summary

Client: Tetra Tech, Inc.
Project/Site: Tetra Tech M11 SWF Treatability Study

Job ID: 550-180516-1
SDG: SWFABTS

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
550-180516-1	SWFTS-MW17-EM37	Water	03/09/22 08:30	03/09/22 19:41
550-180516-2	SWFTS-MW16-EM37	Water	03/09/22 09:20	03/09/22 19:41
550-180516-3	SWFTS-MW13-EM37	Water	03/09/22 08:30	03/09/22 19:41
550-180516-4	SWFTS-EM37-EB2	Water	03/09/22 08:50	03/09/22 19:41
550-180516-5	SWFTS-MW04-EM37	Water	03/09/22 10:00	03/09/22 19:41
550-180516-6	SWFTS-MW03-EM37	Water	03/09/22 08:20	03/09/22 19:41
550-180516-7	SWFTS-MW01-EM37	Water	03/09/22 09:15	03/09/22 19:41
550-180516-8	SWFTS-EM37-FB1	Water	03/09/22 09:25	03/09/22 19:41
550-180516-9	SWFTS-MW02-EM37	Water	03/09/22 10:42	03/09/22 19:41

Detection Summary

Client: Tetra Tech, Inc.
Project/Site: Tetra Tech M11 SWF Treatability Study

Job ID: 550-180516-1
SDG: SWFABTS

Client Sample ID: SWFTS-MW17-EM37 — Lab Sample ID: 550-180516-1

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Nitrate as N	17		0.050	0.014	mg/L	1		300.0	Total/NA
Sulfate	2600		200	43	mg/L	100		300.0	Total/NA
Chlorate	31000		2000	490	ug/L	100		300.1B	Total/NA
Perchlorate	4400		200	63	ug/L	200		314.0	Total/NA
Total Organic Carbon	1.1		0.50	0.26	mg/L	1		SM 5310B	Total/NA

Client Sample ID: SWFTS-MW16-EM37 — Lab Sample ID: 550-180516-2

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Nitrate as N	0.14		0.050	0.014	mg/L	1		300.0	Total/NA
Sulfate	1600		200	43	mg/L	100		300.0	Total/NA
Perchlorate	1800		200	63	ug/L	200		314.0	Total/NA
Total Organic Carbon	2.8		0.50	0.26	mg/L	1		SM 5310B	Total/NA

Client Sample ID: SWFTS-MW13-EM37 — Lab Sample ID: 550-180516-3

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Nitrate as N	14		0.050	0.014	mg/L	1		300.0	Total/NA
Sulfate	2300		200	43	mg/L	100		300.0	Total/NA
Chlorate	21000		4000	980	ug/L	200		300.1B	Total/NA
Perchlorate	2800		200	63	ug/L	200		314.0	Total/NA
Total Organic Carbon	1.3		0.50	0.26	mg/L	1		SM 5310B	Total/NA

Client Sample ID: SWFTS-EM37-EB2 — Lab Sample ID: 550-180516-4

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Nitrate as N	0.019	J	0.050	0.014	mg/L	1		300.0	Total/NA

Client Sample ID: SWFTS-MW04-EM37 — Lab Sample ID: 550-180516-5

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Nitrate as N	9.7		0.050	0.014	mg/L	1		300.0	Total/NA
Sulfate	1200		200	43	mg/L	100		300.0	Total/NA
Chlorate	17000		2000	490	ug/L	100		300.1B	Total/NA
Perchlorate	15000		500	160	ug/L	500		314.0	Total/NA
Total Organic Carbon	1.9		0.50	0.26	mg/L	1		SM 5310B	Total/NA

Client Sample ID: SWFTS-MW03-EM37 — Lab Sample ID: 550-180516-6

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Nitrate as N	11		0.050	0.014	mg/L	1		300.0	Total/NA
Sulfate	1700		200	43	mg/L	100		300.0	Total/NA
Chlorate	1900		400	98	ug/L	20		300.1B	Total/NA
Perchlorate	12000		500	160	ug/L	500		314.0	Total/NA
Total Organic Carbon	1.5		0.50	0.26	mg/L	1		SM 5310B	Total/NA

Client Sample ID: SWFTS-MW01-EM37 — Lab Sample ID: 550-180516-7

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Nitrate as N	0.33		0.050	0.014	mg/L	1		300.0	Total/NA
Sulfate	1400		200	43	mg/L	100		300.0	Total/NA
Perchlorate	1800		200	63	ug/L	200		314.0	Total/NA
Total Organic Carbon	3.3		0.50	0.26	mg/L	1		SM 5310B	Total/NA

This Detection Summary does not include radiochemical test results.

Eurofins Phoenix

Detection Summary

Client: Tetra Tech, Inc.
Project/Site: Tetra Tech M11 SWF Treatability Study

Job ID: 550-180516-1
SDG: SWFABTS

Client Sample ID: SWFTS-EM37-FB1 — Lab Sample ID: 550-180516-8

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Nitrate as N	0.029	J	0.050	0.014	mg/L	1		300.0	Total/NA
Sulfate	0.48	J	2.0	0.43	mg/L	1		300.0	Total/NA

Client Sample ID: SWFTS-MW02-EM37 — Lab Sample ID: 550-180516-9

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Nitrate as N	0.11		0.050	0.014	mg/L	1		300.0	Total/NA
Sulfate	2700		200	43	mg/L	100		300.0	Total/NA
Chlorate	650		100	24	ug/L	5		300.1B	Total/NA
Perchlorate	600	F1	100	31	ug/L	100		314.0	Total/NA
Total Organic Carbon	5.8		0.50	0.26	mg/L	1		SM 5310B	Total/NA

This Detection Summary does not include radiochemical test results.

Client Sample ID: SWFTS-MW17-EM37

Lab Sample ID: 550-180516-1
Date Collected: 03/09/22 08:30
Matrix: Water
Date Received: 03/09/22 19:41

Method: 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Nitrate as N	17		0.050	0.014	mg/L			03/10/22 13:46	1
Sulfate	2600		200	43	mg/L			03/10/22 15:10	100

Method: 300.1B - Disinfection By-Products, (IC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chlorate	31000		2000	490	ug/L			03/19/22 21:02	100

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Dichloroacetic acid(Surr)	*109*		*90 - 115*		*03/19/22 21:02*	*100*

Method: 314.0 - Perchlorate (IC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perchlorate	4400		200	63	ug/L			03/10/22 12:31	200

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon	1.1		0.50	0.26	mg/L			03/19/22 17:51	1

Client Sample ID: SWFTS-MW16-EM37

Lab Sample ID: 550-180516-2
Date Collected: 03/09/22 09:20
Matrix: Water
Date Received: 03/09/22 19:41

Method: 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Nitrate as N	0.14		0.050	0.014	mg/L			03/10/22 12:20	1
Sulfate	1600		200	43	mg/L			03/10/22 13:16	100

Method: 300.1B - Disinfection By-Products, (IC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chlorate	ND	D	40	9.8	ug/L			03/19/22 21:32	2

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Dichloroacetic acid(Surr)	*115*		*90 - 115*		*03/19/22 21:32*	*2*

Method: 314.0 - Perchlorate (IC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perchlorate	1800		200	63	ug/L			03/10/22 17:28	200

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon	2.8		0.50	0.26	mg/L			03/19/22 18:05	1

Client Sample ID: SWFTS-MW13-EM37

Lab Sample ID: 550-180516-3
Date Collected: 03/09/22 08:30
Matrix: Water
Date Received: 03/09/22 19:41

Method: 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Nitrate as N	14		0.050	0.014	mg/L			03/10/22 16:34	1
Sulfate	2300		200	43	mg/L			03/10/22 21:13	100

Client Sample ID: SWFTS-MW13-EM37

Lab Sample ID: 550-180516-3
Date Collected: 03/09/22 08:30
Matrix: Water
Date Received: 03/09/22 19:41

Method: 300.1B - Disinfection By-Products, (IC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chlorate	21000		4000	980	ug/L			03/19/22 22:01	200

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Dichloroacetic acid(Surr)	*102*		*90 - 115*		*03/19/22 22:01*	*200*

Method: 314.0 - Perchlorate (IC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perchlorate	2800		200	63	ug/L			03/10/22 14:02	200

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon	1.3		0.50	0.26	mg/L			03/19/22 18:19	1

Client Sample ID: SWFTS-EM37-EB2

Lab Sample ID: 550-180516-4
Date Collected: 03/09/22 08:50
Matrix: Water
Date Received: 03/09/22 19:41

Method: 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Nitrate as N	0.019	J	0.050	0.014	mg/L			03/10/22 14:11	1
Sulfate	ND		2.0	0.43	mg/L			03/10/22 14:11	1

Method: 300.1B - Disinfection By-Products, (IC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chlorate	ND		20	4.9	ug/L			03/19/22 22:31	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Dichloroacetic acid(Surr)	*109*		*90 - 115*		*03/19/22 22:31*	*1*

Method: 314.0 - Perchlorate (IC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perchlorate	ND		1.0	0.31	ug/L			03/10/22 14:25	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon	ND		0.50	0.26	mg/L			03/19/22 18:54	1

Client Sample ID: SWFTS-MW04-EM37

Lab Sample ID: 550-180516-5
Date Collected: 03/09/22 10:00
Matrix: Water
Date Received: 03/09/22 19:41

Method: 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Nitrate as N	9.7		0.050	0.014	mg/L			03/10/22 14:29	1
Sulfate	1200		200	43	mg/L			03/10/22 20:19	100

Method: 300.1B - Disinfection By-Products, (IC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chlorate	17000		2000	490	ug/L			03/22/22 18:07	100

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Dichloroacetic acid(Surr)	*112*		*90 - 115*		*03/22/22 18:07*	*100*

Client Sample ID: SWFTS-MW04-EM37

Lab Sample ID: 550-180516-5

Date Collected: 03/09/22 10:00
Matrix: Water
Date Received: 03/09/22 19:41

Method: 314.0 - Perchlorate (IC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perchlorate	15000		500	160	ug/L			03/11/22 13:45	500

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon	1.9		0.50	0.26	mg/L			03/19/22 19:06	1

Client Sample ID: SWFTS-MW03-EM37

Lab Sample ID: 550-180516-6

Date Collected: 03/09/22 08:20
Matrix: Water
Date Received: 03/09/22 19:41

Method: 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Nitrate as N	11		0.050	0.014	mg/L			03/10/22 14:48	1
Sulfate	1700		200	43	mg/L			03/10/22 20:37	100

Method: 300.1B - Disinfection By-Products, (IC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chlorate	1900		400	98	ug/L			03/22/22 18:36	20

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Dichloroacetic acid(Surr)	*98*		*90 - 115*		*03/22/22 18:36*	*20*

Method: 314.0 - Perchlorate (IC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perchlorate	12000		500	160	ug/L			03/11/22 14:08	500

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon	1.5		0.50	0.26	mg/L			03/19/22 19:19	1

Client Sample ID: SWFTS-MW01-EM37

Lab Sample ID: 550-180516-7

Date Collected: 03/09/22 09:15
Matrix: Water
Date Received: 03/09/22 19:41

Method: 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Nitrate as N	0.33		0.050	0.014	mg/L			03/10/22 16:01	1
Sulfate	1400		200	43	mg/L			03/10/22 20:56	100

Method: 300.1B - Disinfection By-Products, (IC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chlorate	ND	D	100	24	ug/L			03/19/22 23:59	5

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Dichloroacetic acid(Surr)	*99*		*90 - 115*		*03/19/22 23:59*	*5*

Method: 314.0 - Perchlorate (IC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perchlorate	1800		200	63	ug/L			03/11/22 14:30	200

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon	3.3		0.50	0.26	mg/L			03/19/22 19:33	1

Client Sample ID: SWFTS-EM37-FB1

Lab Sample ID: 550-180516-8
Date Collected: 03/09/22 09:25
Matrix: Water
Date Received: 03/09/22 19:41

Method: 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Nitrate as N	0.029	J	0.050	0.014	mg/L			03/10/22 16:20	1
Sulfate	0.48	J	2.0	0.43	mg/L			03/10/22 16:20	1

Method: 300.1B - Disinfection By-Products, (IC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chlorate	ND		20	4.9	ug/L			03/19/22 00:25	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Dichloroacetic acid(Surr)	*107*		*90 - 115*		*03/19/22 00:25*	*1*

Method: 314.0 - Perchlorate (IC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perchlorate	ND		1.0	0.31	ug/L			03/10/22 15:57	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon	ND		0.50	0.26	mg/L			03/22/22 19:07	1

Client Sample ID: SWFTS-MW02-EM37

Lab Sample ID: 550-180516-9
Date Collected: 03/09/22 10:42
Matrix: Water
Date Received: 03/09/22 19:41

Method: 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Nitrate as N	0.11		0.050	0.014	mg/L			03/10/22 16:38	1
Sulfate	2700		200	43	mg/L			03/10/22 21:14	100

Method: 300.1B - Disinfection By-Products, (IC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chlorate	650		100	24	ug/L			03/23/22 00:30	5

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Dichloroacetic acid(Surr)	*103*		*90 - 115*		*03/23/22 00:30*	*5*

Method: 314.0 - Perchlorate (IC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perchlorate	600	F1	100	31	ug/L			03/10/22 13:20	100

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon	5.8		0.50	0.26	mg/L			03/19/22 20:02	1

Surrogate Summary

Client: Tetra Tech, Inc.
Project/Site: Tetra Tech M11 SWF Treatability Study

Job ID: 550-180516-1
SDG: SWFABTS

Method: 300.1B - Disinfection By-Products, (IC)

Matrix: Water — **Prep Type: Total/NA**

		Percent Surrogate Recovery (Acceptance Limits)
Lab Sample ID	Client Sample ID	DCAA (90-115)
550-180407-G-19 MS ^100	Matrix Spike	103
550-180407-G-19 MSD ^100	Matrix Spike Duplicate	101
550-180516-1	SWFTS-MW17-EM37	109
550-180516-2	SWFTS-MW16-EM37	115
550-180516-3	SWFTS-MW13-EM37	102
550-180516-4	SWFTS-EM37-EB2	109
550-180516-5	SWFTS-MW04-EM37	112
550-180516-6	SWFTS-MW03-EM37	98
550-180516-7	SWFTS-MW01-EM37	99
550-180516-8	SWFTS-EM37-FB1	107
550-180516-9	SWFTS-MW02-EM37	103
550-180526-S-6 MS ^50	Matrix Spike	97
550-180526-S-6 MSD ^50	Matrix Spike Duplicate	97
550-180526-T-6 MS ^5	Matrix Spike	102
550-180526-T-6 MSD ^5	Matrix Spike Duplicate	100
LCS 550-269350/6	Lab Control Sample	98
LCS 550-269352/6	Lab Control Sample	101
LCS 550-269569/6	Lab Control Sample	98
LCSD 550-269350/7	Lab Control Sample Dup	97
LCSD 550-269352/7	Lab Control Sample Dup	101
LCSD 550-269569/7	Lab Control Sample Dup	99
MB 550-269350/5	Method Blank	108
MB 550-269352/5	Method Blank	110
MB 550-269569/5	Method Blank	108

Surrogate Legend

DCAA = Dichloroacetic acid(Surr)

Method: 300.1B - Disinfection By-Products, (IC)

Matrix: Water — **Prep Type: Total/NA**

		Percent Surrogate Recovery (Acceptance Limits)
Lab Sample ID	Client Sample ID	DCAA (50-150)
MRL 550-269350/1003	Lab Control Sample	102
MRL 550-269352/1003	Lab Control Sample	101
MRL 550-269569/1003	Lab Control Sample	104

Surrogate Legend

DCAA = Dichloroacetic acid(Surr)

Method: 300.0 - Anions, Ion Chromatography

Lab Sample ID: MB 550-268579/2
Matrix: Water
Analysis Batch: 268579

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Nitrate as N	ND		0.050	0.014	mg/L			03/10/22 11:27	1
Sulfate	ND		2.0	0.43	mg/L			03/10/22 11:27	1

Lab Sample ID: LCS 550-268579/5
Matrix: Water
Analysis Batch: 268579

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
Nitrate as N			4.00	4.08		mg/L		102	90 - 110		
Sulfate			20.0	21.0		mg/L		105	90 - 110		

Lab Sample ID: LCSD 550-268579/6
Matrix: Water
Analysis Batch: 268579

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Nitrate as N			4.00	4.08		mg/L		102	90 - 110	0	20
Sulfate			20.0	20.8		mg/L		104	90 - 110	1	20

Lab Sample ID: 550-180516-1 MS
Matrix: Water
Analysis Batch: 268579

Client Sample ID: SWFTS-MW17-EM37
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits		
Nitrate as N	17		4.00	20.7	4	mg/L		96	80 - 120		

Lab Sample ID: 550-180516-1 MS
Matrix: Water
Analysis Batch: 268579

Client Sample ID: SWFTS-MW17-EM37
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits		
Sulfate	2600		2000	4680		mg/L		104	80 - 120		

Lab Sample ID: 550-180516-1 MSD
Matrix: Water
Analysis Batch: 268579

Client Sample ID: SWFTS-MW17-EM37
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Nitrate as N	17		4.00	20.6	4	mg/L		95	80 - 120	0	20

Lab Sample ID: 550-180516-1 MSD
Matrix: Water
Analysis Batch: 268579

Client Sample ID: SWFTS-MW17-EM37
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Sulfate	2600		2000	4710		mg/L		106	80 - 120	1	20

Method: 300.0 - Anions, Ion Chromatography (Continued)

Lab Sample ID: MB 550-268581/2
Matrix: Water
Analysis Batch: 268581

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Nitrate as N	ND		0.050	0.014	mg/L			03/10/22 10:48	1
Sulfate	ND		2.0	0.43	mg/L			03/10/22 10:48	1

Lab Sample ID: LCS 550-268581/5
Matrix: Water
Analysis Batch: 268581

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
Nitrate as N			4.00	4.17		mg/L		104	90 - 110		
Sulfate			20.0	21.0		mg/L		105	90 - 110		

Lab Sample ID: LCSD 550-268581/6
Matrix: Water
Analysis Batch: 268581

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Nitrate as N			4.00	4.18		mg/L		104	90 - 110	0	20
Sulfate			20.0	21.1		mg/L		105	90 - 110	0	20

Lab Sample ID: 550-180516-2 MS
Matrix: Water
Analysis Batch: 268581

Client Sample ID: SWFTS-MW16-EM37
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits		
Nitrate as N	0.14		4.00	4.35		mg/L		105	80 - 120		

Lab Sample ID: 550-180516-2 MS
Matrix: Water
Analysis Batch: 268581

Client Sample ID: SWFTS-MW16-EM37
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits		
Sulfate	1600		2000	3770		mg/L		108	80 - 120		

Lab Sample ID: 550-180516-2 MSD
Matrix: Water
Analysis Batch: 268581

Client Sample ID: SWFTS-MW16-EM37
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Nitrate as N	0.14		4.00	4.37		mg/L		106	80 - 120	0	20

Lab Sample ID: 550-180516-2 MSD
Matrix: Water
Analysis Batch: 268581

Client Sample ID: SWFTS-MW16-EM37
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Sulfate	1600		2000	3740		mg/L		107	80 - 120	1	20

Method: 300.1B - Disinfection By-Products, (IC)

Lab Sample ID: MB 550-269350/5
Matrix: Water
Analysis Batch: 269350

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chlorate	ND		20	4.9	ug/L			03/18/22 21:28	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Dichloroacetic acid(Surr)	*108*		*90 - 115*		*03/18/22 21:28*	*1*

Lab Sample ID: LCS 550-269350/6
Matrix: Water
Analysis Batch: 269350

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
Chlorate			100	98.3		ug/L		98	75 - 125		

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
Dichloroacetic acid(Surr)	*98*		*90 - 115*

Lab Sample ID: LCSD 550-269350/7
Matrix: Water
Analysis Batch: 269350

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Chlorate			100	93.6		ug/L		94	75 - 125	5	25

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
Dichloroacetic acid(Surr)	*97*		*90 - 115*

Lab Sample ID: MRL 550-269350/1003
Matrix: Water
Analysis Batch: 269350

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte			Spike Added	MRL Result	MRL Qualifier	Unit	D	%Rec	%Rec. Limits		
Chlorate			20.0	21.3		ug/L		106	50 - 150		

Surrogate	*MRL %Recovery*	*MRL Qualifier*	*Limits*
Dichloroacetic acid(Surr)	*102*		*50 - 150*

Lab Sample ID: 550-180526-S-6 MS ^50
Matrix: Water
Analysis Batch: 269350

Client Sample ID: Matrix Spike
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits		
Chlorate	ND		5000	4580		ug/L		92	75 - 125		

Surrogate	*MS %Recovery*	*MS Qualifier*	*Limits*
Dichloroacetic acid(Surr)	*97*		*90 - 115*

Method: 300.1B - Disinfection By-Products, (IC) (Continued)

Lab Sample ID: 550-180526-S-6 MSD ^50
Matrix: Water
Analysis Batch: 269350

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Chlorate	ND		5000	4710		ug/L		94	75 - 125	3	25

Surrogate	*MSD %Recovery*	*MSD Qualifier*	*Limits*
Dichloroacetic acid(Surr)	*97*		*90 - 115*

Lab Sample ID: MB 550-269352/5
Matrix: Water
Analysis Batch: 269352

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chlorate	ND		20	4.9	ug/L			03/19/22 12:12	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Dichloroacetic acid(Surr)	*110*		*90 - 115*		*03/19/22 12:12*	*1*

Lab Sample ID: LCS 550-269352/6
Matrix: Water
Analysis Batch: 269352

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
Chlorate			100	96.4		ug/L		96	75 - 125		

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
Dichloroacetic acid(Surr)	*101*		*90 - 115*

Lab Sample ID: LCSD 550-269352/7
Matrix: Water
Analysis Batch: 269352

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Chlorate			100	95.8		ug/L		96	75 - 125	1	25

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
Dichloroacetic acid(Surr)	*101*		*90 - 115*

Lab Sample ID: MRL 550-269352/1003
Matrix: Water
Analysis Batch: 269352

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte			Spike Added	MRL Result	MRL Qualifier	Unit	D	%Rec	%Rec. Limits		
Chlorate			20.0	20.7		ug/L		103	50 - 150		

Surrogate	*MRL %Recovery*	*MRL Qualifier*	*Limits*
Dichloroacetic acid(Surr)	*101*		*50 - 150*

Method: 300.1B - Disinfection By-Products, (IC) (Continued)

Lab Sample ID: 550-180407-G-19 MS ^100
Matrix: Water
Analysis Batch: 269352

Client Sample ID: Matrix Spike
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits		
Chlorate	980	J	10000	10900		ug/L		99	75 - 125		

Surrogate	*MS %Recovery*	*MS Qualifier*	*Limits*
Dichloroacetic acid(Surr)	*103*		*90 - 115*

Lab Sample ID: 550-180407-G-19 MSD ^100
Matrix: Water
Analysis Batch: 269352

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Chlorate	980	J	10000	10900		ug/L		100	75 - 125	1	25

Surrogate	*MSD %Recovery*	*MSD Qualifier*	*Limits*
Dichloroacetic acid(Surr)	*101*		*90 - 115*

Lab Sample ID: MB 550-269569/5
Matrix: Water
Analysis Batch: 269569

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chlorate	ND		20	4.9	ug/L			03/22/22 15:10	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Dichloroacetic acid(Surr)	*108*		*90 - 115*		*03/22/22 15:10*	*1*

Lab Sample ID: LCS 550-269569/6
Matrix: Water
Analysis Batch: 269569

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
Chlorate			100	95.2		ug/L		95	75 - 125		

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
Dichloroacetic acid(Surr)	*98*		*90 - 115*

Lab Sample ID: LCSD 550-269569/7
Matrix: Water
Analysis Batch: 269569

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Chlorate			100	94.2		ug/L		94	75 - 125	1	25

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
Dichloroacetic acid(Surr)	*99*		*90 - 115*

Method: 300.1B - Disinfection By-Products, (IC) (Continued)

Lab Sample ID: MRL 550-269569/1003
Matrix: Water
Analysis Batch: 269569

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte			Spike Added	MRL Result	MRL Qualifier	Unit	D	%Rec	%Rec. Limits		
Chlorate			20.0	20.7		ug/L		104	50 - 150		

Surrogate	*MRL %Recovery*	*MRL Qualifier*	*Limits*
Dichloroacetic acid(Surr)	*104*		*50 - 150*

Lab Sample ID: 550-180526-T-6 MS ^5
Matrix: Water
Analysis Batch: 269569

Client Sample ID: Matrix Spike
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits		
Chlorate	ND	D	500	512		ug/L		102	75 - 125		

Surrogate	*MS %Recovery*	*MS Qualifier*	*Limits*
Dichloroacetic acid(Surr)	*102*		*90 - 115*

Lab Sample ID: 550-180526-T-6 MSD ^5
Matrix: Water
Analysis Batch: 269569

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Chlorate	ND	D	500	504		ug/L		101	75 - 125	2	25

Surrogate	*MSD %Recovery*	*MSD Qualifier*	*Limits*
Dichloroacetic acid(Surr)	*100*		*90 - 115*

Method: 314.0 - Perchlorate (IC)

Lab Sample ID: MB 550-268554/1002
Matrix: Water
Analysis Batch: 268554

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perchlorate	ND		1.0	0.31	ug/L			03/10/22 10:59	1

Lab Sample ID: LCS 550-268554/4
Matrix: Water
Analysis Batch: 268554

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
Perchlorate			25.0	27.8		ug/L		111	85 - 115		

Lab Sample ID: LCSD 550-268554/5
Matrix: Water
Analysis Batch: 268554

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Perchlorate			25.0	27.6		ug/L		110	85 - 115	1	15

Method: 314.0 - Perchlorate (IC) (Continued)

Lab Sample ID: MRL 550-268554/1003
Matrix: Water
Analysis Batch: 268554

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	MRL Result	MRL Qualifier	Unit	D	%Rec	%Rec. Limits
Perchlorate	1.00	1.12		ug/L		112	75 - 125

Lab Sample ID: 550-180516-1 MS
Matrix: Water
Analysis Batch: 268554

Client Sample ID: SWFTS-MW17-EM37
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Perchlorate	4400		5000	9370		ug/L		100	80 - 120

Lab Sample ID: 550-180516-1 MSD
Matrix: Water
Analysis Batch: 268554

Client Sample ID: SWFTS-MW17-EM37
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Perchlorate	4400		5000	9300		ug/L		99	80 - 120	1	15

Lab Sample ID: MB 550-268555/1002
Matrix: Water
Analysis Batch: 268555

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perchlorate	ND		1.0	0.31	ug/L			03/10/22 10:59	1

Lab Sample ID: LCS 550-268555/4
Matrix: Water
Analysis Batch: 268555

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Perchlorate	25.0	27.0		ug/L		108	85 - 115

Lab Sample ID: LCSD 550-268555/5
Matrix: Water
Analysis Batch: 268555

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Perchlorate	25.0	26.9		ug/L		107	85 - 115	1	15

Lab Sample ID: MRL 550-268555/1003
Matrix: Water
Analysis Batch: 268555

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	MRL Result	MRL Qualifier	Unit	D	%Rec	%Rec. Limits
Perchlorate	1.00	0.928	J	ug/L		93	75 - 125

Lab Sample ID: 550-180516-9 MS
Matrix: Water
Analysis Batch: 268555

Client Sample ID: SWFTS-MW02-EM37
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Perchlorate	600	F1	2500	2590		ug/L		80	80 - 120

Method: 314.0 - Perchlorate (IC)

Lab Sample ID: 550-180516-9 MSD
Matrix: Water
Analysis Batch: 268555

Client Sample ID: SWFTS-MW02-EM37
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Perchlorate	600	F1	2500	2490	F1	ug/L		76	80 - 120	4	15

Lab Sample ID: MB 550-268660/1002
Matrix: Water
Analysis Batch: 268660

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perchlorate	ND		1.0	0.31	ug/L			03/11/22 09:33	1

Lab Sample ID: LCS 550-268660/4
Matrix: Water
Analysis Batch: 268660

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Perchlorate	25.0	25.5		ug/L		102	85 - 115

Lab Sample ID: LCSD 550-268660/5
Matrix: Water
Analysis Batch: 268660

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Perchlorate	25.0	25.2		ug/L		101	85 - 115	1	15

Lab Sample ID: MRL 550-268660/1003
Matrix: Water
Analysis Batch: 268660

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	MRL Result	MRL Qualifier	Unit	D	%Rec	%Rec. Limits
Perchlorate	1.00	1.01		ug/L		101	75 - 125

Lab Sample ID: 550-180633-F-1 MS ^10
Matrix: Water
Analysis Batch: 268660

Client Sample ID: Matrix Spike
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Perchlorate	3.7	J	250	247		ug/L		97	80 - 120

Lab Sample ID: 550-180633-F-1 MSD ^10
Matrix: Water
Analysis Batch: 268660

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Perchlorate	3.7	J	250	249		ug/L		98	80 - 120	1	15

Method: SM 5310B - Organic Carbon, Total (TOC)

Lab Sample ID: MB 550-269361/5
Matrix: Water
Analysis Batch: 269361

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon	ND		0.50	0.26	mg/L			03/19/22 15:12	1

Lab Sample ID: LCS 550-269361/6
Matrix: Water
Analysis Batch: 269361

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Total Organic Carbon	20.0	18.6		mg/L		93	90 - 110

Lab Sample ID: LCSD 550-269361/7
Matrix: Water
Analysis Batch: 269361

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Total Organic Carbon	20.0	18.6		mg/L		93	90 - 110	0	20

Lab Sample ID: 550-180407-B-14 MSD
Matrix: Water
Analysis Batch: 269361

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Total Organic Carbon	2.3	F1	20.0	20.2	F1	mg/L		89	90 - 110	2	20

Lab Sample ID: 550-180407-D-14 MS
Matrix: Water
Analysis Batch: 269361

Client Sample ID: Matrix Spike
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Total Organic Carbon	2.3	F1	20.0	20.5		mg/L		91	90 - 110

Lab Sample ID: MB 550-269647/5
Matrix: Water
Analysis Batch: 269647

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon	ND		0.50	0.26	mg/L			03/22/22 16:07	1

Lab Sample ID: LCS 550-269647/6
Matrix: Water
Analysis Batch: 269647

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Total Organic Carbon	20.0	18.4		mg/L		92	90 - 110

Lab Sample ID: LCSD 550-269647/7
Matrix: Water
Analysis Batch: 269647

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Total Organic Carbon	20.0	18.2		mg/L		91	90 - 110	1	20

Method: SM 5310B - Organic Carbon, Total (TOC)

Lab Sample ID: 550-180526-E-6 MS
Matrix: Water
Analysis Batch: 269647

Client Sample ID: Matrix Spike
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits		
Total Organic Carbon	1.4	F1	20.0	16.9	F1	mg/L		78	90 - 110		

Lab Sample ID: 550-180526-E-6 MSD
Matrix: Water
Analysis Batch: 269647

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Total Organic Carbon	1.4	F1	20.0	18.9	F1	mg/L		88	90 - 110	11	20

HPLC/IC

Analysis Batch: 268554

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
550-180516-1	SWFTS-MW17-EM37	Total/NA	Water	314.0	
550-180516-2	SWFTS-MW16-EM37	Total/NA	Water	314.0	
550-180516-3	SWFTS-MW13-EM37	Total/NA	Water	314.0	
550-180516-4	SWFTS-EM37-EB2	Total/NA	Water	314.0	
550-180516-8	SWFTS-EM37-FB1	Total/NA	Water	314.0	
MB 550-268554/1002	Method Blank	Total/NA	Water	314.0	
LCS 550-268554/4	Lab Control Sample	Total/NA	Water	314.0	
LCSD 550-268554/5	Lab Control Sample Dup	Total/NA	Water	314.0	
MRL 550-268554/1003	Lab Control Sample	Total/NA	Water	314.0	
550-180516-1 MS	SWFTS-MW17-EM37	Total/NA	Water	314.0	
550-180516-1 MSD	SWFTS-MW17-EM37	Total/NA	Water	314.0	

Analysis Batch: 268555

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
550-180516-9	SWFTS-MW02-EM37	Total/NA	Water	314.0	
MB 550-268555/1002	Method Blank	Total/NA	Water	314.0	
LCS 550-268555/4	Lab Control Sample	Total/NA	Water	314.0	
LCSD 550-268555/5	Lab Control Sample Dup	Total/NA	Water	314.0	
MRL 550-268555/1003	Lab Control Sample	Total/NA	Water	314.0	
550-180516-9 MS	SWFTS-MW02-EM37	Total/NA	Water	314.0	
550-180516-9 MSD	SWFTS-MW02-EM37	Total/NA	Water	314.0	

Analysis Batch: 268579

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
550-180516-1	SWFTS-MW17-EM37	Total/NA	Water	300.0	
550-180516-1	SWFTS-MW17-EM37	Total/NA	Water	300.0	
550-180516-3	SWFTS-MW13-EM37	Total/NA	Water	300.0	
550-180516-3	SWFTS-MW13-EM37	Total/NA	Water	300.0	
MB 550-268579/2	Method Blank	Total/NA	Water	300.0	
LCS 550-268579/5	Lab Control Sample	Total/NA	Water	300.0	
LCSD 550-268579/6	Lab Control Sample Dup	Total/NA	Water	300.0	
550-180516-1 MS	SWFTS-MW17-EM37	Total/NA	Water	300.0	
550-180516-1 MS	SWFTS-MW17-EM37	Total/NA	Water	300.0	
550-180516-1 MSD	SWFTS-MW17-EM37	Total/NA	Water	300.0	
550-180516-1 MSD	SWFTS-MW17-EM37	Total/NA	Water	300.0	

Analysis Batch: 268581

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
550-180516-2	SWFTS-MW16-EM37	Total/NA	Water	300.0	
550-180516-2	SWFTS-MW16-EM37	Total/NA	Water	300.0	
550-180516-4	SWFTS-EM37-EB2	Total/NA	Water	300.0	
550-180516-5	SWFTS-MW04-EM37	Total/NA	Water	300.0	
550-180516-5	SWFTS-MW04-EM37	Total/NA	Water	300.0	
550-180516-6	SWFTS-MW03-EM37	Total/NA	Water	300.0	
550-180516-6	SWFTS-MW03-EM37	Total/NA	Water	300.0	
550-180516-7	SWFTS-MW01-EM37	Total/NA	Water	300.0	
550-180516-7	SWFTS-MW01-EM37	Total/NA	Water	300.0	
550-180516-8	SWFTS-EM37-FB1	Total/NA	Water	300.0	
550-180516-9	SWFTS-MW02-EM37	Total/NA	Water	300.0	
550-180516-9	SWFTS-MW02-EM37	Total/NA	Water	300.0	
MB 550-268581/2	Method Blank	Total/NA	Water	300.0	

HPLC/IC (Continued)

Analysis Batch: 268581 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
LCS 550-268581/5	Lab Control Sample	Total/NA	Water	300.0	
LCSD 550-268581/6	Lab Control Sample Dup	Total/NA	Water	300.0	
550-180516-2 MS	SWFTS-MW16-EM37	Total/NA	Water	300.0	
550-180516-2 MS	SWFTS-MW16-EM37	Total/NA	Water	300.0	
550-180516-2 MSD	SWFTS-MW16-EM37	Total/NA	Water	300.0	
550-180516-2 MSD	SWFTS-MW16-EM37	Total/NA	Water	300.0	

Analysis Batch: 268660

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
550-180516-5	SWFTS-MW04-EM37	Total/NA	Water	314.0	
550-180516-6	SWFTS-MW03-EM37	Total/NA	Water	314.0	
550-180516-7	SWFTS-MW01-EM37	Total/NA	Water	314.0	
MB 550-268660/1002	Method Blank	Total/NA	Water	314.0	
LCS 550-268660/4	Lab Control Sample	Total/NA	Water	314.0	
LCSD 550-268660/5	Lab Control Sample Dup	Total/NA	Water	314.0	
MRL 550-268660/1003	Lab Control Sample	Total/NA	Water	314.0	
550-180633-F-1 MS ^10	Matrix Spike	Total/NA	Water	314.0	
550-180633-F-1 MSD ^10	Matrix Spike Duplicate	Total/NA	Water	314.0	

Analysis Batch: 269350

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
550-180516-8	SWFTS-EM37-FB1	Total/NA	Water	300.1B	
MB 550-269350/5	Method Blank	Total/NA	Water	300.1B	
LCS 550-269350/6	Lab Control Sample	Total/NA	Water	300.1B	
LCSD 550-269350/7	Lab Control Sample Dup	Total/NA	Water	300.1B	
MRL 550-269350/1003	Lab Control Sample	Total/NA	Water	300.1B	
550-180526-S-6 MS ^50	Matrix Spike	Total/NA	Water	300.1B	
550-180526-S-6 MSD ^50	Matrix Spike Duplicate	Total/NA	Water	300.1B	

Analysis Batch: 269352

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
550-180516-1	SWFTS-MW17-EM37	Total/NA	Water	300.1B	
550-180516-2	SWFTS-MW16-EM37	Total/NA	Water	300.1B	
550-180516-3	SWFTS-MW13-EM37	Total/NA	Water	300.1B	
550-180516-4	SWFTS-EM37-EB2	Total/NA	Water	300.1B	
550-180516-7	SWFTS-MW01-EM37	Total/NA	Water	300.1B	
MB 550-269352/5	Method Blank	Total/NA	Water	300.1B	
LCS 550-269352/6	Lab Control Sample	Total/NA	Water	300.1B	
LCSD 550-269352/7	Lab Control Sample Dup	Total/NA	Water	300.1B	
MRL 550-269352/1003	Lab Control Sample	Total/NA	Water	300.1B	
550-180407-G-19 MS ^100	Matrix Spike	Total/NA	Water	300.1B	
550-180407-G-19 MSD ^100	Matrix Spike Duplicate	Total/NA	Water	300.1B	

Analysis Batch: 269569

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
550-180516-5	SWFTS-MW04-EM37	Total/NA	Water	300.1B	
550-180516-6	SWFTS-MW03-EM37	Total/NA	Water	300.1B	
550-180516-9	SWFTS-MW02-EM37	Total/NA	Water	300.1B	
MB 550-269569/5	Method Blank	Total/NA	Water	300.1B	
LCS 550-269569/6	Lab Control Sample	Total/NA	Water	300.1B	
LCSD 550-269569/7	Lab Control Sample Dup	Total/NA	Water	300.1B	

HPLC/IC (Continued)

Analysis Batch: 269569 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
MRL 550-269569/1003	Lab Control Sample	Total/NA	Water	300.1B	
550-180526-T-6 MS ^5	Matrix Spike	Total/NA	Water	300.1B	
550-180526-T-6 MSD ^5	Matrix Spike Duplicate	Total/NA	Water	300.1B	

General Chemistry

Analysis Batch: 269361

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
550-180516-1	SWFTS-MW17-EM37	Total/NA	Water	SM 5310B	
550-180516-2	SWFTS-MW16-EM37	Total/NA	Water	SM 5310B	
550-180516-3	SWFTS-MW13-EM37	Total/NA	Water	SM 5310B	
550-180516-4	SWFTS-EM37-EB2	Total/NA	Water	SM 5310B	
550-180516-5	SWFTS-MW04-EM37	Total/NA	Water	SM 5310B	
550-180516-6	SWFTS-MW03-EM37	Total/NA	Water	SM 5310B	
550-180516-7	SWFTS-MW01-EM37	Total/NA	Water	SM 5310B	
550-180516-9	SWFTS-MW02-EM37	Total/NA	Water	SM 5310B	
MB 550-269361/5	Method Blank	Total/NA	Water	SM 5310B	
LCS 550-269361/6	Lab Control Sample	Total/NA	Water	SM 5310B	
LCSD 550-269361/7	Lab Control Sample Dup	Total/NA	Water	SM 5310B	
550-180407-B-14 MSD	Matrix Spike Duplicate	Total/NA	Water	SM 5310B	
550-180407-D-14 MS	Matrix Spike	Total/NA	Water	SM 5310B	

Analysis Batch: 269647

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
550-180516-8	SWFTS-EM37-FB1	Total/NA	Water	SM 5310B	
MB 550-269647/5	Method Blank	Total/NA	Water	SM 5310B	
LCS 550-269647/6	Lab Control Sample	Total/NA	Water	SM 5310B	
LCSD 550-269647/7	Lab Control Sample Dup	Total/NA	Water	SM 5310B	
550-180526-E-6 MS	Matrix Spike	Total/NA	Water	SM 5310B	
550-180526-E-6 MSD	Matrix Spike Duplicate	Total/NA	Water	SM 5310B	

Lab Chronicle

Client: Tetra Tech, Inc.
Project/Site: Tetra Tech M11 SWF Treatability Study

Job ID: 550-180516-1
SDG: SWFABTS

Client Sample ID: SWFTS-MW17-EM37
Date Collected: 03/09/22 08:30
Date Received: 03/09/22 19:41

Lab Sample ID: 550-180516-1
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	300.0		1	268579	03/10/22 13:46	AS1	TAL PHX
Total/NA	Analysis	300.0		100	268579	03/10/22 15:10	AS1	TAL PHX
Total/NA	Analysis	300.1B		100	269352	03/19/22 21:02	MEG	TAL PHX
Total/NA	Analysis	314.0		200	268554	03/10/22 12:31	RDC	TAL PHX
Total/NA	Analysis	SM 5310B		1	269361	03/19/22 17:51	MEG	TAL PHX

Client Sample ID: SWFTS-MW16-EM37
Date Collected: 03/09/22 09:20
Date Received: 03/09/22 19:41

Lab Sample ID: 550-180516-2
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	300.0		1	268581	03/10/22 12:20	AS1	TAL PHX
Total/NA	Analysis	300.0		100	268581	03/10/22 13:16	AS1	TAL PHX
Total/NA	Analysis	300.1B		2	269352	03/19/22 21:32	MEG	TAL PHX
Total/NA	Analysis	314.0		200	268554	03/10/22 17:28	RDC	TAL PHX
Total/NA	Analysis	SM 5310B		1	269361	03/19/22 18:05	MEG	TAL PHX

Client Sample ID: SWFTS-MW13-EM37
Date Collected: 03/09/22 08:30
Date Received: 03/09/22 19:41

Lab Sample ID: 550-180516-3
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	300.0		1	268579	03/10/22 16:34	AS1	TAL PHX
Total/NA	Analysis	300.0		100	268579	03/10/22 21:13	AS1	TAL PHX
Total/NA	Analysis	300.1B		200	269352	03/19/22 22:01	MEG	TAL PHX
Total/NA	Analysis	314.0		200	268554	03/10/22 14:02	RDC	TAL PHX
Total/NA	Analysis	SM 5310B		1	269361	03/19/22 18:19	MEG	TAL PHX

Client Sample ID: SWFTS-EM37-EB2
Date Collected: 03/09/22 08:50
Date Received: 03/09/22 19:41

Lab Sample ID: 550-180516-4
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	300.0		1	268581	03/10/22 14:11	AS1	TAL PHX
Total/NA	Analysis	300.1B		1	269352	03/19/22 22:31	MEG	TAL PHX
Total/NA	Analysis	314.0		1	268554	03/10/22 14:25	RDC	TAL PHX
Total/NA	Analysis	SM 5310B		1	269361	03/19/22 18:54	MEG	TAL PHX

Client Sample ID: SWFTS-MW04-EM37
Date Collected: 03/09/22 10:00
Date Received: 03/09/22 19:41

Lab Sample ID: 550-180516-5
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	300.0		1	268581	03/10/22 14:29	AS1	TAL PHX

Lab Chronicle

Client: Tetra Tech, Inc.
Project/Site: Tetra Tech M11 SWF Treatability Study

Job ID: 550-180516-1
SDG: SWFABTS

Client Sample ID: SWFTS-MW04-EM37
Date Collected: 03/09/22 10:00
Date Received: 03/09/22 19:41

Lab Sample ID: 550-180516-5
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	300.0		100	268581	03/10/22 20:19	AS1	TAL PHX
Total/NA	Analysis	300.1B		100	269569	03/22/22 18:07	MEG	TAL PHX
Total/NA	Analysis	314.0		500	268660	03/11/22 13:45	RDC	TAL PHX
Total/NA	Analysis	SM 5310B		1	269361	03/19/22 19:06	MEG	TAL PHX

Client Sample ID: SWFTS-MW03-EM37
Date Collected: 03/09/22 08:20
Date Received: 03/09/22 19:41

Lab Sample ID: 550-180516-6
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	300.0		1	268581	03/10/22 14:48	AS1	TAL PHX
Total/NA	Analysis	300.0		100	268581	03/10/22 20:37	AS1	TAL PHX
Total/NA	Analysis	300.1B		20	269569	03/22/22 18:36	MEG	TAL PHX
Total/NA	Analysis	314.0		500	268660	03/11/22 14:08	RDC	TAL PHX
Total/NA	Analysis	SM 5310B		1	269361	03/19/22 19:19	MEG	TAL PHX

Client Sample ID: SWFTS-MW01-EM37
Date Collected: 03/09/22 09:15
Date Received: 03/09/22 19:41

Lab Sample ID: 550-180516-7
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	300.0		1	268581	03/10/22 16:01	AS1	TAL PHX
Total/NA	Analysis	300.0		100	268581	03/10/22 20:56	AS1	TAL PHX
Total/NA	Analysis	300.1B		5	269352	03/19/22 23:59	MEG	TAL PHX
Total/NA	Analysis	314.0		200	268660	03/11/22 14:30	RDC	TAL PHX
Total/NA	Analysis	SM 5310B		1	269361	03/19/22 19:33	MEG	TAL PHX

Client Sample ID: SWFTS-EM37-FB1
Date Collected: 03/09/22 09:25
Date Received: 03/09/22 19:41

Lab Sample ID: 550-180516-8
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	300.0		1	268581	03/10/22 16:20	AS1	TAL PHX
Total/NA	Analysis	300.1B		1	269350	03/19/22 00:25	MEG	TAL PHX
Total/NA	Analysis	314.0		1	268554	03/10/22 15:57	RDC	TAL PHX
Total/NA	Analysis	SM 5310B		1	269647	03/22/22 19:07	MEG	TAL PHX

Client Sample ID: SWFTS-MW02-EM37
Date Collected: 03/09/22 10:42
Date Received: 03/09/22 19:41

Lab Sample ID: 550-180516-9
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	300.0		1	268581	03/10/22 16:38	AS1	TAL PHX
Total/NA	Analysis	300.0		100	268581	03/10/22 21:14	AS1	TAL PHX

Lab Chronicle

Client: Tetra Tech, Inc.
Project/Site: Tetra Tech M11 SWF Treatability Study

Job ID: 550-180516-1
SDG: SWFABTS

Client Sample ID: SWFTS-MW02-EM37

Date Collected: 03/09/22 10:42
Date Received: 03/09/22 19:41

Lab Sample ID: 550-180516-9

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	300.1B		5	269569	03/23/22 00:30	MEG	TAL PHX
Total/NA	Analysis	314.0		100	268555	03/10/22 13:20	RDC	TAL PHX
Total/NA	Analysis	SM 5310B		1	269361	03/19/22 20:02	MEG	TAL PHX

Laboratory References:

TAL PHX = Eurofins Phoenix, 4625 East Cotton Center Boulevard, Suite #189, Phoenix, AZ 85040, TEL (602)437-3340

Accreditation/Certification Summary

Client: Tetra Tech, Inc.
Project/Site: Tetra Tech M11 SWF Treatability Study

Job ID: 550-180516-1
SDG: SWFABTS

Laboratory: Eurofins Phoenix

All accreditations/certifications held by this laboratory are listed. Not all accreditations/certifications are applicable to this report.

Authority	Program	Identification Number	Expiration Date
AIHA-LAP, LLC	Environmental Lead Laboratory Accreditation Program (ELLAP)	154268	11-01-23
AIHA-LAP, LLC	Industrial Hygiene Laboratory Accreditation Program (IHLAP)	154268	11-01-23
Arizona	State	AZ0728	06-10-22
California	State	2941	06-10-22
Nevada	State	AZ1030	07-31-22
USDA	US Federal Programs	P330-19-00227	08-27-22

Method Summary

Client: Tetra Tech, Inc.
Project/Site: Tetra Tech M11 SWF Treatability Study

Job ID: 550-180516-1
SDG: SWFABTS

Method	Method Description	Protocol	Laboratory
300.0	Anions, Ion Chromatography	MCAWW	TAL PHX
300.1B	Disinfection By-Products, (IC)	EPA	TAL PHX
314.0	Perchlorate (IC)	EPA	TAL PHX
SM 5310B	Organic Carbon, Total (TOC)	SM	TAL PHX

Protocol References:

EPA = US Environmental Protection Agency

MCAWW = "Methods For Chemical Analysis Of Water And Wastes", EPA-600/4-79-020, March 1983 And Subsequent Revisions.

SM = "Standard Methods For The Examination Of Water And Wastewater"

Laboratory References:

TAL PHX = Eurofins Phoenix, 4625 East Cotton Center Boulevard, Suite #189, Phoenix, AZ 85040, TEL (602)437-3340

Tetra Tech
1093 Commerce Park Drive
Oak Ridge, TN37830
(865)483-9900

TestAmerica
Las Vegas
219

CHAIN-OF-CUSTODY

180516

NERT-M11
Groundwater Sampling

Laboratory Name: Eurofins TestAmerica, Phoenix (602) 437-3340 | Address: 4625 East Cotton Ctr Blvd, Suite 189, Phoenix, AZ 85040 | Contact: Mary Charlson 602-659-7627 | Page 1 of 3

Project Name: Tetra Tech M11 SWF Treatability Study | Sampler: J. Bunkers | Sampler Phone: 7027672053

Project No. M11-CWP-04
NERT - Seep Well Field Area Bioremediation Treatability Study | Project Contact: Maureen McMyler | Site Telephone No.: (702) 966-8340

Report to: Maureen McMyler, 1093 Commerce Park Dr. (865)220-4762
Bill to: Sunshine Pryor, 350 Indiana St., Golden, CO 80401 (303) 217-5700
Project Manager/Supervisor: Dana Grady

Analysis and Method Requested

Remarks
Preservation Codes:
A- HCL
D-Nitric Acid
L-EDA
N-None
S-H2SO4
Other:

Item No.	Sample Number	Date	Time	G=Grab C=Comp	Matrix	Sample Description, Location	Number of Containers	Perchlorate E314.0	TOC SM5310B	Chlorate E300.1	Sulfate/Nitrate E300.0 SHORT HOLD NITRATE!	Total Manganese SW846 6010B	Dissolved Metals SW6010/6020 (Field Filtered)		Notes
						Preservation Code:	-	N	A	L	N	D	D		
1	SWFTS-MW17-EM37	3/9/22	0830	G	W		7	X	X	X	X			-01	
2	SWFTS-MW16-EM37	3/9/22	0920	G	W		7	X	X	X	X			-02	
3															
4															
5															
6															
7															
8															
9															
10															

550-180516 Chain of Custody

Transfers Relinquished By (Signature)	Date/Time	Transfers Accepted By (Signature)	Date/Time
[signature]	3/9/22 1500	[signature] TALVS	3-9-22 1500
TALVS	3/9/22 SAS 1600	[signature]	3/10/22 6:30
Drop Box		Laboratory: ETA-PHX	

Special Instructions:

FedEx Airbill No.:
Sampler's Signature: (REQUIRED)
Sampler's Signature: [signature]

TAT: ___Standard ___ Rush Due _____
Received Good Condition ___ Y ___ N ___ Cold

TH 243 23.6/23.5
3.8/3.7/3.4: C.S. PHX

Tetra Tech
1093 Commerce Park Drive
Oak Ridge, TN37830
(865)483-9900

TestAmerica
Las Vegas
219

CHAIN-OF-CUSTODY

180516

NERT-M11
Groundwater Sampling

3/24/2022

Laboratory Name: Eurofins TestAmerica, Phoenix (602) 437-3340 | Address: 4625 East Cotton Ctr Blvd Suite 189 Phoenix, AZ 85040 | Contact: Mary Charlson 602-659-7627 | Page 2 of 3

Project Name: Tetra Tech M11 SWF Treatability Study	Sampler: G. Schuler	Sampler Phone: 480 620 5786
Project No. M11-CWP-04	Project Contact: **Maureen McMyler**	Site Telephone No.: (702) 966-8340
NERT - Seep Well Field Area Bioremediation Treatability Study		
Report to: Maureen McMyler, 1093 Commerce Park Dr. (865)220-4762	Project Manager/Supervisor: **Dana Grady**	
Bill to: Sunshine Pryor, 350 Indiana St., Golden, CO 80401 (303) 217-5700		

Analysis and Method Requested

Item No	Sample Number	Date	Time	G=Grab C=Comp	Matrix	Sample Description, Location	Number of Containers	Perchlorate E314.0	TOC SM5310B	Chlorate E300.1	Sulfate/Nitrate E300.0 SHORT HOLD NITRATE!	Total Manganese SW846 6010B	Dissolved Metals SW6010/6020 (Field Filtered)	Remarks
	Preservation Code:						-	N	A	L	N	D	D	**Notes**
1	SWFTS-MW13-EM37	3/9/22	0830	G	WG	—	7	X	X	X	X			-03
2	SWFTS-EM37-EB2	↓	0850	↓	↓	—	7	X	X	X	X			-04
3	SWFTS-MW04-EM37	↓	1000	↓	↓	—	7	X	X	X	X			-05
4														
5														
6														
7														
8														
9														
10														

Preservation Codes:
A- HCL
D-Nitric Acid
L-EDA
N-None
S-H2SO4
Other:

Transfers Relinquished By (Signature)	Date/Time	Transfers Accepted By (Signature)	Date/Time	Special Instructions:
G. Schuler	3/9/22 1500	TALS	3-9-22 1500	
TALS	3-9-22 1600 SDS		3/10/22 6:30	FedEx Airbill No.:
		Laboratory: EETA-PHX	**Sampler's Signature: (REQUIRED)**	Sampler's Signature

TAT: ___ Standard ___ Rush Date: _____ Received Good Condition: ___ Y ___ N ___ Cold

TH 243 03.6/2.5

3.8 | 3.7 | 3.4 °C PHX

Tetra Tech
1093 Commerce Park Drive
Oak Ridge, TN37830
(865)483-9900

CHAIN-OF-CUSTODY

180516

TestAmerica Las Vegas 210

NERT-M11
Groundwater Sampling

3/24/2022

Laboratory Name: Eurofins TestAmerica, Phoenix (602) 437-3340 | Address: 4625 East Cotton Ctr Blvd, Suite 189, Phoenix, AZ 85040 | Contact: Mary Charlson 602-659-7627 | Page ___ of ___

Project Name: Tetra Tech M11 SWF Treatability Study
Project No. M11-CWP-04
NERT - Seep Well Field Area Bioremediation Treatability Study

Sampler: Aaron Pettay | Sampler Phone: 801-971-9917
Project Contact: **Maureen McMyler** | Site Telephone No.: (702) 966-8340
Project Manager/Supervisor: **Dana Grady**

Report to: Maureen McMyler, 1093 Commerce Park Dr. (865)220-4762
Bill to: Sunshine Pryor, 350 Indiana St., Golden, CO 80401 (303) 217-5700

Analysis and Method Requested

Remarks
Preservation Codes:
A- HCL
D-Nitric Acid
L-EDA
N-None
S-H2SO4
Other:

Item No.	Sample Number	Date	Time	G-Grab C-Comp	Matrix	Sample Description, Location	Number of Containers	Perchlorate E314.0	TOC SM5310B	Chlorate E300.1	Sulfate/Nitrate E300.0 SHORT HOLD NITRATE!	Total Manganese SW846 6010B	Dissolved Metals SW6010/6020 (Field Filtered)	Notes
						Preservation Code:	-	N	A	L	N	D	D	
1	SWFTS-MW03-EM37	3/9/2022	0820	G	WG		7	X	X	X	X			-06
2	SWFTS-MW01-EM37	3/9/2022	0915	G	WG		7	X	X	X	X			-07
3	SWFTS-EM37-FB1	3/9/2022	0925	G	WQ		7	X	X	X	X			-08
4	SWFTS-MW02-EM37	3/9/2022	1042	G	WG		7	X	X	X	X			-09
5														
6														
7														
8														
9														
10														

Transfers Relinquished By (Signature)	Date/Time	Transfers Accepted By (Signature)	Date/Time	Special Instructions:
[signature]	3/9/2022 1447	TAM TALUS	3-9-22 1500	
TAM TALUS	3-9-22 1600	[signature]	3/10/22	FedEx Airbill No.: / FedEx Airbill No.:
		Laboratory: EETA-PHX	6:30	Sampler's Signature (REQUIRED) / Sampler's Signature

TAT: ___Standard ___Rush Due: _____ | Received Good Condition: ___Y ___N ___Cold

TH 243 13.6/13.5

3.8/3.7/3.4 C.S. PHX

Login Sample Receipt Checklist

Client: Tetra Tech, Inc.

Job Number: 550-180516-1
SDG Number: SWFABTS

Login Number: 180516
List Number: 1
Creator: Maycock, Lisa

List Source: Eurofins Phoenix

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	True	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	False	Check done at department level as required.

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ANALYTICAL REPORT

Eurofins Phoenix
4625 East Cotton Center Boulevard
Suite #189
Phoenix, AZ 85040
Tel: (602)437-3340

Laboratory Job ID: 550-186012-1
Client Project/Site: Tetra Tech M11 SWF Treatability Study

For:
Tetra Tech, Inc.
1093 Commerce Park Drive
Suite 100
Oak Ridge, Tennessee 37830

Attn: Dana Grady

Rachel Sester

Authorized for release by:
6/30/2022 2:58:17 PM

Rachel Sester, Project Manager I
(602)659-7615
Rachel.Sester@et.eurofinsus.com

LINKS

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This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.

Results relate only to the items tested and the sample(s) as received by the laboratory.

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Definitions/Glossary

Client: Tetra Tech, Inc. Job ID: 550-186012-1
Project/Site: Tetra Tech M11 SWF Treatability Study

Qualifiers

HPLC/IC

Qualifier	Qualifier Description
D	Sample results are obtained from a dilution; the surrogate or matrix spike recoveries reported are calculated from diluted samples.
F1	MS and/or MSD recovery exceeds control limits.
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

General Chemistry

Qualifier	Qualifier Description
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CFU	Colony Forming Unit
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MCL	EPA recommended "Maximum Contaminant Level"
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
MPN	Most Probable Number
MQL	Method Quantitation Limit
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
NEG	Negative / Absent
POS	Positive / Present
PQL	Practical Quantitation Limit
PRES	Presumptive
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)
TNTC	Too Numerous To Count

Job ID: 550-186012-1

Laboratory: Eurofins Phoenix

Narrative

Job Narrative
550-186012-1

Comments
No additional comments.

Receipt
The samples were received on 6/22/2022 6:30 AM. Unless otherwise noted below, the samples arrived in good condition, and where required, properly preserved and on ice. The temperatures of the 3 coolers at receipt time were 0.3º C, 1.3º C and 26.6º C.

HPLC/IC
Method 300.1B: The matrix spike duplicate (MSD) recovery for Chlorate in 550-277527 was outside control limits. Sample matrix interference was suspected because the associated laboratory control sample (LCS) recovery was within acceptance limits.

Method 300.1B: The following samples were diluted for Chlorate by method EPA 300.1B due to an abundance of non-target analytes present within the sample matrix: PC-91-EM38 (550-186012-6), SWFTS-MW21-EM38 (550-186012-13) and SWFTS-MW20-EM38 (550-186012-15). In the diluted samples this analyte was not detected or was beneath the lowest calibration limit. As such, an elevated reporting limit (RL) has been provided.
Method 300.0: The following sample was diluted for Nitrate as N due to matrix interferences as well as high amounts of metals constituents: PC-91-EM38 (550-186012-6). A metals test was performed on the undiluted sample which produced a strong positive result. Therefore to reduce these interferences, a dilution was prepared prior to the instrument analysis. The sample was re-tested at increasing dilutions and run at the lowest dilution which presented with minimized interference. This analyte was not detected in the diluted sample. As such, an elevated reporting limit (RL) has been provided and the result has been qualified with a D flag.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

General Chemistry
No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

Sample Summary

Client: Tetra Tech, Inc.
Job ID: 550-186012-1
Project/Site: Tetra Tech M11 SWF Treatability Study

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
550-186012-1	PC-58-EM38	Water	06/21/22 08:50	06/21/22 17:15
550-186012-2	SWFTS-EM38-EB1	Water	06/21/22 09:00	06/21/22 17:15
550-186012-3	SWFTS-EM38-FB1	Water	06/21/22 09:10	06/21/22 17:15
550-186012-4	PC-88-EM38	Water	06/21/22 10:10	06/21/22 17:15
550-186012-5	PC-88-EM38-FD	Water	06/21/22 10:10	06/21/22 17:15
550-186012-6	PC-91-EM38	Water	06/21/22 11:05	06/21/22 17:15
550-186012-7	PC-92-EM38	Water	06/21/22 11:35	06/21/22 17:15
550-186012-8	PC-94-EM38	Water	06/21/22 12:30	06/21/22 17:15
550-186012-9	SWFTS-MW01-EM38	Water	06/21/22 13:30	06/21/22 17:15
550-186012-10	SWFTS-MW25-EM38	Water	06/21/22 08:50	06/21/22 17:15
550-186012-11	SWFTS-MW23-EM38	Water	06/21/22 09:50	06/21/22 17:15
550-186012-12	SWFTS-MW24-EM38	Water	06/21/22 10:50	06/21/22 17:15
550-186012-13	SWFTS-MW21-EM38	Water	06/21/22 11:50	06/21/22 17:15
550-186012-14	SWFTS-MW22-EM38	Water	06/21/22 12:45	06/21/22 17:15
550-186012-15	SWFTS-MW20-EM38	Water	06/21/22 14:00	06/21/22 17:15

Detection Summary

Client: Tetra Tech, Inc.
Job ID: 550-186012-1
Project/Site: Tetra Tech M11 SWF Treatability Study

Client Sample ID: PC-58-EM38 — Lab Sample ID: 550-186012-1

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Nitrate as N	13		0.25	0.070	mg/L	5		300.0	Total/NA
Sulfate	1300		100	21	mg/L	50		300.0	Total/NA
Chlorate	6000		1000	240	ug/L	50		300.1B	Total/NA
Perchlorate	980		20	6.3	ug/L	20		314.0	Total/NA
Total Organic Carbon	3.2		0.50	0.26	mg/L	1		SM 5310B	Total/NA

Client Sample ID: SWFTS-EM38-EB1 — Lab Sample ID: 550-186012-2

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Total Organic Carbon	0.43	J	0.50	0.26	mg/L	1		SM 5310B	Total/NA

Client Sample ID: SWFTS-EM38-FB1 — Lab Sample ID: 550-186012-3

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Total Organic Carbon	0.30	J	0.50	0.26	mg/L	1		SM 5310B	Total/NA

Client Sample ID: PC-88-EM38 — Lab Sample ID: 550-186012-4

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Nitrate as N	10		0.25	0.070	mg/L	5		300.0	Total/NA
Sulfate	690		100	21	mg/L	50		300.0	Total/NA
Chlorate	7000		1000	240	ug/L	50		300.1B	Total/NA
Perchlorate	9100		200	63	ug/L	200		314.0	Total/NA
Total Organic Carbon	2.8		0.50	0.26	mg/L	1		SM 5310B	Total/NA

Client Sample ID: PC-88-EM38-FD — Lab Sample ID: 550-186012-5

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Nitrate as N	10		0.25	0.070	mg/L	5		300.0	Total/NA
Sulfate	700		100	21	mg/L	50		300.0	Total/NA
Chlorate	7100		1000	240	ug/L	50		300.1B	Total/NA
Perchlorate	9100		200	63	ug/L	200		314.0	Total/NA
Total Organic Carbon	3.0		0.50	0.26	mg/L	1		SM 5310B	Total/NA

Client Sample ID: PC-91-EM38 — Lab Sample ID: 550-186012-6

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Sulfate	360		20	4.3	mg/L	10		300.0	Total/NA
Perchlorate	0.82	J	1.0	0.31	ug/L	1		314.0	Total/NA
Total Organic Carbon	5.4		0.50	0.26	mg/L	1		SM 5310B	Total/NA

Client Sample ID: PC-92-EM38 — Lab Sample ID: 550-186012-7

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Nitrate as N	10		0.25	0.070	mg/L	5		300.0	Total/NA
Sulfate	1500		100	21	mg/L	50		300.0	Total/NA
Chlorate	36000		2000	490	ug/L	100		300.1B	Total/NA
Perchlorate	15000		500	160	ug/L	500		314.0	Total/NA
Total Organic Carbon	1.8		0.50	0.26	mg/L	1		SM 5310B	Total/NA

Client Sample ID: PC-94-EM38 — Lab Sample ID: 550-186012-8

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Nitrate as N	9.5		0.25	0.070	mg/L	5		300.0	Total/NA

This Detection Summary does not include radiochemical test results.

Eurofins Phoenix

Client Sample ID: PC-94-EM38 (Continued) — Lab Sample ID: 550-186012-8

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Sulfate	1700		100	21	mg/L	50		300.0	Total/NA
Chlorate	10000		4000	980	ug/L	200		300.1B	Total/NA
Perchlorate	11000		500	160	ug/L	500		314.0	Total/NA
Total Organic Carbon	2.1		0.50	0.26	mg/L	1		SM 5310B	Total/NA

Client Sample ID: SWFTS-MW01-EM38 — Lab Sample ID: 550-186012-9

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Nitrate as N	6.1		0.10	0.028	mg/L	2		300.0	Total/NA
Sulfate	1700		100	21	mg/L	50		300.0	Total/NA
Chlorate	6200	F1	1000	240	ug/L	50		300.1B	Total/NA
Perchlorate	9800		500	160	ug/L	500		314.0	Total/NA
Total Organic Carbon	2.0		0.50	0.26	mg/L	1		SM 5310B	Total/NA

Client Sample ID: SWFTS-MW25-EM38 — Lab Sample ID: 550-186012-10

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Nitrate as N	15		0.25	0.070	mg/L	5		300.0	Total/NA
Sulfate	2100		100	21	mg/L	50		300.0	Total/NA
Chlorate	11000		2000	490	ug/L	100		300.1B	Total/NA
Perchlorate	12000		500	160	ug/L	500		314.0	Total/NA
Total Organic Carbon	3.1		2.0	1.0	mg/L	4		SM 5310B	Total/NA

Client Sample ID: SWFTS-MW23-EM38 — Lab Sample ID: 550-186012-11

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Nitrate as N	10		0.10	0.028	mg/L	2		300.0	Total/NA
Sulfate	750		100	21	mg/L	50		300.0	Total/NA
Chlorate	1600		1000	240	ug/L	50		300.1B	Total/NA
Perchlorate	1700		100	31	ug/L	100		314.0	Total/NA
Total Organic Carbon	3.4		0.50	0.26	mg/L	1		SM 5310B	Total/NA

Client Sample ID: SWFTS-MW24-EM38 — Lab Sample ID: 550-186012-12

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Nitrate as N	6.8		0.10	0.028	mg/L	2		300.0	Total/NA
Sulfate	1700		100	21	mg/L	50		300.0	Total/NA
Chlorate	15000		1000	240	ug/L	50		300.1B	Total/NA
Perchlorate	7900		200	63	ug/L	200		314.0	Total/NA
Total Organic Carbon	1.6		0.50	0.26	mg/L	1		SM 5310B	Total/NA

Client Sample ID: SWFTS-MW21-EM38 — Lab Sample ID: 550-186012-13

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Nitrate as N	2.7		0.050	0.014	mg/L	1		300.0	Total/NA
Sulfate	2100		100	21	mg/L	50		300.0	Total/NA
Chlorate	42	J	100	24	ug/L	5		300.1B	Total/NA
Perchlorate	2600		100	31	ug/L	100		314.0	Total/NA
Total Organic Carbon	1.6		0.50	0.26	mg/L	1		SM 5310B	Total/NA

Client Sample ID: SWFTS-MW22-EM38 — Lab Sample ID: 550-186012-14

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Nitrate as N	3.8		0.050	0.014	mg/L	1		300.0	Total/NA

This Detection Summary does not include radiochemical test results.

Client Sample ID: SWFTS-MW22-EM38 (Continued)
Lab Sample ID: 550-186012-14

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Sulfate	1200		100	21	mg/L	50		300.0	Total/NA
Chlorate	9400		1000	240	ug/L	50		300.1B	Total/NA
Perchlorate	5600		200	63	ug/L	200		314.0	Total/NA
Total Organic Carbon	3.0		2.0	1.0	mg/L	4		SM 5310B	Total/NA

Client Sample ID: SWFTS-MW20-EM38
Lab Sample ID: 550-186012-15

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Nitrate as N	0.017	J	0.050	0.014	mg/L	1		300.0	Total/NA
Sulfate	2800		100	21	mg/L	50		300.0	Total/NA
Chlorate	28	J	100	24	ug/L	5		300.1B	Total/NA
Total Organic Carbon	4.3		0.50	0.26	mg/L	1		SM 5310B	Total/NA

This Detection Summary does not include radiochemical test results.

Client Sample ID: PC-58-EM38 — Lab Sample ID: 550-186012-1

Date Collected: 06/21/22 08:50 — **Matrix: Water**
Date Received: 06/21/22 17:15

Method: 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Nitrate as N	13		0.25	0.070	mg/L			06/22/22 14:03	5
Sulfate	1300		100	21	mg/L			06/22/22 18:02	50

Method: 300.1B - Disinfection By-Products, (IC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chlorate	6000		1000	240	ug/L			06/23/22 02:03	50

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Dichloroacetic acid(Surr)	*98*		*90 - 115*		*06/23/22 02:03*	*50*

Method: 314.0 - Perchlorate (IC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perchlorate	980		20	6.3	ug/L			06/23/22 17:03	20

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon	3.2		0.50	0.26	mg/L			06/25/22 17:07	1

Client Sample ID: SWFTS-EM38-EB1 — Lab Sample ID: 550-186012-2

Date Collected: 06/21/22 09:00 — **Matrix: Water**
Date Received: 06/21/22 17:15

Method: 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Nitrate as N	ND		0.050	0.014	mg/L			06/22/22 14:40	1
Sulfate	ND		2.0	0.43	mg/L			06/22/22 14:40	1

Method: 300.1B - Disinfection By-Products, (IC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chlorate	ND		20	4.9	ug/L			06/23/22 02:33	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Dichloroacetic acid(Surr)	*103*		*90 - 115*		*06/23/22 02:33*	*1*

Method: 314.0 - Perchlorate (IC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perchlorate	ND		1.0	0.31	ug/L			06/23/22 17:26	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon	0.43	J	0.50	0.26	mg/L			06/29/22 18:54	1

Client Sample ID: SWFTS-EM38-FB1 — Lab Sample ID: 550-186012-3

Date Collected: 06/21/22 09:10 — **Matrix: Water**
Date Received: 06/21/22 17:15

Method: 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Nitrate as N	ND		0.050	0.014	mg/L			06/22/22 18:21	1
Sulfate	ND		2.0	0.43	mg/L			06/22/22 18:21	1

Client Sample ID: SWFTS-EM38-FB1 — Lab Sample ID: 550-186012-3

Date Collected: 06/21/22 09:10 — **Matrix: Water**
Date Received: 06/21/22 17:15

Method: 300.1B - Disinfection By-Products, (IC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chlorate	ND		20	4.9	ug/L			06/23/22 03:02	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Dichloroacetic acid(Surr)	*98*		*90 - 115*		*06/23/22 03:02*	*1*

Method: 314.0 - Perchlorate (IC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perchlorate	ND		1.0	0.31	ug/L			06/23/22 17:48	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon	**0.30**	**J**	0.50	0.26	mg/L			06/25/22 17:49	1

Client Sample ID: PC-88-EM38 — Lab Sample ID: 550-186012-4

Date Collected: 06/21/22 10:10 — **Matrix: Water**
Date Received: 06/21/22 17:15

Method: 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Nitrate as N	**10**		0.25	0.070	mg/L			06/22/22 13:26	5
Sulfate	**690**		100	21	mg/L			06/22/22 20:30	50

Method: 300.1B - Disinfection By-Products, (IC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chlorate	**7000**		1000	240	ug/L			06/23/22 03:32	50

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Dichloroacetic acid(Surr)	*98*		*90 - 115*		*06/23/22 03:32*	*50*

Method: 314.0 - Perchlorate (IC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perchlorate	**9100**		200	63	ug/L			06/23/22 18:11	200

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon	**2.8**		0.50	0.26	mg/L			06/25/22 17:59	1

Client Sample ID: PC-88-EM38-FD — Lab Sample ID: 550-186012-5

Date Collected: 06/21/22 10:10 — **Matrix: Water**
Date Received: 06/21/22 17:15

Method: 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Nitrate as N	**10**		0.25	0.070	mg/L			06/22/22 13:45	5
Sulfate	**700**		100	21	mg/L			06/22/22 20:48	50

Method: 300.1B - Disinfection By-Products, (IC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chlorate	**7100**		1000	240	ug/L			06/23/22 09:25	50

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Dichloroacetic acid(Surr)	*100*		*90 - 115*		*06/23/22 09:25*	*50*

Client Sample ID: PC-88-EM38-FD
Lab Sample ID: 550-186012-5
Date Collected: 06/21/22 10:10 **Matrix: Water**
Date Received: 06/21/22 17:15

Method: 314.0 - Perchlorate (IC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perchlorate	**9100**		200	63	ug/L			06/23/22 18:34	200

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon	**3.0**		0.50	0.26	mg/L			06/25/22 18:11	1

Client Sample ID: PC-91-EM38
Lab Sample ID: 550-186012-6
Date Collected: 06/21/22 11:05 **Matrix: Water**
Date Received: 06/21/22 17:15

Method: 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Nitrate as N	ND	D	0.50	0.14	mg/L			06/22/22 13:08	10
Sulfate	**360**		20	4.3	mg/L			06/22/22 13:08	10

Method: 300.1B - Disinfection By-Products, (IC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chlorate	ND	D	100	24	ug/L			06/23/22 09:55	5

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Dichloroacetic acid(Surr)	*97*		*90 - 115*		*06/23/22 09:55*	*5*

Method: 314.0 - Perchlorate (IC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perchlorate	**0.82**	**J**	1.0	0.31	ug/L			06/23/22 18:57	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon	**5.4**		0.50	0.26	mg/L			06/25/22 18:21	1

Client Sample ID: PC-92-EM38
Lab Sample ID: 550-186012-7
Date Collected: 06/21/22 11:35 **Matrix: Water**
Date Received: 06/21/22 17:15

Method: 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Nitrate as N	**10**		0.25	0.070	mg/L			06/22/22 14:22	5
Sulfate	**1500**		100	21	mg/L			06/22/22 21:25	50

Method: 300.1B - Disinfection By-Products, (IC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chlorate	**36000**		2000	490	ug/L			06/23/22 10:24	100

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Dichloroacetic acid(Surr)	*100*		*90 - 115*		*06/23/22 10:24*	*100*

Method: 314.0 - Perchlorate (IC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perchlorate	**15000**		500	160	ug/L			06/24/22 12:38	500

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon	**1.8**		0.50	0.26	mg/L			06/29/22 19:06	1

Client Sample ID: PC-94-EM38 — Lab Sample ID: 550-186012-8

Date Collected: 06/21/22 12:30 — **Matrix: Water**
Date Received: 06/21/22 17:15

Method: 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Nitrate as N	9.5		0.25	0.070	mg/L			06/22/22 15:54	5
Sulfate	1700		100	21	mg/L			06/22/22 21:06	50

Method: 300.1B - Disinfection By-Products, (IC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chlorate	10000		4000	980	ug/L			06/23/22 17:16	200

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Dichloroacetic acid(Surr)	*106*		*90 - 115*		*06/23/22 17:16*	*200*

Method: 314.0 - Perchlorate (IC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perchlorate	11000		500	160	ug/L			06/24/22 13:01	500

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon	2.1		0.50	0.26	mg/L			06/25/22 18:44	1

Client Sample ID: SWFTS-MW01-EM38 — Lab Sample ID: 550-186012-9

Date Collected: 06/21/22 13:30 — **Matrix: Water**
Date Received: 06/21/22 17:15

Method: 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Nitrate as N	6.1		0.10	0.028	mg/L			06/22/22 12:13	2
Sulfate	1700		100	21	mg/L			06/22/22 19:34	50

Method: 300.1B - Disinfection By-Products, (IC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chlorate	6200	F1	1000	240	ug/L			06/23/22 13:50	50

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Dichloroacetic acid(Surr)	*90*		*90 - 115*		*06/23/22 13:50*	*50*

Method: 314.0 - Perchlorate (IC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perchlorate	9800		500	160	ug/L			06/23/22 12:05	500

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon	2.0		0.50	0.26	mg/L			06/25/22 15:05	1

Client Sample ID: SWFTS-MW25-EM38 — Lab Sample ID: 550-186012-10

Date Collected: 06/21/22 08:50 — **Matrix: Water**
Date Received: 06/21/22 17:15

Method: 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Nitrate as N	15		0.25	0.070	mg/L			06/22/22 16:12	5
Sulfate	2100		100	21	mg/L			06/22/22 21:43	50

Client Sample ID: SWFTS-MW25-EM38 — Lab Sample ID: 550-186012-10

Date Collected: 06/21/22 08:50 — **Matrix: Water**
Date Received: 06/21/22 17:15

Method: 300.1B - Disinfection By-Products, (IC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chlorate	11000		2000	490	ug/L			06/23/22 17:46	100

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Dichloroacetic acid(Surr)	*90*		*90 - 115*		*06/23/22 17:46*	*100*

Method: 314.0 - Perchlorate (IC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perchlorate	12000		500	160	ug/L			06/23/22 20:06	500

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon	3.1		2.0	1.0	mg/L			06/25/22 18:55	4

Client Sample ID: SWFTS-MW23-EM38 — Lab Sample ID: 550-186012-11

Date Collected: 06/21/22 09:50 — **Matrix: Water**
Date Received: 06/21/22 17:15

Method: 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Nitrate as N	10		0.10	0.028	mg/L			06/22/22 16:30	2
Sulfate	750		100	21	mg/L			06/22/22 22:02	50

Method: 300.1B - Disinfection By-Products, (IC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chlorate	1600		1000	240	ug/L			06/23/22 11:52	50

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Dichloroacetic acid(Surr)	*98*		*90 - 115*		*06/23/22 11:52*	*50*

Method: 314.0 - Perchlorate (IC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perchlorate	1700		100	31	ug/L			06/24/22 13:23	100

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon	3.4		0.50	0.26	mg/L			06/25/22 19:07	1

Client Sample ID: SWFTS-MW24-EM38 — Lab Sample ID: 550-186012-12

Date Collected: 06/21/22 10:50 — **Matrix: Water**
Date Received: 06/21/22 17:15

Method: 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Nitrate as N	6.8		0.10	0.028	mg/L			06/22/22 16:49	2
Sulfate	1700		100	21	mg/L			06/22/22 22:20	50

Method: 300.1B - Disinfection By-Products, (IC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chlorate	15000		1000	240	ug/L			06/23/22 12:22	50

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Dichloroacetic acid(Surr)	*96*		*90 - 115*		*06/23/22 12:22*	*50*

Client Sample ID: SWFTS-MW24-EM38 — Lab Sample ID: 550-186012-12

Date Collected: 06/21/22 10:50 — **Matrix: Water**
Date Received: 06/21/22 17:15

Method: 314.0 - Perchlorate (IC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perchlorate	7900		200	63	ug/L			06/24/22 13:45	200

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon	1.6		0.50	0.26	mg/L			06/25/22 19:17	1

Client Sample ID: SWFTS-MW21-EM38 — Lab Sample ID: 550-186012-13

Date Collected: 06/21/22 11:50 — **Matrix: Water**
Date Received: 06/21/22 17:15

Method: 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Nitrate as N	2.7		0.050	0.014	mg/L			06/22/22 17:07	1
Sulfate	2100		100	21	mg/L			06/22/22 23:52	50

Method: 300.1B - Disinfection By-Products, (IC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chlorate	42	J	100	24	ug/L			06/23/22 15:18	5

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Dichloroacetic acid(Surr)	*95*		*90 - 115*		*06/23/22 15:18*	*5*

Method: 314.0 - Perchlorate (IC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perchlorate	2600		100	31	ug/L			06/24/22 14:08	100

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon	1.6		0.50	0.26	mg/L			06/25/22 20:24	1

Client Sample ID: SWFTS-MW22-EM38 — Lab Sample ID: 550-186012-14

Date Collected: 06/21/22 12:45 — **Matrix: Water**
Date Received: 06/21/22 17:15

Method: 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Nitrate as N	3.8		0.050	0.014	mg/L			06/22/22 17:26	1
Sulfate	1200		100	21	mg/L			06/22/22 23:34	50

Method: 300.1B - Disinfection By-Products, (IC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chlorate	9400		1000	240	ug/L			06/23/22 16:17	50

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Dichloroacetic acid(Surr)	*104*		*90 - 115*		*06/23/22 16:17*	*50*

Method: 314.0 - Perchlorate (IC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perchlorate	5600		200	63	ug/L			06/24/22 15:15	200

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon	3.0		2.0	1.0	mg/L			06/25/22 20:59	4

Client: Tetra Tech, Inc.
Job ID: 550-186012-1
Project/Site: Tetra Tech M11 SWF Treatability Study

Client Sample ID: SWFTS-MW20-EM38
Lab Sample ID: 550-186012-15
Date Collected: 06/21/22 14:00
Matrix: Water
Date Received: 06/21/22 17:15

Method: 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Nitrate as N	0.017	J	0.050	0.014	mg/L			06/22/22 17:44	1
Sulfate	2800		100	21	mg/L			06/23/22 00:11	50

Method: 300.1B - Disinfection By-Products, (IC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chlorate	28	J	100	24	ug/L			06/23/22 15:48	5

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Dichloroacetic acid(Surr)	*98*		*90 - 115*		*06/23/22 15:48*	*5*

Method: 314.0 - Perchlorate (IC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perchlorate	ND		1.0	0.31	ug/L			06/28/22 19:13	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon	4.3		0.50	0.26	mg/L			06/25/22 21:10	1

Surrogate Summary

Client: Tetra Tech, Inc.
Job ID: 550-186012-1
Project/Site: Tetra Tech M11 SWF Treatability Study

Method: 300.1B - Disinfection By-Products, (IC)

Matrix: Water **Prep Type: Total/NA**

		Percent Surrogate Recovery (Acceptance Limits)
Lab Sample ID	Client Sample ID	DCAA (90-115)
550-185952-G-5 MS ^5	Matrix Spike	109
550-185952-G-5 MSD ^5	Matrix Spike Duplicate	99
550-186012-1	PC-58-EM38	98
550-186012-2	SWFTS-EM38-EB1	103
550-186012-3	SWFTS-EM38-FB1	98
550-186012-4	PC-88-EM38	98
550-186012-5	PC-88-EM38-FD	100
550-186012-6	PC-91-EM38	97
550-186012-7	PC-92-EM38	100
550-186012-8	PC-94-EM38	106
550-186012-9	SWFTS-MW01-EM38	90
550-186012-9 MS	SWFTS-MW01-EM38	95
550-186012-9 MSD	SWFTS-MW01-EM38	105
550-186012-10	SWFTS-MW25-EM38	90
550-186012-11	SWFTS-MW23-EM38	98
550-186012-12	SWFTS-MW24-EM38	96
550-186012-13	SWFTS-MW21-EM38	95
550-186012-14	SWFTS-MW22-EM38	104
550-186012-15	SWFTS-MW20-EM38	98
LCS 550-277526/6	Lab Control Sample	103
LCS 550-277527/5	Lab Control Sample	103
LCSD 550-277526/7	Lab Control Sample Dup	100
LCSD 550-277527/6	Lab Control Sample Dup	98
MB 550-277526/5	Method Blank	101
MB 550-277527/4	Method Blank	97

Surrogate Legend

DCAA = Dichloroacetic acid(Surr)

Method: 300.1B - Disinfection By-Products, (IC)

Matrix: Water **Prep Type: Total/NA**

		Percent Surrogate Recovery (Acceptance Limits)
Lab Sample ID	Client Sample ID	DCAA (50-150)
MRL 550-277526/1003	Lab Control Sample	106
MRL 550-277527/1002	Lab Control Sample	102

Surrogate Legend

DCAA = Dichloroacetic acid(Surr)

Method: 300.0 - Anions, Ion Chromatography

Lab Sample ID: MB 550-277537/2
Matrix: Water
Analysis Batch: 277537

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Nitrate as N	ND		0.050	0.014	mg/L			06/22/22 10:41	1
Sulfate	ND		2.0	0.43	mg/L			06/22/22 10:41	1

Lab Sample ID: LCS 550-277537/5
Matrix: Water
Analysis Batch: 277537

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Nitrate as N			4.00	4.19		mg/L		105	90 - 110		
Sulfate			20.0	20.6		mg/L		103	90 - 110		

Lab Sample ID: LCSD 550-277537/6
Matrix: Water
Analysis Batch: 277537

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Nitrate as N			4.00	4.19		mg/L		105	90 - 110	0	20
Sulfate			20.0	20.6		mg/L		103	90 - 110	0	20

Lab Sample ID: 550-186012-9 MS
Matrix: Water
Analysis Batch: 277537

Client Sample ID: SWFTS-MW01-EM38
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits		
Nitrate as N	6.1		8.00	14.7		mg/L		107	80 - 120		

Lab Sample ID: 550-186012-9 MS
Matrix: Water
Analysis Batch: 277537

Client Sample ID: SWFTS-MW01-EM38
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits		
Sulfate	1700		1000	2800		mg/L		107	80 - 120		

Lab Sample ID: 550-186012-9 MSD
Matrix: Water
Analysis Batch: 277537

Client Sample ID: SWFTS-MW01-EM38
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Nitrate as N	6.1		8.00	14.8		mg/L		108	80 - 120	1	20

Lab Sample ID: 550-186012-9 MSD
Matrix: Water
Analysis Batch: 277537

Client Sample ID: SWFTS-MW01-EM38
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Sulfate	1700		1000	2780		mg/L		106	80 - 120	0	20

Method: 300.1B - Disinfection By-Products, (IC)

Lab Sample ID: MB 550-277526/5
Client Sample ID: Method Blank
Matrix: Water
Prep Type: Total/NA
Analysis Batch: 277526

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chlorate	ND		20	4.9	ug/L			06/22/22 15:44	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Dichloroacetic acid(Surr)	*101*		*90 - 115*		*06/22/22 15:44*	*1*

Lab Sample ID: LCS 550-277526/6
Client Sample ID: Lab Control Sample
Matrix: Water
Prep Type: Total/NA
Analysis Batch: 277526

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Chlorate			100	103		ug/L		103	75 - 125		

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
Dichloroacetic acid(Surr)	*103*		*90 - 115*

Lab Sample ID: LCSD 550-277526/7
Client Sample ID: Lab Control Sample Dup
Matrix: Water
Prep Type: Total/NA
Analysis Batch: 277526

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Chlorate			100	94.8		ug/L		95	75 - 125	8	25

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
Dichloroacetic acid(Surr)	*100*		*90 - 115*

Lab Sample ID: MRL 550-277526/1003
Client Sample ID: Lab Control Sample
Matrix: Water
Prep Type: Total/NA
Analysis Batch: 277526

Analyte			Spike Added	MRL Result	MRL Qualifier	Unit	D	%Rec	%Rec Limits		
Chlorate			20.0	19.7	J	ug/L		98	50 - 150		

Surrogate	*MRL %Recovery*	*MRL Qualifier*	*Limits*
Dichloroacetic acid(Surr)	*106*		*50 - 150*

Lab Sample ID: 550-185952-G-5 MS ^5
Client Sample ID: Matrix Spike
Matrix: Water
Prep Type: Total/NA
Analysis Batch: 277526

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits		
Chlorate	160		500	627		ug/L		92	75 - 125		

Surrogate	*MS %Recovery*	*MS Qualifier*	*Limits*
Dichloroacetic acid(Surr)	*109*		*90 - 115*

Method: 300.1B - Disinfection By-Products, (IC) (Continued)

Lab Sample ID: 550-185952-G-5 MSD ^5
Matrix: Water
Analysis Batch: 277526

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Chlorate	160		500	663		ug/L		100	75 - 125	6	25

Surrogate	*MSD %Recovery*	*MSD Qualifier*	*Limits*
Dichloroacetic acid(Surr)	*99*		*90 - 115*

Lab Sample ID: MB 550-277527/4
Matrix: Water
Analysis Batch: 277527

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chlorate	ND		20	4.9	ug/L			06/23/22 06:29	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Dichloroacetic acid(Surr)	*97*		*90 - 115*		*06/23/22 06:29*	*1*

Lab Sample ID: LCS 550-277527/5
Matrix: Water
Analysis Batch: 277527

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Chlorate	100	96.5		ug/L		97	75 - 125

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
Dichloroacetic acid(Surr)	*103*		*90 - 115*

Lab Sample ID: LCSD 550-277527/6
Matrix: Water
Analysis Batch: 277527

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Chlorate	100	95.4		ug/L		95	75 - 125	1	25

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
Dichloroacetic acid(Surr)	*98*		*90 - 115*

Lab Sample ID: MRL 550-277527/1002
Matrix: Water
Analysis Batch: 277527

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	MRL Result	MRL Qualifier	Unit	D	%Rec	%Rec Limits
Chlorate	20.0	19.7	J	ug/L		98	50 - 150

Surrogate	*MRL %Recovery*	*MRL Qualifier*	*Limits*
Dichloroacetic acid(Surr)	*102*		*50 - 150*

Method: 300.1B - Disinfection By-Products, (IC) (Continued)

Lab Sample ID: 550-186012-9 MS
Matrix: Water
Analysis Batch: 277527

Client Sample ID: SWFTS-MW01-EM38
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Chlorate	6200	F1	5000	12500		ug/L		125	75 - 125

Surrogate	*MS %Recovery*	*MS Qualifier*	*Limits*
Dichloroacetic acid(Surr)	*95*		*90 - 115*

Lab Sample ID: 550-186012-9 MSD
Matrix: Water
Analysis Batch: 277527

Client Sample ID: SWFTS-MW01-EM38
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Chlorate	6200	F1	5000	12600	F1	ug/L		127	75 - 125	1	25

Surrogate	*MSD %Recovery*	*MSD Qualifier*	*Limits*
Dichloroacetic acid(Surr)	*105*		*90 - 115*

Method: 314.0 - Perchlorate (IC)

Lab Sample ID: MB 550-277658/1002
Matrix: Water
Analysis Batch: 277658

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perchlorate	ND		1.0	0.31	ug/L			06/23/22 10:31	1

Lab Sample ID: LCS 550-277658/4
Matrix: Water
Analysis Batch: 277658

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Perchlorate	25.0	25.5		ug/L		102	85 - 115

Lab Sample ID: LCSD 550-277658/5
Matrix: Water
Analysis Batch: 277658

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Perchlorate	25.0	25.5		ug/L		102	85 - 115	0	15

Lab Sample ID: MRL 550-277658/1003
Matrix: Water
Analysis Batch: 277658

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	MRL Result	MRL Qualifier	Unit	D	%Rec	%Rec Limits
Perchlorate	1.00	0.840	J	ug/L		84	75 - 125

Method: 314.0 - Perchlorate (IC) (Continued)

Lab Sample ID: 550-186012-9 MS
Matrix: Water
Analysis Batch: 277658

Client Sample ID: SWFTS-MW01-EM38
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Perchlorate	9800		12500	22300		ug/L		100	80 - 120

Lab Sample ID: 550-186012-9 MSD
Matrix: Water
Analysis Batch: 277658

Client Sample ID: SWFTS-MW01-EM38
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Perchlorate	9800		12500	22100		ug/L		98	80 - 120	1	15

Lab Sample ID: MB 550-277756/1002
Matrix: Water
Analysis Batch: 277756

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perchlorate	ND		1.0	0.31	ug/L			06/24/22 09:17	1

Lab Sample ID: LCS 550-277756/4
Matrix: Water
Analysis Batch: 277756

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Perchlorate	25.0	24.5		ug/L		98	85 - 115

Lab Sample ID: LCSD 550-277756/5
Matrix: Water
Analysis Batch: 277756

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Perchlorate	25.0	24.7		ug/L		99	85 - 115	1	15

Lab Sample ID: MRL 550-277756/1003
Matrix: Water
Analysis Batch: 277756

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	MRL Result	MRL Qualifier	Unit	D	%Rec	%Rec Limits
Perchlorate	1.00	0.833	J	ug/L		83	75 - 125

Lab Sample ID: 550-185912-E-17 MS ^100
Matrix: Water
Analysis Batch: 277756

Client Sample ID: Matrix Spike
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Perchlorate	1900		2500	4280		ug/L		95	80 - 120

Lab Sample ID: 550-185912-E-17 MSD ^100
Matrix: Water
Analysis Batch: 277756

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Perchlorate	1900		2500	4370		ug/L		99	80 - 120	2	15

Method: 314.0 - Perchlorate (IC)

Lab Sample ID: MB 550-277992/17
Matrix: Water
Analysis Batch: 277992

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perchlorate	ND		1.0	0.31	ug/L			06/28/22 16:36	1

Lab Sample ID: LCS 550-277992/18
Matrix: Water
Analysis Batch: 277992

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Perchlorate			25.0	24.5		ug/L		98	85 - 115		

Lab Sample ID: LCSD 550-277992/19
Matrix: Water
Analysis Batch: 277992

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Perchlorate			25.0	25.1		ug/L		100	85 - 115	2	15

Lab Sample ID: MRL 550-277992/1003
Matrix: Water
Analysis Batch: 277992

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte			Spike Added	MRL Result	MRL Qualifier	Unit	D	%Rec	%Rec Limits		
Perchlorate			1.00	0.914	J	ug/L		91	75 - 125		

Lab Sample ID: 550-186258-A-1 MS
Matrix: Water
Analysis Batch: 277992

Client Sample ID: Matrix Spike
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits		
Perchlorate	ND		25.0	21.6		ug/L		86	80 - 120		

Lab Sample ID: 550-186258-A-1 MSD
Matrix: Water
Analysis Batch: 277992

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Perchlorate	ND		25.0	21.1		ug/L		84	80 - 120	2	15

Method: SM 5310B - Organic Carbon, Total (TOC)

Lab Sample ID: MB 550-277919/33
Matrix: Water
Analysis Batch: 277919

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon	ND		0.50	0.26	mg/L			06/25/22 19:52	1

Method: SM 5310B - Organic Carbon, Total (TOC) (Continued)

Lab Sample ID: MB 550-277919/4
Matrix: Water
Analysis Batch: 277919

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon	ND		0.50	0.26	mg/L			06/25/22 14:30	1

Lab Sample ID: LCS 550-277919/34
Matrix: Water
Analysis Batch: 277919

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Total Organic Carbon	20.0	19.9		mg/L		100	90 - 110

Lab Sample ID: LCS 550-277919/5
Matrix: Water
Analysis Batch: 277919

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Total Organic Carbon	20.0	19.9		mg/L		100	90 - 110

Lab Sample ID: LCSD 550-277919/35
Matrix: Water
Analysis Batch: 277919

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Total Organic Carbon	20.0	19.8		mg/L		99	90 - 110	0	20

Lab Sample ID: LCSD 550-277919/6
Matrix: Water
Analysis Batch: 277919

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Total Organic Carbon	20.0	20.0		mg/L		100	90 - 110	0	20

Lab Sample ID: 550-186012-9 MS
Matrix: Water
Analysis Batch: 277919

Client Sample ID: SWFTS-MW01-EM38
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Total Organic Carbon	2.0		20.0	21.1		mg/L		96	90 - 110

Lab Sample ID: 550-186012-9 MSD
Matrix: Water
Analysis Batch: 277919

Client Sample ID: SWFTS-MW01-EM38
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Total Organic Carbon	2.0		20.0	22.0		mg/L		100	90 - 110	4	20

Lab Sample ID: 550-186012-13 MS
Matrix: Water
Analysis Batch: 277919

Client Sample ID: SWFTS-MW21-EM38
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Total Organic Carbon	1.6		20.0	21.2		mg/L		98	90 - 110

Method: SM 5310B - Organic Carbon, Total (TOC)

Lab Sample ID: 550-186012-13 MSD
Matrix: Water
Analysis Batch: 277919

Client Sample ID: SWFTS-MW21-EM38
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Total Organic Carbon	1.6		20.0	20.7		mg/L		96	90 - 110	2	20

Lab Sample ID: MB 550-278149/4
Matrix: Water
Analysis Batch: 278149

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon	ND		0.50	0.26	mg/L			06/29/22 16:49	1

Lab Sample ID: LCS 550-278149/5
Matrix: Water
Analysis Batch: 278149

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Total Organic Carbon	20.0	18.8		mg/L		94	90 - 110

Lab Sample ID: LCSD 550-278149/6
Matrix: Water
Analysis Batch: 278149

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Total Organic Carbon	20.0	19.1		mg/L		95	90 - 110	2	20

Lab Sample ID: 550-186038-F-2 MS
Matrix: Water
Analysis Batch: 278149

Client Sample ID: Matrix Spike
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Total Organic Carbon	3.2		20.0	21.9		mg/L		94	90 - 110

Lab Sample ID: 550-186038-G-2 MSD
Matrix: Water
Analysis Batch: 278149

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Total Organic Carbon	3.2		20.0	21.3		mg/L		90	90 - 110	3	20

HPLC/IC

Analysis Batch: 277526

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
550-186012-1	PC-58-EM38	Total/NA	Water	300.1B	
550-186012-2	SWFTS-EM38-EB1	Total/NA	Water	300.1B	
550-186012-3	SWFTS-EM38-FB1	Total/NA	Water	300.1B	
550-186012-4	PC-88-EM38	Total/NA	Water	300.1B	
MB 550-277526/5	Method Blank	Total/NA	Water	300.1B	
LCS 550-277526/6	Lab Control Sample	Total/NA	Water	300.1B	
LCSD 550-277526/7	Lab Control Sample Dup	Total/NA	Water	300.1B	
MRL 550-277526/1003	Lab Control Sample	Total/NA	Water	300.1B	
550-185952-G-5 MS ^5	Matrix Spike	Total/NA	Water	300.1B	
550-185952-G-5 MSD ^5	Matrix Spike Duplicate	Total/NA	Water	300.1B	

Analysis Batch: 277527

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
550-186012-5	PC-88-EM38-FD	Total/NA	Water	300.1B	
550-186012-6	PC-91-EM38	Total/NA	Water	300.1B	
550-186012-7	PC-92-EM38	Total/NA	Water	300.1B	
550-186012-8	PC-94-EM38	Total/NA	Water	300.1B	
550-186012-9	SWFTS-MW01-EM38	Total/NA	Water	300.1B	
550-186012-10	SWFTS-MW25-EM38	Total/NA	Water	300.1B	
550-186012-11	SWFTS-MW23-EM38	Total/NA	Water	300.1B	
550-186012-12	SWFTS-MW24-EM38	Total/NA	Water	300.1B	
550-186012-13	SWFTS-MW21-EM38	Total/NA	Water	300.1B	
550-186012-14	SWFTS-MW22-EM38	Total/NA	Water	300.1B	
550-186012-15	SWFTS-MW20-EM38	Total/NA	Water	300.1B	
MB 550-277527/4	Method Blank	Total/NA	Water	300.1B	
LCS 550-277527/5	Lab Control Sample	Total/NA	Water	300.1B	
LCSD 550-277527/6	Lab Control Sample Dup	Total/NA	Water	300.1B	
MRL 550-277527/1002	Lab Control Sample	Total/NA	Water	300.1B	
550-186012-9 MS	SWFTS-MW01-EM38	Total/NA	Water	300.1B	
550-186012-9 MSD	SWFTS-MW01-EM38	Total/NA	Water	300.1B	

Analysis Batch: 277537

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
550-186012-1	PC-58-EM38	Total/NA	Water	300.0	
550-186012-1	PC-58-EM38	Total/NA	Water	300.0	
550-186012-2	SWFTS-EM38-EB1	Total/NA	Water	300.0	
550-186012-3	SWFTS-EM38-FB1	Total/NA	Water	300.0	
550-186012-4	PC-88-EM38	Total/NA	Water	300.0	
550-186012-4	PC-88-EM38	Total/NA	Water	300.0	
550-186012-5	PC-88-EM38-FD	Total/NA	Water	300.0	
550-186012-5	PC-88-EM38-FD	Total/NA	Water	300.0	
550-186012-6	PC-91-EM38	Total/NA	Water	300.0	
550-186012-7	PC-92-EM38	Total/NA	Water	300.0	
550-186012-7	PC-92-EM38	Total/NA	Water	300.0	
550-186012-8	PC-94-EM38	Total/NA	Water	300.0	
550-186012-8	PC-94-EM38	Total/NA	Water	300.0	
550-186012-9	SWFTS-MW01-EM38	Total/NA	Water	300.0	
550-186012-9	SWFTS-MW01-EM38	Total/NA	Water	300.0	
550-186012-10	SWFTS-MW25-EM38	Total/NA	Water	300.0	
550-186012-10	SWFTS-MW25-EM38	Total/NA	Water	300.0	
550-186012-11	SWFTS-MW23-EM38	Total/NA	Water	300.0	

HPLC/IC (Continued)

Analysis Batch: 277537 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
550-186012-11	SWFTS-MW23-EM38	Total/NA	Water	300.0	
550-186012-12	SWFTS-MW24-EM38	Total/NA	Water	300.0	
550-186012-12	SWFTS-MW24-EM38	Total/NA	Water	300.0	
550-186012-13	SWFTS-MW21-EM38	Total/NA	Water	300.0	
550-186012-13	SWFTS-MW21-EM38	Total/NA	Water	300.0	
550-186012-14	SWFTS-MW22-EM38	Total/NA	Water	300.0	
550-186012-14	SWFTS-MW22-EM38	Total/NA	Water	300.0	
550-186012-15	SWFTS-MW20-EM38	Total/NA	Water	300.0	
550-186012-15	SWFTS-MW20-EM38	Total/NA	Water	300.0	
MB 550-277537/2	Method Blank	Total/NA	Water	300.0	
LCS 550-277537/5	Lab Control Sample	Total/NA	Water	300.0	
LCSD 550-277537/6	Lab Control Sample Dup	Total/NA	Water	300.0	
550-186012-9 MS	SWFTS-MW01-EM38	Total/NA	Water	300.0	
550-186012-9 MS	SWFTS-MW01-EM38	Total/NA	Water	300.0	
550-186012-9 MSD	SWFTS-MW01-EM38	Total/NA	Water	300.0	
550-186012-9 MSD	SWFTS-MW01-EM38	Total/NA	Water	300.0	

Analysis Batch: 277658

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
550-186012-1	PC-58-EM38	Total/NA	Water	314.0	
550-186012-2	SWFTS-EM38-EB1	Total/NA	Water	314.0	
550-186012-3	SWFTS-EM38-FB1	Total/NA	Water	314.0	
550-186012-4	PC-88-EM38	Total/NA	Water	314.0	
550-186012-5	PC-88-EM38-FD	Total/NA	Water	314.0	
550-186012-6	PC-91-EM38	Total/NA	Water	314.0	
550-186012-9	SWFTS-MW01-EM38	Total/NA	Water	314.0	
550-186012-10	SWFTS-MW25-EM38	Total/NA	Water	314.0	
MB 550-277658/1002	Method Blank	Total/NA	Water	314.0	
LCS 550-277658/4	Lab Control Sample	Total/NA	Water	314.0	
LCSD 550-277658/5	Lab Control Sample Dup	Total/NA	Water	314.0	
MRL 550-277658/1003	Lab Control Sample	Total/NA	Water	314.0	
550-186012-9 MS	SWFTS-MW01-EM38	Total/NA	Water	314.0	
550-186012-9 MSD	SWFTS-MW01-EM38	Total/NA	Water	314.0	

Analysis Batch: 277756

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
550-186012-7	PC-92-EM38	Total/NA	Water	314.0	
550-186012-8	PC-94-EM38	Total/NA	Water	314.0	
550-186012-11	SWFTS-MW23-EM38	Total/NA	Water	314.0	
550-186012-12	SWFTS-MW24-EM38	Total/NA	Water	314.0	
550-186012-13	SWFTS-MW21-EM38	Total/NA	Water	314.0	
550-186012-14	SWFTS-MW22-EM38	Total/NA	Water	314.0	
MB 550-277756/1002	Method Blank	Total/NA	Water	314.0	
LCS 550-277756/4	Lab Control Sample	Total/NA	Water	314.0	
LCSD 550-277756/5	Lab Control Sample Dup	Total/NA	Water	314.0	
MRL 550-277756/1003	Lab Control Sample	Total/NA	Water	314.0	
550-185912-E-17 MS ^100	Matrix Spike	Total/NA	Water	314.0	
550-185912-E-17 MSD ^100	Matrix Spike Duplicate	Total/NA	Water	314.0	

QC Association Summary

Client: Tetra Tech, Inc.
Job ID: 550-186012-1
Project/Site: Tetra Tech M11 SWF Treatability Study

HPLC/IC

Analysis Batch: 277992

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
550-186012-15	SWFTS-MW20-EM38	Total/NA	Water	314.0	
MB 550-277992/17	Method Blank	Total/NA	Water	314.0	
LCS 550-277992/18	Lab Control Sample	Total/NA	Water	314.0	
LCSD 550-277992/19	Lab Control Sample Dup	Total/NA	Water	314.0	
MRL 550-277992/1003	Lab Control Sample	Total/NA	Water	314.0	
550-186258-A-1 MS	Matrix Spike	Total/NA	Water	314.0	
550-186258-A-1 MSD	Matrix Spike Duplicate	Total/NA	Water	314.0	

General Chemistry

Analysis Batch: 277919

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
550-186012-1	PC-58-EM38	Total/NA	Water	SM 5310B	
550-186012-3	SWFTS-EM38-FB1	Total/NA	Water	SM 5310B	
550-186012-4	PC-88-EM38	Total/NA	Water	SM 5310B	
550-186012-5	PC-88-EM38-FD	Total/NA	Water	SM 5310B	
550-186012-6	PC-91-EM38	Total/NA	Water	SM 5310B	
550-186012-8	PC-94-EM38	Total/NA	Water	SM 5310B	
550-186012-9	SWFTS-MW01-EM38	Total/NA	Water	SM 5310B	
550-186012-10	SWFTS-MW25-EM38	Total/NA	Water	SM 5310B	
550-186012-11	SWFTS-MW23-EM38	Total/NA	Water	SM 5310B	
550-186012-12	SWFTS-MW24-EM38	Total/NA	Water	SM 5310B	
550-186012-13	SWFTS-MW21-EM38	Total/NA	Water	SM 5310B	
550-186012-14	SWFTS-MW22-EM38	Total/NA	Water	SM 5310B	
550-186012-15	SWFTS-MW20-EM38	Total/NA	Water	SM 5310B	
MB 550-277919/33	Method Blank	Total/NA	Water	SM 5310B	
MB 550-277919/4	Method Blank	Total/NA	Water	SM 5310B	
LCS 550-277919/34	Lab Control Sample	Total/NA	Water	SM 5310B	
LCS 550-277919/5	Lab Control Sample	Total/NA	Water	SM 5310B	
LCSD 550-277919/35	Lab Control Sample Dup	Total/NA	Water	SM 5310B	
LCSD 550-277919/6	Lab Control Sample Dup	Total/NA	Water	SM 5310B	
550-186012-9 MS	SWFTS-MW01-EM38	Total/NA	Water	SM 5310B	
550-186012-9 MSD	SWFTS-MW01-EM38	Total/NA	Water	SM 5310B	
550-186012-13 MS	SWFTS-MW21-EM38	Total/NA	Water	SM 5310B	
550-186012-13 MSD	SWFTS-MW21-EM38	Total/NA	Water	SM 5310B	

Analysis Batch: 278149

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
550-186012-2	SWFTS-EM38-EB1	Total/NA	Water	SM 5310B	
550-186012-7	PC-92-EM38	Total/NA	Water	SM 5310B	
MB 550-278149/4	Method Blank	Total/NA	Water	SM 5310B	
LCS 550-278149/5	Lab Control Sample	Total/NA	Water	SM 5310B	
LCSD 550-278149/6	Lab Control Sample Dup	Total/NA	Water	SM 5310B	
550-186038-F-2 MS	Matrix Spike	Total/NA	Water	SM 5310B	
550-186038-G-2 MSD	Matrix Spike Duplicate	Total/NA	Water	SM 5310B	

Lab Chronicle

Client: Tetra Tech, Inc. Job ID: 550-186012-1
Project/Site: Tetra Tech M11 SWF Treatability Study

Client Sample ID: PC-58-EM38 — Lab Sample ID: 550-186012-1
Date Collected: 06/21/22 08:50 — **Matrix: Water**
Date Received: 06/21/22 17:15

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	300.0		5	277537	06/22/22 14:03	AS1	TAL PHX
Total/NA	Analysis	300.0		50	277537	06/22/22 18:02	AS1	TAL PHX
Total/NA	Analysis	300.1B		50	277526	06/23/22 02:03	MEG	TAL PHX
Total/NA	Analysis	314.0		20	277658	06/23/22 17:03	RDC	TAL PHX
Total/NA	Analysis	SM 5310B		1	277919	06/25/22 17:07	MEG	TAL PHX

Client Sample ID: SWFTS-EM38-EB1 — Lab Sample ID: 550-186012-2
Date Collected: 06/21/22 09:00 — **Matrix: Water**
Date Received: 06/21/22 17:15

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	300.0		1	277537	06/22/22 14:40	AS1	TAL PHX
Total/NA	Analysis	300.1B		1	277526	06/23/22 02:33	MEG	TAL PHX
Total/NA	Analysis	314.0		1	277658	06/23/22 17:26	RDC	TAL PHX
Total/NA	Analysis	SM 5310B		1	278149	06/29/22 18:54	MEG	TAL PHX

Client Sample ID: SWFTS-EM38-FB1 — Lab Sample ID: 550-186012-3
Date Collected: 06/21/22 09:10 — **Matrix: Water**
Date Received: 06/21/22 17:15

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	300.0		1	277537	06/22/22 18:21	AS1	TAL PHX
Total/NA	Analysis	300.1B		1	277526	06/23/22 03:02	MEG	TAL PHX
Total/NA	Analysis	314.0		1	277658	06/23/22 17:48	RDC	TAL PHX
Total/NA	Analysis	SM 5310B		1	277919	06/25/22 17:49	MEG	TAL PHX

Client Sample ID: PC-88-EM38 — Lab Sample ID: 550-186012-4
Date Collected: 06/21/22 10:10 — **Matrix: Water**
Date Received: 06/21/22 17:15

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	300.0		5	277537	06/22/22 13:26	AS1	TAL PHX
Total/NA	Analysis	300.0		50	277537	06/22/22 20:30	AS1	TAL PHX
Total/NA	Analysis	300.1B		50	277526	06/23/22 03:32	MEG	TAL PHX
Total/NA	Analysis	314.0		200	277658	06/23/22 18:11	RDC	TAL PHX
Total/NA	Analysis	SM 5310B		1	277919	06/25/22 17:59	MEG	TAL PHX

Client Sample ID: PC-88-EM38-FD — Lab Sample ID: 550-186012-5
Date Collected: 06/21/22 10:10 — **Matrix: Water**
Date Received: 06/21/22 17:15

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	300.0		5	277537	06/22/22 13:45	AS1	TAL PHX
Total/NA	Analysis	300.0		50	277537	06/22/22 20:48	AS1	TAL PHX

Client Sample ID: PC-88-EM38-FD
Lab Sample ID: 550-186012-5
Date Collected: 06/21/22 10:10 **Matrix: Water**
Date Received: 06/21/22 17:15

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	300.1B		50	277527	06/23/22 09:25	MEG	TAL PHX
Total/NA	Analysis	314.0		200	277658	06/23/22 18:34	RDC	TAL PHX
Total/NA	Analysis	SM 5310B		1	277919	06/25/22 18:11	MEG	TAL PHX

Client Sample ID: PC-91-EM38
Lab Sample ID: 550-186012-6
Date Collected: 06/21/22 11:05 **Matrix: Water**
Date Received: 06/21/22 17:15

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	300.0		10	277537	06/22/22 13:08	AS1	TAL PHX
Total/NA	Analysis	300.1B		5	277527	06/23/22 09:55	MEG	TAL PHX
Total/NA	Analysis	314.0		1	277658	06/23/22 18:57	RDC	TAL PHX
Total/NA	Analysis	SM 5310B		1	277919	06/25/22 18:21	MEG	TAL PHX

Client Sample ID: PC-92-EM38
Lab Sample ID: 550-186012-7
Date Collected: 06/21/22 11:35 **Matrix: Water**
Date Received: 06/21/22 17:15

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	300.0		5	277537	06/22/22 14:22	AS1	TAL PHX
Total/NA	Analysis	300.0		50	277537	06/22/22 21:25	AS1	TAL PHX
Total/NA	Analysis	300.1B		100	277527	06/23/22 10:24	MEG	TAL PHX
Total/NA	Analysis	314.0		500	277756	06/24/22 12:38	RDC	TAL PHX
Total/NA	Analysis	SM 5310B		1	278149	06/29/22 19:06	MEG	TAL PHX

Client Sample ID: PC-94-EM38
Lab Sample ID: 550-186012-8
Date Collected: 06/21/22 12:30 **Matrix: Water**
Date Received: 06/21/22 17:15

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	300.0		5	277537	06/22/22 15:54	AS1	TAL PHX
Total/NA	Analysis	300.0		50	277537	06/22/22 21:06	AS1	TAL PHX
Total/NA	Analysis	300.1B		200	277527	06/23/22 17:16	MEG	TAL PHX
Total/NA	Analysis	314.0		500	277756	06/24/22 13:01	RDC	TAL PHX
Total/NA	Analysis	SM 5310B		1	277919	06/25/22 18:44	MEG	TAL PHX

Client Sample ID: SWFTS-MW01-EM38
Lab Sample ID: 550-186012-9
Date Collected: 06/21/22 13:30 **Matrix: Water**
Date Received: 06/21/22 17:15

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	300.0		2	277537	06/22/22 12:13	AS1	TAL PHX
Total/NA	Analysis	300.0		50	277537	06/22/22 19:34	AS1	TAL PHX
Total/NA	Analysis	300.1B		50	277527	06/23/22 13:50	MEG	TAL PHX

Lab Chronicle

Client: Tetra Tech, Inc. Job ID: 550-186012-1
Project/Site: Tetra Tech M11 SWF Treatability Study

Client Sample ID: SWFTS-MW01-EM38 Lab Sample ID: 550-186012-9

Date Collected: 06/21/22 13:30 **Matrix: Water**
Date Received: 06/21/22 17:15

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	314.0		500	277658	06/23/22 12:05	RDC	TAL PHX
Total/NA	Analysis	SM 5310B		1	277919	06/25/22 15:05	MEG	TAL PHX

Client Sample ID: SWFTS-MW25-EM38 Lab Sample ID: 550-186012-10

Date Collected: 06/21/22 08:50 **Matrix: Water**
Date Received: 06/21/22 17:15

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	300.0		5	277537	06/22/22 16:12	AS1	TAL PHX
Total/NA	Analysis	300.0		50	277537	06/22/22 21:43	AS1	TAL PHX
Total/NA	Analysis	300.1B		100	277527	06/23/22 17:46	MEG	TAL PHX
Total/NA	Analysis	314.0		500	277658	06/23/22 20:06	RDC	TAL PHX
Total/NA	Analysis	SM 5310B		4	277919	06/25/22 18:55	MEG	TAL PHX

Client Sample ID: SWFTS-MW23-EM38 Lab Sample ID: 550-186012-11

Date Collected: 06/21/22 09:50 **Matrix: Water**
Date Received: 06/21/22 17:15

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	300.0		2	277537	06/22/22 16:30	AS1	TAL PHX
Total/NA	Analysis	300.0		50	277537	06/22/22 22:02	AS1	TAL PHX
Total/NA	Analysis	300.1B		50	277527	06/23/22 11:52	MEG	TAL PHX
Total/NA	Analysis	314.0		100	277756	06/24/22 13:23	RDC	TAL PHX
Total/NA	Analysis	SM 5310B		1	277919	06/25/22 19:07	MEG	TAL PHX

Client Sample ID: SWFTS-MW24-EM38 Lab Sample ID: 550-186012-12

Date Collected: 06/21/22 10:50 **Matrix: Water**
Date Received: 06/21/22 17:15

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	300.0		2	277537	06/22/22 16:49	AS1	TAL PHX
Total/NA	Analysis	300.0		50	277537	06/22/22 22:20	AS1	TAL PHX
Total/NA	Analysis	300.1B		50	277527	06/23/22 12:22	MEG	TAL PHX
Total/NA	Analysis	314.0		200	277756	06/24/22 13:45	RDC	TAL PHX
Total/NA	Analysis	SM 5310B		1	277919	06/25/22 19:17	MEG	TAL PHX

Client Sample ID: SWFTS-MW21-EM38 Lab Sample ID: 550-186012-13

Date Collected: 06/21/22 11:50 **Matrix: Water**
Date Received: 06/21/22 17:15

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	300.0		1	277537	06/22/22 17:07	AS1	TAL PHX
Total/NA	Analysis	300.0		50	277537	06/22/22 23:52	AS1	TAL PHX
Total/NA	Analysis	300.1B		5	277527	06/23/22 15:18	MEG	TAL PHX

Lab Chronicle

Client: Tetra Tech, Inc. Job ID: 550-186012-1
Project/Site: Tetra Tech M11 SWF Treatability Study

Client Sample ID: SWFTS-MW21-EM38 Lab Sample ID: 550-186012-13

Date Collected: 06/21/22 11:50 **Matrix: Water**
Date Received: 06/21/22 17:15

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	314.0		100	277756	06/24/22 14:08	RDC	TAL PHX
Total/NA	Analysis	SM 5310B		1	277919	06/25/22 20:24	MEG	TAL PHX

Client Sample ID: SWFTS-MW22-EM38 Lab Sample ID: 550-186012-14

Date Collected: 06/21/22 12:45 **Matrix: Water**
Date Received: 06/21/22 17:15

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	300.0		1	277537	06/22/22 17:26	AS1	TAL PHX
Total/NA	Analysis	300.0		50	277537	06/22/22 23:34	AS1	TAL PHX
Total/NA	Analysis	300.1B		50	277527	06/23/22 16:17	MEG	TAL PHX
Total/NA	Analysis	314.0		200	277756	06/24/22 15:15	RDC	TAL PHX
Total/NA	Analysis	SM 5310B		4	277919	06/25/22 20:59	MEG	TAL PHX

Client Sample ID: SWFTS-MW20-EM38 Lab Sample ID: 550-186012-15

Date Collected: 06/21/22 14:00 **Matrix: Water**
Date Received: 06/21/22 17:15

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	300.0		1	277537	06/22/22 17:44	AS1	TAL PHX
Total/NA	Analysis	300.0		50	277537	06/23/22 00:11	AS1	TAL PHX
Total/NA	Analysis	300.1B		5	277527	06/23/22 15:48	MEG	TAL PHX
Total/NA	Analysis	314.0		1	277992	06/28/22 19:13	RDC	TAL PHX
Total/NA	Analysis	SM 5310B		1	277919	06/25/22 21:10	MEG	TAL PHX

Laboratory References:
TAL PHX = Eurofins Phoenix, 4625 East Cotton Center Boulevard, Suite #189, Phoenix, AZ 85040, TEL (602)437-3340

Accreditation/Certification Summary

Client: Tetra Tech, Inc. Job ID: 550-186012-1
Project/Site: Tetra Tech M11 SWF Treatability Study

Laboratory: Eurofins Phoenix

All accreditations/certifications held by this laboratory are listed. Not all accreditations/certifications are applicable to this report.

Authority	Program	Identification Number	Expiration Date
AIHA-LAP, LLC	Environmental Lead Laboratory Accreditation Program (ELLAP)	154268	11-01-23
AIHA-LAP, LLC	Industrial Hygiene Laboratory Accreditation Program (IHLAP)	154268	11-01-23
Arizona	State	AZ0728	06-10-22 *
California	State	2941	06-10-22 *
Nevada	State	AZ1030	07-31-22
Oregon	NELAP	AZ100001	03-09-23
USDA	US Federal Programs	P330-19-00227	08-27-22

* Accreditation/Certification renewal pending - accreditation/certification considered valid.

Method Summary

Client: Tetra Tech, Inc.
Job ID: 550-186012-1
Project/Site: Tetra Tech M11 SWF Treatability Study

Method	Method Description	Protocol	Laboratory
300.0	Anions, Ion Chromatography	MCAWW	TAL PHX
300.1B	Disinfection By-Products, (IC)	EPA	TAL PHX
314.0	Perchlorate (IC)	EPA	TAL PHX
SM 5310B	Organic Carbon, Total (TOC)	SM	TAL PHX

Protocol References:

EPA = US Environmental Protection Agency

MCAWW = "Methods For Chemical Analysis Of Water And Wastes", EPA-600/4-79-020, March 1983 And Subsequent Revisions.

SM = "Standard Methods For The Examination Of Water And Wastewater"

Laboratory References:

TAL PHX = Eurofins Phoenix, 4625 East Cotton Center Boulevard, Suite #189, Phoenix, AZ 85040, TEL (602)437-3340

TestAmerica Las Vegas 210

186012

6/30/2022

Tetra Tech

1093 Commerce Park Drive
Oak Ridge, TN37830
(865)483-9900

CHAIN-OF-CUSTODY

NERT-M11
Groundwater Sampling

Laboratory Name: Eurofins TestAmerica, Phoenix (602) 437-3340 | Address: 4625 East Cotton Ctr Blvd, Suite 189, Phoenix, AZ 85040 | Contact: Mary Charlson 602-659-7627 | Page ___ of ___

Project Name: Tetra Tech M11 SWF Treatability Study
Project No. M11-CWP-04
NERT - Seep Well Field Area Bioremediation Treatability Study

Sampler: J. Bunkers
Sampler Phone: 702-767-2053
Project Contact: **Maureen McMyler**
Site Telephone No.: (702) 966-8340
Project Manager/Supervisor: **Dana Grady**

Report to: Maureen McMyler, 1093 Commerce Park Dr. (865)220-4762
Bill to: Sunshine Pryor, 350 Indiana St., Golden, CO 80401 (303) 217-5700

Analysis and Method Requested

Remarks
Preservation Codes:
A- HCL
D-Nitric Acid
L-EDA
N-None
S-H2SO4
Other:

Item No	Sample Number	Date	Time	G-Grab C=Comp	Matrix	Sample Description, Location	Number of Containers	Perchlorate E314.0	TOC SM5310B	Chlorate E300.1	Sulfate/Nitrate E300.0 SHORT HOLD NITRATE!	Notes
	Preservation Code:						-	N	A	L	N	
1	PC-58-EM38	6/21/22	0850	G	W		7	X	X	X	X	
2	SWFTS-EM38-EB1	6/21/22	0900	G	W		7	X	X	X	X	
3	SWFTS-EM38-FB1	6/21/22	0910	G	W		7	X	X	X	X	
4	PC-88-EM38	6/21/22	1010	G	W		7	X	X	X	X	
5	PC88-EM38-FD	6/21/22	1010	G	W		7	X	X	X	X	
6	PC-91-EM38	6/21/22	1105	G	W		7	X	X	X	X	
7	PC-92-EM38	6/21/22	1135	G	W		7	X	X	X	X	
8	PC-94-EM38	6/21/22	1230	G	W		7	X	X	X	X	
9	SWFTS-MW01-EM38	6/21/22	1330	G	W		7	X	X	X	X	
9	SWFTS-MW01-EM38-MS/MSD	6/21/22	1330	G	W		7	X	X	X	X	

550-186012 Chain of Custody

Transfers Relinquished By (Signature)	Date/Time	Transfers Accepted By (Signature)	Date/Time
	6/21/22	TAM TALVS	6-21-22 1500
TAM TALVS	6/21/22 1600		

Special Instructions:

FedEx Airbill No.:
FedEx Airbill No.

Laboratory: Mark St 6-22-22 6:30
Sampler's Signature: (REQUIRED)
Sampler's Signature:

TAT ___ Standard ___ Rush Due _____
Received Good Condition ____ Y ____ N ____ Cold

EETA-Phx

TH 240 26.3/26.6

1.3°C 0.3°C DB-ice

TestAmerica
Las Vegas
219

6/30/2022

Tetra Tech
1093 Commerce Park Drive
Oak Ridge, TN37830
(865)483-9900

CHAIN-OF-CUSTODY

NERT-M11
Groundwater Sampling

Laboratory Name: Eurofins TestAmerica, Phoenix (602) 437-3340 | Address: 4625 East Cotton Ctr Blvd, Suite 189, Phoenix, AZ 85040 | Contact: Mary Charlson 602-659-7627 | Page ___ of ___

Project Name: Tetra Tech M11 SWF Treatability Study | Sampler: G. Schuler | Sampler Phone: 480 6205186

Project No. M11-CWP-04
NERT - Seep Well Field Area Bioremediation Treatability Study | Project Contact: Maureen McMyler | Site Telephone No.: (702) 966-8340

Report to: Maureen McMyler, 1093 Commerce Park Dr. (865)220-4762 | Project Manager/Supervisor: Dana Grady

Bill to: Sunshine Pryor, 350 Indiana St., Golden, CO 80401 (303) 217-5700

Analysis and Method Requested

Remarks
Preservation Codes:
A- HCL
D-Nitric Acid
L-EDA
N-None
S-H2SO4
Other:

MTS 6-22-22

Item No.	Sample Number	Date	Time	G=Grab C=Comp	Matrix	Sample Description, Location	Number of Containers	Perchlorate E314.0	TOC SM5310B	Chlorate E300.1	Sulfate/Nitrate E300.0 SHORT HOLD NITRATE!	Notes
						Preservation Code:	-	N	A	L	N	
11-10	SWFTS-MW25-EM38	6/21/22	0850	G	WG	—	7	X	X	X	X	
12-11	SWFTS-MW23-EM38		0950			—	7	X	X	X	X	
13-12	SWFTS-MW24-EM38		1050			—	7	X	X	X	X	
14-13	SWFTS-MW21-EM38		1150			—	7	X	X	X	X	
15-14	SWFTS-MW22-EM38		1245			—	7	X	X	X	X	
16-15	SWFTS-MW20-EM38		1400			—	7	X	X	X	X	
7												
8												
9												
10												

Transfers Relinquished By (Signature)	Date/Time	Transfers Accepted By (Signature)	Date/Time
G. Schuler	6/21/22	TAM TALUS	6/21/22 1500
TAM TALUS	6/21/22 1600 SDS		
		Laboratory: Marc St EETA-PHX	6-22-22 6:30

Special Instructions:

FedEx Airbill No.:

Sampler's Signature: (REQUIRED)

TAT ___ Standard ___ Rush Due ___

Received Good Condition ___ Y ___ N ___ Cold

TH 240 26.3/26.6

1.3°C 0.3°C DB-ice

Login Sample Receipt Checklist

Client: Tetra Tech, Inc.

Job Number: 550-186012-1

Login Number: 186012
List Number: 1
Creator: Maycock, Lisa

List Source: Eurofins Phoenix

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	True	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	False	Check done at department level as required.

eurofins | Environment Testing America

ANALYTICAL REPORT

Eurofins Phoenix
4625 East Cotton Center Boulevard
Suite #189
Phoenix, AZ 85040
Tel: (602)437-3340

Laboratory Job ID: 550-186069-1
Client Project/Site: Tetra Tech M11 SWF Treatability Study

For:
Tetra Tech, Inc.
1093 Commerce Park Drive
Suite 100
Oak Ridge, Tennessee 37830

Attn: Dana Grady

Rachel Sester

Authorized for release by:
7/7/2022 8:50:56 PM

Rachel Sester, Project Manager I
(602)659-7615
Rachel.Sester@et.eurofinsus.com

LINKS

Review your project results through my EOL

Have a Question? Ask The Expert

Visit us at: www.eurofinsus.com/Env

This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.

Results relate only to the items tested and the sample(s) as received by the laboratory.

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Definitions/Glossary

Client: Tetra Tech, Inc. Job ID: 550-186069-1
Project/Site: Tetra Tech M11 SWF Treatability Study

Qualifiers

HPLC/IC

Qualifier	Qualifier Description
4	MS, MSD: The analyte present in the original sample is greater than 4 times the matrix spike concentration; therefore, control limits are not applicable.
D	Sample results are obtained from a dilution; the surrogate or matrix spike recoveries reported are calculated from diluted samples.
E	Result exceeded calibration range.
F1	MS and/or MSD recovery exceeds control limits.
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

General Chemistry

Qualifier	Qualifier Description
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CFU	Colony Forming Unit
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MCL	EPA recommended "Maximum Contaminant Level"
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
MPN	Most Probable Number
MQL	Method Quantitation Limit
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
NEG	Negative / Absent
POS	Positive / Present
PQL	Practical Quantitation Limit
PRES	Presumptive
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)
TNTC	Too Numerous To Count

Case Narrative

Client: Tetra Tech, Inc. Job ID: 550-186069-1
Project/Site: Tetra Tech M11 SWF Treatability Study

Job ID: 550-186069-1

Laboratory: Eurofins Phoenix

Narrative

Job Narrative
550-186069-1

Comments
No additional comments.

Receipt
The samples were received on 6/23/2022 6:30 AM. Unless otherwise noted below, the samples arrived in good condition, and where required, properly preserved and on ice. The temperatures of the 3 coolers at receipt time were 3.5º C, 3.9º C and 19.9º C.

HPLC/IC
Method 300.1B: The following sample was diluted for Chlorate by method EPA 300.1B due to an abundance of non-target analytes present within the sample matrix: SWFTS-MW16-EM38 (550-186069-5). In the diluted sample this analyte was not detected or was beneath the lowest calibration limit. As such, an elevated reporting limit (RL) has been provided.

Method 300.1B: The following sample was diluted for Chlorate by method EPA 300.1B due to an abundance of non-target analytes present within the sample matrix: SWFTS-MW15-EM38 (550-186069-6). In the diluted samples this analyte was not detected or was beneath the lowest calibration limit. As such, an elevated reporting limit (RL) has been provided.

Method 300.1B: The matrix spike duplicate (MSD) recovery for Chlorate in analytical batch 550-278284 was outside control limits. Sample matrix interference and/or non-homogeneity were suspected because the associated laboratory control sample (LCS) recovery was within acceptance limits.

Method 300.1B: The matrix spike / matrix spike duplicate (MS/MSD) recoveries for Chlorate in analytical batch 550-278284 were outside control limits. Sample matrix interference was suspected because the associated laboratory control sample (LCS) recovery was within acceptance limits.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

General Chemistry
No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

Sample Summary

Client: Tetra Tech, Inc.
Job ID: 550-186069-1
Project/Site: Tetra Tech M11 SWF Treatability Study

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
550-186069-1	SWFTS-MW19-EM38	Water	06/22/22 08:45	06/22/22 18:33
550-186069-2	SWFTS-MW19-EM38-FD	Water	06/22/22 08:45	06/22/22 18:33
550-186069-3	SWFTS-MW18-EM38	Water	06/22/22 09:50	06/22/22 18:33
550-186069-4	SWFTS-MW17-EM38	Water	06/22/22 10:35	06/22/22 18:33
550-186069-5	SWFTS-MW16-EM38	Water	06/22/22 11:25	06/22/22 18:33
550-186069-6	SWFTS-MW15-EM38	Water	06/22/22 12:15	06/22/22 18:33
550-186069-7	SWFTS-MW14-EM38	Water	06/22/22 13:05	06/22/22 18:33
550-186069-8	SWFTS-MW13-EM38	Water	06/22/22 13:45	06/22/22 18:33
550-186069-9	SWFTS-MW02-EM38	Water	06/22/22 09:25	06/22/22 18:33
550-186069-10	SWFTS-EM38-EB2	Water	06/22/22 09:30	06/22/22 18:33
550-186069-11	SWFTS-EM38-FB2	Water	06/22/22 09:40	06/22/22 18:33
550-186069-12	SWFTS-MW03-EM38	Water	06/22/22 10:25	06/22/22 18:33
550-186069-13	SWFTS-MW04-EM38	Water	06/22/22 11:20	06/22/22 18:33
550-186069-14	SWFTS-MW06A-EM38	Water	06/22/22 12:20	06/22/22 18:33
550-186069-15	SWFTS-MW06A-EM38-FD	Water	06/22/22 12:20	06/22/22 18:33
550-186069-16	SWFTS-MW06B-EM38	Water	06/22/22 13:10	06/22/22 18:33

Detection Summary

Client: Tetra Tech, Inc.
Job ID: 550-186069-1
Project/Site: Tetra Tech M11 SWF Treatability Study

Client Sample ID: SWFTS-MW19-EM38 — Lab Sample ID: 550-186069-1

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Nitrate as N	1.7		0.050	0.014	mg/L	1		300.0	Total/NA
Sulfate	1900		100	21	mg/L	50		300.0	Total/NA
Chlorate	110		100	24	ug/L	5		300.1B	Total/NA
Perchlorate	3900		100	31	ug/L	100		314.0	Total/NA
Total Organic Carbon	4.8		0.50	0.26	mg/L	1		SM 5310B	Total/NA

Client Sample ID: SWFTS-MW19-EM38-FD — Lab Sample ID: 550-186069-2

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Nitrate as N	1.7		0.050	0.014	mg/L	1		300.0	Total/NA
Sulfate	1900		100	21	mg/L	50		300.0	Total/NA
Chlorate	110		100	24	ug/L	5		300.1B	Total/NA
Perchlorate	4000		100	31	ug/L	100		314.0	Total/NA
Total Organic Carbon	4.8		0.50	0.26	mg/L	1		SM 5310B	Total/NA

Client Sample ID: SWFTS-MW18-EM38 — Lab Sample ID: 550-186069-3

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Nitrate as N	8.8		0.10	0.028	mg/L	2		300.0	Total/NA
Sulfate	1800		100	21	mg/L	50		300.0	Total/NA
Chlorate	13000		1000	240	ug/L	50		300.1B	Total/NA
Perchlorate	4700		200	63	ug/L	200		314.0	Total/NA
Total Organic Carbon	2.8		0.50	0.26	mg/L	1		SM 5310B	Total/NA

Client Sample ID: SWFTS-MW17-EM38 — Lab Sample ID: 550-186069-4

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Nitrate as N	16		0.10	0.028	mg/L	2		300.0	Total/NA
Sulfate	2100		100	21	mg/L	50		300.0	Total/NA
Chlorate	16000		2000	490	ug/L	100		300.1B	Total/NA
Perchlorate	2300		100	31	ug/L	100		314.0	Total/NA
Total Organic Carbon	1.3		0.50	0.26	mg/L	1		SM 5310B	Total/NA

Client Sample ID: SWFTS-MW16-EM38 — Lab Sample ID: 550-186069-5

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Nitrate as N	0.085		0.050	0.014	mg/L	1		300.0	Total/NA
Sulfate	1700		100	21	mg/L	50		300.0	Total/NA
Chlorate	11	J	40	9.8	ug/L	2		300.1B	Total/NA
Perchlorate	740		50	16	ug/L	50		314.0	Total/NA
Total Organic Carbon	3.0		0.50	0.26	mg/L	1		SM 5310B	Total/NA

Client Sample ID: SWFTS-MW15-EM38 — Lab Sample ID: 550-186069-6

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Nitrate as N	2.2		0.050	0.014	mg/L	1		300.0	Total/NA
Sulfate	1200		100	21	mg/L	50		300.0	Total/NA
Perchlorate	1400		500	160	ug/L	500		314.0	Total/NA
Total Organic Carbon	3.6		0.50	0.26	mg/L	1		SM 5310B	Total/NA

Client Sample ID: SWFTS-MW14-EM38 — Lab Sample ID: 550-186069-7

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Nitrate as N	4.3		0.050	0.014	mg/L	1		300.0	Total/NA

This Detection Summary does not include radiochemical test results.

Eurofins Phoenix

Detection Summary

Client: Tetra Tech, Inc.
Job ID: 550-186069-1
Project/Site: Tetra Tech M11 SWF Treatability Study

Client Sample ID: SWFTS-MW14-EM38 (Continued) — Lab Sample ID: 550-186069-7

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Sulfate	2400		100	21	mg/L	50		300.0	Total/NA
Chlorate	1500		100	24	ug/L	5		300.1B	Total/NA
Perchlorate	6400		200	63	ug/L	200		314.0	Total/NA
Total Organic Carbon	3.3		0.50	0.26	mg/L	1		SM 5310B	Total/NA

Client Sample ID: SWFTS-MW13-EM38 — Lab Sample ID: 550-186069-8

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Nitrate as N	18		0.10	0.028	mg/L	2		300.0	Total/NA
Sulfate	2900		100	21	mg/L	50		300.0	Total/NA
Chlorate	35000		4000	980	ug/L	200		300.1B	Total/NA
Perchlorate	5400		200	63	ug/L	200		314.0	Total/NA
Total Organic Carbon	0.95		0.50	0.26	mg/L	1		SM 5310B	Total/NA

Client Sample ID: SWFTS-MW02-EM38 — Lab Sample ID: 550-186069-9

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Nitrate as N	10		0.10	0.028	mg/L	2		300.0	Total/NA
Sulfate	1700		100	21	mg/L	50		300.0	Total/NA
Chlorate	20000		1000	240	ug/L	50		300.1B	Total/NA
Perchlorate	14000		500	160	ug/L	500		314.0	Total/NA
Total Organic Carbon	1.6		0.50	0.26	mg/L	1		SM 5310B	Total/NA

Client Sample ID: SWFTS-EM38-EB2 — Lab Sample ID: 550-186069-10

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Total Organic Carbon	0.53		0.50	0.26	mg/L	1		SM 5310B	Total/NA

Client Sample ID: SWFTS-EM38-FB2 — Lab Sample ID: 550-186069-11

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Total Organic Carbon	0.39	J	0.50	0.26	mg/L	1		SM 5310B	Total/NA

Client Sample ID: SWFTS-MW03-EM38 — Lab Sample ID: 550-186069-12

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Nitrate as N	8.2		1.0	0.28	mg/L	20		300.0	Total/NA
Sulfate	1900		40	8.5	mg/L	20		300.0	Total/NA
Chlorate	11000		1000	240	ug/L	50		300.1B	Total/NA
Perchlorate	6100		200	63	ug/L	200		314.0	Total/NA
Total Organic Carbon	2.2		0.50	0.26	mg/L	1		SM 5310B	Total/NA

Client Sample ID: SWFTS-MW04-EM38 — Lab Sample ID: 550-186069-13

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Nitrate as N	10		0.10	0.028	mg/L	2		300.0	Total/NA
Sulfate	1200		100	21	mg/L	50		300.0	Total/NA
Chlorate	15000		2000	490	ug/L	100		300.1B	Total/NA
Perchlorate	12000		500	160	ug/L	500		314.0	Total/NA
Total Organic Carbon	2.5		0.50	0.26	mg/L	1		SM 5310B	Total/NA

This Detection Summary does not include radiochemical test results.

Detection Summary

Client: Tetra Tech, Inc.
Job ID: 550-186069-1
Project/Site: Tetra Tech M11 SWF Treatability Study

Client Sample ID: SWFTS-MW06A-EM38 — Lab Sample ID: 550-186069-14

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Nitrate as N	3.9		0.050	0.014	mg/L	1		300.0	Total/NA
Sulfate	550		100	21	mg/L	50		300.0	Total/NA
Chlorate	150		100	24	ug/L	5		300.1B	Total/NA
Perchlorate	750		100	31	ug/L	100		314.0	Total/NA
Total Organic Carbon	3.7		0.50	0.26	mg/L	1		SM 5310B	Total/NA

Client Sample ID: SWFTS-MW06A-EM38-FD — Lab Sample ID: 550-186069-15

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Nitrate as N	3.8		0.050	0.014	mg/L	1		300.0	Total/NA
Sulfate	550		100	21	mg/L	50		300.0	Total/NA
Chlorate	140		100	24	ug/L	5		300.1B	Total/NA
Perchlorate	700		100	31	ug/L	100		314.0	Total/NA
Total Organic Carbon	3.8		0.50	0.26	mg/L	1		SM 5310B	Total/NA

Client Sample ID: SWFTS-MW06B-EM38 — Lab Sample ID: 550-186069-16

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Nitrate as N	12		0.10	0.028	mg/L	2		300.0	Total/NA
Sulfate	710		100	21	mg/L	50		300.0	Total/NA
Chlorate	2700		400	98	ug/L	20		300.1B	Total/NA
Perchlorate	2600		100	31	ug/L	100		314.0	Total/NA
Total Organic Carbon	4.6		2.0	1.0	mg/L	4		SM 5310B	Total/NA

This Detection Summary does not include radiochemical test results.

Client Sample ID: SWFTS-MW19-EM38 — Lab Sample ID: 550-186069-1

Date Collected: 06/22/22 08:45 — **Matrix: Water**
Date Received: 06/22/22 18:33

Method: 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Nitrate as N	1.7		0.050	0.014	mg/L			06/23/22 14:27	1
Sulfate	1900		100	21	mg/L			06/24/22 05:11	50

Method: 300.1B - Disinfection By-Products, (IC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chlorate	110		100	24	ug/L			06/30/22 08:26	5

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Dichloroacetic acid(Surr)	*100*		*90 - 115*		*06/30/22 08:26*	*5*

Method: 314.0 - Perchlorate (IC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perchlorate	3900		100	31	ug/L			06/24/22 17:07	100

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon	4.8		0.50	0.26	mg/L			06/25/22 21:21	1

Client Sample ID: SWFTS-MW19-EM38-FD — Lab Sample ID: 550-186069-2

Date Collected: 06/22/22 08:45 — **Matrix: Water**
Date Received: 06/22/22 18:33

Method: 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Nitrate as N	1.7		0.050	0.014	mg/L			06/23/22 15:59	1
Sulfate	1900		100	21	mg/L			06/24/22 05:29	50

Method: 300.1B - Disinfection By-Products, (IC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chlorate	110		100	24	ug/L			06/30/22 08:56	5

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Dichloroacetic acid(Surr)	*107*		*90 - 115*		*06/30/22 08:56*	*5*

Method: 314.0 - Perchlorate (IC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perchlorate	4000		100	31	ug/L			06/24/22 17:30	100

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon	4.8		0.50	0.26	mg/L			06/25/22 21:33	1

Client Sample ID: SWFTS-MW18-EM38 — Lab Sample ID: 550-186069-3

Date Collected: 06/22/22 09:50 — **Matrix: Water**
Date Received: 06/22/22 18:33

Method: 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Nitrate as N	8.8		0.10	0.028	mg/L			06/23/22 16:18	2
Sulfate	1800		100	21	mg/L			06/24/22 05:48	50

Client Sample ID: SWFTS-MW18-EM38 — Lab Sample ID: 550-186069-3

Date Collected: 06/22/22 09:50 — **Matrix: Water**
Date Received: 06/22/22 18:33

Method: 300.1B - Disinfection By-Products, (IC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chlorate	13000		1000	240	ug/L			06/30/22 09:25	50

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Dichloroacetic acid(Surr)	*95*		*90 - 115*		*06/30/22 09:25*	*50*

Method: 314.0 - Perchlorate (IC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perchlorate	4700		200	63	ug/L			06/24/22 17:52	200

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon	2.8		0.50	0.26	mg/L			06/25/22 21:46	1

Client Sample ID: SWFTS-MW17-EM38 — Lab Sample ID: 550-186069-4

Date Collected: 06/22/22 10:35 — **Matrix: Water**
Date Received: 06/22/22 18:33

Method: 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Nitrate as N	16		0.10	0.028	mg/L			06/23/22 16:36	2
Sulfate	2100		100	21	mg/L			06/23/22 22:07	50

Method: 300.1B - Disinfection By-Products, (IC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chlorate	16000		2000	490	ug/L			07/01/22 06:03	100

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Dichloroacetic acid(Surr)	*99*		*90 - 115*		*07/01/22 06:03*	*100*

Method: 314.0 - Perchlorate (IC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perchlorate	2300		100	31	ug/L			06/24/22 18:14	100

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon	1.3		0.50	0.26	mg/L			06/25/22 21:58	1

Client Sample ID: SWFTS-MW16-EM38 — Lab Sample ID: 550-186069-5

Date Collected: 06/22/22 11:25 — **Matrix: Water**
Date Received: 06/22/22 18:33

Method: 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Nitrate as N	0.085		0.050	0.014	mg/L			06/23/22 16:55	1
Sulfate	1700		100	21	mg/L			06/23/22 22:35	50

Method: 300.1B - Disinfection By-Products, (IC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chlorate	11	J	40	9.8	ug/L			06/28/22 22:00	2

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Dichloroacetic acid(Surr)	*102*		*90 - 115*		*06/28/22 22:00*	*2*

Client Sample ID: SWFTS-MW16-EM38 — Lab Sample ID: 550-186069-5

Date Collected: 06/22/22 11:25 — **Matrix: Water**
Date Received: 06/22/22 18:33

Method: 314.0 - Perchlorate (IC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perchlorate	740		50	16	ug/L			06/24/22 18:37	50

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon	3.0		0.50	0.26	mg/L			06/25/22 22:10	1

Client Sample ID: SWFTS-MW15-EM38 — Lab Sample ID: 550-186069-6

Date Collected: 06/22/22 12:15 — **Matrix: Water**
Date Received: 06/22/22 18:33

Method: 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Nitrate as N	2.2		0.050	0.014	mg/L			06/23/22 17:13	1
Sulfate	1200		100	21	mg/L			06/23/22 23:03	50

Method: 300.1B - Disinfection By-Products, (IC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chlorate	ND	D	100	24	ug/L			06/30/22 10:24	5

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Dichloroacetic acid(Surr)	*104*		*90 - 115*		*06/30/22 10:24*	*5*

Method: 314.0 - Perchlorate (IC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perchlorate	1400		500	160	ug/L			06/25/22 11:32	500

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon	3.6		0.50	0.26	mg/L			06/25/22 22:23	1

Client Sample ID: SWFTS-MW14-EM38 — Lab Sample ID: 550-186069-7

Date Collected: 06/22/22 13:05 — **Matrix: Water**
Date Received: 06/22/22 18:33

Method: 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Nitrate as N	4.3		0.050	0.014	mg/L			06/23/22 17:31	1
Sulfate	2400		100	21	mg/L			06/24/22 01:22	50

Method: 300.1B - Disinfection By-Products, (IC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chlorate	1500		100	24	ug/L			06/28/22 22:59	5

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Dichloroacetic acid(Surr)	*101*		*90 - 115*		*06/28/22 22:59*	*5*

Method: 314.0 - Perchlorate (IC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perchlorate	6400		200	63	ug/L			06/28/22 12:29	200

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon	3.3		0.50	0.26	mg/L			06/25/22 22:36	1

Client Sample ID: SWFTS-MW13-EM38 — Lab Sample ID: 550-186069-8

Date Collected: 06/22/22 13:45 — **Matrix: Water**
Date Received: 06/22/22 18:33

Method: 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Nitrate as N	18		0.10	0.028	mg/L			06/23/22 17:50	2
Sulfate	2900		100	21	mg/L			06/24/22 01:50	50

Method: 300.1B - Disinfection By-Products, (IC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chlorate	35000		4000	980	ug/L			06/30/22 11:52	200

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Dichloroacetic acid(Surr)	*96*		*90 - 115*		*06/30/22 11:52*	*200*

Method: 314.0 - Perchlorate (IC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perchlorate	5400		200	63	ug/L			06/25/22 13:01	200

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon	0.95		0.50	0.26	mg/L			06/29/22 19:16	1

Client Sample ID: SWFTS-MW02-EM38 — Lab Sample ID: 550-186069-9

Date Collected: 06/22/22 09:25 — **Matrix: Water**
Date Received: 06/22/22 18:33

Method: 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Nitrate as N	10		0.10	0.028	mg/L			06/23/22 18:08	2
Sulfate	1700		100	21	mg/L			06/24/22 02:18	50

Method: 300.1B - Disinfection By-Products, (IC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chlorate	20000		1000	240	ug/L			06/30/22 14:49	50

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Dichloroacetic acid(Surr)	*96*		*90 - 115*		*06/30/22 14:49*	*50*

Method: 314.0 - Perchlorate (IC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perchlorate	14000		500	160	ug/L			06/25/22 13:24	500

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon	1.6		0.50	0.26	mg/L			06/25/22 23:08	1

Client Sample ID: SWFTS-EM38-EB2 — Lab Sample ID: 550-186069-10

Date Collected: 06/22/22 09:30 — **Matrix: Water**
Date Received: 06/22/22 18:33

Method: 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Nitrate as N	ND		0.050	0.014	mg/L			06/23/22 14:46	1
Sulfate	ND		2.0	0.43	mg/L			06/23/22 14:46	1

Client Sample ID: SWFTS-EM38-EB2 — Lab Sample ID: 550-186069-10

Date Collected: 06/22/22 09:30 — **Matrix: Water**
Date Received: 06/22/22 18:33

Method: 300.1B - Disinfection By-Products, (IC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chlorate	ND		20	4.9	ug/L			06/30/22 15:18	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Dichloroacetic acid(Surr)	*98*		*90 - 115*		*06/30/22 15:18*	*1*

Method: 314.0 - Perchlorate (IC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perchlorate	ND		1.0	0.31	ug/L			06/25/22 13:46	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon	**0.53**		0.50	0.26	mg/L			06/25/22 23:18	1

Client Sample ID: SWFTS-EM38-FB2 — Lab Sample ID: 550-186069-11

Date Collected: 06/22/22 09:40 — **Matrix: Water**
Date Received: 06/22/22 18:33

Method: 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Nitrate as N	ND		0.050	0.014	mg/L			06/23/22 18:27	1
Sulfate	ND		2.0	0.43	mg/L			06/23/22 18:27	1

Method: 300.1B - Disinfection By-Products, (IC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chlorate	ND		20	4.9	ug/L			06/30/22 15:48	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Dichloroacetic acid(Surr)	*98*		*90 - 115*		*06/30/22 15:48*	*1*

Method: 314.0 - Perchlorate (IC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perchlorate	ND		1.0	0.31	ug/L			06/25/22 14:09	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon	**0.39**	**J**	0.50	0.26	mg/L			06/25/22 23:29	1

Client Sample ID: SWFTS-MW03-EM38 — Lab Sample ID: 550-186069-12

Date Collected: 06/22/22 10:25 — **Matrix: Water**
Date Received: 06/22/22 18:33

Method: 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Nitrate as N	**8.2**		1.0	0.28	mg/L			06/23/22 14:09	20
Sulfate	**1900**		40	8.5	mg/L			06/23/22 14:09	20

Method: 300.1B - Disinfection By-Products, (IC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chlorate	**11000**		1000	240	ug/L			06/30/22 16:17	50

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Dichloroacetic acid(Surr)	*98*		*90 - 115*		*06/30/22 16:17*	*50*

Client Sample ID: SWFTS-MW03-EM38 — Lab Sample ID: 550-186069-12

Date Collected: 06/22/22 10:25 — **Matrix: Water**
Date Received: 06/22/22 18:33

Method: 314.0 - Perchlorate (IC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perchlorate	6100		200	63	ug/L			06/25/22 14:31	200

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon	2.2		0.50	0.26	mg/L			06/25/22 23:39	1

Client Sample ID: SWFTS-MW04-EM38 — Lab Sample ID: 550-186069-13

Date Collected: 06/22/22 11:20 — **Matrix: Water**
Date Received: 06/22/22 18:33

Method: 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Nitrate as N	10		0.10	0.028	mg/L			06/23/22 19:40	2
Sulfate	1200		100	21	mg/L			06/24/22 02:46	50

Method: 300.1B - Disinfection By-Products, (IC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chlorate	15000		2000	490	ug/L			07/01/22 18:04	100

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Dichloroacetic acid(Surr)	*111*		*90 - 115*		*07/01/22 18:04*	*100*

Method: 314.0 - Perchlorate (IC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perchlorate	12000		500	160	ug/L			06/28/22 13:37	500

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon	2.5		0.50	0.26	mg/L			06/25/22 23:49	1

Client Sample ID: SWFTS-MW06A-EM38 — Lab Sample ID: 550-186069-14

Date Collected: 06/22/22 12:20 — **Matrix: Water**
Date Received: 06/22/22 18:33

Method: 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Nitrate as N	3.9		0.050	0.014	mg/L			06/23/22 19:59	1
Sulfate	550		100	21	mg/L			06/23/22 23:31	50

Method: 300.1B - Disinfection By-Products, (IC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chlorate	150		100	24	ug/L			06/30/22 23:40	5

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Dichloroacetic acid(Surr)	*98*		*90 - 115*		*06/30/22 23:40*	*5*

Method: 314.0 - Perchlorate (IC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perchlorate	750		100	31	ug/L			06/25/22 16:01	100

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon	3.7		0.50	0.26	mg/L			06/26/22 00:01	1

Client: Tetra Tech, Inc.
Job ID: 550-186069-1
Project/Site: Tetra Tech M11 SWF Treatability Study

Client Sample ID: SWFTS-MW06A-EM38-FD
Lab Sample ID: 550-186069-15
Date Collected: 06/22/22 12:20
Matrix: Water
Date Received: 06/22/22 18:33

Method: 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Nitrate as N	3.8		0.050	0.014	mg/L			06/23/22 20:17	1
Sulfate	550		100	21	mg/L			06/24/22 17:11	50

Method: 300.1B - Disinfection By-Products, (IC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chlorate	140		100	24	ug/L			07/01/22 00:09	5

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Dichloroacetic acid(Surr)	*102*		*90 - 115*		*07/01/22 00:09*	*5*

Method: 314.0 - Perchlorate (IC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perchlorate	700		100	31	ug/L			06/25/22 16:23	100

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon	3.8		0.50	0.26	mg/L			06/26/22 00:14	1

Client Sample ID: SWFTS-MW06B-EM38
Lab Sample ID: 550-186069-16
Date Collected: 06/22/22 13:10
Matrix: Water
Date Received: 06/22/22 18:33

Method: 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Nitrate as N	12		0.10	0.028	mg/L			06/23/22 20:35	2
Sulfate	710		100	21	mg/L			06/23/22 20:54	50

Method: 300.1B - Disinfection By-Products, (IC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chlorate	2700		400	98	ug/L			07/01/22 19:33	20

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Dichloroacetic acid(Surr)	*98*		*90 - 115*		*07/01/22 19:33*	*20*

Method: 314.0 - Perchlorate (IC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perchlorate	2600		100	31	ug/L			06/25/22 16:45	100

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon	4.6		2.0	1.0	mg/L			06/26/22 00:26	4

Surrogate Summary

Client: Tetra Tech, Inc.
Job ID: 550-186069-1
Project/Site: Tetra Tech M11 SWF Treatability Study

Method: 300.1B - Disinfection By-Products, (IC)

Matrix: Water **Prep Type: Total/NA**

		Percent Surrogate Recovery (Acceptance Limits)
Lab Sample ID	Client Sample ID	DCAA (90-115)
550-186069-1	SWFTS-MW19-EM38	100
550-186069-2	SWFTS-MW19-EM38-FD	107
550-186069-3	SWFTS-MW18-EM38	95
550-186069-4	SWFTS-MW17-EM38	99
550-186069-5	SWFTS-MW16-EM38	102
550-186069-6	SWFTS-MW15-EM38	104
550-186069-7	SWFTS-MW14-EM38	101
550-186069-8	SWFTS-MW13-EM38	96
550-186069-8 MS	SWFTS-MW13-EM38	96
550-186069-8 MSD	SWFTS-MW13-EM38	95
550-186069-9	SWFTS-MW02-EM38	96
550-186069-10	SWFTS-EM38-EB2	98
550-186069-11	SWFTS-EM38-FB2	98
550-186069-12	SWFTS-MW03-EM38	98
550-186069-13	SWFTS-MW04-EM38	111
550-186069-13 MS	SWFTS-MW04-EM38	96
550-186069-13 MSD	SWFTS-MW04-EM38	103
550-186069-14	SWFTS-MW06A-EM38	98
550-186069-15	SWFTS-MW06A-EM38-FD	102
550-186069-16	SWFTS-MW06B-EM38	98
550-186152-H-1 MS	Matrix Spike	105
550-186152-H-1 MSD	Matrix Spike Duplicate	105
550-186171-G-5 MS ^100	Matrix Spike	98
550-186171-G-5 MSD ^100	Matrix Spike Duplicate	102
550-186171-H-2 MS ^200	Matrix Spike	97
550-186171-H-2 MSD ^200	Matrix Spike Duplicate	101
LCS 550-278063/6	Lab Control Sample	100
LCS 550-278151/5	Lab Control Sample	98
LCS 550-278284/6	Lab Control Sample	97
LCS 550-278318/6	Lab Control Sample	97
LCSD 550-278063/7	Lab Control Sample Dup	97
LCSD 550-278151/6	Lab Control Sample Dup	96
LCSD 550-278284/7	Lab Control Sample Dup	101
LCSD 550-278318/7	Lab Control Sample Dup	96
MB 550-278063/5	Method Blank	97
MB 550-278151/4	Method Blank	101
MB 550-278284/5	Method Blank	97
MB 550-278318/5	Method Blank	95

Surrogate Legend

DCAA = Dichloroacetic acid(Surr)

Method: 300.1B - Disinfection By-Products, (IC)

Matrix: Water **Prep Type: Total/NA**

		Percent Surrogate Recovery (Acceptance Limits)
Lab Sample ID	Client Sample ID	DCAA (50-150)
MRL 550-278063/1003	Lab Control Sample	103
MRL 550-278151/1002	Lab Control Sample	96

Surrogate Summary

Client: Tetra Tech, Inc. Job ID: 550-186069-1
Project/Site: Tetra Tech M11 SWF Treatability Study

Method: 300.1B - Disinfection By-Products, (IC) (Continued)

Matrix: Water **Prep Type: Total/NA**

		Percent Surrogate Recovery (Acceptance Limits)							
Lab Sample ID	Client Sample ID	DCAA (50-150)							
MRL 550-278284/1003	Lab Control Sample	98							
MRL 550-278318/1003	Lab Control Sample	93							

Surrogate Legend

DCAA = Dichloroacetic acid(Surr)

Method: 300.0 - Anions, Ion Chromatography

Lab Sample ID: MB 550-277693/2
Matrix: Water
Analysis Batch: 277693

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Nitrate as N	ND		0.050	0.014	mg/L			06/23/22 10:47	1
Sulfate	ND		2.0	0.43	mg/L			06/23/22 10:47	1

Lab Sample ID: LCS 550-277693/5
Matrix: Water
Analysis Batch: 277693

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Nitrate as N	4.00	4.18		mg/L		105	90 - 110
Sulfate	20.0	20.5		mg/L		103	90 - 110

Lab Sample ID: LCSD 550-277693/6
Matrix: Water
Analysis Batch: 277693

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Nitrate as N	4.00	4.18		mg/L		105	90 - 110	0	20
Sulfate	20.0	20.5		mg/L		102	90 - 110	0	20

Lab Sample ID: 550-185951-A-1 MS
Matrix: Water
Analysis Batch: 277693

Client Sample ID: Matrix Spike
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Nitrate as N	4.0		4.00	8.33		mg/L		108	80 - 120
Sulfate	17		20.0	39.0		mg/L		108	80 - 120

Lab Sample ID: 550-185951-A-1 MSD
Matrix: Water
Analysis Batch: 277693

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Nitrate as N	4.0		4.00	8.36		mg/L		108	80 - 120	0	20
Sulfate	17		20.0	39.0		mg/L		108	80 - 120	0	20

Lab Sample ID: MB 550-277694/1039
Matrix: Water
Analysis Batch: 277694

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Nitrate as N	ND		0.050	0.014	mg/L			06/23/22 22:08	1
Sulfate	ND		2.0	0.43	mg/L			06/23/22 22:08	1

Lab Sample ID: LCS 550-277694/40
Matrix: Water
Analysis Batch: 277694

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Nitrate as N	4.00	4.16		mg/L		104	90 - 110
Sulfate	20.0	20.5		mg/L		103	90 - 110

Method: 300.0 - Anions, Ion Chromatography

Lab Sample ID: LCSD 550-277694/41
Matrix: Water
Analysis Batch: 277694

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Nitrate as N			4.00	4.17		mg/L		104	90 - 110	0	20
Sulfate			20.0	20.5		mg/L		103	90 - 110	0	20

Lab Sample ID: 550-185951-A-10 MS ^2
Matrix: Water
Analysis Batch: 277694

Client Sample ID: Matrix Spike
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Nitrate as N	5.9		8.00	14.5		mg/L		108	80 - 120
Sulfate	22		40.0	65.6		mg/L		108	80 - 120

Lab Sample ID: 550-185951-A-10 MSD ^2
Matrix: Water
Analysis Batch: 277694

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Nitrate as N	5.9		8.00	14.7		mg/L		110	80 - 120	1	20
Sulfate	22		40.0	66.1		mg/L		109	80 - 120	1	20

Lab Sample ID: MB 550-277695/2
Matrix: Water
Analysis Batch: 277695

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Nitrate as N	ND		0.050	0.014	mg/L			06/23/22 11:24	1
Sulfate	ND		2.0	0.43	mg/L			06/23/22 11:24	1

Lab Sample ID: LCS 550-277695/5
Matrix: Water
Analysis Batch: 277695

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Nitrate as N			4.00	4.06		mg/L		101	90 - 110
Sulfate			20.0	20.4		mg/L		102	90 - 110

Lab Sample ID: LCSD 550-277695/6
Matrix: Water
Analysis Batch: 277695

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Nitrate as N			4.00	4.05		mg/L		101	90 - 110	0	20
Sulfate			20.0	20.3		mg/L		102	90 - 110	0	20

Lab Sample ID: 550-186085-B-1 MS ^5
Matrix: Water
Analysis Batch: 277695

Client Sample ID: Matrix Spike
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Nitrate as N	3.3		20.0	24.4		mg/L		106	80 - 120
Sulfate	740		100	826	4	mg/L		89	80 - 120

Method: 300.0 - Anions, Ion Chromatography

Lab Sample ID: 550-186085-B-1 MSD ^5
Matrix: Water
Analysis Batch: 277695

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Nitrate as N	3.3		20.0	24.6		mg/L		106	80 - 120	1	20
Sulfate	740		100	830	4	mg/L		93	80 - 120	0	20

Lab Sample ID: MB 550-277696/2
Matrix: Water
Analysis Batch: 277696

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Nitrate as N	ND		0.050	0.014	mg/L			06/23/22 10:56	1
Sulfate	ND		2.0	0.43	mg/L			06/23/22 10:56	1

Lab Sample ID: LCS 550-277696/5
Matrix: Water
Analysis Batch: 277696

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Nitrate as N	4.00	4.07		mg/L		102	90 - 110
Sulfate	20.0	20.2		mg/L		101	90 - 110

Lab Sample ID: LCSD 550-277696/6
Matrix: Water
Analysis Batch: 277696

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Nitrate as N	4.00	4.07		mg/L		102	90 - 110	0	20
Sulfate	20.0	20.2		mg/L		101	90 - 110	0	20

Lab Sample ID: 550-186086-B-1 MS ^5
Matrix: Water
Analysis Batch: 277696

Client Sample ID: Matrix Spike
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Nitrate as N	0.98		20.0	21.8		mg/L		104	80 - 120
Sulfate	850		100	943	4	mg/L		93	80 - 120

Lab Sample ID: 550-186086-B-1 MSD ^5
Matrix: Water
Analysis Batch: 277696

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Nitrate as N	0.98		20.0	21.9		mg/L		104	80 - 120	0	20
Sulfate	850		100	941	4	mg/L		92	80 - 120	0	20

Lab Sample ID: MB 550-277793/2
Matrix: Water
Analysis Batch: 277793

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Nitrate as N	ND		0.050	0.014	mg/L			06/24/22 10:44	1
Sulfate	ND		2.0	0.43	mg/L			06/24/22 10:44	1

Method: 300.0 - Anions, Ion Chromatography

Lab Sample ID: LCS 550-277793/5
Matrix: Water
Analysis Batch: 277793

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Nitrate as N	4.00	4.20		mg/L		105	90 - 110
Sulfate	20.0	20.6		mg/L		103	90 - 110

Lab Sample ID: LCSD 550-277793/6
Matrix: Water
Analysis Batch: 277793

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Nitrate as N	4.00	4.19		mg/L		105	90 - 110	0	20
Sulfate	20.0	20.6		mg/L		103	90 - 110	0	20

Lab Sample ID: 550-186171-F-2 MS ^2
Matrix: Water
Analysis Batch: 277793

Client Sample ID: Matrix Spike
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Nitrate as N	16		8.00	23.7		mg/L		102	80 - 120

Lab Sample ID: 550-186171-F-2 MS ^50
Matrix: Water
Analysis Batch: 277793

Client Sample ID: Matrix Spike
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Sulfate	2000		1000	3080		mg/L		106	80 - 120

Lab Sample ID: 550-186171-F-2 MSD ^2
Matrix: Water
Analysis Batch: 277793

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Nitrate as N	16		8.00	23.7		mg/L		102	80 - 120	0	20

Lab Sample ID: 550-186171-F-2 MSD ^50
Matrix: Water
Analysis Batch: 277793

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Sulfate	2000		1000	3090		mg/L		108	80 - 120	0	20

Method: 300.1B - Disinfection By-Products, (IC)

Lab Sample ID: MB 550-278063/5
Matrix: Water
Analysis Batch: 278063

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chlorate	ND		20	4.9	ug/L			06/28/22 17:05	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Dichloroacetic acid(Surr)	*97*		*90 - 115*		*06/28/22 17:05*	*1*

Method: 300.1B - Disinfection By-Products, (IC)

Lab Sample ID: LCS 550-278063/6
Matrix: Water
Analysis Batch: 278063

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Chlorate			100	99.2		ug/L		99	75 - 125		

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
Dichloroacetic acid(Surr)	*100*		*90 - 115*

Lab Sample ID: LCSD 550-278063/7
Matrix: Water
Analysis Batch: 278063

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Chlorate			100	95.1		ug/L		95	75 - 125	4	25

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
Dichloroacetic acid(Surr)	*97*		*90 - 115*

Lab Sample ID: MRL 550-278063/1003
Matrix: Water
Analysis Batch: 278063

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte			Spike Added	MRL Result	MRL Qualifier	Unit	D	%Rec	%Rec Limits		
Chlorate			20.0	20.4		ug/L		102	50 - 150		

Surrogate	*MRL %Recovery*	*MRL Qualifier*	*Limits*
Dichloroacetic acid(Surr)	*103*		*50 - 150*

Lab Sample ID: 550-186152-H-1 MS
Matrix: Water
Analysis Batch: 278063

Client Sample ID: Matrix Spike
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits		
Chlorate	24		100	118		ug/L		94	75 - 125		

Surrogate	*MS %Recovery*	*MS Qualifier*	*Limits*
Dichloroacetic acid(Surr)	*105*		*90 - 115*

Lab Sample ID: 550-186152-H-1 MSD
Matrix: Water
Analysis Batch: 278063

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Chlorate	24		100	118		ug/L		94	75 - 125	0	25

Surrogate	*MSD %Recovery*	*MSD Qualifier*	*Limits*
Dichloroacetic acid(Surr)	*105*		*90 - 115*

Method: 300.1B - Disinfection By-Products, (IC) (Continued)

Lab Sample ID: MB 550-278151/4
Matrix: Water
Analysis Batch: 278151

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chlorate	ND		20	4.9	ug/L			06/30/22 04:31	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Dichloroacetic acid(Surr)	*101*		*90 - 115*		*06/30/22 04:31*	*1*

Lab Sample ID: LCS 550-278151/5
Matrix: Water
Analysis Batch: 278151

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Chlorate			100	98.1		ug/L		98	75 - 125		

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
Dichloroacetic acid(Surr)	*98*		*90 - 115*

Lab Sample ID: LCSD 550-278151/6
Matrix: Water
Analysis Batch: 278151

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Chlorate			100	95.4		ug/L		95	75 - 125	3	25

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
Dichloroacetic acid(Surr)	*96*		*90 - 115*

Lab Sample ID: MRL 550-278151/1002
Matrix: Water
Analysis Batch: 278151

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte			Spike Added	MRL Result	MRL Qualifier	Unit	D	%Rec	%Rec Limits		
Chlorate			20.0	21.2		ug/L		106	50 - 150		

Surrogate	*MRL %Recovery*	*MRL Qualifier*	*Limits*
Dichloroacetic acid(Surr)	*96*		*50 - 150*

Lab Sample ID: 550-186069-8 MS
Matrix: Water
Analysis Batch: 278151

Client Sample ID: SWFTS-MW13-EM38
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits		
Chlorate	35000		20000	54100		ug/L		97	75 - 125		

Surrogate	*MS %Recovery*	*MS Qualifier*	*Limits*
Dichloroacetic acid(Surr)	*96*		*90 - 115*

Method: 300.1B - Disinfection By-Products, (IC) (Continued)

Lab Sample ID: 550-186069-8 MSD — **Client Sample ID: SWFTS-MW13-EM38**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 278151

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Chlorate	35000		20000	58700		ug/L		120	75 - 125	8	25

Surrogate	*MSD %Recovery*	*MSD Qualifier*	*Limits*
Dichloroacetic acid(Surr)	*95*		*90 - 115*

Lab Sample ID: MB 550-278284/5 — **Client Sample ID: Method Blank**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 278284

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chlorate	ND		20	4.9	ug/L			06/30/22 20:14	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Dichloroacetic acid(Surr)	*97*		*90 - 115*		*06/30/22 20:14*	*1*

Lab Sample ID: LCS 550-278284/6 — **Client Sample ID: Lab Control Sample**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 278284

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Chlorate			100	93.2		ug/L		93	75 - 125		

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
Dichloroacetic acid(Surr)	*97*		*90 - 115*

Lab Sample ID: LCSD 550-278284/7 — **Client Sample ID: Lab Control Sample Dup**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 278284

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Chlorate			100	95.2		ug/L		95	75 - 125	2	25

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
Dichloroacetic acid(Surr)	*101*		*90 - 115*

Lab Sample ID: MRL 550-278284/1003 — **Client Sample ID: Lab Control Sample**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 278284

Analyte			Spike Added	MRL Result	MRL Qualifier	Unit	D	%Rec	%Rec Limits		
Chlorate			20.0	21.0		ug/L		105	50 - 150		

Surrogate	*MRL %Recovery*	*MRL Qualifier*	*Limits*
Dichloroacetic acid(Surr)	*98*		*50 - 150*

Method: 300.1B - Disinfection By-Products, (IC) (Continued)

Lab Sample ID: 550-186171-G-5 MS ^100
Matrix: Water
Analysis Batch: 278284

Client Sample ID: Matrix Spike
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Chlorate	33000	F1	10000	53400	E F1	ug/L		203	75 - 125

Surrogate	*MS %Recovery*	*MS Qualifier*	*Limits*
Dichloroacetic acid(Surr)	*98*		*90 - 115*

Lab Sample ID: 550-186171-G-5 MSD ^100
Matrix: Water
Analysis Batch: 278284

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Chlorate	33000	F1	10000	56300	E F1	ug/L		232	75 - 125	5	25

Surrogate	*MSD %Recovery*	*MSD Qualifier*	*Limits*
Dichloroacetic acid(Surr)	*102*		*90 - 115*

Lab Sample ID: 550-186171-H-2 MS ^200
Matrix: Water
Analysis Batch: 278284

Client Sample ID: Matrix Spike
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Chlorate	18000	F1	20000	41000		ug/L		116	75 - 125

Surrogate	*MS %Recovery*	*MS Qualifier*	*Limits*
Dichloroacetic acid(Surr)	*97*		*90 - 115*

Lab Sample ID: 550-186171-H-2 MSD ^200
Matrix: Water
Analysis Batch: 278284

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Chlorate	18000	F1	20000	43900	F1	ug/L		130	75 - 125	7	25

Surrogate	*MSD %Recovery*	*MSD Qualifier*	*Limits*
Dichloroacetic acid(Surr)	*101*		*90 - 115*

Lab Sample ID: MB 550-278318/5
Matrix: Water
Analysis Batch: 278318

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chlorate	ND		20	4.9	ug/L			07/01/22 16:36	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Dichloroacetic acid(Surr)	*95*		*90 - 115*		*07/01/22 16:36*	*1*

Method: 300.1B - Disinfection By-Products, (IC) (Continued)

Lab Sample ID: LCS 550-278318/6
Matrix: Water
Analysis Batch: 278318

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Chlorate			100	94.7		ug/L		95	75 - 125		

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
Dichloroacetic acid(Surr)	*97*		*90 - 115*

Lab Sample ID: LCSD 550-278318/7
Matrix: Water
Analysis Batch: 278318

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Chlorate			100	94.5		ug/L		94	75 - 125	0	25

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
Dichloroacetic acid(Surr)	*96*		*90 - 115*

Lab Sample ID: MRL 550-278318/1003
Matrix: Water
Analysis Batch: 278318

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte			Spike Added	MRL Result	MRL Qualifier	Unit	D	%Rec	%Rec Limits		
Chlorate			20.0	19.0	J	ug/L		95	50 - 150		

Surrogate	*MRL %Recovery*	*MRL Qualifier*	*Limits*
Dichloroacetic acid(Surr)	*93*		*50 - 150*

Lab Sample ID: 550-186069-13 MS
Matrix: Water
Analysis Batch: 278318

Client Sample ID: SWFTS-MW04-EM38
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits		
Chlorate	15000		10000	25900		ug/L		107	75 - 125		

Surrogate	*MS %Recovery*	*MS Qualifier*	*Limits*
Dichloroacetic acid(Surr)	*96*		*90 - 115*

Lab Sample ID: 550-186069-13 MSD
Matrix: Water
Analysis Batch: 278318

Client Sample ID: SWFTS-MW04-EM38
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Chlorate	15000		10000	26800		ug/L		115	75 - 125	3	25

Surrogate	*MSD %Recovery*	*MSD Qualifier*	*Limits*
Dichloroacetic acid(Surr)	*103*		*90 - 115*

Method: 314.0 - Perchlorate (IC)

Lab Sample ID: MB 550-277756/1002
Matrix: Water
Analysis Batch: 277756

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perchlorate	ND		1.0	0.31	ug/L			06/24/22 09:17	1

Lab Sample ID: LCS 550-277756/4
Matrix: Water
Analysis Batch: 277756

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Perchlorate			25.0	24.5		ug/L		98	85 - 115		

Lab Sample ID: LCSD 550-277756/5
Matrix: Water
Analysis Batch: 277756

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Perchlorate			25.0	24.7		ug/L		99	85 - 115	1	15

Lab Sample ID: MRL 550-277756/1003
Matrix: Water
Analysis Batch: 277756

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte			Spike Added	MRL Result	MRL Qualifier	Unit	D	%Rec	%Rec Limits		
Perchlorate			1.00	0.833	J	ug/L		83	75 - 125		

Lab Sample ID: 550-185912-E-17 MS ^100
Matrix: Water
Analysis Batch: 277756

Client Sample ID: Matrix Spike
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits		
Perchlorate	1900		2500	4280		ug/L		95	80 - 120		

Lab Sample ID: 550-185912-E-17 MSD ^100
Matrix: Water
Analysis Batch: 277756

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Perchlorate	1900		2500	4370		ug/L		99	80 - 120	2	15

Lab Sample ID: MB 550-277807/1002
Matrix: Water
Analysis Batch: 277807

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perchlorate	ND		1.0	0.31	ug/L			06/25/22 10:02	1

Lab Sample ID: LCS 550-277807/4
Matrix: Water
Analysis Batch: 277807

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Perchlorate			25.0	25.9		ug/L		104	85 - 115		

Method: 314.0 - Perchlorate (IC)

Lab Sample ID: LCSD 550-277807/5
Matrix: Water
Analysis Batch: 277807

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Perchlorate			25.0	24.8		ug/L		99	85 - 115	4	15

Lab Sample ID: MRL 550-277807/1003
Matrix: Water
Analysis Batch: 277807

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte			Spike Added	MRL Result	MRL Qualifier	Unit	D	%Rec	%Rec Limits		
Perchlorate			1.00	0.866	J	ug/L		87	75 - 125		

Lab Sample ID: 550-186069-6 MS
Matrix: Water
Analysis Batch: 277807

Client Sample ID: SWFTS-MW15-EM38
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits		
Perchlorate	1400		12500	14000		ug/L		101	80 - 120		

Lab Sample ID: 550-186069-6 MSD
Matrix: Water
Analysis Batch: 277807

Client Sample ID: SWFTS-MW15-EM38
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Perchlorate	1400		12500	13900		ug/L		100	80 - 120	1	15

Lab Sample ID: MB 550-277991/1002
Matrix: Water
Analysis Batch: 277991

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perchlorate	ND		1.0	0.31	ug/L			06/28/22 11:00	1

Lab Sample ID: LCS 550-277991/4
Matrix: Water
Analysis Batch: 277991

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Perchlorate			25.0	24.7		ug/L		99	85 - 115		

Lab Sample ID: LCSD 550-277991/5
Matrix: Water
Analysis Batch: 277991

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Perchlorate			25.0	24.5		ug/L		98	85 - 115	1	15

Lab Sample ID: MRL 550-277991/1003
Matrix: Water
Analysis Batch: 277991

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte			Spike Added	MRL Result	MRL Qualifier	Unit	D	%Rec	%Rec Limits		
Perchlorate			1.00	0.914	J	ug/L		91	75 - 125		

Method: 314.0 - Perchlorate (IC)

Lab Sample ID: 550-186069-7 MS
Matrix: Water
Analysis Batch: 277991

Client Sample ID: SWFTS-MW14-EM38
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Perchlorate	6400		5000	10900	E	ug/L		91	80 - 120

Lab Sample ID: 550-186069-7 MSD
Matrix: Water
Analysis Batch: 277991

Client Sample ID: SWFTS-MW14-EM38
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Perchlorate	6400		5000	10900	E	ug/L		90	80 - 120	0	15

Method: SM 5310B - Organic Carbon, Total (TOC)

Lab Sample ID: MB 550-277919/33
Matrix: Water
Analysis Batch: 277919

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon	ND		0.50	0.26	mg/L			06/25/22 19:52	1

Lab Sample ID: LCS 550-277919/34
Matrix: Water
Analysis Batch: 277919

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Total Organic Carbon	20.0	19.9		mg/L		100	90 - 110

Lab Sample ID: LCSD 550-277919/35
Matrix: Water
Analysis Batch: 277919

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Total Organic Carbon	20.0	19.8		mg/L		99	90 - 110	0	20

Lab Sample ID: 550-186012-B-13 MS
Matrix: Water
Analysis Batch: 277919

Client Sample ID: Matrix Spike
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Total Organic Carbon	1.6		20.0	21.2		mg/L		98	90 - 110

Lab Sample ID: 550-186012-C-13 MSD
Matrix: Water
Analysis Batch: 277919

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Total Organic Carbon	1.6		20.0	20.7		mg/L		96	90 - 110	2	20

Method: SM 5310B - Organic Carbon, Total (TOC) (Continued)

Lab Sample ID: MB 550-278149/4
Matrix: Water
Analysis Batch: 278149

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon	ND		0.50	0.26	mg/L			06/29/22 16:49	1

Lab Sample ID: LCS 550-278149/5
Matrix: Water
Analysis Batch: 278149

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Total Organic Carbon			20.0	18.8		mg/L		94	90 - 110		

Lab Sample ID: LCSD 550-278149/6
Matrix: Water
Analysis Batch: 278149

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Total Organic Carbon			20.0	19.1		mg/L		95	90 - 110	2	20

Lab Sample ID: 550-186038-F-2 MS
Matrix: Water
Analysis Batch: 278149

Client Sample ID: Matrix Spike
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits		
Total Organic Carbon	3.2		20.0	21.9		mg/L		94	90 - 110		

Lab Sample ID: 550-186038-G-2 MSD
Matrix: Water
Analysis Batch: 278149

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Total Organic Carbon	3.2		20.0	21.3		mg/L		90	90 - 110	3	20

HPLC/IC

Analysis Batch: 277693

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
550-186069-1	SWFTS-MW19-EM38	Total/NA	Water	300.0	
550-186069-2	SWFTS-MW19-EM38-FD	Total/NA	Water	300.0	
550-186069-3	SWFTS-MW18-EM38	Total/NA	Water	300.0	
550-186069-4	SWFTS-MW17-EM38	Total/NA	Water	300.0	
550-186069-5	SWFTS-MW16-EM38	Total/NA	Water	300.0	
550-186069-6	SWFTS-MW15-EM38	Total/NA	Water	300.0	
550-186069-7	SWFTS-MW14-EM38	Total/NA	Water	300.0	
550-186069-8	SWFTS-MW13-EM38	Total/NA	Water	300.0	
550-186069-9	SWFTS-MW02-EM38	Total/NA	Water	300.0	
550-186069-10	SWFTS-EM38-EB2	Total/NA	Water	300.0	
550-186069-11	SWFTS-EM38-FB2	Total/NA	Water	300.0	
550-186069-12	SWFTS-MW03-EM38	Total/NA	Water	300.0	
550-186069-13	SWFTS-MW04-EM38	Total/NA	Water	300.0	
550-186069-14	SWFTS-MW06A-EM38	Total/NA	Water	300.0	
550-186069-15	SWFTS-MW06A-EM38-FD	Total/NA	Water	300.0	
550-186069-16	SWFTS-MW06B-EM38	Total/NA	Water	300.0	
550-186069-16	SWFTS-MW06B-EM38	Total/NA	Water	300.0	
MB 550-277693/2	Method Blank	Total/NA	Water	300.0	
LCS 550-277693/5	Lab Control Sample	Total/NA	Water	300.0	
LCSD 550-277693/6	Lab Control Sample Dup	Total/NA	Water	300.0	
550-185951-A-1 MS	Matrix Spike	Total/NA	Water	300.0	
550-185951-A-1 MSD	Matrix Spike Duplicate	Total/NA	Water	300.0	

Analysis Batch: 277694

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
550-186069-1	SWFTS-MW19-EM38	Total/NA	Water	300.0	
550-186069-2	SWFTS-MW19-EM38-FD	Total/NA	Water	300.0	
550-186069-3	SWFTS-MW18-EM38	Total/NA	Water	300.0	
MB 550-277694/1039	Method Blank	Total/NA	Water	300.0	
LCS 550-277694/40	Lab Control Sample	Total/NA	Water	300.0	
LCSD 550-277694/41	Lab Control Sample Dup	Total/NA	Water	300.0	
550-185951-A-10 MS ^2	Matrix Spike	Total/NA	Water	300.0	
550-185951-A-10 MSD ^2	Matrix Spike Duplicate	Total/NA	Water	300.0	

Analysis Batch: 277695

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
550-186069-7	SWFTS-MW14-EM38	Total/NA	Water	300.0	
550-186069-8	SWFTS-MW13-EM38	Total/NA	Water	300.0	
550-186069-9	SWFTS-MW02-EM38	Total/NA	Water	300.0	
550-186069-13	SWFTS-MW04-EM38	Total/NA	Water	300.0	
MB 550-277695/2	Method Blank	Total/NA	Water	300.0	
LCS 550-277695/5	Lab Control Sample	Total/NA	Water	300.0	
LCSD 550-277695/6	Lab Control Sample Dup	Total/NA	Water	300.0	
550-186085-B-1 MS ^5	Matrix Spike	Total/NA	Water	300.0	
550-186085-B-1 MSD ^5	Matrix Spike Duplicate	Total/NA	Water	300.0	

Analysis Batch: 277696

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
550-186069-4	SWFTS-MW17-EM38	Total/NA	Water	300.0	
550-186069-5	SWFTS-MW16-EM38	Total/NA	Water	300.0	
550-186069-6	SWFTS-MW15-EM38	Total/NA	Water	300.0	

HPLC/IC (Continued)

Analysis Batch: 277696 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
550-186069-14	SWFTS-MW06A-EM38	Total/NA	Water	300.0	
MB 550-277696/2	Method Blank	Total/NA	Water	300.0	
LCS 550-277696/5	Lab Control Sample	Total/NA	Water	300.0	
LCSD 550-277696/6	Lab Control Sample Dup	Total/NA	Water	300.0	
550-186086-B-1 MS ^5	Matrix Spike	Total/NA	Water	300.0	
550-186086-B-1 MSD ^5	Matrix Spike Duplicate	Total/NA	Water	300.0	

Analysis Batch: 277756

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
550-186069-1	SWFTS-MW19-EM38	Total/NA	Water	314.0	
550-186069-2	SWFTS-MW19-EM38-FD	Total/NA	Water	314.0	
550-186069-3	SWFTS-MW18-EM38	Total/NA	Water	314.0	
550-186069-4	SWFTS-MW17-EM38	Total/NA	Water	314.0	
550-186069-5	SWFTS-MW16-EM38	Total/NA	Water	314.0	
MB 550-277756/1002	Method Blank	Total/NA	Water	314.0	
LCS 550-277756/4	Lab Control Sample	Total/NA	Water	314.0	
LCSD 550-277756/5	Lab Control Sample Dup	Total/NA	Water	314.0	
MRL 550-277756/1003	Lab Control Sample	Total/NA	Water	314.0	
550-185912-E-17 MS ^100	Matrix Spike	Total/NA	Water	314.0	
550-185912-E-17 MSD ^100	Matrix Spike Duplicate	Total/NA	Water	314.0	

Analysis Batch: 277793

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
550-186069-15	SWFTS-MW06A-EM38-FD	Total/NA	Water	300.0	
MB 550-277793/2	Method Blank	Total/NA	Water	300.0	
LCS 550-277793/5	Lab Control Sample	Total/NA	Water	300.0	
LCSD 550-277793/6	Lab Control Sample Dup	Total/NA	Water	300.0	
550-186171-F-2 MS ^2	Matrix Spike	Total/NA	Water	300.0	
550-186171-F-2 MS ^50	Matrix Spike	Total/NA	Water	300.0	
550-186171-F-2 MSD ^2	Matrix Spike Duplicate	Total/NA	Water	300.0	
550-186171-F-2 MSD ^50	Matrix Spike Duplicate	Total/NA	Water	300.0	

Analysis Batch: 277807

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
550-186069-6	SWFTS-MW15-EM38	Total/NA	Water	314.0	
550-186069-8	SWFTS-MW13-EM38	Total/NA	Water	314.0	
550-186069-9	SWFTS-MW02-EM38	Total/NA	Water	314.0	
550-186069-10	SWFTS-EM38-EB2	Total/NA	Water	314.0	
550-186069-11	SWFTS-EM38-FB2	Total/NA	Water	314.0	
550-186069-12	SWFTS-MW03-EM38	Total/NA	Water	314.0	
550-186069-14	SWFTS-MW06A-EM38	Total/NA	Water	314.0	
550-186069-15	SWFTS-MW06A-EM38-FD	Total/NA	Water	314.0	
550-186069-16	SWFTS-MW06B-EM38	Total/NA	Water	314.0	
MB 550-277807/1002	Method Blank	Total/NA	Water	314.0	
LCS 550-277807/4	Lab Control Sample	Total/NA	Water	314.0	
LCSD 550-277807/5	Lab Control Sample Dup	Total/NA	Water	314.0	
MRL 550-277807/1003	Lab Control Sample	Total/NA	Water	314.0	
550-186069-6 MS	SWFTS-MW15-EM38	Total/NA	Water	314.0	
550-186069-6 MSD	SWFTS-MW15-EM38	Total/NA	Water	314.0	

HPLC/IC

Analysis Batch: 277991

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
550-186069-7	SWFTS-MW14-EM38	Total/NA	Water	314.0	
550-186069-13	SWFTS-MW04-EM38	Total/NA	Water	314.0	
MB 550-277991/1002	Method Blank	Total/NA	Water	314.0	
LCS 550-277991/4	Lab Control Sample	Total/NA	Water	314.0	
LCSD 550-277991/5	Lab Control Sample Dup	Total/NA	Water	314.0	
MRL 550-277991/1003	Lab Control Sample	Total/NA	Water	314.0	
550-186069-7 MS	SWFTS-MW14-EM38	Total/NA	Water	314.0	
550-186069-7 MSD	SWFTS-MW14-EM38	Total/NA	Water	314.0	

Analysis Batch: 278063

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
550-186069-5	SWFTS-MW16-EM38	Total/NA	Water	300.1B	
550-186069-7	SWFTS-MW14-EM38	Total/NA	Water	300.1B	
MB 550-278063/5	Method Blank	Total/NA	Water	300.1B	
LCS 550-278063/6	Lab Control Sample	Total/NA	Water	300.1B	
LCSD 550-278063/7	Lab Control Sample Dup	Total/NA	Water	300.1B	
MRL 550-278063/1003	Lab Control Sample	Total/NA	Water	300.1B	
550-186152-H-1 MS	Matrix Spike	Total/NA	Water	300.1B	
550-186152-H-1 MSD	Matrix Spike Duplicate	Total/NA	Water	300.1B	

Analysis Batch: 278151

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
550-186069-1	SWFTS-MW19-EM38	Total/NA	Water	300.1B	
550-186069-2	SWFTS-MW19-EM38-FD	Total/NA	Water	300.1B	
550-186069-3	SWFTS-MW18-EM38	Total/NA	Water	300.1B	
550-186069-6	SWFTS-MW15-EM38	Total/NA	Water	300.1B	
550-186069-8	SWFTS-MW13-EM38	Total/NA	Water	300.1B	
550-186069-9	SWFTS-MW02-EM38	Total/NA	Water	300.1B	
550-186069-10	SWFTS-EM38-EB2	Total/NA	Water	300.1B	
550-186069-11	SWFTS-EM38-FB2	Total/NA	Water	300.1B	
550-186069-12	SWFTS-MW03-EM38	Total/NA	Water	300.1B	
MB 550-278151/4	Method Blank	Total/NA	Water	300.1B	
LCS 550-278151/5	Lab Control Sample	Total/NA	Water	300.1B	
LCSD 550-278151/6	Lab Control Sample Dup	Total/NA	Water	300.1B	
MRL 550-278151/1002	Lab Control Sample	Total/NA	Water	300.1B	
550-186069-8 MS	SWFTS-MW13-EM38	Total/NA	Water	300.1B	
550-186069-8 MSD	SWFTS-MW13-EM38	Total/NA	Water	300.1B	

Analysis Batch: 278284

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
550-186069-4	SWFTS-MW17-EM38	Total/NA	Water	300.1B	
550-186069-14	SWFTS-MW06A-EM38	Total/NA	Water	300.1B	
550-186069-15	SWFTS-MW06A-EM38-FD	Total/NA	Water	300.1B	
MB 550-278284/5	Method Blank	Total/NA	Water	300.1B	
LCS 550-278284/6	Lab Control Sample	Total/NA	Water	300.1B	
LCSD 550-278284/7	Lab Control Sample Dup	Total/NA	Water	300.1B	
MRL 550-278284/1003	Lab Control Sample	Total/NA	Water	300.1B	
550-186171-G-5 MS ^100	Matrix Spike	Total/NA	Water	300.1B	
550-186171-G-5 MSD ^100	Matrix Spike Duplicate	Total/NA	Water	300.1B	
550-186171-H-2 MS ^200	Matrix Spike	Total/NA	Water	300.1B	
550-186171-H-2 MSD ^200	Matrix Spike Duplicate	Total/NA	Water	300.1B	

HPLC/IC

Analysis Batch: 278318

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
550-186069-13	SWFTS-MW04-EM38	Total/NA	Water	300.1B	
550-186069-16	SWFTS-MW06B-EM38	Total/NA	Water	300.1B	
MB 550-278318/5	Method Blank	Total/NA	Water	300.1B	
LCS 550-278318/6	Lab Control Sample	Total/NA	Water	300.1B	
LCSD 550-278318/7	Lab Control Sample Dup	Total/NA	Water	300.1B	
MRL 550-278318/1003	Lab Control Sample	Total/NA	Water	300.1B	
550-186069-13 MS	SWFTS-MW04-EM38	Total/NA	Water	300.1B	
550-186069-13 MSD	SWFTS-MW04-EM38	Total/NA	Water	300.1B	

General Chemistry

Analysis Batch: 277919

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
550-186069-1	SWFTS-MW19-EM38	Total/NA	Water	SM 5310B	
550-186069-2	SWFTS-MW19-EM38-FD	Total/NA	Water	SM 5310B	
550-186069-3	SWFTS-MW18-EM38	Total/NA	Water	SM 5310B	
550-186069-4	SWFTS-MW17-EM38	Total/NA	Water	SM 5310B	
550-186069-5	SWFTS-MW16-EM38	Total/NA	Water	SM 5310B	
550-186069-6	SWFTS-MW15-EM38	Total/NA	Water	SM 5310B	
550-186069-7	SWFTS-MW14-EM38	Total/NA	Water	SM 5310B	
550-186069-9	SWFTS-MW02-EM38	Total/NA	Water	SM 5310B	
550-186069-10	SWFTS-EM38-EB2	Total/NA	Water	SM 5310B	
550-186069-11	SWFTS-EM38-FB2	Total/NA	Water	SM 5310B	
550-186069-12	SWFTS-MW03-EM38	Total/NA	Water	SM 5310B	
550-186069-13	SWFTS-MW04-EM38	Total/NA	Water	SM 5310B	
550-186069-14	SWFTS-MW06A-EM38	Total/NA	Water	SM 5310B	
550-186069-15	SWFTS-MW06A-EM38-FD	Total/NA	Water	SM 5310B	
550-186069-16	SWFTS-MW06B-EM38	Total/NA	Water	SM 5310B	
MB 550-277919/33	Method Blank	Total/NA	Water	SM 5310B	
LCS 550-277919/34	Lab Control Sample	Total/NA	Water	SM 5310B	
LCSD 550-277919/35	Lab Control Sample Dup	Total/NA	Water	SM 5310B	
550-186012-B-13 MS	Matrix Spike	Total/NA	Water	SM 5310B	
550-186012-C-13 MSD	Matrix Spike Duplicate	Total/NA	Water	SM 5310B	

Analysis Batch: 278149

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
550-186069-8	SWFTS-MW13-EM38	Total/NA	Water	SM 5310B	
MB 550-278149/4	Method Blank	Total/NA	Water	SM 5310B	
LCS 550-278149/5	Lab Control Sample	Total/NA	Water	SM 5310B	
LCSD 550-278149/6	Lab Control Sample Dup	Total/NA	Water	SM 5310B	
550-186038-F-2 MS	Matrix Spike	Total/NA	Water	SM 5310B	
550-186038-G-2 MSD	Matrix Spike Duplicate	Total/NA	Water	SM 5310B	

Lab Chronicle

Client: Tetra Tech, Inc.
Job ID: 550-186069-1
Project/Site: Tetra Tech M11 SWF Treatability Study

Client Sample ID: SWFTS-MW19-EM38
Lab Sample ID: 550-186069-1
Date Collected: 06/22/22 08:45
Matrix: Water
Date Received: 06/22/22 18:33

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	300.0		1	277693	06/23/22 14:27	AS1	TAL PHX
Total/NA	Analysis	300.0		50	277694	06/24/22 05:11	AS1	TAL PHX
Total/NA	Analysis	300.1B		5	278151	06/30/22 08:26	MEG	TAL PHX
Total/NA	Analysis	314.0		100	277756	06/24/22 17:07	RDC	TAL PHX
Total/NA	Analysis	SM 5310B		1	277919	06/25/22 21:21	MEG	TAL PHX

Client Sample ID: SWFTS-MW19-EM38-FD
Lab Sample ID: 550-186069-2
Date Collected: 06/22/22 08:45
Matrix: Water
Date Received: 06/22/22 18:33

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	300.0		1	277693	06/23/22 15:59	AS1	TAL PHX
Total/NA	Analysis	300.0		50	277694	06/24/22 05:29	AS1	TAL PHX
Total/NA	Analysis	300.1B		5	278151	06/30/22 08:56	MEG	TAL PHX
Total/NA	Analysis	314.0		100	277756	06/24/22 17:30	RDC	TAL PHX
Total/NA	Analysis	SM 5310B		1	277919	06/25/22 21:33	MEG	TAL PHX

Client Sample ID: SWFTS-MW18-EM38
Lab Sample ID: 550-186069-3
Date Collected: 06/22/22 09:50
Matrix: Water
Date Received: 06/22/22 18:33

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	300.0		2	277693	06/23/22 16:18	AS1	TAL PHX
Total/NA	Analysis	300.0		50	277694	06/24/22 05:48	AS1	TAL PHX
Total/NA	Analysis	300.1B		50	278151	06/30/22 09:25	MEG	TAL PHX
Total/NA	Analysis	314.0		200	277756	06/24/22 17:52	RDC	TAL PHX
Total/NA	Analysis	SM 5310B		1	277919	06/25/22 21:46	MEG	TAL PHX

Client Sample ID: SWFTS-MW17-EM38
Lab Sample ID: 550-186069-4
Date Collected: 06/22/22 10:35
Matrix: Water
Date Received: 06/22/22 18:33

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	300.0		2	277693	06/23/22 16:36	AS1	TAL PHX
Total/NA	Analysis	300.0		50	277696	06/23/22 22:07	AS1	TAL PHX
Total/NA	Analysis	300.1B		100	278284	07/01/22 06:03	MEG	TAL PHX
Total/NA	Analysis	314.0		100	277756	06/24/22 18:14	RDC	TAL PHX
Total/NA	Analysis	SM 5310B		1	277919	06/25/22 21:58	MEG	TAL PHX

Lab Chronicle

Client: Tetra Tech, Inc.
Job ID: 550-186069-1
Project/Site: Tetra Tech M11 SWF Treatability Study

Client Sample ID: SWFTS-MW16-EM38
Lab Sample ID: 550-186069-5
Date Collected: 06/22/22 11:25
Matrix: Water
Date Received: 06/22/22 18:33

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	300.0		1	277693	06/23/22 16:55	AS1	TAL PHX
Total/NA	Analysis	300.0		50	277696	06/23/22 22:35	AS1	TAL PHX
Total/NA	Analysis	300.1B		2	278063	06/28/22 22:00	MEG	TAL PHX
Total/NA	Analysis	314.0		50	277756	06/24/22 18:37	RDC	TAL PHX
Total/NA	Analysis	SM 5310B		1	277919	06/25/22 22:10	MEG	TAL PHX

Client Sample ID: SWFTS-MW15-EM38
Lab Sample ID: 550-186069-6
Date Collected: 06/22/22 12:15
Matrix: Water
Date Received: 06/22/22 18:33

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	300.0		1	277693	06/23/22 17:13	AS1	TAL PHX
Total/NA	Analysis	300.0		50	277696	06/23/22 23:03	AS1	TAL PHX
Total/NA	Analysis	300.1B		5	278151	06/30/22 10:24	MEG	TAL PHX
Total/NA	Analysis	314.0		500	277807	06/25/22 11:32	RDC	TAL PHX
Total/NA	Analysis	SM 5310B		1	277919	06/25/22 22:23	MEG	TAL PHX

Client Sample ID: SWFTS-MW14-EM38
Lab Sample ID: 550-186069-7
Date Collected: 06/22/22 13:05
Matrix: Water
Date Received: 06/22/22 18:33

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	300.0		1	277693	06/23/22 17:31	AS1	TAL PHX
Total/NA	Analysis	300.0		50	277695	06/24/22 01:22	AS1	TAL PHX
Total/NA	Analysis	300.1B		5	278063	06/28/22 22:59	MEG	TAL PHX
Total/NA	Analysis	314.0		200	277991	06/28/22 12:29	RDC	TAL PHX
Total/NA	Analysis	SM 5310B		1	277919	06/25/22 22:36	MEG	TAL PHX

Client Sample ID: SWFTS-MW13-EM38
Lab Sample ID: 550-186069-8
Date Collected: 06/22/22 13:45
Matrix: Water
Date Received: 06/22/22 18:33

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	300.0		2	277693	06/23/22 17:50	AS1	TAL PHX
Total/NA	Analysis	300.0		50	277695	06/24/22 01:50	AS1	TAL PHX
Total/NA	Analysis	300.1B		200	278151	06/30/22 11:52	MEG	TAL PHX
Total/NA	Analysis	314.0		200	277807	06/25/22 13:01	RDC	TAL PHX
Total/NA	Analysis	SM 5310B		1	278149	06/29/22 19:16	MEG	TAL PHX

Lab Chronicle

Client: Tetra Tech, Inc. Job ID: 550-186069-1
Project/Site: Tetra Tech M11 SWF Treatability Study

Client Sample ID: SWFTS-MW02-EM38 Lab Sample ID: 550-186069-9
Date Collected: 06/22/22 09:25 **Matrix: Water**
Date Received: 06/22/22 18:33

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	300.0		2	277693	06/23/22 18:08	AS1	TAL PHX
Total/NA	Analysis	300.0		50	277695	06/24/22 02:18	AS1	TAL PHX
Total/NA	Analysis	300.1B		50	278151	06/30/22 14:49	MEG	TAL PHX
Total/NA	Analysis	314.0		500	277807	06/25/22 13:24	RDC	TAL PHX
Total/NA	Analysis	SM 5310B		1	277919	06/25/22 23:08	MEG	TAL PHX

Client Sample ID: SWFTS-EM38-EB2 Lab Sample ID: 550-186069-10
Date Collected: 06/22/22 09:30 **Matrix: Water**
Date Received: 06/22/22 18:33

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	300.0		1	277693	06/23/22 14:46	AS1	TAL PHX
Total/NA	Analysis	300.1B		1	278151	06/30/22 15:18	MEG	TAL PHX
Total/NA	Analysis	314.0		1	277807	06/25/22 13:46	RDC	TAL PHX
Total/NA	Analysis	SM 5310B		1	277919	06/25/22 23:18	MEG	TAL PHX

Client Sample ID: SWFTS-EM38-FB2 Lab Sample ID: 550-186069-11
Date Collected: 06/22/22 09:40 **Matrix: Water**
Date Received: 06/22/22 18:33

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	300.0		1	277693	06/23/22 18:27	AS1	TAL PHX
Total/NA	Analysis	300.1B		1	278151	06/30/22 15:48	MEG	TAL PHX
Total/NA	Analysis	314.0		1	277807	06/25/22 14:09	RDC	TAL PHX
Total/NA	Analysis	SM 5310B		1	277919	06/25/22 23:29	MEG	TAL PHX

Client Sample ID: SWFTS-MW03-EM38 Lab Sample ID: 550-186069-12
Date Collected: 06/22/22 10:25 **Matrix: Water**
Date Received: 06/22/22 18:33

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	300.0		20	277693	06/23/22 14:09	AS1	TAL PHX
Total/NA	Analysis	300.1B		50	278151	06/30/22 16:17	MEG	TAL PHX
Total/NA	Analysis	314.0		200	277807	06/25/22 14:31	RDC	TAL PHX
Total/NA	Analysis	SM 5310B		1	277919	06/25/22 23:39	MEG	TAL PHX

Client Sample ID: SWFTS-MW04-EM38 Lab Sample ID: 550-186069-13
Date Collected: 06/22/22 11:20 **Matrix: Water**
Date Received: 06/22/22 18:33

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	300.0		2	277693	06/23/22 19:40	AS1	TAL PHX
Total/NA	Analysis	300.0		50	277695	06/24/22 02:46	AS1	TAL PHX
Total/NA	Analysis	300.1B		100	278318	07/01/22 18:04	MEG	TAL PHX

Lab Chronicle

Client: Tetra Tech, Inc.
Job ID: 550-186069-1
Project/Site: Tetra Tech M11 SWF Treatability Study

Client Sample ID: SWFTS-MW04-EM38
Lab Sample ID: 550-186069-13
Date Collected: 06/22/22 11:20
Matrix: Water
Date Received: 06/22/22 18:33

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	314.0		500	277991	06/28/22 13:37	RDC	TAL PHX
Total/NA	Analysis	SM 5310B		1	277919	06/25/22 23:49	MEG	TAL PHX

Client Sample ID: SWFTS-MW06A-EM38
Lab Sample ID: 550-186069-14
Date Collected: 06/22/22 12:20
Matrix: Water
Date Received: 06/22/22 18:33

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	300.0		1	277693	06/23/22 19:59	AS1	TAL PHX
Total/NA	Analysis	300.0		50	277696	06/23/22 23:31	AS1	TAL PHX
Total/NA	Analysis	300.1B		5	278284	06/30/22 23:40	MEG	TAL PHX
Total/NA	Analysis	314.0		100	277807	06/25/22 16:01	RDC	TAL PHX
Total/NA	Analysis	SM 5310B		1	277919	06/26/22 00:01	MEG	TAL PHX

Client Sample ID: SWFTS-MW06A-EM38-FD
Lab Sample ID: 550-186069-15
Date Collected: 06/22/22 12:20
Matrix: Water
Date Received: 06/22/22 18:33

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	300.0		1	277693	06/23/22 20:17	AS1	TAL PHX
Total/NA	Analysis	300.0		50	277793	06/24/22 17:11	AS1	TAL PHX
Total/NA	Analysis	300.1B		5	278284	07/01/22 00:09	MEG	TAL PHX
Total/NA	Analysis	314.0		100	277807	06/25/22 16:23	RDC	TAL PHX
Total/NA	Analysis	SM 5310B		1	277919	06/26/22 00:14	MEG	TAL PHX

Client Sample ID: SWFTS-MW06B-EM38
Lab Sample ID: 550-186069-16
Date Collected: 06/22/22 13:10
Matrix: Water
Date Received: 06/22/22 18:33

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	300.0		2	277693	06/23/22 20:35	AS1	TAL PHX
Total/NA	Analysis	300.0		50	277693	06/23/22 20:54	AS1	TAL PHX
Total/NA	Analysis	300.1B		20	278318	07/01/22 19:33	MEG	TAL PHX
Total/NA	Analysis	314.0		100	277807	06/25/22 16:45	RDC	TAL PHX
Total/NA	Analysis	SM 5310B		4	277919	06/26/22 00:26	MEG	TAL PHX

Laboratory References:

TAL PHX = Eurofins Phoenix, 4625 East Cotton Center Boulevard, Suite #189, Phoenix, AZ 85040, TEL (602)437-3340

Accreditation/Certification Summary

Client: Tetra Tech, Inc. Job ID: 550-186069-1
Project/Site: Tetra Tech M11 SWF Treatability Study

Laboratory: Eurofins Phoenix

All accreditations/certifications held by this laboratory are listed. Not all accreditations/certifications are applicable to this report.

Authority	Program	Identification Number	Expiration Date
AIHA-LAP, LLC	Environmental Lead Laboratory Accreditation Program (ELLAP)	154268	11-01-23
AIHA-LAP, LLC	Industrial Hygiene Laboratory Accreditation Program (IHLAP)	154268	11-01-23
Arizona	State	AZ0728	06-10-23
California	State	2941	06-10-22 *
Nevada	State	AZ1030	07-31-22
Oregon	NELAP	AZ100001	03-09-23
USDA	US Federal Programs	P330-19-00227	08-27-22

* Accreditation/Certification renewal pending - accreditation/certification considered valid.

Method Summary

Client: Tetra Tech, Inc.
Job ID: 550-186069-1
Project/Site: Tetra Tech M11 SWF Treatability Study

Method	Method Description	Protocol	Laboratory
300.0	Anions, Ion Chromatography	MCAWW	TAL PHX
300.1B	Disinfection By-Products, (IC)	EPA	TAL PHX
314.0	Perchlorate (IC)	EPA	TAL PHX
SM 5310B	Organic Carbon, Total (TOC)	SM	TAL PHX

Protocol References:

EPA = US Environmental Protection Agency

MCAWW = "Methods For Chemical Analysis Of Water And Wastes", EPA-600/4-79-020, March 1983 And Subsequent Revisions.

SM = "Standard Methods For The Examination Of Water And Wastewater"

Laboratory References:

TAL PHX = Eurofins Phoenix, 4625 East Cotton Center Boulevard, Suite #189, Phoenix, AZ 85040, TEL (602)437-3340

186069

TestAmerica
Las Vegas
219

Tetra Tech
1093 Commerce Park Drive
Oak Ridge, TN37830
(865)483-9900

CHAIN-OF-CUSTODY

NERT-M11
Groundwater Sampling

Laboratory Name: Eurofins TestAmerica, Phoenix (602) 437-3340 | Address: 4625 East Cotton Ctr Blvd, Suite 189, Phoenix, AZ 85040 | Contact: Mary Charlson 602-659-7627 | Page ___ of ___

Project Name: Tetra Tech M11 SWF Treatability Study | Sampler: G. Schuler | Sampler Phone: 480 620 5186

Project No. M11-CWP-04
NERT - Seep Well Field Area Bioremediation Treatability Study | Project Contact: Maureen McMyler | Site Telephone No.: (702) 966-8340

Report to: Maureen McMyler, 1093 Commerce Park Dr. (865)220-4762
Bill to: Sunshine Pryor, 350 Indiana St., Golden, CO 80401 (303) 217-5700
Project Manager/Supervisor: Dana Grady

Analysis and Method Requested

Remarks
Preservation Codes:
A- HCL
D-Nitric Acid
L-EDA
N-None
S-H2SO4
Other:

Item No.	Sample Number	Date	Time	G=Grab C=Comp	Matrix	Sample Description, Location	Number of Containers	Perchlorate E314.0	TOC SM5310B	Chlorate E300.1	Sulfate/Nitrate E300.0 SHORT HOLD NITRATE!	Notes
						Preservation Code:	-	N	A	L	N	
1	SWFTS-MW19-EM38	6/22/22	0845	G	WG	—	7	X	X	X	X	
2	SWFTS-MW19-EM38-FD	↓	0845	↓	↓	—	7	X	X	X	X	
3	SWFTS-MW18-EM38	↓	0950	↓	↓	—	7	X	X	X	X	
4	SWFTS-MW17-EM38	↓	1035	↓	↓	—	7	X	X	X	X	
5	SWFTS-MW16-EM38	↓	1125	↓	↓	—	7	X	X	X	X	
6	SWFTS-MW15-EM38	↓	1215	↓	↓	—	7	X	X	X	X	
7	SWFTS-MW14-EM38	↓	1305	↓	↓	—	7	X	X	X	X	
8	SWFTS-MW13-EM38	↓	1345	↓	↓	—	7	X	X	X	X	
9												
10												

550-186069 Chain of Custody

Transfers Relinquished By (Signature)	Date/Time	Transfers Accepted By (Signature)	Date/Time
G. Schuler	6/22/22	TAM TALVS	6-22-22 1450
TAM TALVS	6-22-22 1600		
		Laboratory: Marc St	6-23-22 6:30

Special Instructions:

FedEx Airbill No.:
Sampler's Signature: (REQUIRED)

TAT ___ Standard ___ Rush Due ___
Received Good Condition ___ Y ___ N ___ Cold

3.9

THS40 19.6/19.9

3.9°c 3.5°c

DB-icr

7/7/2022

7/7/2022

Tetra Tech
1093 Commerce Park Drive
Oak Ridge, TN37830
(865)483-9900

TestAmerica
Las Vegas
219

CHAIN-OF-CUSTODY

NERT-M11
Groundwater Sampling

Laboratory Name: Eurofins TestAmerica, Phoenix (602) 437-3340 | Address: 4625 East Cotton Ctr Blvd, Suite 189, Phoenix, AZ 85040 | Contact: Mary Charlson 602-659-7627 | Page ___ of ___

Project Name: Tetra Tech M11 SWF Treatability Study
Project No. M11-CWP-04
NERT - Seep Well Field Area Bioremediation Treatability Study

Sampler: J. Bunkers | Sampler Phone: 702-767-2053
Project Contact: Maureen McMyler | Site Telephone No: (702) 966-8340
Report to: Maureen McMyler, 1093 Commerce Park Dr. (865)220-4762
Bill to: Sunshine Pryor, 350 Indiana St., Golden, CO 80401 (303) 217-5700
Project Manager/Supervisor: Dana Grady

Analysis and Method Requested

Remarks
Preservation Codes:
A- HCL
D-Nitric Acid
L-EDA
N-None
S-H2SO4
Other:

Item No	Sample Number	Date	Time	G-Grab C-Comp	Matrix	Sample Description, Location	Number of Containers	Perchlorate E314.0	TOC SM5310B	Chlorate E300.1	Sulfate/Nitrate E300.0 SHORT HOLD NITRATE!	Notes
						Preservation Code:	-	N	A	L	N	
9- 1	SWFTS-MW02-EM38	6/22/22	0925	G	W		7	X	X	X	X	
10- 2	SWFTS-EM38-EB2	6/22/22	0930	G	W		7	X	X	X	X	
11- 3	SWFTS-EM38-FB2	6/22/22	0940	G	W		7	X	X	X	X	
12- 4	SWFTS-MW03-EM38	6/22/22	1025	G	W		7	X	X	X	X	
13- 5	SWFTS-MW04-EM38	6/22/22	1120	G	W		7	X	X	X	X	
14- 6	SWFTS-MW06A-EM38	6/22/22	1220	G	W		7	X	X	X	X	
15- 7	SWFTS-MW06A-EM38-FD	6/22/22	1220	G	W		7	X	X	X	X	
16- 8	SWFTS-MW06B-EM38	6/22/22	1310	G	W		7	X	X	X	X	
9												
10												

Transfers Relinquished By (Signature)	Date/Time	Transfers Accepted By (Signature)	Date/Time	Special Instructions:
[signature]	6/22/22	TAMM TALVS	6-22-22 1440	
TAMM TALVS	6/22/22 1600			
			FedEx Airbill No.:	FedEx Airbill No.:
		Laboratory: [signature]	6-23-22 6:30 Sampler's Signature: (REQUIRED)	Sampler's Signature: [signature]

TAT ___Standard ___Rush Due _____ | Received Good Condition ___Y ___N ___Cold

TH240 19.6/19.9

3.9°C 3.5°C DB-ice

Login Sample Receipt Checklist

Client: Tetra Tech, Inc.

Job Number: 550-186069-1

Login Number: 186069
List Number: 1
Creator: Maycock, Lisa

List Source: Eurofins Phoenix

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	True	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	False	Check done at department level as required.

eurofins | Environment Testing America

ANALYTICAL REPORT

Eurofins Phoenix
4625 East Cotton Center Boulevard
Suite #189
Phoenix, AZ 85040
Tel: (602)437-3340

Laboratory Job ID: 550-186171-1
Client Project/Site: Tetra Tech M11 SWF Treatability Study

For:
Tetra Tech, Inc.
1093 Commerce Park Drive
Suite 100
Oak Ridge, Tennessee 37830

Attn: Dana Grady

Rachel Sester

Authorized for release by:
7/7/2022 6:15:06 PM

Rachel Sester, Project Manager I
(602)659-7615
Rachel.Sester@et.eurofinsus.com

LINKS

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Results relate only to the items tested and the sample(s) as received by the laboratory.

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Definitions/Glossary

Client: Tetra Tech, Inc. Job ID: 550-186171-1
Project/Site: Tetra Tech M11 SWF Treatability Study

Qualifiers

HPLC/IC

Qualifier	Qualifier Description
E	Result exceeded calibration range.
F1	MS and/or MSD recovery exceeds control limits.
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CFU	Colony Forming Unit
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MCL	EPA recommended "Maximum Contaminant Level"
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
MPN	Most Probable Number
MQL	Method Quantitation Limit
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
NEG	Negative / Absent
POS	Positive / Present
PQL	Practical Quantitation Limit
PRES	Presumptive
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)
TNTC	Too Numerous To Count

Case Narrative

Client: Tetra Tech, Inc. Job ID: 550-186171-1
Project/Site: Tetra Tech M11 SWF Treatability Study

Job ID: 550-186171-1

Laboratory: Eurofins Phoenix

Narrative

Job Narrative
550-186171-1

Comments
No additional comments.

Receipt
The samples were received on 6/24/2022 6:30 AM. Unless otherwise noted below, the samples arrived in good condition, and where required, properly preserved and on ice. The temperatures of the 3 coolers at receipt time were 3.0º C, 3.6º C and 27.2º C.

HPLC/IC
Method 300.1B: The matrix spike duplicate (MSD) recovery for Chlorate in analytical batch 550-278284 was outside control limits. Sample matrix interference and/or non-homogeneity were suspected because the associated laboratory control sample (LCS) recovery was within acceptance limits.

Method 300.1B: The matrix spike / matrix spike duplicate (MS/MSD) recoveries for Chlorate in analytical batch 550-278284 were outside control limits. Sample matrix interference was suspected because the associated laboratory control sample (LCS) recovery was within acceptance limits.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

General Chemistry
No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

Sample Summary

Client: Tetra Tech, Inc.
Job ID: 550-186171-1
Project/Site: Tetra Tech M11 SWF Treatability Study

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
550-186171-1	SWFTS-MW12-EM38	Water	06/23/22 08:45	06/23/22 17:35
550-186171-2	SWFTS-MW10A-EM38	Water	06/23/22 09:50	06/23/22 17:35
550-186171-3	SWFTS-MW09A-EM38	Water	06/23/22 10:50	06/23/22 17:35
550-186171-4	SWFTS-MW09B-EM38	Water	06/23/22 11:45	06/23/22 17:35
550-186171-5	SWFTS-MW09B-EM38-FD	Water	06/23/22 11:45	06/23/22 17:35
550-186171-6	SWFTS-MW07A-EM38	Water	06/23/22 08:40	06/23/22 17:35
550-186171-7	SWFTS-MW07B-EM38	Water	06/23/22 09:35	06/23/22 17:35

Detection Summary

Client: Tetra Tech, Inc.
Job ID: 550-186171-1
Project/Site: Tetra Tech M11 SWF Treatability Study

Client Sample ID: SWFTS-MW12-EM38 — Lab Sample ID: 550-186171-1

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Nitrate as N	6.6		0.050	0.014	mg/L	1		300.0	Total/NA
Sulfate	1600		100	21	mg/L	50		300.0	Total/NA
Chlorate	1500		100	24	ug/L	5		300.1B	Total/NA
Perchlorate	2500		100	31	ug/L	100		314.0	Total/NA
Total Organic Carbon	3.0		0.50	0.26	mg/L	1		SM 5310B	Total/NA

Client Sample ID: SWFTS-MW10A-EM38 — Lab Sample ID: 550-186171-2

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Nitrate as N	16		0.10	0.028	mg/L	2		300.0	Total/NA
Sulfate	2000		100	21	mg/L	50		300.0	Total/NA
Chlorate	18000	F1	4000	980	ug/L	200		300.1B	Total/NA
Perchlorate	16000		500	160	ug/L	500		314.0	Total/NA
Total Organic Carbon	2.1		0.50	0.26	mg/L	1		SM 5310B	Total/NA

Client Sample ID: SWFTS-MW09A-EM38 — Lab Sample ID: 550-186171-3

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Nitrate as N	9.5		0.050	0.014	mg/L	1		300.0	Total/NA
Sulfate	1800		100	21	mg/L	50		300.0	Total/NA
Chlorate	19000		2000	490	ug/L	100		300.1B	Total/NA
Perchlorate	11000		500	160	ug/L	500		314.0	Total/NA
Total Organic Carbon	1.9		0.50	0.26	mg/L	1		SM 5310B	Total/NA

Client Sample ID: SWFTS-MW09B-EM38 — Lab Sample ID: 550-186171-4

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Nitrate as N	16		0.050	0.014	mg/L	1		300.0	Total/NA
Sulfate	1900		100	21	mg/L	50		300.0	Total/NA
Chlorate	36000		2000	490	ug/L	100		300.1B	Total/NA
Perchlorate	16000		500	160	ug/L	500		314.0	Total/NA
Total Organic Carbon	1.7		0.50	0.26	mg/L	1		SM 5310B	Total/NA

Client Sample ID: SWFTS-MW09B-EM38-FD — Lab Sample ID: 550-186171-5

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Nitrate as N	16		0.10	0.028	mg/L	2		300.0	Total/NA
Sulfate	2000		100	21	mg/L	50		300.0	Total/NA
Chlorate	33000	F1	2000	490	ug/L	100		300.1B	Total/NA
Perchlorate	17000		500	160	ug/L	500		314.0	Total/NA
Total Organic Carbon	2.0		0.50	0.26	mg/L	1		SM 5310B	Total/NA

Client Sample ID: SWFTS-MW07A-EM38 — Lab Sample ID: 550-186171-6

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Nitrate as N	16		0.10	0.028	mg/L	2		300.0	Total/NA
Sulfate	1700		100	21	mg/L	50		300.0	Total/NA
Chlorate	38000		2000	490	ug/L	100		300.1B	Total/NA
Perchlorate	19000		500	160	ug/L	500		314.0	Total/NA
Total Organic Carbon	2.1		0.50	0.26	mg/L	1		SM 5310B	Total/NA

This Detection Summary does not include radiochemical test results.

Eurofins Phoenix

Detection Summary

Client: Tetra Tech, Inc.
Job ID: 550-186171-1
Project/Site: Tetra Tech M11 SWF Treatability Study

Client Sample ID: SWFTS-MW07B-EM38
Lab Sample ID: 550-186171-7

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Nitrate as N	23		0.10	0.028	mg/L	2		300.0	Total/NA
Sulfate	2000		100	21	mg/L	50		300.0	Total/NA
Chlorate	34000		4000	980	ug/L	200		300.1B	Total/NA
Perchlorate	15000		500	160	ug/L	500		314.0	Total/NA
Total Organic Carbon	2.5		0.50	0.26	mg/L	1		SM 5310B	Total/NA

This Detection Summary does not include radiochemical test results.

Client Sample ID: SWFTS-MW12-EM38 — Lab Sample ID: 550-186171-1

Date Collected: 06/23/22 08:45 — **Matrix: Water**
Date Received: 06/23/22 17:35

Method: 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Nitrate as N	6.6		0.050	0.014	mg/L			06/24/22 13:48	1
Sulfate	1600		100	21	mg/L			06/24/22 21:28	50

Method: 300.1B - Disinfection By-Products, (IC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chlorate	1500		100	24	ug/L			07/01/22 01:08	5

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Dichloroacetic acid(Surr)	*97*		*90 - 115*		*07/01/22 01:08*	*5*

Method: 314.0 - Perchlorate (IC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perchlorate	2500		100	31	ug/L			06/28/22 13:59	100

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon	3.0		0.50	0.26	mg/L			06/28/22 22:13	1

Client Sample ID: SWFTS-MW10A-EM38 — Lab Sample ID: 550-186171-2

Date Collected: 06/23/22 09:50 — **Matrix: Water**
Date Received: 06/23/22 17:35

Method: 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Nitrate as N	16		0.10	0.028	mg/L			06/24/22 12:16	2
Sulfate	2000		100	21	mg/L			06/24/22 19:56	50

Method: 300.1B - Disinfection By-Products, (IC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chlorate	18000	F1	4000	980	ug/L			06/30/22 21:42	200

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Dichloroacetic acid(Surr)	*90*		*90 - 115*		*06/30/22 21:42*	*200*

Method: 314.0 - Perchlorate (IC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perchlorate	16000		500	160	ug/L			06/25/22 11:34	500

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon	2.1		0.50	0.26	mg/L			06/28/22 21:38	1

Client Sample ID: SWFTS-MW09A-EM38 — Lab Sample ID: 550-186171-3

Date Collected: 06/23/22 10:50 — **Matrix: Water**
Date Received: 06/23/22 17:35

Method: 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Nitrate as N	9.5		0.050	0.014	mg/L			06/24/22 13:30	1
Sulfate	1800		100	21	mg/L			06/24/22 21:10	50

Client Sample ID: SWFTS-MW09A-EM38 — Lab Sample ID: 550-186171-3

Date Collected: 06/23/22 10:50 — **Matrix: Water**
Date Received: 06/23/22 17:35

Method: 300.1B - Disinfection By-Products, (IC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chlorate	19000		2000	490	ug/L			07/01/22 01:38	100

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Dichloroacetic acid(Surr)	*98*		*90 - 115*		*07/01/22 01:38*	*100*

Method: 314.0 - Perchlorate (IC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perchlorate	11000		500	160	ug/L			06/28/22 14:21	500

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon	1.9		0.50	0.26	mg/L			06/29/22 23:49	1

Client Sample ID: SWFTS-MW09B-EM38 — Lab Sample ID: 550-186171-4

Date Collected: 06/23/22 11:45 — **Matrix: Water**
Date Received: 06/23/22 17:35

Method: 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Nitrate as N	16		0.050	0.014	mg/L			06/24/22 13:11	1
Sulfate	1900		100	21	mg/L			06/24/22 20:51	50

Method: 300.1B - Disinfection By-Products, (IC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chlorate	36000		2000	490	ug/L			07/01/22 02:07	100

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Dichloroacetic acid(Surr)	*91*		*90 - 115*		*07/01/22 02:07*	*100*

Method: 314.0 - Perchlorate (IC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perchlorate	16000		500	160	ug/L			06/25/22 13:28	500

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon	1.7		0.50	0.26	mg/L			06/30/22 00:01	1

Client Sample ID: SWFTS-MW09B-EM38-FD — Lab Sample ID: 550-186171-5

Date Collected: 06/23/22 11:45 — **Matrix: Water**
Date Received: 06/23/22 17:35

Method: 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Nitrate as N	16		0.10	0.028	mg/L			06/24/22 14:07	2
Sulfate	2000		100	21	mg/L			06/24/22 21:47	50

Method: 300.1B - Disinfection By-Products, (IC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chlorate	33000	F1	2000	490	ug/L			07/01/22 03:36	100

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Dichloroacetic acid(Surr)	*95*		*90 - 115*		*07/01/22 03:36*	*100*

Client Sample ID: SWFTS-MW09B-EM38-FD
Lab Sample ID: 550-186171-5
Date Collected: 06/23/22 11:45 **Matrix: Water**
Date Received: 06/23/22 17:35

Method: 314.0 - Perchlorate (IC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perchlorate	17000		500	160	ug/L			06/25/22 13:51	500

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon	2.0		0.50	0.26	mg/L			06/28/22 22:49	1

Client Sample ID: SWFTS-MW07A-EM38
Lab Sample ID: 550-186171-6
Date Collected: 06/23/22 08:40 **Matrix: Water**
Date Received: 06/23/22 17:35

Method: 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Nitrate as N	16		0.10	0.028	mg/L			06/24/22 14:25	2
Sulfate	1700		100	21	mg/L			06/24/22 22:05	50

Method: 300.1B - Disinfection By-Products, (IC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chlorate	38000		2000	490	ug/L			07/01/22 05:04	100

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Dichloroacetic acid(Surr)	*95*		*90 - 115*		*07/01/22 05:04*	*100*

Method: 314.0 - Perchlorate (IC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perchlorate	19000		500	160	ug/L			06/25/22 14:14	500

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon	2.1		0.50	0.26	mg/L			06/30/22 00:13	1

Client Sample ID: SWFTS-MW07B-EM38
Lab Sample ID: 550-186171-7
Date Collected: 06/23/22 09:35 **Matrix: Water**
Date Received: 06/23/22 17:35

Method: 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Nitrate as N	23		0.10	0.028	mg/L			06/24/22 14:43	2
Sulfate	2000		100	21	mg/L			06/24/22 22:23	50

Method: 300.1B - Disinfection By-Products, (IC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chlorate	34000		4000	980	ug/L			07/01/22 05:34	200

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Dichloroacetic acid(Surr)	*96*		*90 - 115*		*07/01/22 05:34*	*200*

Method: 314.0 - Perchlorate (IC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perchlorate	15000		500	160	ug/L			06/25/22 14:37	500

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon	2.5		0.50	0.26	mg/L			06/28/22 23:14	1

Surrogate Summary

Client: Tetra Tech, Inc.
Job ID: 550-186171-1
Project/Site: Tetra Tech M11 SWF Treatability Study

Method: 300.1B - Disinfection By-Products, (IC)

Matrix: Water **Prep Type: Total/NA**

		Percent Surrogate Recovery (Acceptance Limits)							
Lab Sample ID	Client Sample ID	DCAA (90-115)							
550-186171-1	SWFTS-MW12-EM38	97							
550-186171-2	SWFTS-MW10A-EM38	90							
550-186171-2 MS	SWFTS-MW10A-EM38	97							
550-186171-2 MSD	SWFTS-MW10A-EM38	101							
550-186171-3	SWFTS-MW09A-EM38	98							
550-186171-4	SWFTS-MW09B-EM38	91							
550-186171-5	SWFTS-MW09B-EM38-FD	95							
550-186171-5 MS	SWFTS-MW09B-EM38-FD	98							
550-186171-5 MSD	SWFTS-MW09B-EM38-FD	102							
550-186171-6	SWFTS-MW07A-EM38	95							
550-186171-7	SWFTS-MW07B-EM38	96							
LCS 550-278284/6	Lab Control Sample	97							
LCSD 550-278284/7	Lab Control Sample Dup	101							
MB 550-278284/5	Method Blank	97							

Surrogate Legend

DCAA = Dichloroacetic acid(Surr)

Method: 300.1B - Disinfection By-Products, (IC)

Matrix: Water **Prep Type: Total/NA**

		Percent Surrogate Recovery (Acceptance Limits)							
Lab Sample ID	Client Sample ID	DCAA (50-150)							
MRL 550-278284/1003	Lab Control Sample	98							

Surrogate Legend

DCAA = Dichloroacetic acid(Surr)

Method: 300.0 - Anions, Ion Chromatography

Lab Sample ID: MB 550-277793/2
Matrix: Water
Analysis Batch: 277793

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Nitrate as N	ND		0.050	0.014	mg/L			06/24/22 10:44	1
Sulfate	ND		2.0	0.43	mg/L			06/24/22 10:44	1

Lab Sample ID: LCS 550-277793/5
Matrix: Water
Analysis Batch: 277793

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Nitrate as N			4.00	4.20		mg/L		105	90 - 110		
Sulfate			20.0	20.6		mg/L		103	90 - 110		

Lab Sample ID: LCSD 550-277793/6
Matrix: Water
Analysis Batch: 277793

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Nitrate as N			4.00	4.19		mg/L		105	90 - 110	0	20
Sulfate			20.0	20.6		mg/L		103	90 - 110	0	20

Lab Sample ID: 550-186171-2 MS
Matrix: Water
Analysis Batch: 277793

Client Sample ID: SWFTS-MW10A-EM38
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits		
Nitrate as N	16		8.00	23.7		mg/L		102	80 - 120		

Lab Sample ID: 550-186171-2 MS
Matrix: Water
Analysis Batch: 277793

Client Sample ID: SWFTS-MW10A-EM38
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits		
Sulfate	2000		1000	3080		mg/L		106	80 - 120		

Lab Sample ID: 550-186171-2 MSD
Matrix: Water
Analysis Batch: 277793

Client Sample ID: SWFTS-MW10A-EM38
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Nitrate as N	16		8.00	23.7		mg/L		102	80 - 120	0	20

Lab Sample ID: 550-186171-2 MSD
Matrix: Water
Analysis Batch: 277793

Client Sample ID: SWFTS-MW10A-EM38
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Sulfate	2000		1000	3090		mg/L		108	80 - 120	0	20

Method: 300.1B - Disinfection By-Products, (IC)

Lab Sample ID: MB 550-278284/5
Client Sample ID: Method Blank
Matrix: Water
Prep Type: Total/NA
Analysis Batch: 278284

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chlorate	ND		20	4.9	ug/L			06/30/22 20:14	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Dichloroacetic acid(Surr)	*97*		*90 - 115*		*06/30/22 20:14*	*1*

Lab Sample ID: LCS 550-278284/6
Client Sample ID: Lab Control Sample
Matrix: Water
Prep Type: Total/NA
Analysis Batch: 278284

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Chlorate			100	93.2		ug/L		93	75 - 125		

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
Dichloroacetic acid(Surr)	*97*		*90 - 115*

Lab Sample ID: LCSD 550-278284/7
Client Sample ID: Lab Control Sample Dup
Matrix: Water
Prep Type: Total/NA
Analysis Batch: 278284

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Chlorate			100	95.2		ug/L		95	75 - 125	2	25

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
Dichloroacetic acid(Surr)	*101*		*90 - 115*

Lab Sample ID: MRL 550-278284/1003
Client Sample ID: Lab Control Sample
Matrix: Water
Prep Type: Total/NA
Analysis Batch: 278284

Analyte			Spike Added	MRL Result	MRL Qualifier	Unit	D	%Rec	%Rec Limits		
Chlorate			20.0	21.0		ug/L		105	50 - 150		

Surrogate	*MRL %Recovery*	*MRL Qualifier*	*Limits*
Dichloroacetic acid(Surr)	*98*		*50 - 150*

Lab Sample ID: 550-186171-2 MS
Client Sample ID: SWFTS-MW10A-EM38
Matrix: Water
Prep Type: Total/NA
Analysis Batch: 278284

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits		
Chlorate	18000	F1	20000	41000		ug/L		116	75 - 125		

Surrogate	*MS %Recovery*	*MS Qualifier*	*Limits*
Dichloroacetic acid(Surr)	*97*		*90 - 115*

Method: 300.1B - Disinfection By-Products, (IC) (Continued)

Lab Sample ID: 550-186171-2 MSD
Matrix: Water
Analysis Batch: 278284

Client Sample ID: SWFTS-MW10A-EM38
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Chlorate	18000	F1	20000	43900	F1	ug/L		130	75 - 125	7	25

Surrogate	*MSD %Recovery*	*MSD Qualifier*	*Limits*
Dichloroacetic acid(Surr)	*101*		*90 - 115*

Lab Sample ID: 550-186171-5 MS
Matrix: Water
Analysis Batch: 278284

Client Sample ID: SWFTS-MW09B-EM38-FD
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Chlorate	33000	F1	10000	53400	E F1	ug/L		203	75 - 125

Surrogate	*MS %Recovery*	*MS Qualifier*	*Limits*
Dichloroacetic acid(Surr)	*98*		*90 - 115*

Lab Sample ID: 550-186171-5 MSD
Matrix: Water
Analysis Batch: 278284

Client Sample ID: SWFTS-MW09B-EM38-FD
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Chlorate	33000	F1	10000	56300	E F1	ug/L		232	75 - 125	5	25

Surrogate	*MSD %Recovery*	*MSD Qualifier*	*Limits*
Dichloroacetic acid(Surr)	*102*		*90 - 115*

Method: 314.0 - Perchlorate (IC)

Lab Sample ID: MB 550-277806/1002
Matrix: Water
Analysis Batch: 277806

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perchlorate	ND		1.0	0.31	ug/L			06/25/22 10:03	1

Lab Sample ID: LCS 550-277806/4
Matrix: Water
Analysis Batch: 277806

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Perchlorate	25.0	23.1		ug/L		92	85 - 115

Lab Sample ID: LCSD 550-277806/5
Matrix: Water
Analysis Batch: 277806

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Perchlorate	25.0	23.1		ug/L		92	85 - 115	0	15

Method: 314.0 - Perchlorate (IC) (Continued)

Lab Sample ID: MRL 550-277806/1003
Matrix: Water
Analysis Batch: 277806

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte			Spike Added	MRL Result	MRL Qualifier	Unit	D	%Rec	%Rec Limits		
Perchlorate			1.00	1.03		ug/L		103	75 - 125		

Lab Sample ID: 550-186171-2 MS
Matrix: Water
Analysis Batch: 277806

Client Sample ID: SWFTS-MW10A-EM38
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits		
Perchlorate	16000		12500	27100	E	ug/L		93	80 - 120		

Lab Sample ID: 550-186171-2 MSD
Matrix: Water
Analysis Batch: 277806

Client Sample ID: SWFTS-MW10A-EM38
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Perchlorate	16000		12500	27300	E	ug/L		94	80 - 120	1	15

Lab Sample ID: MB 550-277991/1002
Matrix: Water
Analysis Batch: 277991

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perchlorate	ND		1.0	0.31	ug/L			06/28/22 11:00	1

Lab Sample ID: LCS 550-277991/4
Matrix: Water
Analysis Batch: 277991

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Perchlorate			25.0	24.7		ug/L		99	85 - 115		

Lab Sample ID: LCSD 550-277991/5
Matrix: Water
Analysis Batch: 277991

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Perchlorate			25.0	24.5		ug/L		98	85 - 115	1	15

Lab Sample ID: MRL 550-277991/1003
Matrix: Water
Analysis Batch: 277991

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte			Spike Added	MRL Result	MRL Qualifier	Unit	D	%Rec	%Rec Limits		
Perchlorate			1.00	0.914	J	ug/L		91	75 - 125		

Lab Sample ID: 550-186069-E-7 MS ^200
Matrix: Water
Analysis Batch: 277991

Client Sample ID: Matrix Spike
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits		
Perchlorate	6400		5000	10900	E	ug/L		91	80 - 120		

Method: 314.0 - Perchlorate (IC)

Lab Sample ID: 550-186069-E-7 MSD ^200
Client Sample ID: Matrix Spike Duplicate
Matrix: Water
Prep Type: Total/NA
Analysis Batch: 277991

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Perchlorate	6400		5000	10900	E	ug/L		90	80 - 120	0	15

Method: SM 5310B - Organic Carbon, Total (TOC)

Lab Sample ID: MB 550-278026/34
Client Sample ID: Method Blank
Matrix: Water
Prep Type: Total/NA
Analysis Batch: 278026

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon	ND		0.50	0.26	mg/L			06/28/22 21:06	1

Lab Sample ID: LCS 550-278026/35
Client Sample ID: Lab Control Sample
Matrix: Water
Prep Type: Total/NA
Analysis Batch: 278026

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Total Organic Carbon	20.0	19.1		mg/L		96	90 - 110

Lab Sample ID: LCSD 550-278026/36
Client Sample ID: Lab Control Sample Dup
Matrix: Water
Prep Type: Total/NA
Analysis Batch: 278026

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Total Organic Carbon	20.0	19.3		mg/L		96	90 - 110	1	20

Lab Sample ID: 550-186171-2 MS
Client Sample ID: SWFTS-MW10A-EM38
Matrix: Water
Prep Type: Total/NA
Analysis Batch: 278026

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Total Organic Carbon	2.1		20.0	21.6		mg/L		97	90 - 110

Lab Sample ID: 550-186171-2 MSD
Client Sample ID: SWFTS-MW10A-EM38
Matrix: Water
Prep Type: Total/NA
Analysis Batch: 278026

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Total Organic Carbon	2.1		20.0	21.0		mg/L		94	90 - 110	2	20

Lab Sample ID: MB 550-278149/34
Client Sample ID: Method Blank
Matrix: Water
Prep Type: Total/NA
Analysis Batch: 278149

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon	ND		0.50	0.26	mg/L			06/29/22 22:31	1

Method: SM 5310B - Organic Carbon, Total (TOC) (Continued)

Lab Sample ID: LCS 550-278149/35
Matrix: Water
Analysis Batch: 278149

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Total Organic Carbon			20.0	19.1		mg/L		96	90 - 110		

Lab Sample ID: LCSD 550-278149/36
Matrix: Water
Analysis Batch: 278149

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Total Organic Carbon			20.0	19.1		mg/L		95	90 - 110	0	20

Lab Sample ID: 550-186344-H-1 MS
Matrix: Water
Analysis Batch: 278149

Client Sample ID: Matrix Spike
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits		
Total Organic Carbon	0.38	J	20.0	19.1		mg/L		94	90 - 110		

Lab Sample ID: 550-186344-J-1 MSD
Matrix: Water
Analysis Batch: 278149

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Total Organic Carbon	0.38	J	20.0	19.0		mg/L		93	90 - 110	1	20

HPLC/IC

Analysis Batch: 277793

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
550-186171-1	SWFTS-MW12-EM38	Total/NA	Water	300.0	
550-186171-1	SWFTS-MW12-EM38	Total/NA	Water	300.0	
550-186171-2	SWFTS-MW10A-EM38	Total/NA	Water	300.0	
550-186171-2	SWFTS-MW10A-EM38	Total/NA	Water	300.0	
550-186171-3	SWFTS-MW09A-EM38	Total/NA	Water	300.0	
550-186171-3	SWFTS-MW09A-EM38	Total/NA	Water	300.0	
550-186171-4	SWFTS-MW09B-EM38	Total/NA	Water	300.0	
550-186171-4	SWFTS-MW09B-EM38	Total/NA	Water	300.0	
550-186171-5	SWFTS-MW09B-EM38-FD	Total/NA	Water	300.0	
550-186171-5	SWFTS-MW09B-EM38-FD	Total/NA	Water	300.0	
550-186171-6	SWFTS-MW07A-EM38	Total/NA	Water	300.0	
550-186171-6	SWFTS-MW07A-EM38	Total/NA	Water	300.0	
550-186171-7	SWFTS-MW07B-EM38	Total/NA	Water	300.0	
550-186171-7	SWFTS-MW07B-EM38	Total/NA	Water	300.0	
MB 550-277793/2	Method Blank	Total/NA	Water	300.0	
LCS 550-277793/5	Lab Control Sample	Total/NA	Water	300.0	
LCSD 550-277793/6	Lab Control Sample Dup	Total/NA	Water	300.0	
550-186171-2 MS	SWFTS-MW10A-EM38	Total/NA	Water	300.0	
550-186171-2 MS	SWFTS-MW10A-EM38	Total/NA	Water	300.0	
550-186171-2 MSD	SWFTS-MW10A-EM38	Total/NA	Water	300.0	
550-186171-2 MSD	SWFTS-MW10A-EM38	Total/NA	Water	300.0	

Analysis Batch: 277806

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
550-186171-2	SWFTS-MW10A-EM38	Total/NA	Water	314.0	
550-186171-4	SWFTS-MW09B-EM38	Total/NA	Water	314.0	
550-186171-5	SWFTS-MW09B-EM38-FD	Total/NA	Water	314.0	
550-186171-6	SWFTS-MW07A-EM38	Total/NA	Water	314.0	
550-186171-7	SWFTS-MW07B-EM38	Total/NA	Water	314.0	
MB 550-277806/1002	Method Blank	Total/NA	Water	314.0	
LCS 550-277806/4	Lab Control Sample	Total/NA	Water	314.0	
LCSD 550-277806/5	Lab Control Sample Dup	Total/NA	Water	314.0	
MRL 550-277806/1003	Lab Control Sample	Total/NA	Water	314.0	
550-186171-2 MS	SWFTS-MW10A-EM38	Total/NA	Water	314.0	
550-186171-2 MSD	SWFTS-MW10A-EM38	Total/NA	Water	314.0	

Analysis Batch: 277991

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
550-186171-1	SWFTS-MW12-EM38	Total/NA	Water	314.0	
550-186171-3	SWFTS-MW09A-EM38	Total/NA	Water	314.0	
MB 550-277991/1002	Method Blank	Total/NA	Water	314.0	
LCS 550-277991/4	Lab Control Sample	Total/NA	Water	314.0	
LCSD 550-277991/5	Lab Control Sample Dup	Total/NA	Water	314.0	
MRL 550-277991/1003	Lab Control Sample	Total/NA	Water	314.0	
550-186069-E-7 MS ^200	Matrix Spike	Total/NA	Water	314.0	
550-186069-E-7 MSD ^200	Matrix Spike Duplicate	Total/NA	Water	314.0	

Analysis Batch: 278284

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
550-186171-1	SWFTS-MW12-EM38	Total/NA	Water	300.1B	
550-186171-2	SWFTS-MW10A-EM38	Total/NA	Water	300.1B	

HPLC/IC (Continued)

Analysis Batch: 278284 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
550-186171-3	SWFTS-MW09A-EM38	Total/NA	Water	300.1B	
550-186171-4	SWFTS-MW09B-EM38	Total/NA	Water	300.1B	
550-186171-5	SWFTS-MW09B-EM38-FD	Total/NA	Water	300.1B	
550-186171-6	SWFTS-MW07A-EM38	Total/NA	Water	300.1B	
550-186171-7	SWFTS-MW07B-EM38	Total/NA	Water	300.1B	
MB 550-278284/5	Method Blank	Total/NA	Water	300.1B	
LCS 550-278284/6	Lab Control Sample	Total/NA	Water	300.1B	
LCSD 550-278284/7	Lab Control Sample Dup	Total/NA	Water	300.1B	
MRL 550-278284/1003	Lab Control Sample	Total/NA	Water	300.1B	
550-186171-2 MS	SWFTS-MW10A-EM38	Total/NA	Water	300.1B	
550-186171-2 MSD	SWFTS-MW10A-EM38	Total/NA	Water	300.1B	
550-186171-5 MS	SWFTS-MW09B-EM38-FD	Total/NA	Water	300.1B	
550-186171-5 MSD	SWFTS-MW09B-EM38-FD	Total/NA	Water	300.1B	

General Chemistry

Analysis Batch: 278026

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
550-186171-1	SWFTS-MW12-EM38	Total/NA	Water	SM 5310B	
550-186171-2	SWFTS-MW10A-EM38	Total/NA	Water	SM 5310B	
550-186171-5	SWFTS-MW09B-EM38-FD	Total/NA	Water	SM 5310B	
550-186171-7	SWFTS-MW07B-EM38	Total/NA	Water	SM 5310B	
MB 550-278026/34	Method Blank	Total/NA	Water	SM 5310B	
LCS 550-278026/35	Lab Control Sample	Total/NA	Water	SM 5310B	
LCSD 550-278026/36	Lab Control Sample Dup	Total/NA	Water	SM 5310B	
550-186171-2 MS	SWFTS-MW10A-EM38	Total/NA	Water	SM 5310B	
550-186171-2 MSD	SWFTS-MW10A-EM38	Total/NA	Water	SM 5310B	

Analysis Batch: 278149

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
550-186171-3	SWFTS-MW09A-EM38	Total/NA	Water	SM 5310B	
550-186171-4	SWFTS-MW09B-EM38	Total/NA	Water	SM 5310B	
550-186171-6	SWFTS-MW07A-EM38	Total/NA	Water	SM 5310B	
MB 550-278149/34	Method Blank	Total/NA	Water	SM 5310B	
LCS 550-278149/35	Lab Control Sample	Total/NA	Water	SM 5310B	
LCSD 550-278149/36	Lab Control Sample Dup	Total/NA	Water	SM 5310B	
550-186344-H-1 MS	Matrix Spike	Total/NA	Water	SM 5310B	
550-186344-J-1 MSD	Matrix Spike Duplicate	Total/NA	Water	SM 5310B	

Lab Chronicle

Client: Tetra Tech, Inc.
Job ID: 550-186171-1
Project/Site: Tetra Tech M11 SWF Treatability Study

Client Sample ID: SWFTS-MW12-EM38
Lab Sample ID: 550-186171-1
Date Collected: 06/23/22 08:45
Matrix: Water
Date Received: 06/23/22 17:35

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	300.0		1	277793	06/24/22 13:48	AS1	TAL PHX
Total/NA	Analysis	300.0		50	277793	06/24/22 21:28	AS1	TAL PHX
Total/NA	Analysis	300.1B		5	278284	07/01/22 01:08	MEG	TAL PHX
Total/NA	Analysis	314.0		100	277991	06/28/22 13:59	RDC	TAL PHX
Total/NA	Analysis	SM 5310B		1	278026	06/28/22 22:13	MEG	TAL PHX

Client Sample ID: SWFTS-MW10A-EM38
Lab Sample ID: 550-186171-2
Date Collected: 06/23/22 09:50
Matrix: Water
Date Received: 06/23/22 17:35

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	300.0		2	277793	06/24/22 12:16	AS1	TAL PHX
Total/NA	Analysis	300.0		50	277793	06/24/22 19:56	AS1	TAL PHX
Total/NA	Analysis	300.1B		200	278284	06/30/22 21:42	MEG	TAL PHX
Total/NA	Analysis	314.0		500	277806	06/25/22 11:34	RDC	TAL PHX
Total/NA	Analysis	SM 5310B		1	278026	06/28/22 21:38	MEG	TAL PHX

Client Sample ID: SWFTS-MW09A-EM38
Lab Sample ID: 550-186171-3
Date Collected: 06/23/22 10:50
Matrix: Water
Date Received: 06/23/22 17:35

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	300.0		1	277793	06/24/22 13:30	AS1	TAL PHX
Total/NA	Analysis	300.0		50	277793	06/24/22 21:10	AS1	TAL PHX
Total/NA	Analysis	300.1B		100	278284	07/01/22 01:38	MEG	TAL PHX
Total/NA	Analysis	314.0		500	277991	06/28/22 14:21	RDC	TAL PHX
Total/NA	Analysis	SM 5310B		1	278149	06/29/22 23:49	MEG	TAL PHX

Client Sample ID: SWFTS-MW09B-EM38
Lab Sample ID: 550-186171-4
Date Collected: 06/23/22 11:45
Matrix: Water
Date Received: 06/23/22 17:35

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	300.0		1	277793	06/24/22 13:11	AS1	TAL PHX
Total/NA	Analysis	300.0		50	277793	06/24/22 20:51	AS1	TAL PHX
Total/NA	Analysis	300.1B		100	278284	07/01/22 02:07	MEG	TAL PHX
Total/NA	Analysis	314.0		500	277806	06/25/22 13:28	RDC	TAL PHX
Total/NA	Analysis	SM 5310B		1	278149	06/30/22 00:01	MEG	TAL PHX

Lab Chronicle

Client: Tetra Tech, Inc.
Job ID: 550-186171-1
Project/Site: Tetra Tech M11 SWF Treatability Study

Client Sample ID: SWFTS-MW09B-EM38-FD
Lab Sample ID: 550-186171-5
Date Collected: 06/23/22 11:45
Matrix: Water
Date Received: 06/23/22 17:35

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	300.0		2	277793	06/24/22 14:07	AS1	TAL PHX
Total/NA	Analysis	300.0		50	277793	06/24/22 21:47	AS1	TAL PHX
Total/NA	Analysis	300.1B		100	278284	07/01/22 03:36	MEG	TAL PHX
Total/NA	Analysis	314.0		500	277806	06/25/22 13:51	RDC	TAL PHX
Total/NA	Analysis	SM 5310B		1	278026	06/28/22 22:49	MEG	TAL PHX

Client Sample ID: SWFTS-MW07A-EM38
Lab Sample ID: 550-186171-6
Date Collected: 06/23/22 08:40
Matrix: Water
Date Received: 06/23/22 17:35

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	300.0		2	277793	06/24/22 14:25	AS1	TAL PHX
Total/NA	Analysis	300.0		50	277793	06/24/22 22:05	AS1	TAL PHX
Total/NA	Analysis	300.1B		100	278284	07/01/22 05:04	MEG	TAL PHX
Total/NA	Analysis	314.0		500	277806	06/25/22 14:14	RDC	TAL PHX
Total/NA	Analysis	SM 5310B		1	278149	06/30/22 00:13	MEG	TAL PHX

Client Sample ID: SWFTS-MW07B-EM38
Lab Sample ID: 550-186171-7
Date Collected: 06/23/22 09:35
Matrix: Water
Date Received: 06/23/22 17:35

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	300.0		2	277793	06/24/22 14:43	AS1	TAL PHX
Total/NA	Analysis	300.0		50	277793	06/24/22 22:23	AS1	TAL PHX
Total/NA	Analysis	300.1B		200	278284	07/01/22 05:34	MEG	TAL PHX
Total/NA	Analysis	314.0		500	277806	06/25/22 14:37	RDC	TAL PHX
Total/NA	Analysis	SM 5310B		1	278026	06/28/22 23:14	MEG	TAL PHX

Laboratory References:
TAL PHX = Eurofins Phoenix, 4625 East Cotton Center Boulevard, Suite #189, Phoenix, AZ 85040, TEL (602)437-3340

Accreditation/Certification Summary

Client: Tetra Tech, Inc. Job ID: 550-186171-1
Project/Site: Tetra Tech M11 SWF Treatability Study

Laboratory: Eurofins Phoenix

All accreditations/certifications held by this laboratory are listed. Not all accreditations/certifications are applicable to this report.

Authority	Program	Identification Number	Expiration Date
AIHA-LAP, LLC	Environmental Lead Laboratory Accreditation Program (ELLAP)	154268	11-01-23
AIHA-LAP, LLC	Industrial Hygiene Laboratory Accreditation Program (IHLAP)	154268	11-01-23
Arizona	State	AZ0728	06-10-23
California	State	2941	06-10-22 *
Nevada	State	AZ1030	07-31-22
Oregon	NELAP	AZ100001	03-09-23
USDA	US Federal Programs	P330-19-00227	08-27-22

* Accreditation/Certification renewal pending - accreditation/certification considered valid.

Method Summary

Client: Tetra Tech, Inc.
Job ID: 550-186171-1
Project/Site: Tetra Tech M11 SWF Treatability Study

Method	Method Description	Protocol	Laboratory
300.0	Anions, Ion Chromatography	MCAWW	TAL PHX
300.1B	Disinfection By-Products, (IC)	EPA	TAL PHX
314.0	Perchlorate (IC)	EPA	TAL PHX
SM 5310B	Organic Carbon, Total (TOC)	SM	TAL PHX

Protocol References:

EPA = US Environmental Protection Agency

MCAWW = "Methods For Chemical Analysis Of Water And Wastes", EPA-600/4-79-020, March 1983 And Subsequent Revisions.

SM = "Standard Methods For The Examination Of Water And Wastewater"

Laboratory References:

TAL PHX = Eurofins Phoenix, 4625 East Cotton Center Boulevard, Suite #189, Phoenix, AZ 85040, TEL (602)437-3340

186171

TestAmerica
Las Vegas
219

Tetra Tech
1093 Commerce Park Drive
Oak Ridge, TN37830
(865)483-9900

CHAIN-OF-CUSTODY

NERT-M11
Groundwater Sampling

Laboratory Name: Eurofins TestAmerica, Phoenix (602) 437-3340 | Address: 4625 East Cotton Ctr Blvd, Suite 189, Phoenix, AZ 85040 | Contact: Mary Charlson 602-659-7627 | Page ___ of ___

Project Name: Tetra Tech M11 SWF Treatability Study | Sampler: G. Schuler | Sampler Phone: 480 620 5186

Project No. M11-CWP-04
NERT - Seep Well Field Area Bioremediation Treatability Study | Project Contact: Maureen McMyler | Site Telephone No.: (702) 966-8340

Report to: Maureen McMyler, 1093 Commerce Park Dr. (865)220-4762 | Project Manager/Supervisor: Dana Grady

Bill to: Sunshine Pryor, 350 Indiana St., Golden, CO 80401 (303) 217-5700

Analysis and Method Requested

Remarks
Preservation Codes:
A- HCL
D-Nitric Acid
L-EDA
N-None
S-H2SO4
Other:

Item No.	Sample Number	Date	Time	G=Grab C=Comp	Matrix	Sample Description, Location	Number of Containers	Perchlorate E314.0	TOC SM5310B	Chlorate E300.1	Sulfate/Nitrate E300.0 SHORT HOLD NITRATE!	Notes
						Preservation Code:	-	N	A	L	N	
1	SWFTS ~~LVWPS~~-MW12-EM38	6/23/22	0845	G	WG	—	7	X	X	X	X	-1
2	SWFTS ~~LVWPS~~-MW10A-EM38		0950			—	7	X	X	X	X	-2
3	SWFTS-MW10A-EM38-MS/MSD		0950			—	7	X	X	X	X	-2
4	SWFTS-MW09A-EM38		1050			—	7	X	X	X	X	-3
5	SWFTS-MW09B-EM38		1145			—	7	X	X	X	X	-4
6	SWFTS-MW09B-EM38-FD		1145			—	7	X	X	X	X	-6
7												
8												
9												
10												

550-186171 Chain of Custody

Transfers Relinquished By (Signature)	Date/Time	Transfers Accepted By (Signature)	Date/Time
G. Schuler	6/23/22 1335	TAM TALUS	6/23/22 1335
TAM TALUS	6/23/22 1600		

Special Instructions:

FedEx Airbill No.:

Laboratory: Marc St EETA-Phx

Sampler's Signature: (REQUIRED)

TAT: ___Standard ___ Rush Due: _____

Received Good Condition ___ Y ___ N ___ Cold

6-24-22
6:30

TH240 26.9/57.2

3.6°C 3.0°C

DB-ice

LOM 7/5/22 17:18

TestAmerica
Las Vegas
219

Tetra Tech
1093 Commerce Park Drive
Oak Ridge, TN37830
(865)483-9900

CHAIN-OF-CUSTODY

NERT-M11
Groundwater Sampling

Laboratory Name: Eurofins TestAmerica, Phoenix (602) 437-3340 | Address: 4625 East Cotton Ctr Blvd, Suite 189, Phoenix, AZ 85040 | Contact: Mary Charlson 602-659-7627 | Page ___ of ___

Project Name: Tetra Tech M11 SWF Treatability Study | Sampler: J. Bunkers | Sampler Phone: 702-767-2053

Project No. M11-CWP-04
NERT - Seep Well Field Area Bioremediation Treatability Study | Project Contact: Maureen McMyler | Site Telephone No.: (702) 966-8340

Report to: Maureen McMyler, 1093 Commerce Park Dr. (865)220-4762 | Project Manager/Supervisor: Dana Grady

Bill to: Sunshine Pryor, 350 Indiana St., Golden, CO 80401 (303) 217-5700

Analysis and Method Requested

Remarks
Preservation Codes:
A- HCL
D-Nitric Acid
L-EDA
N-None
S-H2SO4
Other:

Item No.	Sample Number	Date	Time	G=Grab C=Comp	Matrix	Sample Description, Location	Number of Containers	Perchlorate E314.0	TOC SM5310B	Chlorate E300.1	Sulfate/Nitrate E300.0 SHORT HOLD NITRATE!	Notes
						Preservation Code:	-	N	A	L	N	
1	SWFTS-MW07A-EM38	6/23/22	0840	G	W		7	X	X	X	X	-6
2	SWFTS-MW07B-EM38	6/23/22	0935	G	W		7	X	X	X	X	-7
3	~~SWFTS-MW08A-EM38~~	~~6/23/22~~		~~G~~	~~W~~		~~7~~	~~X~~	~~X~~	~~X~~	~~X~~	~~JB~~
4												
5												
6												
7												
8												
9												
10												

7-
8-
9-

17/18/5/22

Transfers Relinquished By (Signature)	Date/Time	Transfers Accepted By (Signature)	Date/Time
[signature]	6/23/22 1335	JAM TALUS	6/23/22 1335
JAM TALUS	6/23/22 1600		
		Laboratory: Mar Sq EETA-Phx	

Special Instructions:

FedEx Airbill No.:

FedEx Airbill No.:

Sampler's Signature: (REQUIRED)

Sampler's Signature: [signature]

TAT: ___Standard ___ Rush Due: _____

Received Good Condition ___ Y ___ N ___ Cold

6-24-22
6:30

TH340 26.4/27.2

3.6°c 3.0°c

DB-ice

Login Sample Receipt Checklist

Client: Tetra Tech, Inc.

Job Number: 550-186171-1

Login Number: 186171
List Number: 1
Creator: Maycock, Lisa

List Source: Eurofins Phoenix

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	True	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	False	Check done at department level as required.

eurofins | Environment Testing America

ANALYTICAL REPORT

Eurofins Phoenix
4625 East Cotton Center Boulevard
Suite #189
Phoenix, AZ 85040
Tel: (602)437-3340

Laboratory Job ID: 550-188805-1
Client Project/Site: Seep Well Field

For:
Tetra Tech, Inc.
1093 Commerce Park Drive
Suite 100
Oak Ridge, Tennessee 37830

Attn: Ms. Maureen McMyler

Authorized for release by:
8/30/2022 6:24:51 PM

Rachel Sester, Project Manager I
(602)659-7615
Rachel.Sester@et.eurofinsus.com

LINKS

Review your project results through my EOL

Have a Question? Ask The Expert

Visit us at: www.eurofinsus.com/Env

This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.

Results relate only to the items tested and the sample(s) as received by the laboratory.

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Definitions/Glossary

Client: Tetra Tech, Inc.
Project/Site: Seep Well Field

Job ID: 550-188805-1

Qualifiers

Metals

Qualifier	Qualifier Description
4	MS, MSD: The analyte present in the original sample is greater than 4 times the matrix spike concentration; therefore, control limits are not applicable.
B1	Target analyte detected in method blank at or above the method reporting limit.
E4	Concentration estimated. Analyte was detected below laboratory minimum reporting limit (MRL).

General Chemistry

Qualifier	Qualifier Description
B1	Target analyte detected in method blank at or above the method reporting limit.
E4	Concentration estimated. Analyte was detected below laboratory minimum reporting limit (MRL).
F1	MS and/or MSD recovery exceeds control limits.
F2	MS/MSD RPD exceeds control limits

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CFU	Colony Forming Unit
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MCL	EPA recommended "Maximum Contaminant Level"
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
MPN	Most Probable Number
MQL	Method Quantitation Limit
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
NEG	Negative / Absent
POS	Positive / Present
PQL	Practical Quantitation Limit
PRES	Presumptive
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)
TNTC	Too Numerous To Count

Job ID: 550-188805-1

Laboratory: Eurofins Phoenix

Narrative

Job Narrative
550-188805-1

Comments
No additional comments.

Receipt
The samples were received on 8/13/2022 10:00 AM. Unless otherwise noted below, the samples arrived in good condition, and where required, properly preserved and on ice. The temperature of the cooler at receipt time in Las Vegas was 21.4º C; the temperatures of the 2 coolers at receipt time in Phoenix were 0.9º C and 2.4º C.

HPLC/IC
No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

Metals
Method 6010B: The method blank for preparation batch 550-281556 and analytical batch 550-281731 contained Calcium above method detection limit (MDL). Associated sample(s) were not re-extracted and/or re-analyzed because results were greater than 10X the value found in the method blank.

Method 6010B: The method blank for preparation batch 550-281555 and analytical batch 550-281735 contained Calcium above the reporting limit (RL). Associated sample(s) were not re-extracted and/or re-analyzed because results were greater than 10X the value found in the method blank.

Method 6010B: The following samples were diluted to bring the concentration of target analytes within the calibration range: BH16-42.3 (550-188805-22), BH16-42.3 (550-188805-22[MS]), BH16-42.3 (550-188805-22[MSD]), BH12-36 (550-188805-32) and (550-188805-E-22-A PDS ^2). Elevated reporting limits (RLs) are provided.

Method 6010B: The following samples were diluted to bring the concentration of target analytes within the calibration range: BH11-45 (550-188805-5), BH13-32.6 (550-188805-8), BH13-39 (550-188805-9), BH13-41 (550-188805-10), BH13-41-FD (550-188805-11) and BH15-41 (550-188805-16). Elevated reporting limits (RLs) are provided.

Method 6010B: The following sample was diluted to bring the concentration of target analytes within the calibration range: BH11-40 (550-188805-4). Elevated reporting limits (RLs) are provided.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

General Chemistry
Method 9060A: The method blank for analytical batch 280-584714 contained Total Organic Carbon above the method detection limit. This target analyte concentration was less than the reporting limit (RL); therefore, re-analysis of samples was not performed.

Method 9060A: The matrix spike and matrix spike duplicate (MS/MSD) precision for analytical batch 280-584714 was outside control limits. Sample non-homogeneity is suspected.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

Certification
The accreditations/certifications listed below are applicable to this report.
Laboratory: Eurofins Phoenix
State of Nevada **Identification Number:** AZ1030 **Expiration Date:** 07-31-23

Laboratory: Eurofins Denver
State of Nevada **Identification Number:** CO0002662020-1 **Expiration Date:** 07-31-22*
*Accreditation/Certification renewal pending - accreditation/certificate considered valid.

Sample Summary

Client: Tetra Tech, Inc.
Project/Site: Seep Well Field

Job ID: 550-188805-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
550-188805-1	BH11-15	Solid	08/10/22 10:30	08/13/22 10:00
550-188805-2	BH11-20	Solid	08/10/22 10:40	08/13/22 10:00
550-188805-3	BH11-30	Solid	08/10/22 11:00	08/13/22 10:00
550-188805-4	BH11-40	Solid	08/10/22 11:10	08/13/22 10:00
550-188805-5	BH11-45	Solid	08/10/22 12:35	08/13/22 10:00
550-188805-6	BH13-11	Solid	08/11/22 07:40	08/13/22 10:00
550-188805-7	BH13-22	Solid	08/11/22 08:00	08/13/22 10:00
550-188805-8	BH13-32.6	Solid	08/11/22 08:05	08/13/22 10:00
550-188805-9	BH13-39	Solid	08/11/22 08:10	08/13/22 10:00
550-188805-10	BH13-41	Solid	08/11/22 08:20	08/13/22 10:00
550-188805-11	BH13-41-FD	Solid	08/11/22 08:20	08/13/22 10:00
550-188805-12	BH15-18.5	Solid	08/11/22 09:40	08/13/22 10:00
550-188805-13	BH15-21	Solid	08/11/22 09:50	08/13/22 10:00
550-188805-14	BH15-34.5	Solid	08/11/22 10:00	08/13/22 10:00
550-188805-15	BH15-37.5	Solid	08/11/22 10:05	08/13/22 10:00
550-188805-16	BH15-41	Solid	08/11/22 10:15	08/13/22 10:00
550-188805-17	BH16-17.3	Solid	08/11/22 12:35	08/13/22 10:00
550-188805-18	BH16-21.5	Solid	08/11/22 12:40	08/13/22 10:00
550-188805-19	BH16-21.5-FD	Solid	08/11/22 12:40	08/13/22 10:00
550-188805-20	BH16-26.5	Solid	08/11/22 12:45	08/13/22 10:00
550-188805-21	BH16-31	Solid	08/11/22 12:50	08/13/22 10:00
550-188805-22	BH16-42.3	Solid	08/11/22 13:00	08/13/22 10:00
550-188805-23	BH18-13	Solid	08/11/22 13:35	08/13/22 10:00
550-188805-24	BH18-20	Solid	08/11/22 13:40	08/13/22 10:00
550-188805-25	BH18-23	Solid	08/11/22 13:45	08/13/22 10:00
550-188805-26	BH18-27.5	Solid	08/11/22 13:50	08/13/22 10:00
550-188805-27	BH18-34.5	Solid	08/11/22 13:55	08/13/22 10:00
550-188805-28	BH12-11	Solid	08/12/22 09:40	08/13/22 10:00
550-188805-29	BH12-16	Solid	08/12/22 09:50	08/13/22 10:00
550-188805-30	BH12-21	Solid	08/12/22 10:00	08/13/22 10:00
550-188805-31	BH12-27	Solid	08/12/22 10:10	08/13/22 10:00
550-188805-32	BH12-36	Solid	08/12/22 10:20	08/13/22 10:00

Detection Summary

Client: Tetra Tech, Inc.
Project/Site: Seep Well Field

Job ID: 550-188805-1

Client Sample ID: BH11-15 — Lab Sample ID: 550-188805-1

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Calcium	27000	B1	9.9	0.85	mg/Kg	1		6010B	Total/NA
Total Organic Carbon	1.7	B1 E4	4.0	0.90	g/Kg	1		9060A	Total/NA
Lactic acid	7.8	E4	9.1	2.7	mg/Kg	1		VFA-IC	Soluble

Client Sample ID: BH11-20 — Lab Sample ID: 550-188805-2

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Calcium	31000	B1	10	0.86	mg/Kg	1		6010B	Total/NA
Total Organic Carbon	1.5	B1 E4	4.0	0.90	g/Kg	1		9060A	Total/NA

Client Sample ID: BH11-30 — Lab Sample ID: 550-188805-3

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Calcium	35000	B1	9.8	0.84	mg/Kg	1		6010B	Total/NA
Total Organic Carbon	1.9	B1 E4	4.0	0.90	g/Kg	1		9060A	Total/NA

Client Sample ID: BH11-40 — Lab Sample ID: 550-188805-4

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Calcium	140000	B1	40	3.4	mg/Kg	4		6010B	Total/NA
Total Organic Carbon	2.1	B1 E4	4.0	0.90	g/Kg	1		9060A	Total/NA

Client Sample ID: BH11-45 — Lab Sample ID: 550-188805-5

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Calcium	110000	B1	20	1.7	mg/Kg	2		6010B	Total/NA
Total Organic Carbon	6.9	B1	4.0	0.90	g/Kg	1		9060A	Total/NA

Client Sample ID: BH13-11 — Lab Sample ID: 550-188805-6

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Calcium	6600	B1	9.9	0.85	mg/Kg	1		6010B	Total/NA
Total Organic Carbon	1.4	B1 E4	4.0	0.90	g/Kg	1		9060A	Total/NA
Lactic acid	5.5	E4	9.7	2.9	mg/Kg	1		VFA-IC	Soluble

Client Sample ID: BH13-22 — Lab Sample ID: 550-188805-7

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Calcium	3900	B1	9.8	0.84	mg/Kg	1		6010B	Total/NA
Total Organic Carbon	1.9	B1 E4	4.0	0.90	g/Kg	1		9060A	Total/NA
Formic-acid	2.5	E4	10	2.2	mg/Kg	1		VFA-IC	Soluble

Client Sample ID: BH13-32.6 — Lab Sample ID: 550-188805-8

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Calcium	70000	B1	20	1.7	mg/Kg	2		6010B	Total/NA
Total Organic Carbon	5.2	B1	4.0	0.90	g/Kg	1		9060A	Total/NA
Formic-acid	2.4	E4	9.3	2.0	mg/Kg	1		VFA-IC	Soluble
Lactic acid	3.4	E4	9.3	2.8	mg/Kg	1		VFA-IC	Soluble

Client Sample ID: BH13-39 — Lab Sample ID: 550-188805-9

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Calcium	89000	B1	19	1.7	mg/Kg	2		6010B	Total/NA
Total Organic Carbon	4.8	B1	4.0	0.90	g/Kg	1		9060A	Total/NA

This Detection Summary does not include radiochemical test results.

Eurofins Phoenix

Client Sample ID: BH13-39 (Continued) — Lab Sample ID: 550-188805-9

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Acetic acid	6.4	E4	11	1.6	mg/Kg	1		VFA-IC	Soluble
Formic-acid	7.6	E4	11	2.3	mg/Kg	1		VFA-IC	Soluble

Client Sample ID: BH13-41 — Lab Sample ID: 550-188805-10

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Calcium	63000	B1	19	1.7	mg/Kg	2		6010B	Total/NA
Total Organic Carbon	2.6	B1 E4	4.0	0.90	g/Kg	1		9060A	Total/NA
Acetic acid	58		9.7	1.5	mg/Kg	1		VFA-IC	Soluble
Formic-acid	2.6	E4	9.7	2.1	mg/Kg	1		VFA-IC	Soluble
Lactic acid	4.4	E4	9.7	2.9	mg/Kg	1		VFA-IC	Soluble
Propionic acid	23		9.7	1.7	mg/Kg	1		VFA-IC	Soluble

Client Sample ID: BH13-41-FD — Lab Sample ID: 550-188805-11

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Calcium	65000	B1	20	1.7	mg/Kg	2		6010B	Total/NA
Total Organic Carbon	8.4	B1	4.0	0.90	g/Kg	1		9060A	Total/NA
Acetic acid	64		11	1.6	mg/Kg	1		VFA-IC	Soluble
Formic-acid	2.5	E4	11	2.3	mg/Kg	1		VFA-IC	Soluble
Lactic acid	4.6	E4	11	3.2	mg/Kg	1		VFA-IC	Soluble
Propionic acid	24		11	1.8	mg/Kg	1		VFA-IC	Soluble

Client Sample ID: BH15-18.5 — Lab Sample ID: 550-188805-12

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Calcium	41000	B1	9.9	0.85	mg/Kg	1		6010B	Total/NA
Formic-acid	2.7	E4	11	2.4	mg/Kg	1		VFA-IC	Soluble

Client Sample ID: BH15-21 — Lab Sample ID: 550-188805-13

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Calcium	5600	B1	9.8	0.84	mg/Kg	1		6010B	Total/NA

Client Sample ID: BH15-34.5 — Lab Sample ID: 550-188805-14

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Calcium	38000	B1	10	0.85	mg/Kg	1		6010B	Total/NA

Client Sample ID: BH15-37.5 — Lab Sample ID: 550-188805-15

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Calcium	56000	B1	9.7	0.83	mg/Kg	1		6010B	Total/NA
Total Organic Carbon	1.1	B1 E4	4.0	0.90	g/Kg	1		9060A	Total/NA

Client Sample ID: BH15-41 — Lab Sample ID: 550-188805-16

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Calcium	71000	B1	20	1.7	mg/Kg	2		6010B	Total/NA
Total Organic Carbon	2.8	B1 E4	4.0	0.90	g/Kg	1		9060A	Total/NA

Client Sample ID: BH16-17.3 — Lab Sample ID: 550-188805-17

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Calcium	6100	B1	9.9	0.85	mg/Kg	1		6010B	Total/NA

This Detection Summary does not include radiochemical test results.

Client Sample ID: BH16-17.3 (Continued) — Lab Sample ID: 550-188805-17

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Total Organic Carbon	0.91	B1 E4	4.0	0.90	g/Kg	1		9060A	Total/NA
Formic-acid	2.3	E4	9.2	2.0	mg/Kg	1		VFA-IC	Soluble

Client Sample ID: BH16-21.5 — Lab Sample ID: 550-188805-18

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Calcium	10000	B1	9.8	0.84	mg/Kg	1		6010B	Total/NA
Lactic acid	3.7	E4	9.7	2.9	mg/Kg	1		VFA-IC	Soluble

Client Sample ID: BH16-21.5-FD — Lab Sample ID: 550-188805-19

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Calcium	9400	B1	9.7	0.83	mg/Kg	1		6010B	Total/NA
Lactic acid	3.9	E4	10	3.1	mg/Kg	1		VFA-IC	Soluble
Propionic acid	3.9	E4	10	1.8	mg/Kg	1		VFA-IC	Soluble

Client Sample ID: BH16-26.5 — Lab Sample ID: 550-188805-20

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Calcium	8900	B1	9.9	0.85	mg/Kg	1		6010B	Total/NA
Lactic acid	3.8	E4	9.6	2.9	mg/Kg	1		VFA-IC	Soluble

Client Sample ID: BH16-31 — Lab Sample ID: 550-188805-21

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Calcium	38000	B1	9.8	0.84	mg/Kg	1		6010B	Total/NA
Total Organic Carbon	1.5	B1 E4	4.0	0.90	g/Kg	1		9060A	Total/NA
Formic-acid	2.6	E4	9.3	2.0	mg/Kg	1		VFA-IC	Soluble
Propionic acid	3.7	E4	9.3	1.6	mg/Kg	1		VFA-IC	Soluble

Client Sample ID: BH16-42.3 — Lab Sample ID: 550-188805-22

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Calcium	100000	B1	20	1.7	mg/Kg	2		6010B	Total/NA
Total Organic Carbon	2.9	B1 E4	4.0	0.90	g/Kg	1		9060A	Total/NA

Client Sample ID: BH18-13 — Lab Sample ID: 550-188805-23

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Calcium	6400	B1	9.8	0.84	mg/Kg	1		6010B	Total/NA
Lactic acid	4.8	E4	9.2	2.8	mg/Kg	1		VFA-IC	Soluble

Client Sample ID: BH18-20 — Lab Sample ID: 550-188805-24

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Calcium	20000	B1	9.7	0.83	mg/Kg	1		6010B	Total/NA

Client Sample ID: BH18-23 — Lab Sample ID: 550-188805-25

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Calcium	4600	B1	9.9	0.85	mg/Kg	1		6010B	Total/NA

This Detection Summary does not include radiochemical test results.

Detection Summary

Client: Tetra Tech, Inc.
Project/Site: Seep Well Field

Job ID: 550-188805-1

Client Sample ID: BH18-27.5 — Lab Sample ID: 550-188805-26

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Calcium	8800	B1	9.8	0.84	mg/Kg	1		6010B	Total/NA

Client Sample ID: BH18-34.5 — Lab Sample ID: 550-188805-27

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Calcium	51000	B1	9.9	0.85	mg/Kg	1		6010B	Total/NA
Lactic acid	3.1	E4	9.7	2.9	mg/Kg	1		VFA-IC	Soluble

Client Sample ID: BH12-11 — Lab Sample ID: 550-188805-28

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Calcium	9300	B1	9.8	0.84	mg/Kg	1		6010B	Total/NA

Client Sample ID: BH12-16 — Lab Sample ID: 550-188805-29

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Calcium	6500	B1	9.9	0.85	mg/Kg	1		6010B	Total/NA
Total Organic Carbon	0.91	B1 E4	4.0	0.90	g/Kg	1		9060A	Total/NA
Lactic acid	8.8	E4	9.9	3.0	mg/Kg	1		VFA-IC	Soluble

Client Sample ID: BH12-21 — Lab Sample ID: 550-188805-30

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Calcium	4300	B1	9.8	0.84	mg/Kg	1		6010B	Total/NA
Total Organic Carbon	0.90	B1 E4	4.0	0.90	g/Kg	1		9060A	Total/NA
Lactic acid	3.6	E4	10	3.0	mg/Kg	1		VFA-IC	Soluble

Client Sample ID: BH12-27 — Lab Sample ID: 550-188805-31

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Calcium	6400	B1	9.8	0.84	mg/Kg	1		6010B	Total/NA
Total Organic Carbon	0.98	B1 E4	4.0	0.90	g/Kg	1		9060A	Total/NA

Client Sample ID: BH12-36 — Lab Sample ID: 550-188805-32

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Calcium	99000	B1	20	1.7	mg/Kg	2		6010B	Total/NA

This Detection Summary does not include radiochemical test results.

Client Sample ID: BH11-15

Lab Sample ID: 550-188805-1

Date Collected: 08/10/22 10:30

Matrix: Solid

Date Received: 08/13/22 10:00

Method: 6010B - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Calcium	27000	B1	9.9	0.85	mg/Kg		08/15/22 06:53	08/16/22 12:20	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon	1.7	B1 E4	4.0	0.90	g/Kg			08/18/22 15:46	1

General Chemistry - Soluble

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetic acid	ND		9.1	1.4	mg/Kg			08/18/22 22:21	1
Formic-acid	ND		9.1	2.0	mg/Kg			08/18/22 22:21	1
Lactic acid	7.8	E4	9.1	2.7	mg/Kg			08/18/22 22:21	1
n-Butyric Acid	ND		9.1	1.5	mg/Kg			08/18/22 22:21	1
Propionic acid	ND		9.1	1.5	mg/Kg			08/18/22 22:21	1
Pyruvic Acid	ND		9.1	2.3	mg/Kg			08/18/22 22:21	1

Client Sample ID: BH11-20

Lab Sample ID: 550-188805-2

Date Collected: 08/10/22 10:40

Matrix: Solid

Date Received: 08/13/22 10:00

Method: 6010B - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Calcium	31000	B1	10	0.86	mg/Kg		08/15/22 06:53	08/16/22 12:23	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon	1.5	B1 E4	4.0	0.90	g/Kg			08/18/22 14:28	1

General Chemistry - Soluble

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetic acid	ND		10	1.5	mg/Kg			08/18/22 22:50	1
Formic-acid	ND		10	2.2	mg/Kg			08/18/22 22:50	1
Lactic acid	ND		10	3.0	mg/Kg			08/18/22 22:50	1
n-Butyric Acid	ND		10	1.6	mg/Kg			08/18/22 22:50	1
Propionic acid	ND		10	1.7	mg/Kg			08/18/22 22:50	1
Pyruvic Acid	ND		10	2.5	mg/Kg			08/18/22 22:50	1

Client Sample ID: BH11-30

Lab Sample ID: 550-188805-3

Date Collected: 08/10/22 11:00

Matrix: Solid

Date Received: 08/13/22 10:00

Method: 6010B - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Calcium	35000	B1	9.8	0.84	mg/Kg		08/15/22 06:53	08/16/22 12:26	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon	1.9	B1 E4	4.0	0.90	g/Kg			08/18/22 14:38	1

General Chemistry - Soluble

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetic acid	ND		11	1.6	mg/Kg			08/18/22 23:20	1
Formic-acid	ND		11	2.3	mg/Kg			08/18/22 23:20	1

Client Sample ID: BH11-30

Lab Sample ID: 550-188805-3

Date Collected: 08/10/22 11:00

Matrix: Solid

Date Received: 08/13/22 10:00

General Chemistry - Soluble (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lactic acid	ND		11	3.2	mg/Kg			08/18/22 23:20	1
n-Butyric Acid	ND		11	1.7	mg/Kg			08/18/22 23:20	1
Propionic acid	ND		11	1.8	mg/Kg			08/18/22 23:20	1
Pyruvic Acid	ND		11	2.7	mg/Kg			08/18/22 23:20	1

Client Sample ID: BH11-40

Lab Sample ID: 550-188805-4

Date Collected: 08/10/22 11:10

Matrix: Solid

Date Received: 08/13/22 10:00

Method: 6010B - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Calcium	140000	B1	40	3.4	mg/Kg		08/15/22 06:53	08/17/22 12:55	4

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon	2.1	B1 E4	4.0	0.90	g/Kg			08/18/22 14:47	1

General Chemistry - Soluble

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetic acid	ND		11	1.6	mg/Kg			08/19/22 01:45	1
Formic-acid	ND		11	2.4	mg/Kg			08/19/22 01:45	1
Lactic acid	ND		11	3.3	mg/Kg			08/19/22 01:45	1
n-Butyric Acid	ND		11	1.7	mg/Kg			08/19/22 01:45	1
Propionic acid	ND		11	1.8	mg/Kg			08/19/22 01:45	1
Pyruvic Acid	ND		11	2.7	mg/Kg			08/19/22 01:45	1

Client Sample ID: BH11-45

Lab Sample ID: 550-188805-5

Date Collected: 08/10/22 12:35

Matrix: Solid

Date Received: 08/13/22 10:00

Method: 6010B - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Calcium	110000	B1	20	1.7	mg/Kg		08/15/22 06:53	08/16/22 17:20	2

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon	6.9	B1	4.0	0.90	g/Kg			08/18/22 15:16	1

General Chemistry - Soluble

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetic acid	ND		10	1.6	mg/Kg			08/19/22 02:14	1
Formic-acid	ND		10	2.3	mg/Kg			08/19/22 02:14	1
Lactic acid	ND		10	3.1	mg/Kg			08/19/22 02:14	1
n-Butyric Acid	ND		10	1.7	mg/Kg			08/19/22 02:14	1
Propionic acid	ND		10	1.8	mg/Kg			08/19/22 02:14	1
Pyruvic Acid	ND		10	2.6	mg/Kg			08/19/22 02:14	1

Client Sample ID: BH13-11

Lab Sample ID: 550-188805-6

Date Collected: 08/11/22 07:40

Matrix: Solid

Date Received: 08/13/22 10:00

Method: 6010B - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Calcium	6600	B1	9.9	0.85	mg/Kg		08/15/22 06:53	08/16/22 12:34	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon	1.4	B1 E4	4.0	0.90	g/Kg			08/18/22 15:27	1

General Chemistry - Soluble

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetic acid	ND		9.7	1.5	mg/Kg			08/19/22 02:44	1
Formic-acid	ND		9.7	2.1	mg/Kg			08/19/22 02:44	1
Lactic acid	5.5	E4	9.7	2.9	mg/Kg			08/19/22 02:44	1
n-Butyric Acid	ND		9.7	1.6	mg/Kg			08/19/22 02:44	1
Propionic acid	ND		9.7	1.7	mg/Kg			08/19/22 02:44	1
Pyruvic Acid	ND		9.7	2.4	mg/Kg			08/19/22 02:44	1

Client Sample ID: BH13-22

Lab Sample ID: 550-188805-7

Date Collected: 08/11/22 08:00

Matrix: Solid

Date Received: 08/13/22 10:00

Method: 6010B - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Calcium	3900	B1	9.8	0.84	mg/Kg		08/15/22 06:53	08/16/22 12:37	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon	1.9	B1 E4	4.0	0.90	g/Kg			08/18/22 15:36	1

General Chemistry - Soluble

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetic acid	ND		10	1.5	mg/Kg			08/19/22 03:13	1
Formic-acid	2.5	E4	10	2.2	mg/Kg			08/19/22 03:13	1
Lactic acid	ND		10	3.0	mg/Kg			08/19/22 03:13	1
n-Butyric Acid	ND		10	1.6	mg/Kg			08/19/22 03:13	1
Propionic acid	ND		10	1.7	mg/Kg			08/19/22 03:13	1
Pyruvic Acid	ND		10	2.5	mg/Kg			08/19/22 03:13	1

Client Sample ID: BH13-32.6

Lab Sample ID: 550-188805-8

Date Collected: 08/11/22 08:05

Matrix: Solid

Date Received: 08/13/22 10:00

Method: 6010B - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Calcium	70000	B1	20	1.7	mg/Kg		08/15/22 06:53	08/16/22 17:23	2

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon	5.2	B1	4.0	0.90	g/Kg			08/18/22 16:16	1

General Chemistry - Soluble

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetic acid	ND		9.3	1.4	mg/Kg			08/19/22 03:42	1
Formic-acid	2.4	E4	9.3	2.0	mg/Kg			08/19/22 03:42	1

Client Sample ID: BH13-32.6

Lab Sample ID: 550-188805-8

Date Collected: 08/11/22 08:05

Matrix: Solid

Date Received: 08/13/22 10:00

General Chemistry - Soluble (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lactic acid	**3.4**	**E4**	9.3	2.8	mg/Kg			08/19/22 03:42	1
n-Butyric Acid	ND		9.3	1.5	mg/Kg			08/19/22 03:42	1
Propionic acid	ND		9.3	1.6	mg/Kg			08/19/22 03:42	1
Pyruvic Acid	ND		9.3	2.3	mg/Kg			08/19/22 03:42	1

Client Sample ID: BH13-39

Lab Sample ID: 550-188805-9

Date Collected: 08/11/22 08:10

Matrix: Solid

Date Received: 08/13/22 10:00

Method: 6010B - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Calcium	**89000**	**B1**	19	1.7	mg/Kg		08/15/22 06:53	08/16/22 17:26	2

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon	**4.8**	**B1**	4.0	0.90	g/Kg			08/18/22 16:25	1

General Chemistry - Soluble

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetic acid	**6.4**	**E4**	11	1.6	mg/Kg			08/19/22 04:11	1
Formic-acid	**7.6**	**E4**	11	2.3	mg/Kg			08/19/22 04:11	1
Lactic acid	ND		11	3.2	mg/Kg			08/19/22 04:11	1
n-Butyric Acid	ND		11	1.7	mg/Kg			08/19/22 04:11	1
Propionic acid	ND		11	1.8	mg/Kg			08/19/22 04:11	1
Pyruvic Acid	ND		11	2.6	mg/Kg			08/19/22 04:11	1

Client Sample ID: BH13-41

Lab Sample ID: 550-188805-10

Date Collected: 08/11/22 08:20

Matrix: Solid

Date Received: 08/13/22 10:00

Method: 6010B - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Calcium	**63000**	**B1**	19	1.7	mg/Kg		08/15/22 06:53	08/16/22 17:29	2

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon	**2.6**	**B1 E4**	4.0	0.90	g/Kg			08/18/22 16:35	1

General Chemistry - Soluble

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetic acid	**58**		9.7	1.5	mg/Kg			08/19/22 04:40	1
Formic-acid	**2.6**	**E4**	9.7	2.1	mg/Kg			08/19/22 04:40	1
Lactic acid	**4.4**	**E4**	9.7	2.9	mg/Kg			08/19/22 04:40	1
n-Butyric Acid	ND		9.7	1.6	mg/Kg			08/19/22 04:40	1
Propionic acid	**23**		9.7	1.7	mg/Kg			08/19/22 04:40	1
Pyruvic Acid	ND		9.7	2.4	mg/Kg			08/19/22 04:40	1

Client Sample ID: BH13-41-FD

Lab Sample ID: 550-188805-11

Date Collected: 08/11/22 08:20

Matrix: Solid

Date Received: 08/13/22 10:00

Method: 6010B - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Calcium	**65000**	**B1**	20	1.7	mg/Kg		08/15/22 06:53	08/16/22 17:32	2

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon	**8.4**	**B1**	4.0	0.90	g/Kg			08/18/22 16:48	1

General Chemistry - Soluble

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetic acid	**64**		11	1.6	mg/Kg			08/19/22 05:09	1
Formic-acid	**2.5**	**E4**	11	2.3	mg/Kg			08/19/22 05:09	1
Lactic acid	**4.6**	**E4**	11	3.2	mg/Kg			08/19/22 05:09	1
n-Butyric Acid	ND		11	1.7	mg/Kg			08/19/22 05:09	1
Propionic acid	**24**		11	1.8	mg/Kg			08/19/22 05:09	1
Pyruvic Acid	ND		11	2.6	mg/Kg			08/19/22 05:09	1

Client Sample ID: BH15-18.5

Lab Sample ID: 550-188805-12

Date Collected: 08/11/22 09:40

Matrix: Solid

Date Received: 08/13/22 10:00

Method: 6010B - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Calcium	**41000**	**B1**	9.9	0.85	mg/Kg		08/15/22 06:53	08/16/22 12:57	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon	ND		4.0	0.90	g/Kg			08/19/22 11:36	1

General Chemistry - Soluble

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetic acid	ND		11	1.6	mg/Kg			08/19/22 05:39	1
Formic-acid	**2.7**	**E4**	11	2.4	mg/Kg			08/19/22 05:39	1
Lactic acid	ND		11	3.2	mg/Kg			08/19/22 05:39	1
n-Butyric Acid	ND		11	1.7	mg/Kg			08/19/22 05:39	1
Propionic acid	ND		11	1.8	mg/Kg			08/19/22 05:39	1
Pyruvic Acid	ND		11	2.7	mg/Kg			08/19/22 05:39	1

Client Sample ID: BH15-21

Lab Sample ID: 550-188805-13

Date Collected: 08/11/22 09:50

Matrix: Solid

Date Received: 08/13/22 10:00

Method: 6010B - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Calcium	**5600**	**B1**	9.8	0.84	mg/Kg		08/15/22 06:53	08/16/22 13:00	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon	ND		4.0	0.90	g/Kg			08/19/22 11:45	1

General Chemistry - Soluble

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetic acid	ND		9.8	1.5	mg/Kg			08/22/22 18:56	1
Formic-acid	ND		9.8	2.2	mg/Kg			08/22/22 18:56	1

Client Sample ID: BH15-21

Lab Sample ID: 550-188805-13

Date Collected: 08/11/22 09:50

Matrix: Solid

Date Received: 08/13/22 10:00

General Chemistry - Soluble (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lactic acid	ND		9.8	3.0	mg/Kg			08/22/22 18:56	1
n-Butyric Acid	ND		9.8	1.6	mg/Kg			08/22/22 18:56	1
Propionic acid	ND		9.8	1.7	mg/Kg			08/22/22 18:56	1
Pyruvic Acid	ND		9.8	2.5	mg/Kg			08/22/22 18:56	1

Client Sample ID: BH15-34.5

Lab Sample ID: 550-188805-14

Date Collected: 08/11/22 10:00

Matrix: Solid

Date Received: 08/13/22 10:00

Method: 6010B - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Calcium	**38000**	**B1**	10	0.85	mg/Kg		08/15/22 06:53	08/16/22 13:03	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon	ND		4.0	0.90	g/Kg			08/19/22 11:55	1

General Chemistry - Soluble

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetic acid	ND		9.3	1.4	mg/Kg			08/22/22 19:25	1
Formic-acid	ND		9.3	2.0	mg/Kg			08/22/22 19:25	1
Lactic acid	ND		9.3	2.8	mg/Kg			08/22/22 19:25	1
n-Butyric Acid	ND		9.3	1.5	mg/Kg			08/22/22 19:25	1
Propionic acid	ND		9.3	1.6	mg/Kg			08/22/22 19:25	1
Pyruvic Acid	ND		9.3	2.3	mg/Kg			08/22/22 19:25	1

Client Sample ID: BH15-37.5

Lab Sample ID: 550-188805-15

Date Collected: 08/11/22 10:05

Matrix: Solid

Date Received: 08/13/22 10:00

Method: 6010B - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Calcium	**56000**	**B1**	9.7	0.83	mg/Kg		08/15/22 06:53	08/16/22 13:05	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon	**1.1**	**B1 E4**	4.0	0.90	g/Kg			08/19/22 12:07	1

General Chemistry - Soluble

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetic acid	ND		11	1.6	mg/Kg			08/22/22 19:55	1
Formic-acid	ND		11	2.4	mg/Kg			08/22/22 19:55	1
Lactic acid	ND		11	3.2	mg/Kg			08/22/22 19:55	1
n-Butyric Acid	ND		11	1.7	mg/Kg			08/22/22 19:55	1
Propionic acid	ND		11	1.8	mg/Kg			08/22/22 19:55	1
Pyruvic Acid	ND		11	2.7	mg/Kg			08/22/22 19:55	1

Client Sample ID: BH15-41

Lab Sample ID: 550-188805-16

Date Collected: 08/11/22 10:15

Matrix: Solid

Date Received: 08/13/22 10:00

Method: 6010B - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Calcium	**71000**	**B1**	20	1.7	mg/Kg		08/15/22 06:53	08/16/22 17:35	2

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon	**2.8**	**B1 E4**	4.0	0.90	g/Kg			08/19/22 12:17	1

General Chemistry - Soluble

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetic acid	ND		9.9	1.5	mg/Kg			08/22/22 20:24	1
Formic-acid	ND		9.9	2.2	mg/Kg			08/22/22 20:24	1
Lactic acid	ND		9.9	3.0	mg/Kg			08/22/22 20:24	1
n-Butyric Acid	ND		9.9	1.6	mg/Kg			08/22/22 20:24	1
Propionic acid	ND		9.9	1.7	mg/Kg			08/22/22 20:24	1
Pyruvic Acid	ND		9.9	2.5	mg/Kg			08/22/22 20:24	1

Client Sample ID: BH16-17.3

Lab Sample ID: 550-188805-17

Date Collected: 08/11/22 12:35

Matrix: Solid

Date Received: 08/13/22 10:00

Method: 6010B - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Calcium	**6100**	**B1**	9.9	0.85	mg/Kg		08/15/22 07:01	08/16/22 13:31	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon	**0.91**	**B1 E4**	4.0	0.90	g/Kg			08/19/22 12:56	1

General Chemistry - Soluble

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetic acid	ND		9.2	1.4	mg/Kg			08/22/22 20:53	1
Formic-acid	**2.3**	**E4**	9.2	2.0	mg/Kg			08/22/22 20:53	1
Lactic acid	ND		9.2	2.8	mg/Kg			08/22/22 20:53	1
n-Butyric Acid	ND		9.2	1.5	mg/Kg			08/22/22 20:53	1
Propionic acid	ND		9.2	1.6	mg/Kg			08/22/22 20:53	1
Pyruvic Acid	ND		9.2	2.3	mg/Kg			08/22/22 20:53	1

Client Sample ID: BH16-21.5

Lab Sample ID: 550-188805-18

Date Collected: 08/11/22 12:40

Matrix: Solid

Date Received: 08/13/22 10:00

Method: 6010B - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Calcium	**10000**	**B1**	9.8	0.84	mg/Kg		08/15/22 07:01	08/16/22 13:34	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon	ND		4.0	0.90	g/Kg			08/19/22 13:05	1

General Chemistry - Soluble

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetic acid	ND		9.7	1.5	mg/Kg			08/22/22 23:48	1
Formic-acid	ND		9.7	2.1	mg/Kg			08/22/22 23:48	1

Client Sample ID: BH16-21.5

Lab Sample ID: 550-188805-18

Date Collected: 08/11/22 12:40

Matrix: Solid

Date Received: 08/13/22 10:00

General Chemistry - Soluble (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lactic acid	**3.7**	**E4**	9.7	2.9	mg/Kg			08/22/22 23:48	1
n-Butyric Acid	ND		9.7	1.6	mg/Kg			08/22/22 23:48	1
Propionic acid	ND		9.7	1.6	mg/Kg			08/22/22 23:48	1
Pyruvic Acid	ND		9.7	2.4	mg/Kg			08/22/22 23:48	1

Client Sample ID: BH16-21.5-FD

Lab Sample ID: 550-188805-19

Date Collected: 08/11/22 12:40

Matrix: Solid

Date Received: 08/13/22 10:00

Method: 6010B - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Calcium	**9400**	**B1**	9.7	0.83	mg/Kg		08/15/22 07:01	08/16/22 13:37	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon	ND	F2	4.0	0.90	g/Kg			08/19/22 12:26	1

General Chemistry - Soluble

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetic acid	ND		10	1.6	mg/Kg			08/23/22 00:17	1
Formic-acid	ND		10	2.3	mg/Kg			08/23/22 00:17	1
Lactic acid	**3.9**	**E4**	10	3.1	mg/Kg			08/23/22 00:17	1
n-Butyric Acid	ND		10	1.7	mg/Kg			08/23/22 00:17	1
Propionic acid	**3.9**	**E4**	10	1.8	mg/Kg			08/23/22 00:17	1
Pyruvic Acid	ND		10	2.6	mg/Kg			08/23/22 00:17	1

Client Sample ID: BH16-26.5

Lab Sample ID: 550-188805-20

Date Collected: 08/11/22 12:45

Matrix: Solid

Date Received: 08/13/22 10:00

Method: 6010B - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Calcium	**8900**	**B1**	9.9	0.85	mg/Kg		08/15/22 07:01	08/16/22 13:45	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon	ND		4.0	0.90	g/Kg			08/19/22 14:34	1

General Chemistry - Soluble

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetic acid	ND		9.6	1.4	mg/Kg			08/23/22 00:46	1
Formic-acid	ND		9.6	2.1	mg/Kg			08/23/22 00:46	1
Lactic acid	**3.8**	**E4**	9.6	2.9	mg/Kg			08/23/22 00:46	1
n-Butyric Acid	ND		9.6	1.5	mg/Kg			08/23/22 00:46	1
Propionic acid	ND		9.6	1.6	mg/Kg			08/23/22 00:46	1
Pyruvic Acid	ND		9.6	2.4	mg/Kg			08/23/22 00:46	1

Client Sample ID: BH16-31

Lab Sample ID: 550-188805-21

Date Collected: 08/11/22 12:50

Matrix: Solid

Date Received: 08/13/22 10:00

Method: 6010B - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Calcium	**38000**	**B1**	9.8	0.84	mg/Kg		08/15/22 07:01	08/16/22 13:48	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon	**1.5**	**B1 E4**	4.0	0.90	g/Kg			08/22/22 12:32	1

General Chemistry - Soluble

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetic acid	ND		9.3	1.4	mg/Kg			08/23/22 01:15	1
Formic-acid	**2.6**	**E4**	9.3	2.0	mg/Kg			08/23/22 01:15	1
Lactic acid	ND		9.3	2.8	mg/Kg			08/23/22 01:15	1
n-Butyric Acid	ND		9.3	1.5	mg/Kg			08/23/22 01:15	1
Propionic acid	**3.7**	**E4**	9.3	1.6	mg/Kg			08/23/22 01:15	1
Pyruvic Acid	ND		9.3	2.3	mg/Kg			08/23/22 01:15	1

Client Sample ID: BH16-42.3

Lab Sample ID: 550-188805-22

Date Collected: 08/11/22 13:00

Matrix: Solid

Date Received: 08/13/22 10:00

Method: 6010B - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Calcium	**100000**	**B1**	20	1.7	mg/Kg		08/15/22 07:01	08/16/22 17:12	2

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon	**2.9**	**B1 E4**	4.0	0.90	g/Kg			08/22/22 13:33	1

General Chemistry - Soluble

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetic acid	ND		11	1.6	mg/Kg			08/22/22 21:22	1
Formic-acid	ND		11	2.4	mg/Kg			08/22/22 21:22	1
Lactic acid	ND		11	3.2	mg/Kg			08/22/22 21:22	1
n-Butyric Acid	ND		11	1.7	mg/Kg			08/22/22 21:22	1
Propionic acid	ND		11	1.8	mg/Kg			08/22/22 21:22	1
Pyruvic Acid	ND		11	2.7	mg/Kg			08/22/22 21:22	1

Client Sample ID: BH18-13

Lab Sample ID: 550-188805-23

Date Collected: 08/11/22 13:35

Matrix: Solid

Date Received: 08/13/22 10:00

Method: 6010B - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Calcium	**6400**	**B1**	9.8	0.84	mg/Kg		08/15/22 07:01	08/16/22 13:51	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon	ND		4.0	0.90	g/Kg			08/22/22 12:43	1

General Chemistry - Soluble

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetic acid	ND		9.2	1.4	mg/Kg			08/23/22 01:44	1
Formic-acid	ND		9.2	2.0	mg/Kg			08/23/22 01:44	1

Client Sample ID: BH18-13

Lab Sample ID: 550-188805-23

Date Collected: 08/11/22 13:35

Matrix: Solid

Date Received: 08/13/22 10:00

General Chemistry - Soluble (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lactic acid	**4.8**	**E4**	9.2	2.8	mg/Kg			08/23/22 01:44	1
n-Butyric Acid	ND		9.2	1.5	mg/Kg			08/23/22 01:44	1
Propionic acid	ND		9.2	1.6	mg/Kg			08/23/22 01:44	1
Pyruvic Acid	ND		9.2	2.3	mg/Kg			08/23/22 01:44	1

Client Sample ID: BH18-20

Lab Sample ID: 550-188805-24

Date Collected: 08/11/22 13:40

Matrix: Solid

Date Received: 08/13/22 10:00

Method: 6010B - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Calcium	**20000**	**B1**	9.7	0.83	mg/Kg		08/15/22 07:01	08/16/22 13:54	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon	ND		4.0	0.90	g/Kg			08/22/22 12:53	1

General Chemistry - Soluble

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetic acid	ND		11	1.6	mg/Kg			08/23/22 02:14	1
Formic-acid	ND		11	2.4	mg/Kg			08/23/22 02:14	1
Lactic acid	ND		11	3.3	mg/Kg			08/23/22 02:14	1
n-Butyric Acid	ND		11	1.7	mg/Kg			08/23/22 02:14	1
Propionic acid	ND		11	1.9	mg/Kg			08/23/22 02:14	1
Pyruvic Acid	ND		11	2.7	mg/Kg			08/23/22 02:14	1

Client Sample ID: BH18-23

Lab Sample ID: 550-188805-25

Date Collected: 08/11/22 13:45

Matrix: Solid

Date Received: 08/13/22 10:00

Method: 6010B - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Calcium	**4600**	**B1**	9.9	0.85	mg/Kg		08/15/22 07:01	08/16/22 13:56	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon	ND		4.0	0.90	g/Kg			08/22/22 13:03	1

General Chemistry - Soluble

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetic acid	ND		9.3	1.4	mg/Kg			08/23/22 02:43	1
Formic-acid	ND		9.3	2.0	mg/Kg			08/23/22 02:43	1
Lactic acid	ND		9.3	2.8	mg/Kg			08/23/22 02:43	1
n-Butyric Acid	ND		9.3	1.5	mg/Kg			08/23/22 02:43	1
Propionic acid	ND		9.3	1.6	mg/Kg			08/23/22 02:43	1
Pyruvic Acid	ND		9.3	2.3	mg/Kg			08/23/22 02:43	1

Client Sample ID: BH18-27.5

Lab Sample ID: 550-188805-26

Date Collected: 08/11/22 13:50

Matrix: Solid

Date Received: 08/13/22 10:00

Method: 6010B - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Calcium	**8800**	**B1**	9.8	0.84	mg/Kg		08/15/22 07:01	08/16/22 13:59	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon	ND		4.0	0.90	g/Kg			08/22/22 13:13	1

General Chemistry - Soluble

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetic acid	ND		10	1.5	mg/Kg			08/23/22 03:12	1
Formic-acid	ND		10	2.2	mg/Kg			08/23/22 03:12	1
Lactic acid	ND		10	3.0	mg/Kg			08/23/22 03:12	1
n-Butyric Acid	ND		10	1.6	mg/Kg			08/23/22 03:12	1
Propionic acid	ND		10	1.7	mg/Kg			08/23/22 03:12	1
Pyruvic Acid	ND		10	2.5	mg/Kg			08/23/22 03:12	1

Client Sample ID: BH18-34.5

Lab Sample ID: 550-188805-27

Date Collected: 08/11/22 13:55

Matrix: Solid

Date Received: 08/13/22 10:00

Method: 6010B - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Calcium	**51000**	**B1**	9.9	0.85	mg/Kg		08/15/22 07:01	08/16/22 14:02	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon	ND		4.0	0.90	g/Kg			08/22/22 13:23	1

General Chemistry - Soluble

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetic acid	ND		9.7	1.5	mg/Kg			08/23/22 03:41	1
Formic-acid	ND		9.7	2.1	mg/Kg			08/23/22 03:41	1
Lactic acid	**3.1**	**E4**	9.7	2.9	mg/Kg			08/23/22 03:41	1
n-Butyric Acid	ND		9.7	1.5	mg/Kg			08/23/22 03:41	1
Propionic acid	ND		9.7	1.6	mg/Kg			08/23/22 03:41	1
Pyruvic Acid	ND		9.7	2.4	mg/Kg			08/23/22 03:41	1

Client Sample ID: BH12-11

Lab Sample ID: 550-188805-28

Date Collected: 08/12/22 09:40

Matrix: Solid

Date Received: 08/13/22 10:00

Method: 6010B - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Calcium	**9300**	**B1**	9.8	0.84	mg/Kg		08/15/22 07:01	08/16/22 14:05	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon	ND		4.0	0.90	g/Kg			08/22/22 14:28	1

General Chemistry - Soluble

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetic acid	ND		9.3	1.4	mg/Kg			08/23/22 06:36	1
Formic-acid	ND		9.3	2.1	mg/Kg			08/23/22 06:36	1

Client Sample ID: BH12-11

Lab Sample ID: 550-188805-28

Date Collected: 08/12/22 09:40

Matrix: Solid

Date Received: 08/13/22 10:00

General Chemistry - Soluble (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lactic acid	ND		9.3	2.8	mg/Kg			08/23/22 06:36	1
n-Butyric Acid	ND		9.3	1.5	mg/Kg			08/23/22 06:36	1
Propionic acid	ND		9.3	1.6	mg/Kg			08/23/22 06:36	1
Pyruvic Acid	ND		9.3	2.3	mg/Kg			08/23/22 06:36	1

Client Sample ID: BH12-16

Lab Sample ID: 550-188805-29

Date Collected: 08/12/22 09:50

Matrix: Solid

Date Received: 08/13/22 10:00

Method: 6010B - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Calcium	**6500**	**B1**	9.9	0.85	mg/Kg		08/15/22 07:01	08/16/22 14:08	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon	**0.91**	**B1 E4**	4.0	0.90	g/Kg			08/22/22 14:40	1

General Chemistry - Soluble

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetic acid	ND		9.9	1.5	mg/Kg			08/23/22 07:05	1
Formic-acid	ND		9.9	2.2	mg/Kg			08/23/22 07:05	1
Lactic acid	**8.8**	**E4**	9.9	3.0	mg/Kg			08/23/22 07:05	1
n-Butyric Acid	ND		9.9	1.6	mg/Kg			08/23/22 07:05	1
Propionic acid	ND		9.9	1.7	mg/Kg			08/23/22 07:05	1
Pyruvic Acid	ND		9.9	2.5	mg/Kg			08/23/22 07:05	1

Client Sample ID: BH12-21

Lab Sample ID: 550-188805-30

Date Collected: 08/12/22 10:00

Matrix: Solid

Date Received: 08/13/22 10:00

Method: 6010B - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Calcium	**4300**	**B1**	9.8	0.84	mg/Kg		08/15/22 07:01	08/16/22 14:11	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon	**0.90**	**B1 E4**	4.0	0.90	g/Kg			08/22/22 14:54	1

General Chemistry - Soluble

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetic acid	ND		10	1.5	mg/Kg			08/23/22 07:34	1
Formic-acid	ND		10	2.2	mg/Kg			08/23/22 07:34	1
Lactic acid	**3.6**	**E4**	10	3.0	mg/Kg			08/23/22 07:34	1
n-Butyric Acid	ND		10	1.6	mg/Kg			08/23/22 07:34	1
Propionic acid	ND		10	1.7	mg/Kg			08/23/22 07:34	1
Pyruvic Acid	ND		10	2.5	mg/Kg			08/23/22 07:34	1

Client Sample ID: BH12-27

Lab Sample ID: 550-188805-31

Date Collected: 08/12/22 10:10

Matrix: Solid

Date Received: 08/13/22 10:00

Method: 6010B - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Calcium	6400	B1	9.8	0.84	mg/Kg		08/15/22 07:01	08/16/22 14:19	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon	0.98	B1 E4	4.0	0.90	g/Kg			08/22/22 15:04	1

General Chemistry - Soluble

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetic acid	ND		11	1.6	mg/Kg			08/23/22 08:03	1
Formic-acid	ND		11	2.4	mg/Kg			08/23/22 08:03	1
Lactic acid	ND		11	3.2	mg/Kg			08/23/22 08:03	1
n-Butyric Acid	ND		11	1.7	mg/Kg			08/23/22 08:03	1
Propionic acid	ND		11	1.8	mg/Kg			08/23/22 08:03	1
Pyruvic Acid	ND		11	2.7	mg/Kg			08/23/22 08:03	1

Client Sample ID: BH12-36

Lab Sample ID: 550-188805-32

Date Collected: 08/12/22 10:20

Matrix: Solid

Date Received: 08/13/22 10:00

Method: 6010B - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Calcium	99000	B1	20	1.7	mg/Kg		08/15/22 07:01	08/16/22 17:15	2

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon	ND		4.0	0.90	g/Kg			08/22/22 15:35	1

General Chemistry - Soluble

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetic acid	ND		10	1.6	mg/Kg			08/23/22 08:33	1
Formic-acid	ND		10	2.3	mg/Kg			08/23/22 08:33	1
Lactic acid	ND		10	3.1	mg/Kg			08/23/22 08:33	1
n-Butyric Acid	ND		10	1.7	mg/Kg			08/23/22 08:33	1
Propionic acid	ND		10	1.8	mg/Kg			08/23/22 08:33	1
Pyruvic Acid	ND	F1	10	2.6	mg/Kg			08/23/22 08:33	1

Method: 6010B - Metals (ICP)

Lab Sample ID: MB 550-281555/1-A
Matrix: Solid
Analysis Batch: 281735

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 281555

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Calcium	19.2		9.9	0.85	mg/Kg		08/15/22 06:53	08/16/22 12:09	1

Lab Sample ID: LCS 550-281555/2-A
Matrix: Solid
Analysis Batch: 281735

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 281555

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Calcium	1040	1010		mg/Kg		97	84 - 110

Lab Sample ID: LCSD 550-281555/3-A
Matrix: Solid
Analysis Batch: 281735

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 281555

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Calcium	1040	1010		mg/Kg		98	84 - 110	1	20

Lab Sample ID: 550-188805-1 MS
Matrix: Solid
Analysis Batch: 281735

Client Sample ID: BH11-15
Prep Type: Total/NA
Prep Batch: 281555

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Calcium	27000	B	1040	33200	4	mg/Kg		556	75 - 125

Lab Sample ID: 550-188805-1 MSD
Matrix: Solid
Analysis Batch: 281735

Client Sample ID: BH11-15
Prep Type: Total/NA
Prep Batch: 281555

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Calcium	27000	B	1020	37300	4	mg/Kg		963	75 - 125	12	20

Lab Sample ID: MB 550-281556/1-A
Matrix: Solid
Analysis Batch: 281731

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 281556

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Calcium	5.92	E4	9.9	0.85	mg/Kg		08/15/22 07:01	08/16/22 13:11	1

Lab Sample ID: LCS 550-281556/2-A
Matrix: Solid
Analysis Batch: 281731

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 281556

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Calcium	1050	986		mg/Kg		94	84 - 110

Lab Sample ID: LCSD 550-281556/3-A
Matrix: Solid
Analysis Batch: 281731

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 281556

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Calcium	1040	1010		mg/Kg		97	84 - 110	2	20

Method: 6010B - Metals (ICP)

Lab Sample ID: 550-188805-22 MS
Matrix: Solid
Analysis Batch: 281771

Client Sample ID: BH16-42.3
Prep Type: Total/NA
Prep Batch: 281556

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Calcium	100000	B	1040	111000	4	mg/Kg		687	75 - 125

Lab Sample ID: 550-188805-22 MSD
Matrix: Solid
Analysis Batch: 281771

Client Sample ID: BH16-42.3
Prep Type: Total/NA
Prep Batch: 281556

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Calcium	100000	B	1020	112000	4	mg/Kg		814	75 - 125	1	20

Method: 9060A - Organic Carbon, Total (TOC)

Lab Sample ID: MB 280-584714/5
Matrix: Solid
Analysis Batch: 584714

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon	1.73	E4	4.0	0.90	g/Kg			08/18/22 11:37	1

Lab Sample ID: LCS 280-584714/4
Matrix: Solid
Analysis Batch: 584714

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Total Organic Carbon	2.89	3.26	E4	g/Kg		113	46 - 130

Lab Sample ID: 550-188805-1 MS
Matrix: Solid
Analysis Batch: 584714

Client Sample ID: BH11-15
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Total Organic Carbon	1.7	J B	11.8	13.1		g/Kg		96	46 - 130

Lab Sample ID: 550-188805-1 MSD
Matrix: Solid
Analysis Batch: 584714

Client Sample ID: BH11-15
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Total Organic Carbon	1.7	J B	11.8	12.3		g/Kg		89	46 - 130	7	20

Lab Sample ID: 550-188805-19 MS
Matrix: Solid
Analysis Batch: 584714

Client Sample ID: BH16-21.5-FD
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Total Organic Carbon	ND	F2	11.9	11.2		g/Kg		95	46 - 130

Method: 9060A - Organic Carbon, Total (TOC) (Continued)

Lab Sample ID: 550-188805-19 MSD
Matrix: Solid
Analysis Batch: 584714

Client Sample ID: BH16-21.5-FD
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Total Organic Carbon	ND	F2	11.8	14.9	F2	g/Kg		125	46 - 130	28	20

Lab Sample ID: 550-188805-22 MS
Matrix: Solid
Analysis Batch: 584714

Client Sample ID: BH16-42.3
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Total Organic Carbon	2.9	J B	11.8	15.1		g/Kg		104	46 - 130

Lab Sample ID: 550-188805-22 MSD
Matrix: Solid
Analysis Batch: 584714

Client Sample ID: BH16-42.3
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Total Organic Carbon	2.9	J B	11.7	18.0		g/Kg		129	46 - 130	18	20

Lab Sample ID: 550-188805-31 MS
Matrix: Solid
Analysis Batch: 584714

Client Sample ID: BH12-27
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Total Organic Carbon	0.98	J B	11.8	13.7		g/Kg		108	46 - 130

Lab Sample ID: 550-188805-31 MSD
Matrix: Solid
Analysis Batch: 584714

Client Sample ID: BH12-27
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Total Organic Carbon	0.98	J B	11.7	13.3		g/Kg		105	46 - 130	3	20

Method: VFA-IC - Volatile Fatty Acids, Ion Chromatography

Lab Sample ID: MB 480-637890/1-A
Matrix: Solid
Analysis Batch: 638145

Client Sample ID: Method Blank
Prep Type: Soluble

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetic acid	ND		11	1.6	mg/Kg			08/18/22 19:56	1
Formic-acid	ND		11	2.3	mg/Kg			08/18/22 19:56	1
Lactic acid	ND		11	3.2	mg/Kg			08/18/22 19:56	1
n-Butyric Acid	ND		11	1.7	mg/Kg			08/18/22 19:56	1
Propionic acid	ND		11	1.8	mg/Kg			08/18/22 19:56	1
Pyruvic Acid	ND		11	2.6	mg/Kg			08/18/22 19:56	1

Lab Sample ID: LCS 480-637890/2-A
Matrix: Solid
Analysis Batch: 638145

Client Sample ID: Lab Control Sample
Prep Type: Soluble

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Acetic acid	103	108		mg/Kg		105	80 - 120

Method: VFA-IC - Volatile Fatty Acids, Ion Chromatography (Continued)

Lab Sample ID: LCS 480-637890/2-A
Matrix: Solid
Analysis Batch: 638145

Client Sample ID: Lab Control Sample
Prep Type: Soluble

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Formic-acid	103	105		mg/Kg		102	80 - 120
Lactic acid	103	109		mg/Kg		106	80 - 120
n-Butyric Acid	103	103		mg/Kg		100	80 - 120
Propionic acid	103	106		mg/Kg		104	80 - 120
Pyruvic Acid	103	102		mg/Kg		99	80 - 120

Lab Sample ID: 550-188805-3 MS
Matrix: Solid
Analysis Batch: 638145

Client Sample ID: BH11-30
Prep Type: Soluble

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Acetic acid	ND		109	114		mg/Kg		105	80 - 120
Formic-acid	ND		109	116		mg/Kg		106	80 - 120
Lactic acid	ND		109	119		mg/Kg		110	80 - 120
n-Butyric Acid	ND		109	116		mg/Kg		107	80 - 120
Propionic acid	ND		109	120		mg/Kg		110	80 - 120
Pyruvic Acid	ND		109	112		mg/Kg		103	80 - 120

Lab Sample ID: 550-188805-3 MSD
Matrix: Solid
Analysis Batch: 638145

Client Sample ID: BH11-30
Prep Type: Soluble

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Acetic acid	ND		92.6	95.8		mg/Kg		103	80 - 120	17	20
Formic-acid	ND		92.6	94.8		mg/Kg		102	80 - 120	20	20
Lactic acid	ND		92.6	97.6		mg/Kg		105	80 - 120	20	20
n-Butyric Acid	ND		92.6	95.1		mg/Kg		103	80 - 120	20	20
Propionic acid	ND		92.6	99.2		mg/Kg		107	80 - 120	19	20
Pyruvic Acid	ND		92.6	94.6		mg/Kg		102	80 - 120	16	20

Lab Sample ID: 550-188805-12 MS
Matrix: Solid
Analysis Batch: 638145

Client Sample ID: BH15-18.5
Prep Type: Soluble

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Acetic acid	ND		93.5	95.2		mg/Kg		102	80 - 120
Formic-acid	2.7	J	93.5	99.3		mg/Kg		103	80 - 120
Lactic acid	ND		93.5	104		mg/Kg		111	80 - 120
n-Butyric Acid	ND		93.5	99.0		mg/Kg		106	80 - 120
Propionic acid	ND		93.5	101		mg/Kg		108	80 - 120
Pyruvic Acid	ND		93.5	98.4		mg/Kg		105	80 - 120

Lab Sample ID: MB 480-637896/1-A
Matrix: Solid
Analysis Batch: 638547

Client Sample ID: Method Blank
Prep Type: Soluble

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetic acid	ND		11	1.6	mg/Kg			08/22/22 17:58	1
Formic-acid	ND		11	2.4	mg/Kg			08/22/22 17:58	1
Lactic acid	ND		11	3.2	mg/Kg			08/22/22 17:58	1

Method: VFA-IC - Volatile Fatty Acids, Ion Chromatography (Continued)

Lab Sample ID: MB 480-637896/1-A
Matrix: Solid
Analysis Batch: 638547

Client Sample ID: Method Blank
Prep Type: Soluble

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
n-Butyric Acid	ND		11	1.7	mg/Kg			08/22/22 17:58	1
Propionic acid	ND		11	1.8	mg/Kg			08/22/22 17:58	1
Pyruvic Acid	ND		11	2.7	mg/Kg			08/22/22 17:58	1

Lab Sample ID: MB 480-637902/1-A
Matrix: Solid
Analysis Batch: 638547

Client Sample ID: Method Blank
Prep Type: Soluble

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetic acid	ND		11	1.6	mg/Kg			08/23/22 05:38	1
Formic-acid	ND		11	2.3	mg/Kg			08/23/22 05:38	1
Lactic acid	ND		11	3.2	mg/Kg			08/23/22 05:38	1
n-Butyric Acid	ND		11	1.7	mg/Kg			08/23/22 05:38	1
Propionic acid	ND		11	1.8	mg/Kg			08/23/22 05:38	1
Pyruvic Acid	ND		11	2.6	mg/Kg			08/23/22 05:38	1

Lab Sample ID: LCS 480-637896/2-A
Matrix: Solid
Analysis Batch: 638547

Client Sample ID: Lab Control Sample
Prep Type: Soluble

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Acetic acid	106	120		mg/Kg		114	80 - 120
Formic-acid	106	108		mg/Kg		102	80 - 120
Lactic acid	106	110		mg/Kg		104	80 - 120
n-Butyric Acid	106	105		mg/Kg		100	80 - 120
Propionic acid	106	113		mg/Kg		107	80 - 120
Pyruvic Acid	106	100		mg/Kg		95	80 - 120

Lab Sample ID: LCS 480-637902/2-A
Matrix: Solid
Analysis Batch: 638547

Client Sample ID: Lab Control Sample
Prep Type: Soluble

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Acetic acid	108	125		mg/Kg		116	80 - 120
Formic-acid	108	116		mg/Kg		108	80 - 120
Lactic acid	108	118		mg/Kg		110	80 - 120
n-Butyric Acid	108	117		mg/Kg		109	80 - 120
Propionic acid	108	120		mg/Kg		112	80 - 120
Pyruvic Acid	108	106		mg/Kg		98	80 - 120

Lab Sample ID: 550-188805-22 MS
Matrix: Solid
Analysis Batch: 638547

Client Sample ID: BH16-42.3
Prep Type: Soluble

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Acetic acid	ND		108	113		mg/Kg		104	80 - 120
Formic-acid	ND		108	114		mg/Kg		105	80 - 120
Lactic acid	ND		108	121		mg/Kg		111	80 - 120
n-Butyric Acid	ND		108	114		mg/Kg		105	80 - 120
Propionic acid	ND		108	116		mg/Kg		107	80 - 120

Method: VFA-IC - Volatile Fatty Acids, Ion Chromatography (Continued)

Lab Sample ID: 550-188805-22 MS
Matrix: Solid
Analysis Batch: 638547

Client Sample ID: BH16-42.3
Prep Type: Soluble

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Pyruvic Acid	ND		108	121		mg/Kg		112	80 - 120

Lab Sample ID: 550-188805-22 MSD
Matrix: Solid
Analysis Batch: 638547

Client Sample ID: BH16-42.3
Prep Type: Soluble

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Acetic acid	ND		103	105		mg/Kg		102	80 - 120	7	20
Formic-acid	ND		103	106		mg/Kg		103	80 - 120	7	20
Lactic acid	ND		103	111		mg/Kg		108	80 - 120	8	20
n-Butyric Acid	ND		103	106		mg/Kg		103	80 - 120	7	20
Propionic acid	ND		103	108		mg/Kg		105	80 - 120	7	20
Pyruvic Acid	ND		103	112		mg/Kg		108	80 - 120	8	20

Lab Sample ID: 550-188805-27 MS
Matrix: Solid
Analysis Batch: 638547

Client Sample ID: BH18-34.5
Prep Type: Soluble

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Acetic acid	ND		93.1	94.6		mg/Kg		102	80 - 120
Formic-acid	ND		93.1	95.6		mg/Kg		103	80 - 120
Lactic acid	3.1	J	93.1	101		mg/Kg		106	80 - 120
n-Butyric Acid	ND		93.1	97.0		mg/Kg		104	80 - 120
Propionic acid	ND		93.1	95.2		mg/Kg		102	80 - 120
Pyruvic Acid	ND		93.1	98.5		mg/Kg		106	80 - 120

Lab Sample ID: 550-188805-32 MS
Matrix: Solid
Analysis Batch: 638547

Client Sample ID: BH12-36
Prep Type: Soluble

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Acetic acid	ND		93.6	97.4		mg/Kg		104	80 - 120
Formic-acid	ND		93.6	99.7		mg/Kg		106	80 - 120
Lactic acid	ND		93.6	109		mg/Kg		116	80 - 120
n-Butyric Acid	ND		93.6	105		mg/Kg		112	80 - 120
Propionic acid	ND		93.6	101		mg/Kg		108	80 - 120
Pyruvic Acid	ND	F1	93.6	117	F1	mg/Kg		125	80 - 120

Lab Sample ID: 550-188805-32 MSD
Matrix: Solid
Analysis Batch: 638547

Client Sample ID: BH12-36
Prep Type: Soluble

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Acetic acid	ND		100	106		mg/Kg		106	80 - 120	8	20
Formic-acid	ND		100	107		mg/Kg		107	80 - 120	7	20
Lactic acid	ND		100	115		mg/Kg		115	80 - 120	5	20
n-Butyric Acid	ND		100	108		mg/Kg		108	80 - 120	2	20
Propionic acid	ND		100	107		mg/Kg		107	80 - 120	6	20
Pyruvic Acid	ND	F1	100	124	F1	mg/Kg		124	80 - 120	6	20

Metals

Prep Batch: 281555

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
550-188805-1	BH11-15	Total/NA	Solid	3050B	
550-188805-2	BH11-20	Total/NA	Solid	3050B	
550-188805-3	BH11-30	Total/NA	Solid	3050B	
550-188805-4	BH11-40	Total/NA	Solid	3050B	
550-188805-5	BH11-45	Total/NA	Solid	3050B	
550-188805-6	BH13-11	Total/NA	Solid	3050B	
550-188805-7	BH13-22	Total/NA	Solid	3050B	
550-188805-8	BH13-32.6	Total/NA	Solid	3050B	
550-188805-9	BH13-39	Total/NA	Solid	3050B	
550-188805-10	BH13-41	Total/NA	Solid	3050B	
550-188805-11	BH13-41-FD	Total/NA	Solid	3050B	
550-188805-12	BH15-18.5	Total/NA	Solid	3050B	
550-188805-13	BH15-21	Total/NA	Solid	3050B	
550-188805-14	BH15-34.5	Total/NA	Solid	3050B	
550-188805-15	BH15-37.5	Total/NA	Solid	3050B	
550-188805-16	BH15-41	Total/NA	Solid	3050B	
MB 550-281555/1-A	Method Blank	Total/NA	Solid	3050B	
LCS 550-281555/2-A	Lab Control Sample	Total/NA	Solid	3050B	
LCSD 550-281555/3-A	Lab Control Sample Dup	Total/NA	Solid	3050B	
550-188805-1 MS	BH11-15	Total/NA	Solid	3050B	
550-188805-1 MSD	BH11-15	Total/NA	Solid	3050B	

Prep Batch: 281556

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
550-188805-17	BH16-17.3	Total/NA	Solid	3050B	
550-188805-18	BH16-21.5	Total/NA	Solid	3050B	
550-188805-19	BH16-21.5-FD	Total/NA	Solid	3050B	
550-188805-20	BH16-26.5	Total/NA	Solid	3050B	
550-188805-21	BH16-31	Total/NA	Solid	3050B	
550-188805-22	BH16-42.3	Total/NA	Solid	3050B	
550-188805-23	BH18-13	Total/NA	Solid	3050B	
550-188805-24	BH18-20	Total/NA	Solid	3050B	
550-188805-25	BH18-23	Total/NA	Solid	3050B	
550-188805-26	BH18-27.5	Total/NA	Solid	3050B	
550-188805-27	BH18-34.5	Total/NA	Solid	3050B	
550-188805-28	BH12-11	Total/NA	Solid	3050B	
550-188805-29	BH12-16	Total/NA	Solid	3050B	
550-188805-30	BH12-21	Total/NA	Solid	3050B	
550-188805-31	BH12-27	Total/NA	Solid	3050B	
550-188805-32	BH12-36	Total/NA	Solid	3050B	
MB 550-281556/1-A	Method Blank	Total/NA	Solid	3050B	
LCS 550-281556/2-A	Lab Control Sample	Total/NA	Solid	3050B	
LCSD 550-281556/3-A	Lab Control Sample Dup	Total/NA	Solid	3050B	
550-188805-22 MS	BH16-42.3	Total/NA	Solid	3050B	
550-188805-22 MSD	BH16-42.3	Total/NA	Solid	3050B	

Analysis Batch: 281731

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
550-188805-17	BH16-17.3	Total/NA	Solid	6010B	281556
550-188805-18	BH16-21.5	Total/NA	Solid	6010B	281556
550-188805-19	BH16-21.5-FD	Total/NA	Solid	6010B	281556

Metals (Continued)

Analysis Batch: 281731 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
550-188805-20	BH16-26.5	Total/NA	Solid	6010B	281556
550-188805-21	BH16-31	Total/NA	Solid	6010B	281556
550-188805-23	BH18-13	Total/NA	Solid	6010B	281556
550-188805-24	BH18-20	Total/NA	Solid	6010B	281556
550-188805-25	BH18-23	Total/NA	Solid	6010B	281556
550-188805-26	BH18-27.5	Total/NA	Solid	6010B	281556
550-188805-27	BH18-34.5	Total/NA	Solid	6010B	281556
550-188805-28	BH12-11	Total/NA	Solid	6010B	281556
550-188805-29	BH12-16	Total/NA	Solid	6010B	281556
550-188805-30	BH12-21	Total/NA	Solid	6010B	281556
550-188805-31	BH12-27	Total/NA	Solid	6010B	281556
MB 550-281556/1-A	Method Blank	Total/NA	Solid	6010B	281556
LCS 550-281556/2-A	Lab Control Sample	Total/NA	Solid	6010B	281556
LCSD 550-281556/3-A	Lab Control Sample Dup	Total/NA	Solid	6010B	281556

Analysis Batch: 281735

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
550-188805-1	BH11-15	Total/NA	Solid	6010B	281555
550-188805-2	BH11-20	Total/NA	Solid	6010B	281555
550-188805-3	BH11-30	Total/NA	Solid	6010B	281555
550-188805-6	BH13-11	Total/NA	Solid	6010B	281555
550-188805-7	BH13-22	Total/NA	Solid	6010B	281555
550-188805-12	BH15-18.5	Total/NA	Solid	6010B	281555
550-188805-13	BH15-21	Total/NA	Solid	6010B	281555
550-188805-14	BH15-34.5	Total/NA	Solid	6010B	281555
550-188805-15	BH15-37.5	Total/NA	Solid	6010B	281555
MB 550-281555/1-A	Method Blank	Total/NA	Solid	6010B	281555
LCS 550-281555/2-A	Lab Control Sample	Total/NA	Solid	6010B	281555
LCSD 550-281555/3-A	Lab Control Sample Dup	Total/NA	Solid	6010B	281555
550-188805-1 MS	BH11-15	Total/NA	Solid	6010B	281555
550-188805-1 MSD	BH11-15	Total/NA	Solid	6010B	281555

Analysis Batch: 281771

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
550-188805-22	BH16-42.3	Total/NA	Solid	6010B	281556
550-188805-32	BH12-36	Total/NA	Solid	6010B	281556
550-188805-22 MS	BH16-42.3	Total/NA	Solid	6010B	281556
550-188805-22 MSD	BH16-42.3	Total/NA	Solid	6010B	281556

Analysis Batch: 281772

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
550-188805-5	BH11-45	Total/NA	Solid	6010B	281555
550-188805-8	BH13-32.6	Total/NA	Solid	6010B	281555
550-188805-9	BH13-39	Total/NA	Solid	6010B	281555
550-188805-10	BH13-41	Total/NA	Solid	6010B	281555
550-188805-11	BH13-41-FD	Total/NA	Solid	6010B	281555
550-188805-16	BH15-41	Total/NA	Solid	6010B	281555

Analysis Batch: 281827

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
550-188805-4	BH11-40	Total/NA	Solid	6010B	281555

General Chemistry

Analysis Batch: 584714

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
550-188805-1	BH11-15	Total/NA	Solid	9060A	
550-188805-2	BH11-20	Total/NA	Solid	9060A	
550-188805-3	BH11-30	Total/NA	Solid	9060A	
550-188805-4	BH11-40	Total/NA	Solid	9060A	
550-188805-5	BH11-45	Total/NA	Solid	9060A	
550-188805-6	BH13-11	Total/NA	Solid	9060A	
550-188805-7	BH13-22	Total/NA	Solid	9060A	
550-188805-8	BH13-32.6	Total/NA	Solid	9060A	
550-188805-9	BH13-39	Total/NA	Solid	9060A	
550-188805-10	BH13-41	Total/NA	Solid	9060A	
550-188805-11	BH13-41-FD	Total/NA	Solid	9060A	
550-188805-12	BH15-18.5	Total/NA	Solid	9060A	
550-188805-13	BH15-21	Total/NA	Solid	9060A	
550-188805-14	BH15-34.5	Total/NA	Solid	9060A	
550-188805-15	BH15-37.5	Total/NA	Solid	9060A	
550-188805-16	BH15-41	Total/NA	Solid	9060A	
550-188805-17	BH16-17.3	Total/NA	Solid	9060A	
550-188805-18	BH16-21.5	Total/NA	Solid	9060A	
550-188805-19	BH16-21.5-FD	Total/NA	Solid	9060A	
550-188805-20	BH16-26.5	Total/NA	Solid	9060A	
550-188805-21	BH16-31	Total/NA	Solid	9060A	
550-188805-22	BH16-42.3	Total/NA	Solid	9060A	
550-188805-23	BH18-13	Total/NA	Solid	9060A	
550-188805-24	BH18-20	Total/NA	Solid	9060A	
550-188805-25	BH18-23	Total/NA	Solid	9060A	
550-188805-26	BH18-27.5	Total/NA	Solid	9060A	
550-188805-27	BH18-34.5	Total/NA	Solid	9060A	
550-188805-28	BH12-11	Total/NA	Solid	9060A	
550-188805-29	BH12-16	Total/NA	Solid	9060A	
550-188805-30	BH12-21	Total/NA	Solid	9060A	
550-188805-31	BH12-27	Total/NA	Solid	9060A	
550-188805-32	BH12-36	Total/NA	Solid	9060A	
MB 280-584714/5	Method Blank	Total/NA	Solid	9060A	
LCS 280-584714/4	Lab Control Sample	Total/NA	Solid	9060A	
550-188805-1 MS	BH11-15	Total/NA	Solid	9060A	
550-188805-1 MSD	BH11-15	Total/NA	Solid	9060A	
550-188805-19 MS	BH16-21.5-FD	Total/NA	Solid	9060A	
550-188805-19 MSD	BH16-21.5-FD	Total/NA	Solid	9060A	
550-188805-22 MS	BH16-42.3	Total/NA	Solid	9060A	
550-188805-22 MSD	BH16-42.3	Total/NA	Solid	9060A	
550-188805-31 MS	BH12-27	Total/NA	Solid	9060A	
550-188805-31 MSD	BH12-27	Total/NA	Solid	9060A	

Leach Batch: 637890

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
550-188805-1	BH11-15	Soluble	Solid	DI Leach	
550-188805-2	BH11-20	Soluble	Solid	DI Leach	
550-188805-3	BH11-30	Soluble	Solid	DI Leach	
550-188805-4	BH11-40	Soluble	Solid	DI Leach	
550-188805-5	BH11-45	Soluble	Solid	DI Leach	
550-188805-6	BH13-11	Soluble	Solid	DI Leach	

General Chemistry (Continued)

Leach Batch: 637890 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
550-188805-7	BH13-22	Soluble	Solid	DI Leach	
550-188805-8	BH13-32.6	Soluble	Solid	DI Leach	
550-188805-9	BH13-39	Soluble	Solid	DI Leach	
550-188805-10	BH13-41	Soluble	Solid	DI Leach	
550-188805-11	BH13-41-FD	Soluble	Solid	DI Leach	
550-188805-12	BH15-18.5	Soluble	Solid	DI Leach	
MB 480-637890/1-A	Method Blank	Soluble	Solid	DI Leach	
LCS 480-637890/2-A	Lab Control Sample	Soluble	Solid	DI Leach	
550-188805-3 MS	BH11-30	Soluble	Solid	DI Leach	
550-188805-3 MSD	BH11-30	Soluble	Solid	DI Leach	
550-188805-12 MS	BH15-18.5	Soluble	Solid	DI Leach	

Leach Batch: 637896

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
550-188805-13	BH15-21	Soluble	Solid	DI Leach	
550-188805-14	BH15-34.5	Soluble	Solid	DI Leach	
550-188805-15	BH15-37.5	Soluble	Solid	DI Leach	
550-188805-16	BH15-41	Soluble	Solid	DI Leach	
550-188805-17	BH16-17.3	Soluble	Solid	DI Leach	
550-188805-18	BH16-21.5	Soluble	Solid	DI Leach	
550-188805-19	BH16-21.5-FD	Soluble	Solid	DI Leach	
550-188805-20	BH16-26.5	Soluble	Solid	DI Leach	
550-188805-21	BH16-31	Soluble	Solid	DI Leach	
550-188805-22	BH16-42.3	Soluble	Solid	DI Leach	
550-188805-23	BH18-13	Soluble	Solid	DI Leach	
550-188805-24	BH18-20	Soluble	Solid	DI Leach	
550-188805-25	BH18-23	Soluble	Solid	DI Leach	
550-188805-26	BH18-27.5	Soluble	Solid	DI Leach	
550-188805-27	BH18-34.5	Soluble	Solid	DI Leach	
MB 480-637896/1-A	Method Blank	Soluble	Solid	DI Leach	
LCS 480-637896/2-A	Lab Control Sample	Soluble	Solid	DI Leach	
550-188805-22 MS	BH16-42.3	Soluble	Solid	DI Leach	
550-188805-22 MSD	BH16-42.3	Soluble	Solid	DI Leach	
550-188805-27 MS	BH18-34.5	Soluble	Solid	DI Leach	

Leach Batch: 637902

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
550-188805-28	BH12-11	Soluble	Solid	DI Leach	
550-188805-29	BH12-16	Soluble	Solid	DI Leach	
550-188805-30	BH12-21	Soluble	Solid	DI Leach	
550-188805-31	BH12-27	Soluble	Solid	DI Leach	
550-188805-32	BH12-36	Soluble	Solid	DI Leach	
MB 480-637902/1-A	Method Blank	Soluble	Solid	DI Leach	
LCS 480-637902/2-A	Lab Control Sample	Soluble	Solid	DI Leach	
550-188805-32 MS	BH12-36	Soluble	Solid	DI Leach	
550-188805-32 MSD	BH12-36	Soluble	Solid	DI Leach	

Analysis Batch: 638145

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
550-188805-1	BH11-15	Soluble	Solid	VFA-IC	637890
550-188805-2	BH11-20	Soluble	Solid	VFA-IC	637890

General Chemistry (Continued)

Analysis Batch: 638145 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
550-188805-3	BH11-30	Soluble	Solid	VFA-IC	637890
550-188805-4	BH11-40	Soluble	Solid	VFA-IC	637890
550-188805-5	BH11-45	Soluble	Solid	VFA-IC	637890
550-188805-6	BH13-11	Soluble	Solid	VFA-IC	637890
550-188805-7	BH13-22	Soluble	Solid	VFA-IC	637890
550-188805-8	BH13-32.6	Soluble	Solid	VFA-IC	637890
550-188805-9	BH13-39	Soluble	Solid	VFA-IC	637890
550-188805-10	BH13-41	Soluble	Solid	VFA-IC	637890
550-188805-11	BH13-41-FD	Soluble	Solid	VFA-IC	637890
550-188805-12	BH15-18.5	Soluble	Solid	VFA-IC	637890
MB 480-637890/1-A	Method Blank	Soluble	Solid	VFA-IC	637890
LCS 480-637890/2-A	Lab Control Sample	Soluble	Solid	VFA-IC	637890
550-188805-3 MS	BH11-30	Soluble	Solid	VFA-IC	637890
550-188805-3 MSD	BH11-30	Soluble	Solid	VFA-IC	637890
550-188805-12 MS	BH15-18.5	Soluble	Solid	VFA-IC	637890

Analysis Batch: 638547

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
550-188805-13	BH15-21	Soluble	Solid	VFA-IC	637896
550-188805-14	BH15-34.5	Soluble	Solid	VFA-IC	637896
550-188805-15	BH15-37.5	Soluble	Solid	VFA-IC	637896
550-188805-16	BH15-41	Soluble	Solid	VFA-IC	637896
550-188805-17	BH16-17.3	Soluble	Solid	VFA-IC	637896
550-188805-18	BH16-21.5	Soluble	Solid	VFA-IC	637896
550-188805-19	BH16-21.5-FD	Soluble	Solid	VFA-IC	637896
550-188805-20	BH16-26.5	Soluble	Solid	VFA-IC	637896
550-188805-21	BH16-31	Soluble	Solid	VFA-IC	637896
550-188805-22	BH16-42.3	Soluble	Solid	VFA-IC	637896
550-188805-23	BH18-13	Soluble	Solid	VFA-IC	637896
550-188805-24	BH18-20	Soluble	Solid	VFA-IC	637896
550-188805-25	BH18-23	Soluble	Solid	VFA-IC	637896
550-188805-26	BH18-27.5	Soluble	Solid	VFA-IC	637896
550-188805-27	BH18-34.5	Soluble	Solid	VFA-IC	637896
550-188805-28	BH12-11	Soluble	Solid	VFA-IC	637902
550-188805-29	BH12-16	Soluble	Solid	VFA-IC	637902
550-188805-30	BH12-21	Soluble	Solid	VFA-IC	637902
550-188805-31	BH12-27	Soluble	Solid	VFA-IC	637902
550-188805-32	BH12-36	Soluble	Solid	VFA-IC	637902
MB 480-637896/1-A	Method Blank	Soluble	Solid	VFA-IC	637896
MB 480-637902/1-A	Method Blank	Soluble	Solid	VFA-IC	637902
LCS 480-637896/2-A	Lab Control Sample	Soluble	Solid	VFA-IC	637896
LCS 480-637902/2-A	Lab Control Sample	Soluble	Solid	VFA-IC	637902
550-188805-22 MS	BH16-42.3	Soluble	Solid	VFA-IC	637896
550-188805-22 MSD	BH16-42.3	Soluble	Solid	VFA-IC	637896
550-188805-27 MS	BH18-34.5	Soluble	Solid	VFA-IC	637896
550-188805-32 MS	BH12-36	Soluble	Solid	VFA-IC	637902
550-188805-32 MSD	BH12-36	Soluble	Solid	VFA-IC	637902

Lab Chronicle

Client: Tetra Tech, Inc.
Project/Site: Seep Well Field

Job ID: 550-188805-1

Client Sample ID: BH11-15
Date Collected: 08/10/22 10:30
Date Received: 08/13/22 10:00

Lab Sample ID: 550-188805-1
Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	3050B			281555	SGO	EET PHX	08/15/22 06:53
Total/NA	Analysis	6010B		1	281735	CHS	EET PHX	08/16/22 12:20
Total/NA	Analysis	9060A		1	584714	ABW	EET DEN	08/18/22 15:46
Soluble	Leach	DI Leach			637890	IMZ	EET BUF	08/17/22 15:11
Soluble	Analysis	VFA-IC		1	638145	IMZ	EET BUF	08/18/22 22:21

Client Sample ID: BH11-20
Date Collected: 08/10/22 10:40
Date Received: 08/13/22 10:00

Lab Sample ID: 550-188805-2
Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	3050B			281555	SGO	EET PHX	08/15/22 06:53
Total/NA	Analysis	6010B		1	281735	CHS	EET PHX	08/16/22 12:23
Total/NA	Analysis	9060A		1	584714	ABW	EET DEN	08/18/22 14:28
Soluble	Leach	DI Leach			637890	IMZ	EET BUF	08/17/22 15:11
Soluble	Analysis	VFA-IC		1	638145	IMZ	EET BUF	08/18/22 22:50

Client Sample ID: BH11-30
Date Collected: 08/10/22 11:00
Date Received: 08/13/22 10:00

Lab Sample ID: 550-188805-3
Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	3050B			281555	SGO	EET PHX	08/15/22 06:53
Total/NA	Analysis	6010B		1	281735	CHS	EET PHX	08/16/22 12:26
Total/NA	Analysis	9060A		1	584714	ABW	EET DEN	08/18/22 14:38
Soluble	Leach	DI Leach			637890	IMZ	EET BUF	08/17/22 15:11
Soluble	Analysis	VFA-IC		1	638145	IMZ	EET BUF	08/18/22 23:20

Client Sample ID: BH11-40
Date Collected: 08/10/22 11:10
Date Received: 08/13/22 10:00

Lab Sample ID: 550-188805-4
Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	3050B			281555	SGO	EET PHX	08/15/22 06:53
Total/NA	Analysis	6010B		4	281827	CHS	EET PHX	08/17/22 12:55
Total/NA	Analysis	9060A		1	584714	ABW	EET DEN	08/18/22 14:47
Soluble	Leach	DI Leach			637890	IMZ	EET BUF	08/17/22 15:11
Soluble	Analysis	VFA-IC		1	638145	IMZ	EET BUF	08/19/22 01:45

Lab Chronicle

Client: Tetra Tech, Inc.
Project/Site: Seep Well Field

Job ID: 550-188805-1

Client Sample ID: BH11-45
Date Collected: 08/10/22 12:35
Date Received: 08/13/22 10:00

Lab Sample ID: 550-188805-5
Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	3050B			281555	SGO	EET PHX	08/15/22 06:53
Total/NA	Analysis	6010B		2	281772	CHS	EET PHX	08/16/22 17:20
Total/NA	Analysis	9060A		1	584714	ABW	EET DEN	08/18/22 15:16
Soluble	Leach	DI Leach			637890	IMZ	EET BUF	08/17/22 15:11
Soluble	Analysis	VFA-IC		1	638145	IMZ	EET BUF	08/19/22 02:14

Client Sample ID: BH13-11
Date Collected: 08/11/22 07:40
Date Received: 08/13/22 10:00

Lab Sample ID: 550-188805-6
Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	3050B			281555	SGO	EET PHX	08/15/22 06:53
Total/NA	Analysis	6010B		1	281735	CHS	EET PHX	08/16/22 12:34
Total/NA	Analysis	9060A		1	584714	ABW	EET DEN	08/18/22 15:27
Soluble	Leach	DI Leach			637890	IMZ	EET BUF	08/17/22 15:11
Soluble	Analysis	VFA-IC		1	638145	IMZ	EET BUF	08/19/22 02:44

Client Sample ID: BH13-22
Date Collected: 08/11/22 08:00
Date Received: 08/13/22 10:00

Lab Sample ID: 550-188805-7
Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	3050B			281555	SGO	EET PHX	08/15/22 06:53
Total/NA	Analysis	6010B		1	281735	CHS	EET PHX	08/16/22 12:37
Total/NA	Analysis	9060A		1	584714	ABW	EET DEN	08/18/22 15:36
Soluble	Leach	DI Leach			637890	IMZ	EET BUF	08/17/22 15:11
Soluble	Analysis	VFA-IC		1	638145	IMZ	EET BUF	08/19/22 03:13

Client Sample ID: BH13-32.6
Date Collected: 08/11/22 08:05
Date Received: 08/13/22 10:00

Lab Sample ID: 550-188805-8
Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	3050B			281555	SGO	EET PHX	08/15/22 06:53
Total/NA	Analysis	6010B		2	281772	CHS	EET PHX	08/16/22 17:23
Total/NA	Analysis	9060A		1	584714	ABW	EET DEN	08/18/22 16:16
Soluble	Leach	DI Leach			637890	IMZ	EET BUF	08/17/22 15:11
Soluble	Analysis	VFA-IC		1	638145	IMZ	EET BUF	08/19/22 03:42

Lab Chronicle

Client: Tetra Tech, Inc.
Project/Site: Seep Well Field

Job ID: 550-188805-1

Client Sample ID: BH13-39
Date Collected: 08/11/22 08:10
Date Received: 08/13/22 10:00

Lab Sample ID: 550-188805-9
Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	3050B			281555	SGO	EET PHX	08/15/22 06:53
Total/NA	Analysis	6010B		2	281772	CHS	EET PHX	08/16/22 17:26
Total/NA	Analysis	9060A		1	584714	ABW	EET DEN	08/18/22 16:25
Soluble	Leach	DI Leach			637890	IMZ	EET BUF	08/17/22 15:11
Soluble	Analysis	VFA-IC		1	638145	IMZ	EET BUF	08/19/22 04:11

Client Sample ID: BH13-41
Date Collected: 08/11/22 08:20
Date Received: 08/13/22 10:00

Lab Sample ID: 550-188805-10
Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	3050B			281555	SGO	EET PHX	08/15/22 06:53
Total/NA	Analysis	6010B		2	281772	CHS	EET PHX	08/16/22 17:29
Total/NA	Analysis	9060A		1	584714	ABW	EET DEN	08/18/22 16:35
Soluble	Leach	DI Leach			637890	IMZ	EET BUF	08/17/22 15:11
Soluble	Analysis	VFA-IC		1	638145	IMZ	EET BUF	08/19/22 04:40

Client Sample ID: BH13-41-FD
Date Collected: 08/11/22 08:20
Date Received: 08/13/22 10:00

Lab Sample ID: 550-188805-11
Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	3050B			281555	SGO	EET PHX	08/15/22 06:53
Total/NA	Analysis	6010B		2	281772	CHS	EET PHX	08/16/22 17:32
Total/NA	Analysis	9060A		1	584714	ABW	EET DEN	08/18/22 16:48
Soluble	Leach	DI Leach			637890	IMZ	EET BUF	08/17/22 15:11
Soluble	Analysis	VFA-IC		1	638145	IMZ	EET BUF	08/19/22 05:09

Client Sample ID: BH15-18.5
Date Collected: 08/11/22 09:40
Date Received: 08/13/22 10:00

Lab Sample ID: 550-188805-12
Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	3050B			281555	SGO	EET PHX	08/15/22 06:53
Total/NA	Analysis	6010B		1	281735	CHS	EET PHX	08/16/22 12:57
Total/NA	Analysis	9060A		1	584714	ABW	EET DEN	08/19/22 11:36
Soluble	Leach	DI Leach			637890	IMZ	EET BUF	08/17/22 15:11
Soluble	Analysis	VFA-IC		1	638145	IMZ	EET BUF	08/19/22 05:39

Lab Chronicle

Client: Tetra Tech, Inc.
Project/Site: Seep Well Field

Job ID: 550-188805-1

Client Sample ID: BH15-21
Date Collected: 08/11/22 09:50
Date Received: 08/13/22 10:00

Lab Sample ID: 550-188805-13
Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	3050B			281555	SGO	EET PHX	08/15/22 06:53
Total/NA	Analysis	6010B		1	281735	CHS	EET PHX	08/16/22 13:00
Total/NA	Analysis	9060A		1	584714	ABW	EET DEN	08/19/22 11:45
Soluble	Leach	DI Leach			637896	IMZ	EET BUF	08/17/22 15:45
Soluble	Analysis	VFA-IC		1	638547	IMZ	EET BUF	08/22/22 18:56

Client Sample ID: BH15-34.5
Date Collected: 08/11/22 10:00
Date Received: 08/13/22 10:00

Lab Sample ID: 550-188805-14
Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	3050B			281555	SGO	EET PHX	08/15/22 06:53
Total/NA	Analysis	6010B		1	281735	CHS	EET PHX	08/16/22 13:03
Total/NA	Analysis	9060A		1	584714	ABW	EET DEN	08/19/22 11:55
Soluble	Leach	DI Leach			637896	IMZ	EET BUF	08/17/22 15:45
Soluble	Analysis	VFA-IC		1	638547	IMZ	EET BUF	08/22/22 19:25

Client Sample ID: BH15-37.5
Date Collected: 08/11/22 10:05
Date Received: 08/13/22 10:00

Lab Sample ID: 550-188805-15
Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	3050B			281555	SGO	EET PHX	08/15/22 06:53
Total/NA	Analysis	6010B		1	281735	CHS	EET PHX	08/16/22 13:05
Total/NA	Analysis	9060A		1	584714	ABW	EET DEN	08/19/22 12:07
Soluble	Leach	DI Leach			637896	IMZ	EET BUF	08/17/22 15:45
Soluble	Analysis	VFA-IC		1	638547	IMZ	EET BUF	08/22/22 19:55

Client Sample ID: BH15-41
Date Collected: 08/11/22 10:15
Date Received: 08/13/22 10:00

Lab Sample ID: 550-188805-16
Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	3050B			281555	SGO	EET PHX	08/15/22 06:53
Total/NA	Analysis	6010B		2	281772	CHS	EET PHX	08/16/22 17:35
Total/NA	Analysis	9060A		1	584714	ABW	EET DEN	08/19/22 12:17
Soluble	Leach	DI Leach			637896	IMZ	EET BUF	08/17/22 15:45
Soluble	Analysis	VFA-IC		1	638547	IMZ	EET BUF	08/22/22 20:24

Lab Chronicle

Client: Tetra Tech, Inc.
Project/Site: Seep Well Field

Job ID: 550-188805-1

Client Sample ID: BH16-17.3
Date Collected: 08/11/22 12:35
Date Received: 08/13/22 10:00

Lab Sample ID: 550-188805-17
Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	3050B			281556	SGO	EET PHX	08/15/22 07:01
Total/NA	Analysis	6010B		1	281731	CHS	EET PHX	08/16/22 13:31
Total/NA	Analysis	9060A		1	584714	ABW	EET DEN	08/19/22 12:56
Soluble	Leach	DI Leach			637896	IMZ	EET BUF	08/17/22 15:45
Soluble	Analysis	VFA-IC		1	638547	IMZ	EET BUF	08/22/22 20:53

Client Sample ID: BH16-21.5
Date Collected: 08/11/22 12:40
Date Received: 08/13/22 10:00

Lab Sample ID: 550-188805-18
Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	3050B			281556	SGO	EET PHX	08/15/22 07:01
Total/NA	Analysis	6010B		1	281731	CHS	EET PHX	08/16/22 13:34
Total/NA	Analysis	9060A		1	584714	ABW	EET DEN	08/19/22 13:05
Soluble	Leach	DI Leach			637896	IMZ	EET BUF	08/17/22 15:45
Soluble	Analysis	VFA-IC		1	638547	IMZ	EET BUF	08/22/22 23:48

Client Sample ID: BH16-21.5-FD
Date Collected: 08/11/22 12:40
Date Received: 08/13/22 10:00

Lab Sample ID: 550-188805-19
Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	3050B			281556	SGO	EET PHX	08/15/22 07:01
Total/NA	Analysis	6010B		1	281731	CHS	EET PHX	08/16/22 13:37
Total/NA	Analysis	9060A		1	584714	ABW	EET DEN	08/19/22 12:26
Soluble	Leach	DI Leach			637896	IMZ	EET BUF	08/17/22 15:45
Soluble	Analysis	VFA-IC		1	638547	IMZ	EET BUF	08/23/22 00:17

Client Sample ID: BH16-26.5
Date Collected: 08/11/22 12:45
Date Received: 08/13/22 10:00

Lab Sample ID: 550-188805-20
Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	3050B			281556	SGO	EET PHX	08/15/22 07:01
Total/NA	Analysis	6010B		1	281731	CHS	EET PHX	08/16/22 13:45
Total/NA	Analysis	9060A		1	584714	ABW	EET DEN	08/19/22 14:34
Soluble	Leach	DI Leach			637896	IMZ	EET BUF	08/17/22 15:45
Soluble	Analysis	VFA-IC		1	638547	IMZ	EET BUF	08/23/22 00:46

Lab Chronicle

Client: Tetra Tech, Inc.
Project/Site: Seep Well Field

Job ID: 550-188805-1

Client Sample ID: BH16-31
Date Collected: 08/11/22 12:50
Date Received: 08/13/22 10:00

Lab Sample ID: 550-188805-21
Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	3050B			281556	SGO	EET PHX	08/15/22 07:01
Total/NA	Analysis	6010B		1	281731	CHS	EET PHX	08/16/22 13:48
Total/NA	Analysis	9060A		1	584714	ABW	EET DEN	08/22/22 12:32
Soluble	Leach	DI Leach			637896	IMZ	EET BUF	08/17/22 15:45
Soluble	Analysis	VFA-IC		1	638547	IMZ	EET BUF	08/23/22 01:15

Client Sample ID: BH16-42.3
Date Collected: 08/11/22 13:00
Date Received: 08/13/22 10:00

Lab Sample ID: 550-188805-22
Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	3050B			281556	SGO	EET PHX	08/15/22 07:01
Total/NA	Analysis	6010B		2	281771	CHS	EET PHX	08/16/22 17:12
Total/NA	Analysis	9060A		1	584714	ABW	EET DEN	08/22/22 13:33
Soluble	Leach	DI Leach			637896	IMZ	EET BUF	08/17/22 15:45
Soluble	Analysis	VFA-IC		1	638547	IMZ	EET BUF	08/22/22 21:22

Client Sample ID: BH18-13
Date Collected: 08/11/22 13:35
Date Received: 08/13/22 10:00

Lab Sample ID: 550-188805-23
Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	3050B			281556	SGO	EET PHX	08/15/22 07:01
Total/NA	Analysis	6010B		1	281731	CHS	EET PHX	08/16/22 13:51
Total/NA	Analysis	9060A		1	584714	ABW	EET DEN	08/22/22 12:43
Soluble	Leach	DI Leach			637896	IMZ	EET BUF	08/17/22 15:45
Soluble	Analysis	VFA-IC		1	638547	IMZ	EET BUF	08/23/22 01:44

Client Sample ID: BH18-20
Date Collected: 08/11/22 13:40
Date Received: 08/13/22 10:00

Lab Sample ID: 550-188805-24
Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	3050B			281556	SGO	EET PHX	08/15/22 07:01
Total/NA	Analysis	6010B		1	281731	CHS	EET PHX	08/16/22 13:54
Total/NA	Analysis	9060A		1	584714	ABW	EET DEN	08/22/22 12:53
Soluble	Leach	DI Leach			637896	IMZ	EET BUF	08/17/22 15:45
Soluble	Analysis	VFA-IC		1	638547	IMZ	EET BUF	08/23/22 02:14

Lab Chronicle

Client: Tetra Tech, Inc.
Project/Site: Seep Well Field

Job ID: 550-188805-1

Client Sample ID: BH18-23
Date Collected: 08/11/22 13:45
Date Received: 08/13/22 10:00

Lab Sample ID: 550-188805-25
Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	3050B			281556	SGO	EET PHX	08/15/22 07:01
Total/NA	Analysis	6010B		1	281731	CHS	EET PHX	08/16/22 13:56
Total/NA	Analysis	9060A		1	584714	ABW	EET DEN	08/22/22 13:03
Soluble	Leach	DI Leach			637896	IMZ	EET BUF	08/17/22 15:45
Soluble	Analysis	VFA-IC		1	638547	IMZ	EET BUF	08/23/22 02:43

Client Sample ID: BH18-27.5
Date Collected: 08/11/22 13:50
Date Received: 08/13/22 10:00

Lab Sample ID: 550-188805-26
Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	3050B			281556	SGO	EET PHX	08/15/22 07:01
Total/NA	Analysis	6010B		1	281731	CHS	EET PHX	08/16/22 13:59
Total/NA	Analysis	9060A		1	584714	ABW	EET DEN	08/22/22 13:13
Soluble	Leach	DI Leach			637896	IMZ	EET BUF	08/17/22 15:45
Soluble	Analysis	VFA-IC		1	638547	IMZ	EET BUF	08/23/22 03:12

Client Sample ID: BH18-34.5
Date Collected: 08/11/22 13:55
Date Received: 08/13/22 10:00

Lab Sample ID: 550-188805-27
Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	3050B			281556	SGO	EET PHX	08/15/22 07:01
Total/NA	Analysis	6010B		1	281731	CHS	EET PHX	08/16/22 14:02
Total/NA	Analysis	9060A		1	584714	ABW	EET DEN	08/22/22 13:23
Soluble	Leach	DI Leach			637896	IMZ	EET BUF	08/17/22 15:45
Soluble	Analysis	VFA-IC		1	638547	IMZ	EET BUF	08/23/22 03:41

Client Sample ID: BH12-11
Date Collected: 08/12/22 09:40
Date Received: 08/13/22 10:00

Lab Sample ID: 550-188805-28
Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	3050B			281556	SGO	EET PHX	08/15/22 07:01
Total/NA	Analysis	6010B		1	281731	CHS	EET PHX	08/16/22 14:05
Total/NA	Analysis	9060A		1	584714	ABW	EET DEN	08/22/22 14:28
Soluble	Leach	DI Leach			637902	IMZ	EET BUF	08/17/22 16:07
Soluble	Analysis	VFA-IC		1	638547	IMZ	EET BUF	08/23/22 06:36

Lab Chronicle

Client: Tetra Tech, Inc.
Project/Site: Seep Well Field

Job ID: 550-188805-1

Client Sample ID: BH12-16
Date Collected: 08/12/22 09:50
Date Received: 08/13/22 10:00

Lab Sample ID: 550-188805-29
Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	3050B			281556	SGO	EET PHX	08/15/22 07:01
Total/NA	Analysis	6010B		1	281731	CHS	EET PHX	08/16/22 14:08
Total/NA	Analysis	9060A		1	584714	ABW	EET DEN	08/22/22 14:40
Soluble	Leach	DI Leach			637902	IMZ	EET BUF	08/17/22 16:07
Soluble	Analysis	VFA-IC		1	638547	IMZ	EET BUF	08/23/22 07:05

Client Sample ID: BH12-21
Date Collected: 08/12/22 10:00
Date Received: 08/13/22 10:00

Lab Sample ID: 550-188805-30
Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	3050B			281556	SGO	EET PHX	08/15/22 07:01
Total/NA	Analysis	6010B		1	281731	CHS	EET PHX	08/16/22 14:11
Total/NA	Analysis	9060A		1	584714	ABW	EET DEN	08/22/22 14:54
Soluble	Leach	DI Leach			637902	IMZ	EET BUF	08/17/22 16:07
Soluble	Analysis	VFA-IC		1	638547	IMZ	EET BUF	08/23/22 07:34

Client Sample ID: BH12-27
Date Collected: 08/12/22 10:10
Date Received: 08/13/22 10:00

Lab Sample ID: 550-188805-31
Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	3050B			281556	SGO	EET PHX	08/15/22 07:01
Total/NA	Analysis	6010B		1	281731	CHS	EET PHX	08/16/22 14:19
Total/NA	Analysis	9060A		1	584714	ABW	EET DEN	08/22/22 15:04
Soluble	Leach	DI Leach			637902	IMZ	EET BUF	08/17/22 16:07
Soluble	Analysis	VFA-IC		1	638547	IMZ	EET BUF	08/23/22 08:03

Client Sample ID: BH12-36
Date Collected: 08/12/22 10:20
Date Received: 08/13/22 10:00

Lab Sample ID: 550-188805-32
Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	3050B			281556	SGO	EET PHX	08/15/22 07:01
Total/NA	Analysis	6010B		2	281771	CHS	EET PHX	08/16/22 17:15
Total/NA	Analysis	9060A		1	584714	ABW	EET DEN	08/22/22 15:35
Soluble	Leach	DI Leach			637902	IMZ	EET BUF	08/17/22 16:07
Soluble	Analysis	VFA-IC		1	638547	IMZ	EET BUF	08/23/22 08:33

Laboratory References:

EET BUF = Eurofins Buffalo, 10 Hazelwood Drive, Amherst, NY 14228-2298, TEL (716)691-2600

EET DEN = Eurofins Denver, 4955 Yarrow Street, Arvada, CO 80002, TEL (303)736-0100

EET PHX = Eurofins Phoenix, 4625 East Cotton Center Boulevard, Suite #189, Phoenix, AZ 85040, TEL (602)437-3340

Accreditation/Certification Summary

Client: Tetra Tech, Inc.
Project/Site: Seep Well Field

Job ID: 550-188805-1

Laboratory: Eurofins Phoenix

All accreditations/certifications held by this laboratory are listed. Not all accreditations/certifications are applicable to this report.

Authority	Program	Identification Number	Expiration Date
AIHA-LAP, LLC	Environmental Lead Laboratory Accreditation Program (ELLAP)	154268	11-01-23
AIHA-LAP, LLC	Industrial Hygiene Laboratory Accreditation Program (IHLAP)	154268	11-01-23
Arizona	State	AZ0728	06-10-23
California	State	2941	08-30-22
Oregon	NELAP	AZ100001	03-09-23
USDA	US Federal Programs	P330-19-00227	08-27-22

Laboratory: Eurofins Buffalo

All accreditations/certifications held by this laboratory are listed. Not all accreditations/certifications are applicable to this report.

Authority	Program	Identification Number	Expiration Date
Arkansas DEQ	State	88-0686	07-06-22 *
Connecticut	State	PH-0568	03-31-24
Florida	NELAP	E87672	06-30-23
Georgia	State	10026 (NY)	04-01-23
Georgia	State Program	N/A	03-31-09 *
Georgia (DW)	State	956	03-31-23
Illinois	NELAP	200003	09-30-22
Illinois	NELAP	200003	09-30-22
Iowa	State	374	03-01-23
Iowa	State Program	374	03-01-09 *
Kansas	NELAP	E-10187	01-31-23
Kentucky (DW)	State	90029	12-31-22
Kentucky (UST)	State	30	04-01-23
Kentucky (WW)	State	KY90029	12-31-22
Louisiana	NELAP	02031	06-30-23
Louisiana (All)	NELAP	02031	06-30-23
Maine	State	NY00044	12-04-22
Maryland	State	294	03-31-23
Massachusetts	State	M-NY044	06-30-23
Michigan	State	9937	03-31-23
Michigan	State Program	9937	04-01-09 *
New Hampshire	NELAP	2973	09-11-19 *
New Hampshire	NELAP	2337	11-17-22
New Jersey	NELAP	NY455	06-30-23
New York	NELAP	10026	03-31-23
Pennsylvania	NELAP	68-00281	07-31-23
Rhode Island	State	LAO00328	12-30-22
Tennessee	State	02970	04-01-23
Texas	NELAP	T104704412-18-10	07-31-23
USDA	US Federal Programs	P330-18-00039	03-25-24
Virginia	NELAP	460185	09-14-22
Washington	State	C784	02-10-23
Wisconsin	State	998310390	08-31-22

Laboratory: Eurofins Denver

All accreditations/certifications held by this laboratory are listed. Not all accreditations/certifications are applicable to this report.

Authority	Program	Identification Number	Expiration Date

* Accreditation/Certification renewal pending - accreditation/certification considered valid.

Accreditation/Certification Summary

Client: Tetra Tech, Inc.
Project/Site: Seep Well Field

Job ID: 550-188805-1

Laboratory: Eurofins Denver (Continued)

All accreditations/certifications held by this laboratory are listed. Not all accreditations/certifications are applicable to this report.

Authority	Program	Identification Number	Expiration Date
A2LA	Dept. of Defense ELAP	2907.01	10-31-23
A2LA	ISO/IEC 17025	2907.01	10-31-23
Alabama	State Program	40730	09-30-12 *
Alaska (UST)	State	18-001	02-08-23
Arizona	State	AZ0713	12-20-22
Arkansas DEQ	State	19-047-0	06-01-22 *
California	State	2513	01-08-23
Connecticut	State	PH-0686	09-30-22
Florida	NELAP	E87667-57	06-30-23
Georgia	State	4025-011	01-08-23
Illinois	NELAP	2000172019-1	04-30-23
Iowa	State	IA#370	12-02-22
Kansas	NELAP	E-10166	04-30-23
Kentucky (WW)	State	KY98047	12-31-22
Louisiana	NELAP	30785	06-30-14 *
Louisiana	NELAP	30785	06-30-23
Minnesota	NELAP	1788752	12-31-22
Nevada	State	CO000262020-1	07-31-22 *
New Hampshire	NELAP	205319	04-28-23
New Jersey	NELAP	190002	06-30-23
New York	NELAP	59923	04-01-23
North Carolina (WW/SW)	State	358	12-31-22
North Dakota	State	R-034	01-08-23
Oklahoma	NELAP	8614	08-31-22
Oregon	NELAP	4025-011	01-09-23
Pennsylvania	NELAP	013	07-31-23
South Carolina	State	72002001	01-08-23
Texas	NELAP	TX104704183-08-TX	09-30-09 *
Texas	NELAP	T104704183-21-19	10-01-22
USDA	US Federal Programs	P330-20-00065	03-06-23
Utah	NELAP	QUAN5	06-30-13 *
Utah	NELAP	CO000262019-11	07-31-23
Virginia	NELAP	10490	06-14-23
Washington	State	C583-19	08-03-22 *
West Virginia DEP	State	354	11-30-22
Wisconsin	State	999615430	08-31-22
Wyoming (UST)	A2LA	2907.01	10-31-22

* Accreditation/Certification renewal pending - accreditation/certification considered valid.

Method Summary

Client: Tetra Tech, Inc.
Project/Site: Seep Well Field

Job ID: 550-188805-1

Method	Method Description	Protocol	Laboratory
6010B	Metals (ICP)	SW846	EET PHX
9060A	Organic Carbon, Total (TOC)	SW846	EET DEN
VFA-IC	Volatile Fatty Acids, Ion Chromatography	TestAmerica SOP	EET BUF
3050B	Preparation, Metals	SW846	EET PHX
DI Leach	Deionized Water Leaching Procedure	ASTM	EET BUF

Protocol References:

ASTM = ASTM International

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

TestAmerica SOP = TestAmerica, Inc., Standard Operating Procedure

Laboratory References:

EET BUF = Eurofins Buffalo, 10 Hazelwood Drive, Amherst, NY 14228-2298, TEL (716)691-2600

EET DEN = Eurofins Denver, 4955 Yarrow Street, Arvada, CO 80002, TEL (303)736-0100

EET PHX = Eurofins Phoenix, 4625 East Cotton Center Boulevard, Suite #189, Phoenix, AZ 85040, TEL (602)437-3340

Tetra Tech
150 S Fourth Street, Unit A
Henderson, NV 89015
702-854-2295

188805

CHAIN-OF-CUSTODY

TestAmerica Las Vegas 219

8/30/2022

Laboratory Name: **Eurofins-Phoenix** (602) 437-3340 | **Address: 4625 E. Cotton Center Blvd. Suite 189; Phoenix, AZ 85040** | **Contact: Rachel Sester (602) 659-7615** | Page 1 of 3

Project Name: **Seep Well Field** | Sampler: J. Bunkers | Analysis and Method Requested | Remarks

Project No. **M11** NERT | Project Contact: **Maureen McMyler** | Site Telephone No.: **(702) 767-2053**

Report to: Maureen McMyler; Maureen.McMyler@tetratech.com; (865) 220-4762 | Project Manager/Supervisor: **Dana Grady**

Bill to: Sunshine Pryor, 350 Indiana St., Golden, CO 80401 (303) 217-5700 | Sample Description

550-188805 Chain of Custody

Item No.	Sample Number	Date	Time	G - Grab C - Comp	Matrix	Number of Containers	TOC by 9060A	Total Calcium by 6010B	VFA by IC					Notes
					Preservative	HCL	HNO3	None	None	None				
1	~~SWFTS-BH-EB~~ GS			G	W	8	4	1	3					
2	BH11-15 -1	8/10/22	1030	G	S	3	X	X	X					
3	BH11-20 -2	8/10/22	1040	G	S	3	X	X	X					
4	BH11-30 -3	8/10/22	1100	G	S	3	X	X	X					
5	BH11-40 -4	8/10/22	1110	G	S	3	X	X	X					
6	BH11-45 -5	8/10/22	1235	G	S	3	X	X	X					
7	BH13-11 -6	8/11/22	0740	G	S	3	X	X	X					
8	BH13-22 -7	8/11/22	0800	G	S	3	X	X	X					
9	BH13-32.6 -8	8/11/22	0805	G	S	3	X	X	X					
10	BH13-39 -9	8/11/22	0810	G	S	3	X	X	X					
11	~~BH41 GS~~ BH13-41 -10	8/11/22	0820	G	S	3	X	X	X					
12	BH13-41-FD -11	8/11/22	0820	G	S	3	X	X	X					
13	BH15-18.5 -12	8/11/22	0948 GS	G	S	3	X	X	X					
14	BH15-21 -13	8/11/22	0950	G	S	3	X	X	X					
15	BH15-34.5 -14	8/11/22	1000	G	S	3	X	X	X					

Special Instructions:

Transfers Relinquished By (Signature)	Date/Time	Transfers Accepted By (Signature)	Date/Time
G. Schulers	8/12/22		
TALUS	8-12-22 1600		8/13/22 1500
			Level IVPackage; EQuIS 4-file format EDD
			FedEx Airbill No.:
	8/13/22 1000	Laboratory EETA PHX	Sampler's Signature

TAT: Standard

0.9°C, 2.4°C IR FED EX

TH240 21.1/21.4

Tetra Tech
150 S Fourth Street, Unit A
Henderson, NV 89015
702-854-2295

188805

CHAIN-OF-CUSTODY

estAmerica
Las Vegas
210

8/30/2022

Laboratory Name: **Eurofins-Phoenix** (602) 437-3340						**Address: 4625 E. Cotton Center Blvd. Suite 189; Phoenix, AZ 85040**			**Contact: Rachel Sester (602) 659-7615**							**Page 2 of 3**
Project Name: **Seep Well Field**						Sampler: J. Bunkers	**Analysis and Method Requested**									Remarks
Project No. **M11** NERT			Project Contact: **Maureen McMyler**			Site Telephone No.: **(702) 767-2053**	Number of Containers	**TOC by 9060A**	**Total Calcium by 6010B**	**VFA by IC**						
Report to: Maureen McMyler; Maureen.McMyler@tetratech.com; (865) 220-4762						Project Manager/Supervisor: **Dana Grady**										
Bill to: Sunshine Pryor, 350 Indiana St., Golden, CO 80401 (303) 217-5700						Sample Description										
Item No.	Sample Number		Date	Time	G - Grab C - Comp	Matrix	**Preservative**	**HCL**	**HNO3**	**None**	**None**	**None**				Notes
1	~~SWFTS-BH-EB~~ GS				G	W	8	4	1	3						
2	BH15-37.5	-15	8/11/22	1005	G	S	3	X	X	X						
3	BH15-41	-16	8/11/22	1015	G	S	3	X	X	X						
4	BH16-17.3	-17	8/11/22	1235	G	S	3	X	X	X						
5	BH16-21.5	-18	8/11/22	1240	G	S	3	X	X	X						
6	BH16-21.5-FD	-19	8/11/22	1240	G	S	3	X	X	X						
7	BH16-26.5	-20	8/11/22	1245	G	S	3	X	X	X						
8	BH16-31	-21	8/11/22	1250	G	S	3	X	X	X						
9	BH16-42.3	-22	8/11/22	1300	G	S	3	X	X	X						
10	BH16-42.3-MS/MSD	-22	8/11/22	1300	G	S	3	X	X	X						
11	BH18-13	-23	8/11/22	1335	G	S	3	X	X	X						
12	BH18-20	-24	8/11/22	1340	G	S	3	X	X	X						
13	BH18-23	-25	8/11/22	1345	G	S	3	X	X	X						
14	BH18-27.5	-26	8/11/22	1350	G	S	3	X	X	X						
15	BH18-34.5	-27	8/11/22	1355	G	S	3	X	X	X						

Transfers Relinquished By (Signature)	Date/Time	Transfers Accepted By (Signature)	Date/Time	Special Instructions:
G. Schulz	8/11/22	TALVS	8/12/22 1500	
TALVS	8/12/22 1600			**Level IV** Package; EQuIS 4-file format EDD
				FedEx Airbill No.:
	8/13/22 1000	Laboratory: EETA PHX		Sampler's Signature

TAT: Standard

0.9°C, 2.4°C IR KED

TH40 21.1/21.4

Tetra Tech
150 S Fourth Street, Unit A
Henderson, NV 89015
702-854-2295

CHAIN-OF-CUSTODY

TestAmerica Las Vegas 210

188805

8/30/2022

Laboratory Name: **Eurofins-Phoenix** (602) 437-3340						**Address: 4625 E. Cotton Center Blvd. Suite 189; Phoenix, AZ 85040**			**Contact: Rachel Sester (602) 659-7615**								**Page 3 of 3**
Project Name: **Seep Well Field**						Sampler J. BunkerS	**Analysis and Method Requested**										Remarks
Project No. **M11** NERT			Project Contact **Maureen McMyler**			Site Telephone No. **(702) 767-2053**	Number of Containers	TOC by 9060A	Total Calcium by 6010B	VFA by IC							
Report to: Maureen McMyler; Maureen.McMyler@tetratech.com; (865) 220-4762						Project Manager/Supervisor **Dana Grady**											
Bill to: Sunshine Pryor, 350 Indiana St., Golden, CO 80401 (303) 217-5700						Sample Description											
Item No.	Sample Number		Date	Time	G - Grab C - Comp	Matrix											
							Preservative	**HCL**	**HNO3**	**None**	**None**	**None**					Notes
1	~~SWFTS-BH-EB~~ GS				G	W	8	4	1	3							
2	BH12-11	-23	8/12/22	0940	G	S	3	X	X	X							
3	BH12-16	-24	8/12/22	0950	G	S	3	X	X	X							
4	BH12-21	-25	8/12/22	1000	G	S	3	X	X	X							
5	BH12-27	-31	8/12/22	1010	G	S	3	X	X	X							
6	BH12-36	-32	8/12/22	1020	G	S	3	X	X	X							
7																	
8																	
9																	
10																	
11																	
12																	
13																	
14																	
15																	

Transfers Relinquished By (Signature)	Date/Time	Transfers Accepted By (Signature)	Date/Time	Special Instructions:
C. Schuler	8/12/22	OAM TALUS	8-12-22 1500	
OAM TALUS	8-12-22 1600			Level IVPackage; EQuIS 4-file format EDD
				FedEx Airbill No.:
Unknown	8/13/22 1000	Laboratory EETA PHX		Sampler's Signature

TAT: Standard

0.9°C, 2.4°C ice Fed Ex

TB340 21.1/21.4

Eurofins Phoenix
4625 East Cotton Center Boulevard Suite #189
Phoenix, AZ 85040
Phone: 602-437-3340

Chain of Custody Record

eurofins | Environment Testing America

Client Information (Sub Contract Lab)

Client Contact:	Shipping/Receiving
Company:	TestAmerica Laboratories, Inc.
Address:	4955 Yarrow Street, ,
City:	Arvada
State, Zip:	CO, 80002
Phone:	303-736-0100(Tel) 303-431-7171(Fax)
Email:	
Project Name:	Seep Well Field
Site:	
Sampler:	
Phone:	
Due Date Requested:	8/29/2022
TAT Requested (days):	
PO #:	
WO #:	
Project #:	55017858
SSOW#:	
Lab PM:	Sester, Rachel E
E-Mail:	Rachel.Sester@et.eurofinsus.com
Accreditations Required (See note):	State Program - Nevada
Carrier Tracking No(s):	
State of Origin:	Nevada
COC No:	550-34732.1
Page:	Page 1 of 4
Job #:	550-188805-1

Preservation Codes:
A - HCL, B - NaOH, C - Zn Acetate, D - Nitric Acid, E - NaHSO4, F - MeOH, G - Amchlor, H - Ascorbic Acid, I - Ice, J - DI Water, K - EDTA, L - EDA
M - Hexane, N - None, O - AsNaO2, P - Na2O4S, Q - Na2SO3, R - Na2S2O3, S - H2SO4, T - TSP Dodecahydrate, U - Acetone, V - MCAA, W - pH 4-5, Y - Trizma, Z - other (specify)
Other:

Analysis Requested

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	9060A/ Solids - TOC	Total Number of containers	Special Instructions/Note:
			Preservation Code:						
BH11-15 (550-188805-1)	8/10/22	10:30 Pacific		Solid			X	1	
BH11-20 (550-188805-2)	8/10/22	10:40 Pacific		Solid			X	1	
BH11-30 (550-188805-3)	8/10/22	11:00 Pacific		Solid			X	1	
BH11-40 (550-188805-4)	8/10/22	11:10 Pacific		Solid			X	1	
BH11-45 (550-188805-5)	8/10/22	12:35 Pacific		Solid			X	1	
BH13-11 (550-188805-6)	8/11/22	07:40 Pacific		Solid			X	1	
BH13-22 (550-188805-7)	8/11/22	08:00 Pacific		Solid			X	1	
BH13-32.6 (550-188805-8)	8/11/22	08:05 Pacific		Solid			X	1	
BH13-39 (550-188805-9)	8/11/22	08:10 Pacific		Solid			X	1	

Note. Since laboratory accreditations are subject to change, Eurofins Environment Testing Southwest, LLC places the ownership of method, analyte & accreditation compliance upon out subcontract laboratories. This sample shipment is forwarded under chain-of-custody. If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed, the samples must be shipped back to the Eurofins Environment Testing Southwest, LLC laboratory or other instructions will be provided. Any changes to accreditation status should be brought to Eurofins Environment Testing Southwest, LLC attention immediately. If all requested accreditations are current to date, return the signed Chain of Custody attesting to said complicance to Eurofins Environment Testing Southwest, LLC.

Possible Hazard Identification
Unconfirmed

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
☐ *Return To Client* ☐ *Disposal By Lab* ☐ *Archive For* _____ *Months*

Special Instructions/QC Requirements:

Deliverable Requested: I, II, III, IV, Other (specify) Primary Deliverable Rank: 2

Method of Shipment:

Empty Kit Relinquished by:	Date:	Time:			
Relinquished by: Erie 08-15-22	Date/Time: 14:30	Company: EETSW	Received by: Fedex	Date/Time:	Company
Relinquished by:	Date/Time:	Company	Received by: [signature]	Date/Time: 8/16/22 1000	Company: [signature]
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

Cooler Temperature(s) °C and Other Remarks: 2.1 IR12 CF 0.0

Custody Seals Intact: Δ Yes Δ No
Custody Seal No.:

Ver: 06/08/2021

Eurofins Phoenix
4625 East Cotton Center Boulevard Suite #189
Phoenix, AZ 85040
Phone: 602-437-3340

Chain of Custody Record

eurofins | Environment Testing America

Client Information (Sub Contract Lab)	Sampler:	Lab PM: Sester, Rachel E	Carrier Tracking No(s):	COC No: 550-34732.2
Client Contact: Shipping/Receiving	Phone:	E-Mail: Rachel.Sester@et.eurofinsus.com	State of Origin: Nevada	Page: Page 2 of 4
Company: TestAmerica Laboratories, Inc.		Accreditations Required (See note): State Program - Nevada		Job #: 550-188805-1
Address: 4955 Yarrow Street, ,	Due Date Requested: 8/29/2022			
City: Arvada	TAT Requested (days):			
State, Zip: CO, 80002	PO #:			
Phone: 303-736-0100(Tel) 303-431-7171(Fax)	WO #:			
Email:	Project #: 55017858			
Project Name: Seep Well Field	SSOW#:			
Site:				

Analysis Requested

Preservation Codes:

A - HCL, B - NaOH, C - Zn Acetate, D - Nitric Acid, E - NaHSO4, F - MeOH, G - Amchlor, H - Ascorbic Acid, I - Ice, J - DI Water, K - EDTA, L - EDA, M - Hexane, N - None, O - AsNaO2, P - Na2O4S, Q - Na2SO3, R - Na2S2O3, S - H2SO4, T - TSP Dodecahydrate, U - Acetone, V - MCAA, W - pH 4-5, Y - Trizma, Z - other (specify)

Other:

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Preservation Code:	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	9060A/ Solids - TOC	Total Number of containers	Special Instructions/Note:
BH13-41 (550-188805-10)	8/11/22	08:20 Pacific		Solid				X	1	
BH13-41-FD (550-188805-11)	8/11/22	08:20 Pacific		Solid				X	1	
BH15-18.5 (550-188805-12)	8/11/22	09:40 Pacific		Solid				X	1	
BH15-21 (550-188805-13)	8/11/22	09:50 Pacific		Solid				X	1	
BH15-34.5 (550-188805-14)	8/11/22	10:00 Pacific		Solid				X	1	
BH15-37.5 (550-188805-15)	8/11/22	10:05 Pacific		Solid				X	1	
BH15-41 (550-188805-16)	8/11/22	10:15 Pacific		Solid				X	1	
BH16-17.3 (550-188805-17)	8/11/22	12:35 Pacific		Solid				X	1	
BH16-21.5 (550-188805-18)	8/11/22	12:40 Pacific		Solid				X	1	

Note: Since laboratory accreditations are subject to change, Eurofins Environment Testing Southwest, LLC places the ownership of method, analyte & accreditation compliance upon out subcontract laboratories. This sample shipment is forwarded under chain-of-custody. If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed, the samples must be shipped back to the Eurofins Environment Testing Southwest, LLC laboratory or other instructions will be provided. Any changes to accreditation status should be brought to Eurofins Environment Testing Southwest, LLC attention immediately. If all requested accreditations are current to date, return the signed Chain of Custody attesting to said complicance to Eurofins Environment Testing Southwest, LLC.

Possible Hazard Identification *Unconfirmed*	***Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)*** ☐ *Return To Client* ☐ *Disposal By Lab* ☐ *Archive For* _____ *Months*
Deliverable Requested: I, II, III, IV, Other (specify) Primary Deliverable Rank: 2	Special Instructions/QC Requirements:
Empty Kit Relinquished by:	Date: Time: Method of Shipment:
Relinquished by: Eric 08-15-22 Date/Time: 14:30 Company: EETSW	Received by: Fedex Date/Time: Company
Relinquished by: Date/Time: Company	Received by: Date/Time: 8/16/22 1000 Company
Relinquished by: Date/Time: Company	Received by: Date/Time: Company
Custody Seals Intact: ∆ Yes ∆ No	Custody Seal No.: Cooler Temperature(s) °C and Other Remarks: 2.1 IR12 CF 0.0

Ver: 06/08/2021

Eurofins Phoenix
4625 East Cotton Center Boulevard Suite #189
Phoenix, AZ 85040
Phone: 602-437-3340

Chain of Custody Record

eurofins | Environment Testing America

Client Information (Sub Contract Lab)	Sampler:	Lab PM: Sester, Rachel E	Carrier Tracking No(s):	COC No: 550-34732.3
Client Contact: Shipping/Receiving	Phone:	E-Mail: Rachel.Sester@et.eurofinsus.com	State of Origin: Nevada	Page: Page 3 of 4
Company: TestAmerica Laboratories, Inc.		Accreditations Required (See note): State Program - Nevada		Job #: 550-188805-1
Address: 4955 Yarrow Street, ,	Due Date Requested: 8/29/2022			
City: Arvada	TAT Requested (days):			
State, Zip: CO, 80002				
Phone: 303-736-0100(Tel) 303-431-7171(Fax)	PO #:			
Email:	WO #:			
Project Name: Seep Well Field	Project #: 55017858			
Site:	SSOW#:			

Preservation Codes:

A - HCL, B - NaOH, C - Zn Acetate, D - Nitric Acid, E - NaHSO4, F - MeOH, G - Amchlor, H - Ascorbic Acid, I - Ice, J - DI Water, K - EDTA, L - EDA, M - Hexane, N - None, O - AsNaO2, P - Na2O4S, Q - Na2SO3, R - Na2S2O3, S - H2SO4, T - TSP Dodecahydrate, U - Acetone, V - MCAA, W - pH 4-5, Y - Trizma, Z - other (specify)

Other:

Analysis Requested

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	9060A/ Solids - TOC	Total Number of containers	Special Instructions/Note:
			Preservation Code:						
BH16-21.5-FD (550-188805-19)	8/11/22	12:40 Pacific		Solid			X	1	
BH16-26.5 (550-188805-20)	8/11/22	12:45 Pacific		Solid			X	1	
BH16-31 (550-188805-21)	8/11/22	12:50 Pacific		Solid			X	1	
BH16-42.3 (550-188805-22)	8/11/22	13:00 Pacific		Solid			X	2	
BH16-42.3 (550-188805-22MS)	8/11/22	13:00 Pacific	MS	Solid			X	2	
BH16-42.3 (550-188805-22MSD)	8/11/22	13:00 Pacific	MSD	Solid			X	2	
BH18-13 (550-188805-23)	8/11/22	13:35 Pacific		Solid			X	1	
BH18-20 (550-188805-24)	8/11/22	13:40 Pacific		Solid			X	1	
BH18-23 (550-188805-25)	8/11/22	13:45 Pacific		Solid			X	1	

Note: Since laboratory accreditations are subject to change, Eurofins Environment Testing Southwest, LLC places the ownership of method, analyte & accreditation compliance upon out subcontract laboratories. This sample shipment is forwarded under chain-of-custody. If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed, the samples must be shipped back to the Eurofins Environment Testing Southwest, LLC laboratory or other instructions will be provided. Any changes to accreditation status should be brought to Eurofins Environment Testing Southwest, LLC attention immediately. If all requested accreditations are current to date, return the signed Chain of Custody attesting to said complicance to Eurofins Environment Testing Southwest, LLC.

Possible Hazard Identification	***Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)***
Unconfirmed	☐ *Return To Client* ☐ *Disposal By Lab* ☐ *Archive For* _____ *Months*
Deliverable Requested: I, II, III, IV, Other (specify) Primary Deliverable Rank: 2	Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:

Relinquished by	Date/Time	Company	Received by	Date/Time	Company
[illegible] 08-15-22	14:30	ETSW	Fedex		
Relinquished by:	Date/Time:	Company	Received by: [illegible]	8/16/22 1000	[illegible]
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

Custody Seals Intact: ∆ Yes ∆ No	Custody Seal No.:	Cooler Temperature(s) °C and Other Remarks: 2.1 IR12CF 0.0

Ver: 06/08/2021

Eurofins Phoenix
4625 East Cotton Center Boulevard Suite #189
Phoenix, AZ 85040
Phone: 602-437-3340

Chain of Custody Record

eurofins | Environment Testing America

Client Information (Sub Contract Lab)	Sampler:	Lab PM: Sester, Rachel E	Carrier Tracking No(s):	COC No: 550-34732.4
Client Contact: Shipping/Receiving	Phone:	E-Mail: Rachel.Sester@et.eurofinsus.com	State of Origin: Nevada	Page: Page 4 of 4
Company: TestAmerica Laboratories, Inc.		Accreditations Required (See note): State Program - Nevada		Job #: 550-188805-1
Address: 4955 Yarrow Street, ,	Due Date Requested: 8/29/2022			
City: Arvada	TAT Requested (days):			
State, Zip: CO, 80002				
Phone: 303-736-0100(Tel) 303-431-7171(Fax)	PO #:			
Email:	WO #:			
Project Name: Seep Well Field	Project #: 55017858			
Site:	SSOW#:			

Preservation Codes:

A - HCL, B - NaOH, C - Zn Acetate, D - Nitric Acid, E - NaHSO4, F - MeOH, G - Amchlor, H - Ascorbic Acid, I - Ice, J - DI Water, K - EDTA, L - EDA, M - Hexane, N - None, O - AsNaO2, P - Na2O4S, Q - Na2SO3, R - Na2S2O3, S - H2SO4, T - TSP Dodecahydrate, U - Acetone, V - MCAA, W - pH 4-5, Y - Trizma, Z - other (specify)

Other:

Analysis Requested

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	9060A/ Solids - TOC	Total Number of containers	Special Instructions/Note:
			Preservation Code:						
BH18-27.5 (550-188805-26)	8/11/22	13:50 Pacific		Solid			X	1	
BH18-34.5 (550-188805-27)	8/11/22	13:55 Pacific		Solid			X	1	
BH12-11 (550-188805-28)	8/12/22	09:40 Pacific		Solid			X	1	
BH12-16 (550-188805-29)	8/12/22	09:50 Pacific		Solid			X	1	
BH12-21 (550-188805-30)	8/12/22	10:00 Pacific		Solid			X	1	
BH12-27 (550-188805-31)	8/12/22	10:10 Pacific		Solid			X	1	
BH12-36 (550-188805-32)	8/12/22	10:20 Pacific		Solid			X	1	

Note: Since laboratory accreditations are subject to change, Eurofins Environment Testing Southwest, LLC places the ownership of method, analyte & accreditation compliance upon out subcontract laboratories. This sample shipment is forwarded under chain-of-custody. If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed, the samples must be shipped back to the Eurofins Environment Testing Southwest, LLC laboratory or other instructions will be provided. Any changes to accreditation status should be brought to Eurofins Environment Testing Southwest, LLC attention immediately. If all requested accreditations are current to date, return the signed Chain of Custody attesting to said complicance to Eurofins Environment Testing Southwest, LLC.

Possible Hazard Identification	Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
Unconfirmed	☐ Return To Client ☐ Disposal By Lab ☐ Archive For _____ Months
Deliverable Requested: I, II, III, IV, Other (specify) Primary Deliverable Rank: 2	Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:

	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
1	Eric 08-15-22	14:30	EST	Fedex		
2					8/16/22 1000	Stanton
3						

Custody Seals Intact: Δ Yes Δ No	Custody Seal No.:	Cooler Temperature(s) °C and Other Remarks: 2.1 IR12 CF 0.0

Ver: 06/08/2021

Eurofins Phoenix
4625 East Cotton Center Boulevard Suite #189
Phoenix, AZ 85040
Phone: 602-437-3340

Chain of Custody Record

eurofins | Environment Testing America

Client Information (Sub Contract Lab)	Sampler:	Lab PM: Sester, Rachel E	Carrier Tracking No(s):	COC No: 550-34733.1
Client Contact: Shipping/Receiving	Phone:	E-Mail: Rachel.Sester@et.eurofinsus.com	State of Origin: Nevada	Page: Page 1 of 4
Company: Eurofins Environment Testing Northeast,		Accreditations Required (See note): State Program - Nevada		Job #: 550-188805-1
Address: 10 Hazelwood Drive, ,	Due Date Requested: 8/29/2022			
City: Amherst	TAT Requested (days):			
State, Zip: NY, 14228-2298				
Phone: 716-691-2600(Tel) 716-691-7991(Fax)	PO #:			
Email:	WO #:			
Project Name: Seep Well Field	Project #: 55017858			
Site:	SSOW#:			

Preservation Codes:

A - HCL, B - NaOH, C - Zn Acetate, D - Nitric Acid, E - NaHSO4, F - MeOH, G - Amchlor, H - Ascorbic Acid, I - Ice, J - DI Water, K - EDTA, L - EDA, M - Hexane, N - None, O - AsNaO2, P - Na2O4S, Q - Na2SO3, R - Na2S2O3, S - H2SO4, T - TSP Dodecahydrate, U - Acetone, V - MCAA, W - pH 4-5, Y - Trizma, Z - other (specify)

Other:

Analysis Requested

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	VFA_IC/DI_LEACH Standard VFA Compounds	Total Number of containers	Special Instructions/Note:
			Preservation Code:						
BH11-15 (550-188805-1)	8/10/22	10:30 Pacific		Solid			X	1	
BH11-20 (550-188805-2)	8/10/22	10:40 Pacific		Solid			X	1	
BH11-30 (550-188805-3)	8/10/22	11:00 Pacific		Solid			X	1	
BH11-40 (550-188805-4)	8/10/22	11:10 Pacific		Solid			X	1	
BH11-45 (550-188805-5)	8/10/22	12:35 Pacific		Solid			X	1	
BH13-11 (550-188805-6)	8/11/22	07:40 Pacific		Solid			X	1	
BH13-22 (550-188805-7)	8/11/22	08:00 Pacific		Solid			X	1	
BH13-32.6 (550-188805-8)	8/11/22	08:05 Pacific		Solid			X	1	
BH13-39 (550-188805-9)	8/11/22	08:10 Pacific		Solid			X	1	

Note: Since laboratory accreditations are subject to change, Eurofins Environment Testing Southwest, LLC places the ownership of method, analyte & accreditation compliance upon out subcontract laboratories. This sample shipment is forwarded under chain-of-custody. If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed, the samples must be shipped back to the Eurofins Environment Testing Southwest, LLC laboratory or other instructions will be provided. Any changes to accreditation status should be brought to Eurofins Environment Testing Southwest, LLC attention immediately. If all requested accreditations are current to date, return the signed Chain of Custody attesting to said complicance to Eurofins Environment Testing Southwest, LLC.

Possible Hazard Identification	Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
Unconfirmed	☐ Return To Client ☐ Disposal By Lab ☐ Archive For _____ Months
Deliverable Requested: I, II, III, IV, Other (specify) Primary Deliverable Rank: 2	Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:			
Relinquished by: [illegible] 8-15-22	Date/Time: 14:30	Company: ETSW	Received by: Fedex	Date/Time:	Company	
Relinquished by:	Date/Time:	Company	Received by: Lynn	Date/Time: 8-16-22 1000	Company: TAB	
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company	

Custody Seals Intact: Δ Yes Δ No	Custody Seal No.:	Cooler Temperature(s) °C and Other Remarks: 3.1 ICE

Ver: 06/08/2021

Eurofins Phoenix
4625 East Cotton Center Boulevard Suite #189
Phoenix, AZ 85040
Phone: 602-437-3340

Chain of Custody Record

eurofins | Environment Testing America

Client Information (Sub Contract Lab)	Sampler:	Lab PM: Sester, Rachel E	Carrier Tracking No(s):	COC No: 550-34733.2
Client Contact: Shipping/Receiving	Phone:	E-Mail: Rachel.Sester@et.eurofinsus.com	State of Origin: Nevada	Page: Page 2 of 4
Company: Eurofins Environment Testing Northeast,		Accreditations Required (See note): State Program - Nevada		Job #: 550-188805-1
Address: 10 Hazelwood Drive, ,	Due Date Requested: 8/29/2022			
City: Amherst	TAT Requested (days):			
State, Zip: NY, 14228-2298				
Phone: 716-691-2600(Tel) 716-691-7991(Fax)	PO #:			
Email:	WO #:			
Project Name: Seep Well Field	Project #: 55017858			
Site:	SSOW#:			

Analysis Requested

Preservation Codes:
A - HCL
B - NaOH
C - Zn Acetate
D - Nitric Acid
E - NaHSO4
F - MeOH
G - Amchlor
H - Ascorbic Acid
I - Ice
J - DI Water
K - EDTA
L - EDA
M - Hexane
N - None
O - AsNaO2
P - Na2O4S
Q - Na2SO3
R - Na2S2O3
S - H2SO4
T - TSP Dodecahydrate
U - Acetone
V - MCAA
W - pH 4-5
Y - Trizma
Z - other (specify)
Other:

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	VFA_IC/DI_LEACH Standard VFA Compounds	Total Number of containers	Special Instructions/Note:
			Preservation Code:						
BH13-41 (550-188805-10)	8/11/22	08:20 Pacific		Solid			X	1	
BH13-41-FD (550-188805-11)	8/11/22	08:20 Pacific		Solid			X	1	
BH15-18.5 (550-188805-12)	8/11/22	09:40 Pacific		Solid			X	1	
BH15-21 (550-188805-13)	8/11/22	09:50 Pacific		Solid			X	1	
BH15-34.5 (550-188805-14)	8/11/22	10:00 Pacific		Solid			X	1	
BH15-37.5 (550-188805-15)	8/11/22	10:05 Pacific		Solid			X	1	
BH15-41 (550-188805-16)	8/11/22	10:15 Pacific		Solid			X	1	
BH16-17.3 (550-188805-17)	8/11/22	12:35 Pacific		Solid			X	1	
BH16-21.5 (550-188805-18)	8/11/22	12:40 Pacific		Solid			X	1	

Note: Since laboratory accreditations are subject to change, Eurofins Environment Testing Southwest, LLC places the ownership of method, analyte & accreditation compliance upon out subcontract laboratories. This sample shipment is forwarded under chain-of-custody. If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed, the samples must be shipped back to the Eurofins Environment Testing Southwest, LLC laboratory or other instructions will be provided. Any changes to accreditation status should be brought to Eurofins Environment Testing Southwest, LLC attention immediately. If all requested accreditations are current to date, return the signed Chain of Custody attesting to said complicance to Eurofins Environment Testing Southwest, LLC.

Possible Hazard Identification
Unconfirmed

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
☐ *Return To Client* ☐ *Disposal By Lab* ☐ *Archive For* _____ *Months*

Deliverable Requested: I, II, III, IV, Other (specify) Primary Deliverable Rank: 2

Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:		
Relinquished by: Emed 8-15-22	Date/Time: 14:30 EETSW	Company	Received by: FedEx	Date/Time:	Company
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
Custody Seals Intact: Δ Yes Δ No	Custody Seal No.:		Cooler Temperature(s) °C and Other Remarks:		

Ver: 06/08/2021

Eurofins Phoenix
4625 East Cotton Center Boulevard Suite #189
Phoenix, AZ 85040
Phone: 602-437-3340

Chain of Custody Record

eurofins | Environment Testing America

Client Information (Sub Contract Lab)	Sampler:	Lab PM: Sester, Rachel E	Carrier Tracking No(s):	COC No: 550-34733.3
Client Contact: Shipping/Receiving	Phone:	E-Mail: Rachel.Sester@et.eurofinsus.com	State of Origin: Nevada	Page: Page 3 of 4
Company: Eurofins Environment Testing Northeast,		Accreditations Required (See note): State Program - Nevada		Job #: 550-188805-1
Address: 10 Hazelwood Drive, ,	Due Date Requested: 8/29/2022			
City: Amherst	TAT Requested (days):			
State, Zip: NY, 14228-2298				
Phone: 716-691-2600(Tel) 716-691-7991(Fax)	PO #:			
Email:	WO #:			
Project Name: Seep Well Field	Project #: 55017858			
Site:	SSOW#:			

Analysis Requested

Preservation Codes:
A - HCL
B - NaOH
C - Zn Acetate
D - Nitric Acid
E - NaHSO4
F - MeOH
G - Amchlor
H - Ascorbic Acid
I - Ice
J - DI Water
K - EDTA
L - EDA
M - Hexane
N - None
O - AsNaO2
P - Na2O4S
Q - Na2SO3
R - Na2S2O3
S - H2SO4
T - TSP Dodecahydrate
U - Acetone
V - MCAA
W - pH 4-5
Y - Trizma
Z - other (specify)
Other:

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	VFA_IC/DI_LEACH Standard VFA Compounds	Total Number of containers	Special Instructions/Note:
			Preservation Code:						
BH16-21.5-FD (550-188805-19)	8/11/22	12:40 Pacific		Solid			X	1	
BH16-26.5 (550-188805-20)	8/11/22	12:45 Pacific		Solid			X	1	
BH16-31 (550-188805-21)	8/11/22	12:50 Pacific		Solid			X	1	
BH16-42.3 (550-188805-22)	8/11/22	13:00 Pacific		Solid			X	2	
BH16-42.3 (550-188805-22MS)	8/11/22	13:00 Pacific	MS	Solid			X	2	
BH16-42.3 (550-188805-22MSD)	8/11/22	13:00 Pacific	MSD	Solid			X	2	
BH18-13 (550-188805-23)	8/11/22	13:35 Pacific		Solid			X	1	
BH18-20 (550-188805-24)	8/11/22	13:40 Pacific		Solid			X	1	
BH18-23 (550-188805-25)	8/11/22	13:45 Pacific		Solid			X	1	

Note: Since laboratory accreditations are subject to change, Eurofins Environment Testing Southwest, LLC places the ownership of method, analyte & accreditation compliance upon out subcontract laboratories. This sample shipment is forwarded under chain-of-custody. If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed, the samples must be shipped back to the Eurofins Environment Testing Southwest, LLC laboratory or other instructions will be provided. Any changes to accreditation status should be brought to Eurofins Environment Testing Southwest, LLC attention immediately. If all requested accreditations are current to date, return the signed Chain of Custody attesting to said complicance to Eurofins Environment Testing Southwest, LLC.

Possible Hazard Identification
Unconfirmed

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
☐ *Return To Client* ☐ *Disposal By Lab* ☐ *Archive For* _____ *Months*

Deliverable Requested: I, II, III, IV, Other (specify) Primary Deliverable Rank: 2

Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:		
Relinquished by: Eme 08-15-22	Date/Time: 14:30 EET	Company: SW	Received by: Fedex	Date/Time:	Company
Relinquished by:	Date/Time:	Company	Received by: pg 1	Date/Time:	Company
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
Custody Seals Intact: Δ Yes Δ No	Custody Seal No.:		Cooler Temperature(s) °C and Other Remarks:		

Ver: 06/08/2021

Eurofins Phoenix
4625 East Cotton Center Boulevard Suite #189
Phoenix, AZ 85040
Phone: 602-437-3340

Chain of Custody Record

eurofins | Environment Testing America

Client Information (Sub Contract Lab)	Sampler:	Lab PM: Sester, Rachel E	Carrier Tracking No(s):	COC No: 550-34733.4
Client Contact: Shipping/Receiving	Phone:	E-Mail: Rachel.Sester@et.eurofinsus.com	State of Origin: Nevada	Page: Page 4 of 4
Company: Eurofins Environment Testing Northeast,		Accreditations Required (See note): State Program - Nevada		Job #: 550-188805-1
Address: 10 Hazelwood Drive,	Due Date Requested: 8/29/2022			
City: Amherst	TAT Requested (days):			
State, Zip: NY, 14228-2298				
Phone: 716-691-2600(Tel) 716-691-7991(Fax)	PO #:			
Email:	WO #:			
Project Name: Seep Well Field	Project #: 55017858			
Site:	SSOW#:			

Analysis Requested

Preservation Codes:
A - HCL, B - NaOH, C - Zn Acetate, D - Nitric Acid, E - NaHSO4, F - MeOH, G - Amchlor, H - Ascorbic Acid, I - Ice, J - DI Water, K - EDTA, L - EDA, M - Hexane, N - None, O - AsNaO2, P - Na2O4S, Q - Na2SO3, R - Na2S2O3, S - H2SO4, T - TSP Dodecahydrate, U - Acetone, V - MCAA, W - pH 4-5, Y - Trizma, Z - other (specify)
Other:

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	VFA_IC/DI_LEACH Standard VFA Compounds	Total Number of containers	Special Instructions/Note:
			Preservation Code:						
BH18-27.5 (550-188805-26)	8/11/22	13:50 Pacific		Solid			X	1	
BH18-34.5 (550-188805-27)	8/11/22	13:55 Pacific		Solid			X	1	
BH12-11 (550-188805-28)	8/12/22	09:40 Pacific		Solid			X	1	
BH12-16 (550-188805-29)	8/12/22	09:50 Pacific		Solid			X	1	
BH12-21 (550-188805-30)	8/12/22	10:00 Pacific		Solid			X	1	
BH12-27 (550-188805-31)	8/12/22	10:10 Pacific		Solid			X	1	
BH12-36 (550-188805-32)	8/12/22	10:20 Pacific		Solid			X	1	

Note: Since laboratory accreditations are subject to change, Eurofins Environment Testing Southwest, LLC places the ownership of method, analyte & accreditation compliance upon out subcontract laboratories. This sample shipment is forwarded under chain-of-custody. If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed, the samples must be shipped back to the Eurofins Environment Testing Southwest, LLC laboratory or other instructions will be provided. Any changes to accreditation status should be brought to Eurofins Environment Testing Southwest, LLC attention immediately. If all requested accreditations are current to date, return the signed Chain of Custody attesting to said complicance to Eurofins Environment Testing Southwest, LLC.

Possible Hazard Identification	Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
Unconfirmed	☐ Return To Client ☐ Disposal By Lab ☐ Archive For _____ Months
Deliverable Requested: I, II, III, IV, Other (specify) Primary Deliverable Rank: 2	Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:

	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

Custody Seals Intact: Δ Yes Δ No	Custody Seal No.:	Cooler Temperature(s) °C and Other Remarks:

Ver: 06/08/2021

Login Sample Receipt Checklist

Client: Tetra Tech, Inc.

Job Number: 550-188805-1

Login Number: 188805
List Number: 1
Creator: Maycock, Lisa

List Source: Eurofins Phoenix

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	True	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

Login Sample Receipt Checklist

Client: Tetra Tech, Inc.

Job Number: 550-188805-1

Login Number: 188805
List Number: 2
Creator: Yeager, Brian A

List Source: Eurofins Buffalo
List Creation: 08/16/22 11:06 AM

Question	Answer	Comment
Radioactivity either was not measured or, if measured, is at or below background	True	
The cooler's custody seal, if present, is intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	3.1 ICE
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the sample IDs on the containers and the COC.	True	
Samples are received within Holding Time (Excluding tests with immediate HTs)..	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
VOA sample vials do not have headspace or bubble is <6mm (1/4") in diameter.	True	
If necessary, staff have been informed of any short hold time or quick TAT needs	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Sampling Company provided.	True	
Samples received within 48 hours of sampling.	True	
Samples requiring field filtration have been filtered in the field.	True	
Chlorine Residual checked.	True	

Login Sample Receipt Checklist

Client: Tetra Tech, Inc.

Job Number: 550-188805-1

Login Number: 188805
List Number: 3
Creator: Roehsner, Karen P

List Source: Eurofins Denver
List Creation: 08/16/22 04:16 PM

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	True	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	N/A	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	N/A	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	N/A	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

eurofins | Environment Testing America

ANALYTICAL REPORT

Eurofins Phoenix
4625 East Cotton Center Boulevard
Suite #189
Phoenix, AZ 85040
Tel: (602)437-3340

Laboratory Job ID: 550-189011-1
Client Project/Site: NERT - Seep Well Field

For:
Tetra Tech, Inc.
1093 Commerce Park Drive
Suite 100
Oak Ridge, Tennessee 37830

Attn: Ms. Maureen McMyler

Authorized for release by:
9/8/2022 4:12:21 PM

Rachel Sester, Project Manager I
(602)659-7615
Rachel.Sester@et.eurofinsus.com

LINKS

Review your project results through my EOL

Have a Question? Ask The Expert

Visit us at: www.eurofinsus.com/Env

This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.

Results relate only to the items tested and the sample(s) as received by the laboratory.

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Definitions/Glossary

Client: Tetra Tech, Inc.
Project/Site: NERT - Seep Well Field

Job ID: 550-189011-1

Qualifiers

Metals

Qualifier	Qualifier Description
4	MS, MSD: The analyte present in the original sample is greater than 4 times the matrix spike concentration; therefore, control limits are not applicable.
B1	Target analyte detected in method blank at or above the method reporting limit.
E4	Concentration estimated. Analyte was detected below laboratory minimum reporting limit (MRL).

General Chemistry

Qualifier	Qualifier Description
E4	Concentration estimated. Analyte was detected below laboratory minimum reporting limit (MRL).
F1	MS and/or MSD recovery exceeds control limits.
F2	MS/MSD RPD exceeds control limits

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CFU	Colony Forming Unit
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MCL	EPA recommended "Maximum Contaminant Level"
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
MPN	Most Probable Number
MQL	Method Quantitation Limit
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
NEG	Negative / Absent
POS	Positive / Present
PQL	Practical Quantitation Limit
PRES	Presumptive
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)
TNTC	Too Numerous To Count

Job ID: 550-189011-1

Laboratory: Eurofins Phoenix

Narrative

Job Narrative
550-189011-1

Comments
No additional comments.

Receipt
The samples were received on 8/18/2022 6:30 AM. Unless otherwise noted below, the samples arrived in good condition, and where required, properly preserved and on ice. The temperature of the cooler at receipt time in Las Vegas was 24.7º C; the temperatures of the 6 coolers at receipt time in Phoenix were 2.1º C, 3.6º C, 3.6º C, 3.9º C, 4.2º C and 5.6º C.

Receipt Exceptions
The container label for the following sample did not match the information listed on the Chain-of-Custody (COC): SWFTS-BH24-SO-24.5 (550-189011-12). The container labels list sample time 12:50, while the COC lists sample time 12:40. The client was contacted, and the lab was instructed to use the sampling time on the COC.

The container label for the following sample did not match the information listed on the Chain-of-Custody (COC): SWFTS-BH24-SO-29.3 (550-189011-14). The container labels list SWFTS-BH24-SO-29.3, while the COC lists SWFTS-BH24-SO-44.5. The client was contacted, and the lab was instructed to <us the description in the container>.

The container label for the following sample did not match the information listed on the Chain-of-Custody (COC): SWFTS-BH23-SO-31.3 (550-189011-20). The container labels list sample time 13:40, while the COC lists sample time 13:35. The client was contacted, and the lab was instructed to use the time on the COC.

HPLC/IC
No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

Metals
Method 6010B: The method blank for preparation batch 550-281980 and analytical batch 550-282127 contained Calcium above the method detection limit (MDL). Associated sample(s) were not re-extracted and/or re-analyzed because results were greater than 10X the value found in the method blank.

Method 6010B: The method blank for preparation batch 550-281981 and analytical batch 550-282130 contained Calcium above the method detection limit (MDL). Associated sample(s) were not re-extracted and/or re-analyzed because results were greater than 10X the value found in the method blank.

Method 6010B: The following samples were diluted to bring the concentration of target analytes within the calibration range: SWFTS-BH24-SO-44.5-FD (550-189011-16), SWFTS-BH23-SO-31.3 (550-189011-20), SWFTS-BH23-SO-31.3-FD (550-189011-21) and (550-189012-E-5-D ^2). Elevated reporting limits (RLs) are provided.

Method 6010B: The following samples were diluted to bring the concentration of target analytes within the calibration range: SWFTS-BH19-SO-25 (550-189011-9), SWFTS-BH19-SO-28 (550-189011-10) and SWFTS-BH24-SO-44.5 (550-189011-15). Elevated reporting limits (RLs) are provided.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

General Chemistry
Method 9060A: The matrix spike duplicate (MSD) recovery for Total Organic Carbon were outside control limits. Sample matrix interference is suspected because the associated laboratory control sample (LCS) recovery was within acceptance limits.

Method 9060A: The matrix spike / matrix spike duplicate / sample duplicate (MS/MSD/DUP) precision for analytical batch 280-585938 was outside control limits. Sample matrix interference and/or non-homogeneity are suspected because the associated laboratory control sample / laboratory control sample duplicate (LCS/LCSD) precision was within acceptance limits.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

Sample Summary

Client: Tetra Tech, Inc.
Project/Site: NERT - Seep Well Field

Job ID: 550-189011-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
550-189011-1	SWFTS-BH14-SO-12.8	Solid	08/15/22 08:20	08/18/22 06:30
550-189011-2	SWFTS-BH14-SO-15.5	Solid	08/15/22 08:30	08/18/22 06:30
550-189011-3	SWFTS-BH14-SO-18	Solid	08/15/22 08:40	08/18/22 06:30
550-189011-4	SWFTS-BH14-SO-25.3	Solid	08/15/22 08:50	08/18/22 06:30
550-189011-5	SWFTS-BH14-SO-29	Solid	08/15/22 09:00	08/18/22 06:30
550-189011-6	SWFTS-BH19-SO-11	Solid	08/15/22 09:40	08/18/22 06:30
550-189011-7	SWFTS-BH19-SO-15.5	Solid	08/15/22 09:50	08/18/22 06:30
550-189011-8	SWFTS-BH19-SO-20.5	Solid	08/15/22 10:00	08/18/22 06:30
550-189011-9	SWFTS-BH19-SO-25	Solid	08/15/22 10:10	08/18/22 06:30
550-189011-10	SWFTS-BH19-SO-28	Solid	08/15/22 10:20	08/18/22 06:30
550-189011-11	SWFTS-BH24-SO-19	Solid	08/15/22 12:30	08/18/22 06:30
550-189011-12	SWFTS-BH24-SO-24.5	Solid	08/15/22 12:40	08/18/22 06:30
550-189011-13	SWFTS-BH24-SO-27	Solid	08/15/22 12:50	08/18/22 06:30
550-189011-14	SWFTS-BH24-SO-29.3	Solid	08/15/22 13:00	08/18/22 06:30
550-189011-15	SWFTS-BH24-SO-44.5	Solid	08/15/22 13:10	08/18/22 06:30
550-189011-16	SWFTS-BH24-SO-44.5-FD	Solid	08/15/22 13:10	08/18/22 06:30
550-189011-17	SWFTS-BH23-SO-20.2	Solid	08/15/22 13:20	08/18/22 06:30
550-189011-18	SWFTS-BH23-SO-24	Solid	08/15/22 13:25	08/18/22 06:30
550-189011-19	SWFTS-BH23-SO-27	Solid	08/15/22 13:30	08/18/22 06:30
550-189011-20	SWFTS-BH23-SO-31.3	Solid	08/15/22 13:35	08/18/22 06:30
550-189011-21	SWFTS-BH23-SO-31.3-FD	Solid	08/15/22 13:35	08/18/22 06:30
550-189011-22	SWFTS-BH23-SO-36.7	Solid	08/15/22 13:40	08/18/22 06:30
550-189011-23	SWFTS-BH25-SO-17	Solid	08/15/22 15:00	08/18/22 06:30
550-189011-24	SWFTS-BH25-SO-19.8	Solid	08/15/22 15:05	08/18/22 06:30
550-189011-25	SWFTS-BH25-SO-26.5	Solid	08/15/22 15:10	08/18/22 06:30
550-189011-26	SWFTS-BH25-SO-29.2	Solid	08/15/22 15:15	08/18/22 06:30
550-189011-27	SWFTS-BH25-SO-34.8	Solid	08/15/22 15:20	08/18/22 06:30

Detection Summary

Client: Tetra Tech, Inc.
Project/Site: NERT - Seep Well Field

Job ID: 550-189011-1

Client Sample ID: SWFTS-BH14-SO-12.8 — Lab Sample ID: 550-189011-1

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Calcium	19000	B1	9.9	0.85	mg/Kg	1		6010B	Total/NA

Client Sample ID: SWFTS-BH14-SO-15.5 — Lab Sample ID: 550-189011-2

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Calcium	5700	B1	9.7	0.83	mg/Kg	1		6010B	Total/NA

Client Sample ID: SWFTS-BH14-SO-18 — Lab Sample ID: 550-189011-3

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Calcium	4900	B1	9.9	0.85	mg/Kg	1		6010B	Total/NA

Client Sample ID: SWFTS-BH14-SO-25.3 — Lab Sample ID: 550-189011-4

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Calcium	4500	B1	9.8	0.84	mg/Kg	1		6010B	Total/NA

Client Sample ID: SWFTS-BH14-SO-29 — Lab Sample ID: 550-189011-5

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Calcium	7700	B1	9.9	0.85	mg/Kg	1		6010B	Total/NA

Client Sample ID: SWFTS-BH19-SO-11 — Lab Sample ID: 550-189011-6

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Calcium	12000	B1	9.9	0.85	mg/Kg	1		6010B	Total/NA
Lactic acid	7.8	E4	9.8	3.0	mg/Kg	1		VFA-IC	Soluble
Propionic acid	3.5	E4	9.8	1.7	mg/Kg	1		VFA-IC	Soluble

Client Sample ID: SWFTS-BH19-SO-15.5 — Lab Sample ID: 550-189011-7

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Calcium	7100	B1	9.9	0.85	mg/Kg	1		6010B	Total/NA

Client Sample ID: SWFTS-BH19-SO-20.5 — Lab Sample ID: 550-189011-8

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Calcium	13000	B1	9.8	0.84	mg/Kg	1		6010B	Total/NA

Client Sample ID: SWFTS-BH19-SO-25 — Lab Sample ID: 550-189011-9

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Calcium	68000	B1	20	1.7	mg/Kg	2		6010B	Total/NA

Client Sample ID: SWFTS-BH19-SO-28 — Lab Sample ID: 550-189011-10

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Calcium	98000	B1	20	1.7	mg/Kg	2		6010B	Total/NA

Client Sample ID: SWFTS-BH24-SO-19 — Lab Sample ID: 550-189011-11

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Calcium	31000	B1	9.9	0.85	mg/Kg	1		6010B	Total/NA
Total Organic Carbon	1.1	E4	4.0	0.90	g/Kg	1		9060A	Total/NA

This Detection Summary does not include radiochemical test results.

Eurofins Phoenix

Detection Summary

Client: Tetra Tech, Inc.
Project/Site: NERT - Seep Well Field

Job ID: 550-189011-1

Client Sample ID: SWFTS-BH24-SO-24.5 — Lab Sample ID: 550-189011-12

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Calcium	7300	B1	10	0.86	mg/Kg	1		6010B	Total/NA
Total Organic Carbon	3.1	E4	4.0	0.90	g/Kg	1		9060A	Total/NA
Formic-acid	3.4	E4	10	2.2	mg/Kg	1		VFA-IC	Soluble

Client Sample ID: SWFTS-BH24-SO-27 — Lab Sample ID: 550-189011-13

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Calcium	23000	B1	9.9	0.85	mg/Kg	1		6010B	Total/NA
Total Organic Carbon	1.5	E4	4.0	0.90	g/Kg	1		9060A	Total/NA
Formic-acid	2.5	E4	10	2.2	mg/Kg	1		VFA-IC	Soluble

Client Sample ID: SWFTS-BH24-SO-29.3 — Lab Sample ID: 550-189011-14

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Calcium	43000	B1	10	0.85	mg/Kg	1		6010B	Total/NA
Total Organic Carbon	1.6	E4	4.0	0.90	g/Kg	1		9060A	Total/NA

Client Sample ID: SWFTS-BH24-SO-44.5 — Lab Sample ID: 550-189011-15

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Calcium	83000	B1	20	1.7	mg/Kg	2		6010B	Total/NA
Total Organic Carbon	3.0	E4	4.0	0.90	g/Kg	1		9060A	Total/NA

Client Sample ID: SWFTS-BH24-SO-44.5-FD — Lab Sample ID: 550-189011-16

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Calcium	87000	B1	20	1.7	mg/Kg	2		6010B	Total/NA
Total Organic Carbon	2.0	E4	4.0	0.90	g/Kg	1		9060A	Total/NA

Client Sample ID: SWFTS-BH23-SO-20.2 — Lab Sample ID: 550-189011-17

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Calcium	13000	B1	9.9	0.85	mg/Kg	1		6010B	Total/NA

Client Sample ID: SWFTS-BH23-SO-24 — Lab Sample ID: 550-189011-18

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Calcium	9000	B1	9.9	0.85	mg/Kg	1		6010B	Total/NA

Client Sample ID: SWFTS-BH23-SO-27 — Lab Sample ID: 550-189011-19

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Calcium	24000	B1	9.8	0.84	mg/Kg	1		6010B	Total/NA
Total Organic Carbon	1.3	E4	4.0	0.90	g/Kg	1		9060A	Total/NA

Client Sample ID: SWFTS-BH23-SO-31.3 — Lab Sample ID: 550-189011-20

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Calcium	66000	B1	19	1.7	mg/Kg	2		6010B	Total/NA

Client Sample ID: SWFTS-BH23-SO-31.3-FD — Lab Sample ID: 550-189011-21

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Calcium	78000	B1	20	1.7	mg/Kg	2		6010B	Total/NA
Total Organic Carbon	1.0	E4	4.0	0.90	g/Kg	1		9060A	Total/NA

This Detection Summary does not include radiochemical test results.

Eurofins Phoenix

Detection Summary

Client: Tetra Tech, Inc.
Project/Site: NERT - Seep Well Field

Job ID: 550-189011-1

Client Sample ID: SWFTS-BH23-SO-36.7 — Lab Sample ID: 550-189011-22

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Calcium	56000	B1	9.8	0.84	mg/Kg	1		6010B	Total/NA
Total Organic Carbon	1.1	E4	4.0	0.90	g/Kg	1		9060A	Total/NA

Client Sample ID: SWFTS-BH25-SO-17 — Lab Sample ID: 550-189011-23

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Calcium	39000	B1	9.8	0.84	mg/Kg	1		6010B	Total/NA
Total Organic Carbon	0.91	E4	4.0	0.90	g/Kg	1		9060A	Total/NA

Client Sample ID: SWFTS-BH25-SO-19.8 — Lab Sample ID: 550-189011-24

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Calcium	43000	B1	9.9	0.85	mg/Kg	1		6010B	Total/NA
Total Organic Carbon	1.1	E4	4.0	0.90	g/Kg	1		9060A	Total/NA

Client Sample ID: SWFTS-BH25-SO-26.5 — Lab Sample ID: 550-189011-25

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Calcium	13000	B1	9.7	0.83	mg/Kg	1		6010B	Total/NA

Client Sample ID: SWFTS-BH25-SO-29.2 — Lab Sample ID: 550-189011-26

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Calcium	25000	B1	10	0.86	mg/Kg	1		6010B	Total/NA

Client Sample ID: SWFTS-BH25-SO-34.8 — Lab Sample ID: 550-189011-27

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Calcium	51000	B1	9.8	0.84	mg/Kg	1		6010B	Total/NA
Total Organic Carbon	1.0	E4	4.0	0.90	g/Kg	1		9060A	Total/NA

This Detection Summary does not include radiochemical test results.

Client Sample ID: SWFTS-BH14-SO-12.8

Lab Sample ID: 550-189011-1
Date Collected: 08/15/22 08:20
Matrix: Solid
Date Received: 08/18/22 06:30

Method: 6010B - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Calcium	19000	B1	9.9	0.85	mg/Kg		08/19/22 01:16	08/22/22 06:34	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon	ND		4.0	0.90	g/Kg			09/01/22 16:25	1

General Chemistry - Soluble

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetic acid	ND		9.9	1.5	mg/Kg			09/01/22 17:24	1
Formic-acid	ND		9.9	2.2	mg/Kg			09/01/22 17:24	1
Lactic acid	ND		9.9	3.0	mg/Kg			09/01/22 17:24	1
n-Butyric Acid	ND		9.9	1.6	mg/Kg			09/01/22 17:24	1
Propionic acid	ND		9.9	1.7	mg/Kg			09/01/22 17:24	1
Pyruvic Acid	ND		9.9	2.5	mg/Kg			09/01/22 17:24	1

Client Sample ID: SWFTS-BH14-SO-15.5

Lab Sample ID: 550-189011-2
Date Collected: 08/15/22 08:30
Matrix: Solid
Date Received: 08/18/22 06:30

Method: 6010B - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Calcium	5700	B1	9.7	0.83	mg/Kg		08/19/22 01:16	08/22/22 06:37	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon	ND		4.0	0.90	g/Kg			09/01/22 17:03	1

General Chemistry - Soluble

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetic acid	ND		10	1.5	mg/Kg			09/01/22 17:53	1
Formic-acid	ND		10	2.2	mg/Kg			09/01/22 17:53	1
Lactic acid	ND		10	3.0	mg/Kg			09/01/22 17:53	1
n-Butyric Acid	ND		10	1.6	mg/Kg			09/01/22 17:53	1
Propionic acid	ND		10	1.7	mg/Kg			09/01/22 17:53	1
Pyruvic Acid	ND		10	2.5	mg/Kg			09/01/22 17:53	1

Client Sample ID: SWFTS-BH14-SO-18

Lab Sample ID: 550-189011-3
Date Collected: 08/15/22 08:40
Matrix: Solid
Date Received: 08/18/22 06:30

Method: 6010B - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Calcium	4900	B1	9.9	0.85	mg/Kg		08/19/22 01:16	08/22/22 06:40	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon	ND		4.0	0.90	g/Kg			09/01/22 17:13	1

General Chemistry - Soluble

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetic acid	ND		9.9	1.5	mg/Kg			09/01/22 18:22	1
Formic-acid	ND		9.9	2.2	mg/Kg			09/01/22 18:22	1

Client Sample ID: SWFTS-BH14-SO-18
Lab Sample ID: 550-189011-3
Date Collected: 08/15/22 08:40
Matrix: Solid
Date Received: 08/18/22 06:30

General Chemistry - Soluble (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lactic acid	ND		9.9	3.0	mg/Kg			09/01/22 18:22	1
n-Butyric Acid	ND		9.9	1.6	mg/Kg			09/01/22 18:22	1
Propionic acid	ND		9.9	1.7	mg/Kg			09/01/22 18:22	1
Pyruvic Acid	ND		9.9	2.5	mg/Kg			09/01/22 18:22	1

Client Sample ID: SWFTS-BH14-SO-25.3
Lab Sample ID: 550-189011-4
Date Collected: 08/15/22 08:50
Matrix: Solid
Date Received: 08/18/22 06:30

Method: 6010B - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Calcium	4500	B1	9.8	0.84	mg/Kg		08/19/22 01:16	08/22/22 06:43	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon	ND		4.0	0.90	g/Kg			09/01/22 17:22	1

General Chemistry - Soluble

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetic acid	ND		10	1.5	mg/Kg			09/01/22 18:51	1
Formic-acid	ND		10	2.2	mg/Kg			09/01/22 18:51	1
Lactic acid	ND		10	3.0	mg/Kg			09/01/22 18:51	1
n-Butyric Acid	ND		10	1.6	mg/Kg			09/01/22 18:51	1
Propionic acid	ND		10	1.7	mg/Kg			09/01/22 18:51	1
Pyruvic Acid	ND		10	2.5	mg/Kg			09/01/22 18:51	1

Client Sample ID: SWFTS-BH14-SO-29
Lab Sample ID: 550-189011-5
Date Collected: 08/15/22 09:00
Matrix: Solid
Date Received: 08/18/22 06:30

Method: 6010B - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Calcium	7700	B1	9.9	0.85	mg/Kg		08/19/22 01:16	08/22/22 06:46	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon	ND		4.0	0.90	g/Kg			09/01/22 17:31	1

General Chemistry - Soluble

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetic acid	ND		9.9	1.5	mg/Kg			09/01/22 19:20	1
Formic-acid	ND		9.9	2.2	mg/Kg			09/01/22 19:20	1
Lactic acid	ND		9.9	3.0	mg/Kg			09/01/22 19:20	1
n-Butyric Acid	ND		9.9	1.6	mg/Kg			09/01/22 19:20	1
Propionic acid	ND		9.9	1.7	mg/Kg			09/01/22 19:20	1
Pyruvic Acid	ND		9.9	2.5	mg/Kg			09/01/22 19:20	1

Client Sample ID: SWFTS-BH19-SO-11
Lab Sample ID: 550-189011-6
Date Collected: 08/15/22 09:40
Matrix: Solid
Date Received: 08/18/22 06:30

Method: 6010B - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Calcium	**12000**	**B1**	9.9	0.85	mg/Kg		08/19/22 01:16	08/22/22 06:49	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon	ND		4.0	0.90	g/Kg			09/01/22 17:40	1

General Chemistry - Soluble

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetic acid	ND		9.8	1.5	mg/Kg			09/01/22 22:15	1
Formic-acid	ND		9.8	2.2	mg/Kg			09/01/22 22:15	1
Lactic acid	**7.8**	**E4**	9.8	3.0	mg/Kg			09/01/22 22:15	1
n-Butyric Acid	ND		9.8	1.6	mg/Kg			09/01/22 22:15	1
Propionic acid	**3.5**	**E4**	9.8	1.7	mg/Kg			09/01/22 22:15	1
Pyruvic Acid	ND		9.8	2.5	mg/Kg			09/01/22 22:15	1

Client Sample ID: SWFTS-BH19-SO-15.5
Lab Sample ID: 550-189011-7
Date Collected: 08/15/22 09:50
Matrix: Solid
Date Received: 08/18/22 06:30

Method: 6010B - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Calcium	**7100**	**B1**	9.9	0.85	mg/Kg		08/19/22 01:16	08/22/22 06:51	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon	ND		4.0	0.90	g/Kg			09/01/22 18:09	1

General Chemistry - Soluble

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetic acid	ND		9.9	1.5	mg/Kg			09/01/22 22:44	1
Formic-acid	ND		9.9	2.2	mg/Kg			09/01/22 22:44	1
Lactic acid	ND		9.9	3.0	mg/Kg			09/01/22 22:44	1
n-Butyric Acid	ND		9.9	1.6	mg/Kg			09/01/22 22:44	1
Propionic acid	ND		9.9	1.7	mg/Kg			09/01/22 22:44	1
Pyruvic Acid	ND		9.9	2.5	mg/Kg			09/01/22 22:44	1

Client Sample ID: SWFTS-BH19-SO-20.5
Lab Sample ID: 550-189011-8
Date Collected: 08/15/22 10:00
Matrix: Solid
Date Received: 08/18/22 06:30

Method: 6010B - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Calcium	**13000**	**B1**	9.8	0.84	mg/Kg		08/19/22 01:16	08/22/22 06:54	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon	ND		4.0	0.90	g/Kg			09/01/22 18:18	1

General Chemistry - Soluble

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetic acid	ND		10	1.5	mg/Kg			09/01/22 23:43	1
Formic-acid	ND		10	2.2	mg/Kg			09/01/22 23:43	1

Client Sample ID: SWFTS-BH19-SO-20.5
Lab Sample ID: 550-189011-8
Date Collected: 08/15/22 10:00
Matrix: Solid
Date Received: 08/18/22 06:30

General Chemistry - Soluble (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lactic acid	ND		10	3.0	mg/Kg			09/01/22 23:43	1
n-Butyric Acid	ND		10	1.6	mg/Kg			09/01/22 23:43	1
Propionic acid	ND		10	1.7	mg/Kg			09/01/22 23:43	1
Pyruvic Acid	ND		10	2.5	mg/Kg			09/01/22 23:43	1

Client Sample ID: SWFTS-BH19-SO-25
Lab Sample ID: 550-189011-9
Date Collected: 08/15/22 10:10
Matrix: Solid
Date Received: 08/18/22 06:30

Method: 6010B - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Calcium	68000	B1	20	1.7	mg/Kg		08/19/22 01:16	08/22/22 15:27	2

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon	ND		4.0	0.90	g/Kg			09/01/22 18:28	1

General Chemistry - Soluble

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetic acid	ND		10	1.5	mg/Kg			09/02/22 00:12	1
Formic-acid	ND		10	2.2	mg/Kg			09/02/22 00:12	1
Lactic acid	ND		10	3.0	mg/Kg			09/02/22 00:12	1
n-Butyric Acid	ND		10	1.6	mg/Kg			09/02/22 00:12	1
Propionic acid	ND		10	1.7	mg/Kg			09/02/22 00:12	1
Pyruvic Acid	ND		10	2.5	mg/Kg			09/02/22 00:12	1

Client Sample ID: SWFTS-BH19-SO-28
Lab Sample ID: 550-189011-10
Date Collected: 08/15/22 10:20
Matrix: Solid
Date Received: 08/18/22 06:30

Method: 6010B - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Calcium	98000	B1	20	1.7	mg/Kg		08/19/22 01:16	08/22/22 15:29	2

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon	ND		4.0	0.90	g/Kg			09/01/22 18:37	1

General Chemistry - Soluble

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetic acid	ND		9.9	1.5	mg/Kg			09/01/22 23:14	1
Formic-acid	ND		9.9	2.2	mg/Kg			09/01/22 23:14	1
Lactic acid	ND		9.9	3.0	mg/Kg			09/01/22 23:14	1
n-Butyric Acid	ND		9.9	1.6	mg/Kg			09/01/22 23:14	1
Propionic acid	ND		9.9	1.7	mg/Kg			09/01/22 23:14	1
Pyruvic Acid	ND		9.9	2.5	mg/Kg			09/01/22 23:14	1

Client Sample ID: SWFTS-BH24-SO-19
Lab Sample ID: 550-189011-11
Date Collected: 08/15/22 12:30
Matrix: Solid
Date Received: 08/18/22 06:30

Method: 6010B - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Calcium	31000	B1	9.9	0.85	mg/Kg		08/19/22 01:16	08/22/22 07:08	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon	1.1	E4	4.0	0.90	g/Kg			09/02/22 11:35	1

General Chemistry - Soluble

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetic acid	ND		10	1.5	mg/Kg			09/02/22 00:41	1
Formic-acid	ND		10	2.2	mg/Kg			09/02/22 00:41	1
Lactic acid	ND		10	3.0	mg/Kg			09/02/22 00:41	1
n-Butyric Acid	ND		10	1.6	mg/Kg			09/02/22 00:41	1
Propionic acid	ND		10	1.7	mg/Kg			09/02/22 00:41	1
Pyruvic Acid	ND		10	2.5	mg/Kg			09/02/22 00:41	1

Client Sample ID: SWFTS-BH24-SO-24.5
Lab Sample ID: 550-189011-12
Date Collected: 08/15/22 12:40
Matrix: Solid
Date Received: 08/18/22 06:30

Method: 6010B - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Calcium	7300	B1	10	0.86	mg/Kg		08/19/22 01:16	08/22/22 07:11	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon	3.1	E4	4.0	0.90	g/Kg			09/02/22 11:45	1

General Chemistry - Soluble

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetic acid	ND		10	1.5	mg/Kg			09/02/22 01:10	1
Formic-acid	3.4	E4	10	2.2	mg/Kg			09/02/22 01:10	1
Lactic acid	ND		10	3.0	mg/Kg			09/02/22 01:10	1
n-Butyric Acid	ND		10	1.6	mg/Kg			09/02/22 01:10	1
Propionic acid	ND		10	1.7	mg/Kg			09/02/22 01:10	1
Pyruvic Acid	ND		10	2.5	mg/Kg			09/02/22 01:10	1

Client Sample ID: SWFTS-BH24-SO-27
Lab Sample ID: 550-189011-13
Date Collected: 08/15/22 12:50
Matrix: Solid
Date Received: 08/18/22 06:30

Method: 6010B - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Calcium	23000	B1	9.9	0.85	mg/Kg		08/19/22 01:16	08/22/22 07:14	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon	1.5	E4	4.0	0.90	g/Kg			09/02/22 11:55	1

General Chemistry - Soluble

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetic acid	ND		10	1.5	mg/Kg			09/02/22 01:39	1
Formic-acid	2.5	E4	10	2.2	mg/Kg			09/02/22 01:39	1

Client Sample ID: SWFTS-BH24-SO-27
Lab Sample ID: 550-189011-13
Date Collected: 08/15/22 12:50
Matrix: Solid
Date Received: 08/18/22 06:30

General Chemistry - Soluble (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lactic acid	ND		10	3.0	mg/Kg			09/02/22 01:39	1
n-Butyric Acid	ND		10	1.6	mg/Kg			09/02/22 01:39	1
Propionic acid	ND		10	1.7	mg/Kg			09/02/22 01:39	1
Pyruvic Acid	ND		10	2.5	mg/Kg			09/02/22 01:39	1

Client Sample ID: SWFTS-BH24-SO-29.3
Lab Sample ID: 550-189011-14
Date Collected: 08/15/22 13:00
Matrix: Solid
Date Received: 08/18/22 06:30

Method: 6010B - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Calcium	43000	B1	10	0.85	mg/Kg		08/19/22 01:16	08/22/22 07:17	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon	1.6	E4	4.0	0.90	g/Kg			09/02/22 12:04	1

General Chemistry - Soluble

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetic acid	ND		9.9	1.5	mg/Kg			09/02/22 02:08	1
Formic-acid	ND		9.9	2.2	mg/Kg			09/02/22 02:08	1
Lactic acid	ND		9.9	3.0	mg/Kg			09/02/22 02:08	1
n-Butyric Acid	ND		9.9	1.6	mg/Kg			09/02/22 02:08	1
Propionic acid	ND		9.9	1.7	mg/Kg			09/02/22 02:08	1
Pyruvic Acid	ND		9.9	2.5	mg/Kg			09/02/22 02:08	1

Client Sample ID: SWFTS-BH24-SO-44.5
Lab Sample ID: 550-189011-15
Date Collected: 08/15/22 13:10
Matrix: Solid
Date Received: 08/18/22 06:30

Method: 6010B - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Calcium	83000	B1	20	1.7	mg/Kg		08/19/22 01:16	08/22/22 15:32	2

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon	3.0	E4	4.0	0.90	g/Kg			09/02/22 12:14	1

General Chemistry - Soluble

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetic acid	ND		9.8	1.5	mg/Kg			09/02/22 05:03	1
Formic-acid	ND		9.8	2.2	mg/Kg			09/02/22 05:03	1
Lactic acid	ND		9.8	3.0	mg/Kg			09/02/22 05:03	1
n-Butyric Acid	ND		9.8	1.6	mg/Kg			09/02/22 05:03	1
Propionic acid	ND		9.8	1.7	mg/Kg			09/02/22 05:03	1
Pyruvic Acid	ND		9.8	2.5	mg/Kg			09/02/22 05:03	1

Client Sample ID: SWFTS-BH24-SO-44.5-FD
Lab Sample ID: 550-189011-16
Date Collected: 08/15/22 13:10
Matrix: Solid
Date Received: 08/18/22 06:30

Method: 6010B - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Calcium	87000	B1	20	1.7	mg/Kg		08/19/22 05:00	08/22/22 15:12	2

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon	2.0	E4	4.0	0.90	g/Kg			09/02/22 12:23	1

General Chemistry - Soluble

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetic acid	ND		10	1.5	mg/Kg			09/02/22 05:33	1
Formic-acid	ND		10	2.2	mg/Kg			09/02/22 05:33	1
Lactic acid	ND		10	3.0	mg/Kg			09/02/22 05:33	1
n-Butyric Acid	ND		10	1.6	mg/Kg			09/02/22 05:33	1
Propionic acid	ND		10	1.7	mg/Kg			09/02/22 05:33	1
Pyruvic Acid	ND		10	2.5	mg/Kg			09/02/22 05:33	1

Client Sample ID: SWFTS-BH23-SO-20.2
Lab Sample ID: 550-189011-17
Date Collected: 08/15/22 13:20
Matrix: Solid
Date Received: 08/18/22 06:30

Method: 6010B - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Calcium	13000	B1	9.9	0.85	mg/Kg		08/19/22 05:00	08/22/22 11:10	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon	ND		4.0	0.90	g/Kg			09/02/22 12:33	1

General Chemistry - Soluble

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetic acid	ND		9.8	1.5	mg/Kg			09/02/22 06:02	1
Formic-acid	ND		9.8	2.2	mg/Kg			09/02/22 06:02	1
Lactic acid	ND		9.8	2.9	mg/Kg			09/02/22 06:02	1
n-Butyric Acid	ND		9.8	1.6	mg/Kg			09/02/22 06:02	1
Propionic acid	ND		9.8	1.7	mg/Kg			09/02/22 06:02	1
Pyruvic Acid	ND		9.8	2.5	mg/Kg			09/02/22 06:02	1

Client Sample ID: SWFTS-BH23-SO-24
Lab Sample ID: 550-189011-18
Date Collected: 08/15/22 13:25
Matrix: Solid
Date Received: 08/18/22 06:30

Method: 6010B - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Calcium	9000	B1	9.9	0.85	mg/Kg		08/19/22 05:00	08/22/22 11:13	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon	ND		4.0	0.90	g/Kg			09/02/22 13:02	1

General Chemistry - Soluble

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetic acid	ND		10	1.5	mg/Kg			09/02/22 06:31	1
Formic-acid	ND		10	2.2	mg/Kg			09/02/22 06:31	1

Client Sample ID: SWFTS-BH23-SO-24
Lab Sample ID: 550-189011-18
Date Collected: 08/15/22 13:25
Matrix: Solid
Date Received: 08/18/22 06:30

General Chemistry - Soluble (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lactic acid	ND		10	3.0	mg/Kg			09/02/22 06:31	1
n-Butyric Acid	ND		10	1.6	mg/Kg			09/02/22 06:31	1
Propionic acid	ND		10	1.7	mg/Kg			09/02/22 06:31	1
Pyruvic Acid	ND		10	2.5	mg/Kg			09/02/22 06:31	1

Client Sample ID: SWFTS-BH23-SO-27
Lab Sample ID: 550-189011-19
Date Collected: 08/15/22 13:30
Matrix: Solid
Date Received: 08/18/22 06:30

Method: 6010B - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Calcium	**24000**	**B1**	9.8	0.84	mg/Kg		08/19/22 01:16	08/22/22 06:20	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon	**1.3**	**E4**	4.0	0.90	g/Kg			09/02/22 11:06	1

General Chemistry - Soluble

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetic acid	ND		10	1.5	mg/Kg			09/01/22 19:50	1
Formic-acid	ND		10	2.2	mg/Kg			09/01/22 19:50	1
Lactic acid	ND		10	3.0	mg/Kg			09/01/22 19:50	1
n-Butyric Acid	ND		10	1.6	mg/Kg			09/01/22 19:50	1
Propionic acid	ND		10	1.7	mg/Kg			09/01/22 19:50	1
Pyruvic Acid	ND		10	2.5	mg/Kg			09/01/22 19:50	1

Client Sample ID: SWFTS-BH23-SO-31.3
Lab Sample ID: 550-189011-20
Date Collected: 08/15/22 13:35
Matrix: Solid
Date Received: 08/18/22 06:30

Method: 6010B - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Calcium	**66000**	**B1**	19	1.7	mg/Kg		08/19/22 05:00	08/22/22 15:15	2

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon	ND	F2	4.0	0.90	g/Kg			09/02/22 13:21	1

General Chemistry - Soluble

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetic acid	ND		9.9	1.5	mg/Kg			09/02/22 07:00	1
Formic-acid	ND		9.9	2.2	mg/Kg			09/02/22 07:00	1
Lactic acid	ND		9.9	3.0	mg/Kg			09/02/22 07:00	1
n-Butyric Acid	ND		9.9	1.6	mg/Kg			09/02/22 07:00	1
Propionic acid	ND		9.9	1.7	mg/Kg			09/02/22 07:00	1
Pyruvic Acid	ND		9.9	2.5	mg/Kg			09/02/22 07:00	1

Client Sample ID: SWFTS-BH23-SO-31.3-FD
Lab Sample ID: 550-189011-21
Date Collected: 08/15/22 13:35
Matrix: Solid
Date Received: 08/18/22 06:30

Method: 6010B - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Calcium	78000	B1	20	1.7	mg/Kg		08/19/22 05:00	08/22/22 15:18	2

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon	1.0	E4	4.0	0.90	g/Kg			09/02/22 13:12	1

General Chemistry - Soluble

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetic acid	ND		10	1.5	mg/Kg			09/07/22 07:19	1
Formic-acid	ND		10	2.2	mg/Kg			09/07/22 07:19	1
Lactic acid	ND		10	3.0	mg/Kg			09/07/22 07:19	1
n-Butyric Acid	ND		10	1.6	mg/Kg			09/07/22 07:19	1
Propionic acid	ND		10	1.7	mg/Kg			09/07/22 07:19	1
Pyruvic Acid	ND		10	2.5	mg/Kg			09/07/22 07:19	1

Client Sample ID: SWFTS-BH23-SO-36.7
Lab Sample ID: 550-189011-22
Date Collected: 08/15/22 13:40
Matrix: Solid
Date Received: 08/18/22 06:30

Method: 6010B - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Calcium	56000	B1	9.8	0.84	mg/Kg		08/19/22 05:00	08/22/22 11:21	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon	1.1	E4	4.0	0.90	g/Kg			09/02/22 13:51	1

General Chemistry - Soluble

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetic acid	ND		9.7	1.5	mg/Kg			09/07/22 07:48	1
Formic-acid	ND		9.7	2.1	mg/Kg			09/07/22 07:48	1
Lactic acid	ND		9.7	2.9	mg/Kg			09/07/22 07:48	1
n-Butyric Acid	ND		9.7	1.6	mg/Kg			09/07/22 07:48	1
Propionic acid	ND		9.7	1.7	mg/Kg			09/07/22 07:48	1
Pyruvic Acid	ND		9.7	2.4	mg/Kg			09/07/22 07:48	1

Client Sample ID: SWFTS-BH25-SO-17
Lab Sample ID: 550-189011-23
Date Collected: 08/15/22 15:00
Matrix: Solid
Date Received: 08/18/22 06:30

Method: 6010B - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Calcium	39000	B1	9.8	0.84	mg/Kg		08/19/22 05:00	08/22/22 11:24	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon	0.91	E4	4.0	0.90	g/Kg			09/02/22 14:00	1

General Chemistry - Soluble

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetic acid	ND		9.9	1.5	mg/Kg			09/07/22 08:17	1
Formic-acid	ND		9.9	2.2	mg/Kg			09/07/22 08:17	1

Client Sample ID: SWFTS-BH25-SO-17
Lab Sample ID: 550-189011-23
Date Collected: 08/15/22 15:00
Matrix: Solid
Date Received: 08/18/22 06:30

General Chemistry - Soluble (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lactic acid	ND		9.9	3.0	mg/Kg			09/07/22 08:17	1
n-Butyric Acid	ND		9.9	1.6	mg/Kg			09/07/22 08:17	1
Propionic acid	ND		9.9	1.7	mg/Kg			09/07/22 08:17	1
Pyruvic Acid	ND		9.9	2.5	mg/Kg			09/07/22 08:17	1

Client Sample ID: SWFTS-BH25-SO-19.8
Lab Sample ID: 550-189011-24
Date Collected: 08/15/22 15:05
Matrix: Solid
Date Received: 08/18/22 06:30

Method: 6010B - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Calcium	**43000**	**B1**	9.9	0.85	mg/Kg		08/19/22 05:00	08/22/22 11:27	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon	**1.1**	**E4**	4.0	0.90	g/Kg			09/02/22 14:11	1

General Chemistry - Soluble

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetic acid	ND		10	1.5	mg/Kg			09/07/22 08:46	1
Formic-acid	ND		10	2.2	mg/Kg			09/07/22 08:46	1
Lactic acid	ND		10	3.0	mg/Kg			09/07/22 08:46	1
n-Butyric Acid	ND		10	1.6	mg/Kg			09/07/22 08:46	1
Propionic acid	ND		10	1.7	mg/Kg			09/07/22 08:46	1
Pyruvic Acid	ND		10	2.5	mg/Kg			09/07/22 08:46	1

Client Sample ID: SWFTS-BH25-SO-26.5
Lab Sample ID: 550-189011-25
Date Collected: 08/15/22 15:10
Matrix: Solid
Date Received: 08/18/22 06:30

Method: 6010B - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Calcium	**13000**	**B1**	9.7	0.83	mg/Kg		08/19/22 05:00	08/22/22 11:30	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon	ND		4.0	0.90	g/Kg			09/02/22 15:28	1

General Chemistry - Soluble

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetic acid	ND		9.7	1.5	mg/Kg			09/07/22 09:15	1
Formic-acid	ND		9.7	2.1	mg/Kg			09/07/22 09:15	1
Lactic acid	ND		9.7	2.9	mg/Kg			09/07/22 09:15	1
n-Butyric Acid	ND		9.7	1.6	mg/Kg			09/07/22 09:15	1
Propionic acid	ND		9.7	1.7	mg/Kg			09/07/22 09:15	1
Pyruvic Acid	ND		9.7	2.4	mg/Kg			09/07/22 09:15	1

Client Sample ID: SWFTS-BH25-SO-29.2
Lab Sample ID: 550-189011-26
Date Collected: 08/15/22 15:15
Matrix: Solid
Date Received: 08/18/22 06:30

Method: 6010B - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Calcium	25000	B1	10	0.86	mg/Kg		08/19/22 05:00	08/22/22 11:32	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon	ND		4.0	0.90	g/Kg			09/02/22 14:20	1

General Chemistry - Soluble

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetic acid	ND		10	1.5	mg/Kg			09/07/22 09:44	1
Formic-acid	ND		10	2.2	mg/Kg			09/07/22 09:44	1
Lactic acid	ND		10	3.0	mg/Kg			09/07/22 09:44	1
n-Butyric Acid	ND		10	1.6	mg/Kg			09/07/22 09:44	1
Propionic acid	ND		10	1.7	mg/Kg			09/07/22 09:44	1
Pyruvic Acid	ND		10	2.5	mg/Kg			09/07/22 09:44	1

Client Sample ID: SWFTS-BH25-SO-34.8
Lab Sample ID: 550-189011-27
Date Collected: 08/15/22 15:20
Matrix: Solid
Date Received: 08/18/22 06:30

Method: 6010B - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Calcium	51000	B1	9.8	0.84	mg/Kg		08/19/22 05:00	08/22/22 11:35	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon	1.0	E4	4.0	0.90	g/Kg			09/02/22 14:30	1

General Chemistry - Soluble

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetic acid	ND		9.9	1.5	mg/Kg			09/07/22 10:14	1
Formic-acid	ND		9.9	2.2	mg/Kg			09/07/22 10:14	1
Lactic acid	ND		9.9	3.0	mg/Kg			09/07/22 10:14	1
n-Butyric Acid	ND		9.9	1.6	mg/Kg			09/07/22 10:14	1
Propionic acid	ND		9.9	1.7	mg/Kg			09/07/22 10:14	1
Pyruvic Acid	ND		9.9	2.5	mg/Kg			09/07/22 10:14	1

Method: 6010B - Metals (ICP)

Lab Sample ID: MB 550-281980/1-A
Matrix: Solid
Analysis Batch: 282127

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 281980

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Calcium	3.05	E4	9.9	0.85	mg/Kg		08/19/22 01:16	08/22/22 05:50	1

Lab Sample ID: LCS 550-281980/2-A
Matrix: Solid
Analysis Batch: 282127

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 281980

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Calcium	1040	1100		mg/Kg		106	84 - 110

Lab Sample ID: LCSD 550-281980/3-A
Matrix: Solid
Analysis Batch: 282127

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 281980

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Calcium	1040	1090		mg/Kg		105	84 - 110	1	20

Lab Sample ID: 550-189011-19 MS
Matrix: Solid
Analysis Batch: 282127

Client Sample ID: SWFTS-BH23-SO-27
Prep Type: Total/NA
Prep Batch: 281980

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Calcium	24000	B	1040	22700	4	mg/Kg		-86	75 - 125

Lab Sample ID: 550-189011-19 MSD
Matrix: Solid
Analysis Batch: 282127

Client Sample ID: SWFTS-BH23-SO-27
Prep Type: Total/NA
Prep Batch: 281980

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Calcium	24000	B	1040	26600	4	mg/Kg		291	75 - 125	16	20

Lab Sample ID: MB 550-281981/1-A
Matrix: Solid
Analysis Batch: 282130

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 281981

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Calcium	7.72	E4	9.9	0.85	mg/Kg		08/19/22 05:00	08/22/22 10:36	1

Lab Sample ID: LCS 550-281981/2-A
Matrix: Solid
Analysis Batch: 282130

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 281981

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Calcium	1030	1080		mg/Kg		105	84 - 110

Lab Sample ID: LCSD 550-281981/3-A
Matrix: Solid
Analysis Batch: 282130

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 281981

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Calcium	1040	1110		mg/Kg		106	84 - 110	2	20

Method: 6010B - Metals (ICP)

Lab Sample ID: 550-189012-E-5-A MS ^2
Matrix: Solid
Analysis Batch: 282160

Client Sample ID: Matrix Spike
Prep Type: Total/NA
Prep Batch: 281981

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Calcium	83000	B	1040	72000	4	mg/Kg		-1065	75 - 125

Lab Sample ID: 550-189012-E-5-B MSD ^2
Matrix: Solid
Analysis Batch: 282160

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total/NA
Prep Batch: 281981

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Calcium	83000	B	1040	77800	4	mg/Kg		-518	75 - 125	8	20

Method: 9060A - Organic Carbon, Total (TOC)

Lab Sample ID: MB 280-585834/5
Matrix: Solid
Analysis Batch: 585834

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon	ND		4.0	0.90	g/Kg			09/01/22 13:34	1

Lab Sample ID: LCS 280-585834/4
Matrix: Solid
Analysis Batch: 585834

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Total Organic Carbon	2.89	1.50	E4	g/Kg		52	46 - 130

Lab Sample ID: 410-94160-A-3 MS
Matrix: Solid
Analysis Batch: 585834

Client Sample ID: Matrix Spike
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Total Organic Carbon	ND		11.8	14.3		g/Kg		121	46 - 130

Lab Sample ID: 410-94160-A-3 MSD
Matrix: Solid
Analysis Batch: 585834

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Total Organic Carbon	ND		11.8	14.0		g/Kg		119	46 - 130	2	20

Lab Sample ID: 410-94160-A-15 MS
Matrix: Solid
Analysis Batch: 585834

Client Sample ID: Matrix Spike
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Total Organic Carbon	ND	F1	11.7	14.9		g/Kg		128	46 - 130

Method: 9060A - Organic Carbon, Total (TOC) (Continued)

Lab Sample ID: 410-94160-A-15 MSD
Matrix: Solid
Analysis Batch: 585834

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Total Organic Carbon	ND	F1	11.6	15.4	F1	g/Kg		132	46 - 130	3	20

Lab Sample ID: MB 280-585938/5
Matrix: Solid
Analysis Batch: 585938

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon	ND		4.0	0.90	g/Kg			09/02/22 10:56	1

Lab Sample ID: LCS 280-585938/4
Matrix: Solid
Analysis Batch: 585938

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Total Organic Carbon	2.89	2.77	E4	g/Kg		96	46 - 130

Lab Sample ID: 550-189011-19 MS
Matrix: Solid
Analysis Batch: 585938

Client Sample ID: SWFTS-BH23-SO-27
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Total Organic Carbon	1.3	J	11.8	14.3		g/Kg		111	46 - 130

Lab Sample ID: 550-189011-19 MSD
Matrix: Solid
Analysis Batch: 585938

Client Sample ID: SWFTS-BH23-SO-27
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Total Organic Carbon	1.3	J	11.8	15.7		g/Kg		122	46 - 130	9	20

Lab Sample ID: 550-189011-20 MS
Matrix: Solid
Analysis Batch: 585938

Client Sample ID: SWFTS-BH23-SO-31.3
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Total Organic Carbon	ND	F2	11.8	14.9		g/Kg		126	46 - 130

Lab Sample ID: 550-189011-20 MSD
Matrix: Solid
Analysis Batch: 585938

Client Sample ID: SWFTS-BH23-SO-31.3
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Total Organic Carbon	ND	F2	11.8	11.4	F2	g/Kg		97	46 - 130	26	20

Method: VFA-IC - Volatile Fatty Acids, Ion Chromatography

Lab Sample ID: MB 480-639680/1-A
Matrix: Solid
Analysis Batch: 640054

Client Sample ID: Method Blank
Prep Type: Soluble

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetic acid	ND		10	1.5	mg/Kg			09/01/22 16:25	1
Formic-acid	ND		10	2.2	mg/Kg			09/01/22 16:25	1
Lactic acid	ND		10	3.0	mg/Kg			09/01/22 16:25	1
n-Butyric Acid	ND		10	1.6	mg/Kg			09/01/22 16:25	1
Propionic acid	ND		10	1.7	mg/Kg			09/01/22 16:25	1
Pyruvic Acid	ND		10	2.5	mg/Kg			09/01/22 16:25	1

Lab Sample ID: MB 480-639709/1-A
Matrix: Solid
Analysis Batch: 640054

Client Sample ID: Method Blank
Prep Type: Soluble

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetic acid	ND		10	1.5	mg/Kg			09/02/22 04:05	1
Formic-acid	ND		10	2.2	mg/Kg			09/02/22 04:05	1
Lactic acid	ND		10	3.0	mg/Kg			09/02/22 04:05	1
n-Butyric Acid	ND		10	1.6	mg/Kg			09/02/22 04:05	1
Propionic acid	ND		10	1.7	mg/Kg			09/02/22 04:05	1
Pyruvic Acid	ND		10	2.5	mg/Kg			09/02/22 04:05	1

Lab Sample ID: LCS 480-639680/2-A
Matrix: Solid
Analysis Batch: 640054

Client Sample ID: Lab Control Sample
Prep Type: Soluble

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Acetic acid	98.5	104		mg/Kg		106	80 - 120
Formic-acid	99.1	97.7		mg/Kg		99	80 - 120
Lactic acid	99.5	119		mg/Kg		120	80 - 120
n-Butyric Acid	97.7	93.0		mg/Kg		95	80 - 120
Propionic acid	98.9	103		mg/Kg		104	80 - 120
Pyruvic Acid	100	102		mg/Kg		102	80 - 120

Lab Sample ID: LCS 480-639709/2-A
Matrix: Solid
Analysis Batch: 640054

Client Sample ID: Lab Control Sample
Prep Type: Soluble

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Acetic acid	98.9	104		mg/Kg		105	80 - 120
Formic-acid	99.5	99.5		mg/Kg		100	80 - 120
Lactic acid	99.9	117		mg/Kg		117	80 - 120
n-Butyric Acid	98.1	99.4		mg/Kg		101	80 - 120
Propionic acid	99.3	104		mg/Kg		105	80 - 120
Pyruvic Acid	100	106		mg/Kg		106	80 - 120

Lab Sample ID: 550-189011-14 MS
Matrix: Solid
Analysis Batch: 640054

Client Sample ID: SWFTS-BH24-SO-29.3
Prep Type: Soluble

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Acetic acid	ND		98.9	98.3		mg/Kg		99	80 - 120

Method: VFA-IC - Volatile Fatty Acids, Ion Chromatography (Continued)

Lab Sample ID: 550-189011-14 MS
Matrix: Solid
Analysis Batch: 640054

Client Sample ID: SWFTS-BH24-SO-29.3
Prep Type: Soluble

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Formic-acid	ND		99.5	97.4		mg/Kg		98	80 - 120
Lactic acid	ND		99.9	115		mg/Kg		116	80 - 120
n-Butyric Acid	ND		98.1	97.8		mg/Kg		100	80 - 120
Propionic acid	ND		99.3	101		mg/Kg		102	80 - 120
Pyruvic Acid	ND		100	105		mg/Kg		104	80 - 120

Lab Sample ID: 550-189011-19 MS
Matrix: Solid
Analysis Batch: 640054

Client Sample ID: SWFTS-BH23-SO-27
Prep Type: Soluble

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Acetic acid	ND		99.9	101		mg/Kg		101	80 - 120
Formic-acid	ND		100	97.8		mg/Kg		97	80 - 120
Lactic acid	ND		101	116		mg/Kg		115	80 - 120
n-Butyric Acid	ND		99.1	102		mg/Kg		103	80 - 120
Propionic acid	ND		100	107		mg/Kg		107	80 - 120
Pyruvic Acid	ND		101	105		mg/Kg		104	80 - 120

Lab Sample ID: 550-189011-19 MSD
Matrix: Solid
Analysis Batch: 640054

Client Sample ID: SWFTS-BH23-SO-27
Prep Type: Soluble

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Acetic acid	ND		99.5	97.6		mg/Kg		98	80 - 120	3	20
Formic-acid	ND		100	98.1		mg/Kg		98	80 - 120	0	20
Lactic acid	ND		100	116		mg/Kg		116	80 - 120	0	20
n-Butyric Acid	ND		98.7	97.1		mg/Kg		98	80 - 120	5	20
Propionic acid	ND		99.9	99.7		mg/Kg		100	80 - 120	7	20
Pyruvic Acid	ND		101	103		mg/Kg		102	80 - 120	2	20

Lab Sample ID: 550-189012-B-5-A MS
Matrix: Solid
Analysis Batch: 640054

Client Sample ID: Matrix Spike
Prep Type: Soluble

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Acetic acid	ND		99.5	99.7		mg/Kg		100	80 - 120
Formic-acid	ND		100	100		mg/Kg		100	80 - 120
Lactic acid	ND		100	116		mg/Kg		116	80 - 120
n-Butyric Acid	ND		98.7	98.6		mg/Kg		100	80 - 120
Propionic acid	ND		99.9	101		mg/Kg		102	80 - 120
Pyruvic Acid	ND		101	110		mg/Kg		109	80 - 120

Lab Sample ID: 550-189012-B-5-B MSD
Matrix: Solid
Analysis Batch: 640054

Client Sample ID: Matrix Spike Duplicate
Prep Type: Soluble

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Acetic acid	ND		99.3	104		mg/Kg		104	80 - 120	4	20
Formic-acid	ND		99.9	103		mg/Kg		103	80 - 120	2	20
Lactic acid	ND		100	119		mg/Kg		119	80 - 120	2	20

Method: VFA-IC - Volatile Fatty Acids, Ion Chromatography (Continued)

Lab Sample ID: 550-189012-B-5-B MSD
Matrix: Solid
Analysis Batch: 640054

Client Sample ID: Matrix Spike Duplicate
Prep Type: Soluble

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
n-Butyric Acid	ND		98.5	99.9		mg/Kg		101	80 - 120	1	20
Propionic acid	ND		99.7	108		mg/Kg		109	80 - 120	7	20
Pyruvic Acid	ND		101	110		mg/Kg		109	80 - 120	1	20

Lab Sample ID: MB 480-639709/1-A
Matrix: Solid
Analysis Batch: 640360

Client Sample ID: Method Blank
Prep Type: Soluble

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetic acid	ND		10	1.5	mg/Kg			09/07/22 06:20	1
Formic-acid	ND		10	2.2	mg/Kg			09/07/22 06:20	1
Lactic acid	ND		10	3.0	mg/Kg			09/07/22 06:20	1
n-Butyric Acid	ND		10	1.6	mg/Kg			09/07/22 06:20	1
Propionic acid	ND		10	1.7	mg/Kg			09/07/22 06:20	1
Pyruvic Acid	ND		10	2.5	mg/Kg			09/07/22 06:20	1

Lab Sample ID: LCS 480-639709/2-A
Matrix: Solid
Analysis Batch: 640360

Client Sample ID: Lab Control Sample
Prep Type: Soluble

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Acetic acid	98.9	109		mg/Kg		110	80 - 120
Formic-acid	99.5	105		mg/Kg		106	80 - 120
Lactic acid	99.9	120		mg/Kg		120	80 - 120
n-Butyric Acid	98.1	102		mg/Kg		104	80 - 120
Propionic acid	99.3	108		mg/Kg		108	80 - 120
Pyruvic Acid	100	106		mg/Kg		106	80 - 120

Lab Sample ID: 550-189012-A-2-B MS
Matrix: Solid
Analysis Batch: 640360

Client Sample ID: Matrix Spike
Prep Type: Soluble

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Acetic acid	ND		99.9	104		mg/Kg		104	80 - 120
Formic-acid	ND		100	107		mg/Kg		107	80 - 120
Lactic acid	ND		101	120		mg/Kg		119	80 - 120
n-Butyric Acid	ND		99.1	106		mg/Kg		107	80 - 120
Propionic acid	ND		100	107		mg/Kg		106	80 - 120
Pyruvic Acid	ND		101	110		mg/Kg		108	80 - 120

Metals

Prep Batch: 281980

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
550-189011-1	SWFTS-BH14-SO-12.8	Total/NA	Solid	3050B	
550-189011-2	SWFTS-BH14-SO-15.5	Total/NA	Solid	3050B	
550-189011-3	SWFTS-BH14-SO-18	Total/NA	Solid	3050B	
550-189011-4	SWFTS-BH14-SO-25.3	Total/NA	Solid	3050B	
550-189011-5	SWFTS-BH14-SO-29	Total/NA	Solid	3050B	
550-189011-6	SWFTS-BH19-SO-11	Total/NA	Solid	3050B	
550-189011-7	SWFTS-BH19-SO-15.5	Total/NA	Solid	3050B	
550-189011-8	SWFTS-BH19-SO-20.5	Total/NA	Solid	3050B	
550-189011-9	SWFTS-BH19-SO-25	Total/NA	Solid	3050B	
550-189011-10	SWFTS-BH19-SO-28	Total/NA	Solid	3050B	
550-189011-11	SWFTS-BH24-SO-19	Total/NA	Solid	3050B	
550-189011-12	SWFTS-BH24-SO-24.5	Total/NA	Solid	3050B	
550-189011-13	SWFTS-BH24-SO-27	Total/NA	Solid	3050B	
550-189011-14	SWFTS-BH24-SO-29.3	Total/NA	Solid	3050B	
550-189011-15	SWFTS-BH24-SO-44.5	Total/NA	Solid	3050B	
550-189011-19	SWFTS-BH23-SO-27	Total/NA	Solid	3050B	
MB 550-281980/1-A	Method Blank	Total/NA	Solid	3050B	
LCS 550-281980/2-A	Lab Control Sample	Total/NA	Solid	3050B	
LCSD 550-281980/3-A	Lab Control Sample Dup	Total/NA	Solid	3050B	
550-189011-19 MS	SWFTS-BH23-SO-27	Total/NA	Solid	3050B	
550-189011-19 MSD	SWFTS-BH23-SO-27	Total/NA	Solid	3050B	

Prep Batch: 281981

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
550-189011-16	SWFTS-BH24-SO-44.5-FD	Total/NA	Solid	3050B	
550-189011-17	SWFTS-BH23-SO-20.2	Total/NA	Solid	3050B	
550-189011-18	SWFTS-BH23-SO-24	Total/NA	Solid	3050B	
550-189011-20	SWFTS-BH23-SO-31.3	Total/NA	Solid	3050B	
550-189011-21	SWFTS-BH23-SO-31.3-FD	Total/NA	Solid	3050B	
550-189011-22	SWFTS-BH23-SO-36.7	Total/NA	Solid	3050B	
550-189011-23	SWFTS-BH25-SO-17	Total/NA	Solid	3050B	
550-189011-24	SWFTS-BH25-SO-19.8	Total/NA	Solid	3050B	
550-189011-25	SWFTS-BH25-SO-26.5	Total/NA	Solid	3050B	
550-189011-26	SWFTS-BH25-SO-29.2	Total/NA	Solid	3050B	
550-189011-27	SWFTS-BH25-SO-34.8	Total/NA	Solid	3050B	
MB 550-281981/1-A	Method Blank	Total/NA	Solid	3050B	
LCS 550-281981/2-A	Lab Control Sample	Total/NA	Solid	3050B	
LCSD 550-281981/3-A	Lab Control Sample Dup	Total/NA	Solid	3050B	
550-189012-E-5-A MS ^2	Matrix Spike	Total/NA	Solid	3050B	
550-189012-E-5-B MSD ^2	Matrix Spike Duplicate	Total/NA	Solid	3050B	

Analysis Batch: 282127

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
550-189011-1	SWFTS-BH14-SO-12.8	Total/NA	Solid	6010B	281980
550-189011-2	SWFTS-BH14-SO-15.5	Total/NA	Solid	6010B	281980
550-189011-3	SWFTS-BH14-SO-18	Total/NA	Solid	6010B	281980
550-189011-4	SWFTS-BH14-SO-25.3	Total/NA	Solid	6010B	281980
550-189011-5	SWFTS-BH14-SO-29	Total/NA	Solid	6010B	281980
550-189011-6	SWFTS-BH19-SO-11	Total/NA	Solid	6010B	281980
550-189011-7	SWFTS-BH19-SO-15.5	Total/NA	Solid	6010B	281980
550-189011-8	SWFTS-BH19-SO-20.5	Total/NA	Solid	6010B	281980

Metals (Continued)

Analysis Batch: 282127 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
550-189011-11	SWFTS-BH24-SO-19	Total/NA	Solid	6010B	281980
550-189011-12	SWFTS-BH24-SO-24.5	Total/NA	Solid	6010B	281980
550-189011-13	SWFTS-BH24-SO-27	Total/NA	Solid	6010B	281980
550-189011-14	SWFTS-BH24-SO-29.3	Total/NA	Solid	6010B	281980
550-189011-19	SWFTS-BH23-SO-27	Total/NA	Solid	6010B	281980
MB 550-281980/1-A	Method Blank	Total/NA	Solid	6010B	281980
LCS 550-281980/2-A	Lab Control Sample	Total/NA	Solid	6010B	281980
LCSD 550-281980/3-A	Lab Control Sample Dup	Total/NA	Solid	6010B	281980
550-189011-19 MS	SWFTS-BH23-SO-27	Total/NA	Solid	6010B	281980
550-189011-19 MSD	SWFTS-BH23-SO-27	Total/NA	Solid	6010B	281980

Analysis Batch: 282130

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
550-189011-17	SWFTS-BH23-SO-20.2	Total/NA	Solid	6010B	281981
550-189011-18	SWFTS-BH23-SO-24	Total/NA	Solid	6010B	281981
550-189011-22	SWFTS-BH23-SO-36.7	Total/NA	Solid	6010B	281981
550-189011-23	SWFTS-BH25-SO-17	Total/NA	Solid	6010B	281981
550-189011-24	SWFTS-BH25-SO-19.8	Total/NA	Solid	6010B	281981
550-189011-25	SWFTS-BH25-SO-26.5	Total/NA	Solid	6010B	281981
550-189011-26	SWFTS-BH25-SO-29.2	Total/NA	Solid	6010B	281981
550-189011-27	SWFTS-BH25-SO-34.8	Total/NA	Solid	6010B	281981
MB 550-281981/1-A	Method Blank	Total/NA	Solid	6010B	281981
LCS 550-281981/2-A	Lab Control Sample	Total/NA	Solid	6010B	281981
LCSD 550-281981/3-A	Lab Control Sample Dup	Total/NA	Solid	6010B	281981

Analysis Batch: 282160

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
550-189011-16	SWFTS-BH24-SO-44.5-FD	Total/NA	Solid	6010B	281981
550-189011-20	SWFTS-BH23-SO-31.3	Total/NA	Solid	6010B	281981
550-189011-21	SWFTS-BH23-SO-31.3-FD	Total/NA	Solid	6010B	281981
550-189012-E-5-A MS ^2	Matrix Spike	Total/NA	Solid	6010B	281981
550-189012-E-5-B MSD ^2	Matrix Spike Duplicate	Total/NA	Solid	6010B	281981

Analysis Batch: 282161

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
550-189011-9	SWFTS-BH19-SO-25	Total/NA	Solid	6010B	281980
550-189011-10	SWFTS-BH19-SO-28	Total/NA	Solid	6010B	281980
550-189011-15	SWFTS-BH24-SO-44.5	Total/NA	Solid	6010B	281980

General Chemistry

Analysis Batch: 585834

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
550-189011-1	SWFTS-BH14-SO-12.8	Total/NA	Solid	9060A	
550-189011-2	SWFTS-BH14-SO-15.5	Total/NA	Solid	9060A	
550-189011-3	SWFTS-BH14-SO-18	Total/NA	Solid	9060A	
550-189011-4	SWFTS-BH14-SO-25.3	Total/NA	Solid	9060A	
550-189011-5	SWFTS-BH14-SO-29	Total/NA	Solid	9060A	
550-189011-6	SWFTS-BH19-SO-11	Total/NA	Solid	9060A	
550-189011-7	SWFTS-BH19-SO-15.5	Total/NA	Solid	9060A	
550-189011-8	SWFTS-BH19-SO-20.5	Total/NA	Solid	9060A	

General Chemistry (Continued)

Analysis Batch: 585834 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
550-189011-9	SWFTS-BH19-SO-25	Total/NA	Solid	9060A	
550-189011-10	SWFTS-BH19-SO-28	Total/NA	Solid	9060A	
MB 280-585834/5	Method Blank	Total/NA	Solid	9060A	
LCS 280-585834/4	Lab Control Sample	Total/NA	Solid	9060A	
410-94160-A-3 MS	Matrix Spike	Total/NA	Solid	9060A	
410-94160-A-3 MSD	Matrix Spike Duplicate	Total/NA	Solid	9060A	
410-94160-A-15 MS	Matrix Spike	Total/NA	Solid	9060A	
410-94160-A-15 MSD	Matrix Spike Duplicate	Total/NA	Solid	9060A	

Analysis Batch: 585938

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
550-189011-11	SWFTS-BH24-SO-19	Total/NA	Solid	9060A	
550-189011-12	SWFTS-BH24-SO-24.5	Total/NA	Solid	9060A	
550-189011-13	SWFTS-BH24-SO-27	Total/NA	Solid	9060A	
550-189011-14	SWFTS-BH24-SO-29.3	Total/NA	Solid	9060A	
550-189011-15	SWFTS-BH24-SO-44.5	Total/NA	Solid	9060A	
550-189011-16	SWFTS-BH24-SO-44.5-FD	Total/NA	Solid	9060A	
550-189011-17	SWFTS-BH23-SO-20.2	Total/NA	Solid	9060A	
550-189011-18	SWFTS-BH23-SO-24	Total/NA	Solid	9060A	
550-189011-19	SWFTS-BH23-SO-27	Total/NA	Solid	9060A	
550-189011-20	SWFTS-BH23-SO-31.3	Total/NA	Solid	9060A	
550-189011-21	SWFTS-BH23-SO-31.3-FD	Total/NA	Solid	9060A	
550-189011-22	SWFTS-BH23-SO-36.7	Total/NA	Solid	9060A	
550-189011-23	SWFTS-BH25-SO-17	Total/NA	Solid	9060A	
550-189011-24	SWFTS-BH25-SO-19.8	Total/NA	Solid	9060A	
550-189011-25	SWFTS-BH25-SO-26.5	Total/NA	Solid	9060A	
550-189011-26	SWFTS-BH25-SO-29.2	Total/NA	Solid	9060A	
550-189011-27	SWFTS-BH25-SO-34.8	Total/NA	Solid	9060A	
MB 280-585938/5	Method Blank	Total/NA	Solid	9060A	
LCS 280-585938/4	Lab Control Sample	Total/NA	Solid	9060A	
550-189011-19 MS	SWFTS-BH23-SO-27	Total/NA	Solid	9060A	
550-189011-19 MSD	SWFTS-BH23-SO-27	Total/NA	Solid	9060A	
550-189011-20 MS	SWFTS-BH23-SO-31.3	Total/NA	Solid	9060A	
550-189011-20 MSD	SWFTS-BH23-SO-31.3	Total/NA	Solid	9060A	

Leach Batch: 639680

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
550-189011-1	SWFTS-BH14-SO-12.8	Soluble	Solid	DI Leach	
550-189011-2	SWFTS-BH14-SO-15.5	Soluble	Solid	DI Leach	
550-189011-3	SWFTS-BH14-SO-18	Soluble	Solid	DI Leach	
550-189011-4	SWFTS-BH14-SO-25.3	Soluble	Solid	DI Leach	
550-189011-5	SWFTS-BH14-SO-29	Soluble	Solid	DI Leach	
550-189011-6	SWFTS-BH19-SO-11	Soluble	Solid	DI Leach	
550-189011-7	SWFTS-BH19-SO-15.5	Soluble	Solid	DI Leach	
550-189011-8	SWFTS-BH19-SO-20.5	Soluble	Solid	DI Leach	
550-189011-9	SWFTS-BH19-SO-25	Soluble	Solid	DI Leach	
550-189011-10	SWFTS-BH19-SO-28	Soluble	Solid	DI Leach	
550-189011-11	SWFTS-BH24-SO-19	Soluble	Solid	DI Leach	
550-189011-12	SWFTS-BH24-SO-24.5	Soluble	Solid	DI Leach	
550-189011-13	SWFTS-BH24-SO-27	Soluble	Solid	DI Leach	
550-189011-14	SWFTS-BH24-SO-29.3	Soluble	Solid	DI Leach	

General Chemistry (Continued)

Leach Batch: 639680 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
550-189011-19	SWFTS-BH23-SO-27	Soluble	Solid	DI Leach	
MB 480-639680/1-A	Method Blank	Soluble	Solid	DI Leach	
LCS 480-639680/2-A	Lab Control Sample	Soluble	Solid	DI Leach	
550-189011-14 MS	SWFTS-BH24-SO-29.3	Soluble	Solid	DI Leach	
550-189011-19 MS	SWFTS-BH23-SO-27	Soluble	Solid	DI Leach	
550-189011-19 MSD	SWFTS-BH23-SO-27	Soluble	Solid	DI Leach	

Leach Batch: 639709

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
550-189011-15	SWFTS-BH24-SO-44.5	Soluble	Solid	DI Leach	
550-189011-16	SWFTS-BH24-SO-44.5-FD	Soluble	Solid	DI Leach	
550-189011-17	SWFTS-BH23-SO-20.2	Soluble	Solid	DI Leach	
550-189011-18	SWFTS-BH23-SO-24	Soluble	Solid	DI Leach	
550-189011-20	SWFTS-BH23-SO-31.3	Soluble	Solid	DI Leach	
550-189011-21	SWFTS-BH23-SO-31.3-FD	Soluble	Solid	DI Leach	
550-189011-22	SWFTS-BH23-SO-36.7	Soluble	Solid	DI Leach	
550-189011-23	SWFTS-BH25-SO-17	Soluble	Solid	DI Leach	
550-189011-24	SWFTS-BH25-SO-19.8	Soluble	Solid	DI Leach	
550-189011-25	SWFTS-BH25-SO-26.5	Soluble	Solid	DI Leach	
550-189011-26	SWFTS-BH25-SO-29.2	Soluble	Solid	DI Leach	
550-189011-27	SWFTS-BH25-SO-34.8	Soluble	Solid	DI Leach	
MB 480-639709/1-A	Method Blank	Soluble	Solid	DI Leach	
LCS 480-639709/2-A	Lab Control Sample	Soluble	Solid	DI Leach	
550-189012-A-2-B MS	Matrix Spike	Soluble	Solid	DI Leach	
550-189012-B-5-A MS	Matrix Spike	Soluble	Solid	DI Leach	
550-189012-B-5-B MSD	Matrix Spike Duplicate	Soluble	Solid	DI Leach	

Analysis Batch: 640054

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
550-189011-1	SWFTS-BH14-SO-12.8	Soluble	Solid	VFA-IC	639680
550-189011-2	SWFTS-BH14-SO-15.5	Soluble	Solid	VFA-IC	639680
550-189011-3	SWFTS-BH14-SO-18	Soluble	Solid	VFA-IC	639680
550-189011-4	SWFTS-BH14-SO-25.3	Soluble	Solid	VFA-IC	639680
550-189011-5	SWFTS-BH14-SO-29	Soluble	Solid	VFA-IC	639680
550-189011-6	SWFTS-BH19-SO-11	Soluble	Solid	VFA-IC	639680
550-189011-7	SWFTS-BH19-SO-15.5	Soluble	Solid	VFA-IC	639680
550-189011-8	SWFTS-BH19-SO-20.5	Soluble	Solid	VFA-IC	639680
550-189011-9	SWFTS-BH19-SO-25	Soluble	Solid	VFA-IC	639680
550-189011-10	SWFTS-BH19-SO-28	Soluble	Solid	VFA-IC	639680
550-189011-11	SWFTS-BH24-SO-19	Soluble	Solid	VFA-IC	639680
550-189011-12	SWFTS-BH24-SO-24.5	Soluble	Solid	VFA-IC	639680
550-189011-13	SWFTS-BH24-SO-27	Soluble	Solid	VFA-IC	639680
550-189011-14	SWFTS-BH24-SO-29.3	Soluble	Solid	VFA-IC	639680
550-189011-15	SWFTS-BH24-SO-44.5	Soluble	Solid	VFA-IC	639709
550-189011-16	SWFTS-BH24-SO-44.5-FD	Soluble	Solid	VFA-IC	639709
550-189011-17	SWFTS-BH23-SO-20.2	Soluble	Solid	VFA-IC	639709
550-189011-18	SWFTS-BH23-SO-24	Soluble	Solid	VFA-IC	639709
550-189011-19	SWFTS-BH23-SO-27	Soluble	Solid	VFA-IC	639680
550-189011-20	SWFTS-BH23-SO-31.3	Soluble	Solid	VFA-IC	639709
MB 480-639680/1-A	Method Blank	Soluble	Solid	VFA-IC	639680
MB 480-639709/1-A	Method Blank	Soluble	Solid	VFA-IC	639709

General Chemistry (Continued)

Analysis Batch: 640054 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
LCS 480-639680/2-A	Lab Control Sample	Soluble	Solid	VFA-IC	639680
LCS 480-639709/2-A	Lab Control Sample	Soluble	Solid	VFA-IC	639709
550-189011-14 MS	SWFTS-BH24-SO-29.3	Soluble	Solid	VFA-IC	639680
550-189011-19 MS	SWFTS-BH23-SO-27	Soluble	Solid	VFA-IC	639680
550-189011-19 MSD	SWFTS-BH23-SO-27	Soluble	Solid	VFA-IC	639680
550-189012-B-5-A MS	Matrix Spike	Soluble	Solid	VFA-IC	639709
550-189012-B-5-B MSD	Matrix Spike Duplicate	Soluble	Solid	VFA-IC	639709

Analysis Batch: 640360

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
550-189011-21	SWFTS-BH23-SO-31.3-FD	Soluble	Solid	VFA-IC	639709
550-189011-22	SWFTS-BH23-SO-36.7	Soluble	Solid	VFA-IC	639709
550-189011-23	SWFTS-BH25-SO-17	Soluble	Solid	VFA-IC	639709
550-189011-24	SWFTS-BH25-SO-19.8	Soluble	Solid	VFA-IC	639709
550-189011-25	SWFTS-BH25-SO-26.5	Soluble	Solid	VFA-IC	639709
550-189011-26	SWFTS-BH25-SO-29.2	Soluble	Solid	VFA-IC	639709
550-189011-27	SWFTS-BH25-SO-34.8	Soluble	Solid	VFA-IC	639709
MB 480-639709/1-A	Method Blank	Soluble	Solid	VFA-IC	639709
LCS 480-639709/2-A	Lab Control Sample	Soluble	Solid	VFA-IC	639709
550-189012-A-2-B MS	Matrix Spike	Soluble	Solid	VFA-IC	639709

Lab Chronicle

Client: Tetra Tech, Inc.
Job ID: 550-189011-1
Project/Site: NERT - Seep Well Field

Client Sample ID: SWFTS-BH14-SO-12.8
Lab Sample ID: 550-189011-1
Date Collected: 08/15/22 08:20
Matrix: Solid
Date Received: 08/18/22 06:30

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	3050B			281980	GLW	EET PHX	08/19/22 01:16
Total/NA	Analysis	6010B		1	282127	CHS	EET PHX	08/22/22 06:34
Total/NA	Analysis	9060A		1	585834	ABW	EET DEN	09/01/22 16:25
Soluble	Leach	DI Leach			639680	KER	EET BUF	08/30/22 12:28
Soluble	Analysis	VFA-IC		1	640054	IMZ	EET BUF	09/01/22 17:24

Client Sample ID: SWFTS-BH14-SO-15.5
Lab Sample ID: 550-189011-2
Date Collected: 08/15/22 08:30
Matrix: Solid
Date Received: 08/18/22 06:30

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	3050B			281980	GLW	EET PHX	08/19/22 01:16
Total/NA	Analysis	6010B		1	282127	CHS	EET PHX	08/22/22 06:37
Total/NA	Analysis	9060A		1	585834	ABW	EET DEN	09/01/22 17:03
Soluble	Leach	DI Leach			639680	KER	EET BUF	08/30/22 12:28
Soluble	Analysis	VFA-IC		1	640054	IMZ	EET BUF	09/01/22 17:53

Client Sample ID: SWFTS-BH14-SO-18
Lab Sample ID: 550-189011-3
Date Collected: 08/15/22 08:40
Matrix: Solid
Date Received: 08/18/22 06:30

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	3050B			281980	GLW	EET PHX	08/19/22 01:16
Total/NA	Analysis	6010B		1	282127	CHS	EET PHX	08/22/22 06:40
Total/NA	Analysis	9060A		1	585834	ABW	EET DEN	09/01/22 17:13
Soluble	Leach	DI Leach			639680	KER	EET BUF	08/30/22 12:28
Soluble	Analysis	VFA-IC		1	640054	IMZ	EET BUF	09/01/22 18:22

Client Sample ID: SWFTS-BH14-SO-25.3
Lab Sample ID: 550-189011-4
Date Collected: 08/15/22 08:50
Matrix: Solid
Date Received: 08/18/22 06:30

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	3050B			281980	GLW	EET PHX	08/19/22 01:16
Total/NA	Analysis	6010B		1	282127	CHS	EET PHX	08/22/22 06:43
Total/NA	Analysis	9060A		1	585834	ABW	EET DEN	09/01/22 17:22
Soluble	Leach	DI Leach			639680	KER	EET BUF	08/30/22 12:28
Soluble	Analysis	VFA-IC		1	640054	IMZ	EET BUF	09/01/22 18:51

Lab Chronicle

Client: Tetra Tech, Inc.
Job ID: 550-189011-1
Project/Site: NERT - Seep Well Field

Client Sample ID: SWFTS-BH14-SO-29
Lab Sample ID: 550-189011-5
Date Collected: 08/15/22 09:00
Matrix: Solid
Date Received: 08/18/22 06:30

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	3050B			281980	GLW	EET PHX	08/19/22 01:16
Total/NA	Analysis	6010B		1	282127	CHS	EET PHX	08/22/22 06:46
Total/NA	Analysis	9060A		1	585834	ABW	EET DEN	09/01/22 17:31
Soluble	Leach	DI Leach			639680	KER	EET BUF	08/30/22 12:28
Soluble	Analysis	VFA-IC		1	640054	IMZ	EET BUF	09/01/22 19:20

Client Sample ID: SWFTS-BH19-SO-11
Lab Sample ID: 550-189011-6
Date Collected: 08/15/22 09:40
Matrix: Solid
Date Received: 08/18/22 06:30

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	3050B			281980	GLW	EET PHX	08/19/22 01:16
Total/NA	Analysis	6010B		1	282127	CHS	EET PHX	08/22/22 06:49
Total/NA	Analysis	9060A		1	585834	ABW	EET DEN	09/01/22 17:40
Soluble	Leach	DI Leach			639680	KER	EET BUF	08/30/22 12:28
Soluble	Analysis	VFA-IC		1	640054	IMZ	EET BUF	09/01/22 22:15

Client Sample ID: SWFTS-BH19-SO-15.5
Lab Sample ID: 550-189011-7
Date Collected: 08/15/22 09:50
Matrix: Solid
Date Received: 08/18/22 06:30

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	3050B			281980	GLW	EET PHX	08/19/22 01:16
Total/NA	Analysis	6010B		1	282127	CHS	EET PHX	08/22/22 06:51
Total/NA	Analysis	9060A		1	585834	ABW	EET DEN	09/01/22 18:09
Soluble	Leach	DI Leach			639680	KER	EET BUF	08/30/22 12:28
Soluble	Analysis	VFA-IC		1	640054	IMZ	EET BUF	09/01/22 22:44

Client Sample ID: SWFTS-BH19-SO-20.5
Lab Sample ID: 550-189011-8
Date Collected: 08/15/22 10:00
Matrix: Solid
Date Received: 08/18/22 06:30

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	3050B			281980	GLW	EET PHX	08/19/22 01:16
Total/NA	Analysis	6010B		1	282127	CHS	EET PHX	08/22/22 06:54
Total/NA	Analysis	9060A		1	585834	ABW	EET DEN	09/01/22 18:18
Soluble	Leach	DI Leach			639680	KER	EET BUF	08/30/22 12:28
Soluble	Analysis	VFA-IC		1	640054	IMZ	EET BUF	09/01/22 23:43

Lab Chronicle

Client: Tetra Tech, Inc.
Job ID: 550-189011-1
Project/Site: NERT - Seep Well Field

Client Sample ID: SWFTS-BH19-SO-25
Lab Sample ID: 550-189011-9
Date Collected: 08/15/22 10:10
Matrix: Solid
Date Received: 08/18/22 06:30

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	3050B			281980	GLW	EET PHX	08/19/22 01:16
Total/NA	Analysis	6010B		2	282161	CHS	EET PHX	08/22/22 15:27
Total/NA	Analysis	9060A		1	585834	ABW	EET DEN	09/01/22 18:28
Soluble	Leach	DI Leach			639680	KER	EET BUF	08/30/22 12:28
Soluble	Analysis	VFA-IC		1	640054	IMZ	EET BUF	09/02/22 00:12

Client Sample ID: SWFTS-BH19-SO-28
Lab Sample ID: 550-189011-10
Date Collected: 08/15/22 10:20
Matrix: Solid
Date Received: 08/18/22 06:30

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	3050B			281980	GLW	EET PHX	08/19/22 01:16
Total/NA	Analysis	6010B		2	282161	CHS	EET PHX	08/22/22 15:29
Total/NA	Analysis	9060A		1	585834	ABW	EET DEN	09/01/22 18:37
Soluble	Leach	DI Leach			639680	KER	EET BUF	08/30/22 12:28
Soluble	Analysis	VFA-IC		1	640054	IMZ	EET BUF	09/01/22 23:14

Client Sample ID: SWFTS-BH24-SO-19
Lab Sample ID: 550-189011-11
Date Collected: 08/15/22 12:30
Matrix: Solid
Date Received: 08/18/22 06:30

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	3050B			281980	GLW	EET PHX	08/19/22 01:16
Total/NA	Analysis	6010B		1	282127	CHS	EET PHX	08/22/22 07:08
Total/NA	Analysis	9060A		1	585938	ABW	EET DEN	09/02/22 11:35
Soluble	Leach	DI Leach			639680	KER	EET BUF	08/30/22 12:28
Soluble	Analysis	VFA-IC		1	640054	IMZ	EET BUF	09/02/22 00:41

Client Sample ID: SWFTS-BH24-SO-24.5
Lab Sample ID: 550-189011-12
Date Collected: 08/15/22 12:40
Matrix: Solid
Date Received: 08/18/22 06:30

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	3050B			281980	GLW	EET PHX	08/19/22 01:16
Total/NA	Analysis	6010B		1	282127	CHS	EET PHX	08/22/22 07:11
Total/NA	Analysis	9060A		1	585938	ABW	EET DEN	09/02/22 11:45
Soluble	Leach	DI Leach			639680	KER	EET BUF	08/30/22 12:28
Soluble	Analysis	VFA-IC		1	640054	IMZ	EET BUF	09/02/22 01:10

Lab Chronicle

Client: Tetra Tech, Inc.
Job ID: 550-189011-1
Project/Site: NERT - Seep Well Field

Client Sample ID: SWFTS-BH24-SO-27
Lab Sample ID: 550-189011-13
Date Collected: 08/15/22 12:50
Matrix: Solid
Date Received: 08/18/22 06:30

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	3050B			281980	GLW	EET PHX	08/19/22 01:16
Total/NA	Analysis	6010B		1	282127	CHS	EET PHX	08/22/22 07:14
Total/NA	Analysis	9060A		1	585938	ABW	EET DEN	09/02/22 11:55
Soluble	Leach	DI Leach			639680	KER	EET BUF	08/30/22 12:28
Soluble	Analysis	VFA-IC		1	640054	IMZ	EET BUF	09/02/22 01:39

Client Sample ID: SWFTS-BH24-SO-29.3
Lab Sample ID: 550-189011-14
Date Collected: 08/15/22 13:00
Matrix: Solid
Date Received: 08/18/22 06:30

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	3050B			281980	GLW	EET PHX	08/19/22 01:16
Total/NA	Analysis	6010B		1	282127	CHS	EET PHX	08/22/22 07:17
Total/NA	Analysis	9060A		1	585938	ABW	EET DEN	09/02/22 12:04
Soluble	Leach	DI Leach			639680	KER	EET BUF	08/30/22 12:28
Soluble	Analysis	VFA-IC		1	640054	IMZ	EET BUF	09/02/22 02:08

Client Sample ID: SWFTS-BH24-SO-44.5
Lab Sample ID: 550-189011-15
Date Collected: 08/15/22 13:10
Matrix: Solid
Date Received: 08/18/22 06:30

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	3050B			281980	GLW	EET PHX	08/19/22 01:16
Total/NA	Analysis	6010B		2	282161	CHS	EET PHX	08/22/22 15:32
Total/NA	Analysis	9060A		1	585938	ABW	EET DEN	09/02/22 12:14
Soluble	Leach	DI Leach			639709	KER	EET BUF	08/30/22 15:03
Soluble	Analysis	VFA-IC		1	640054	IMZ	EET BUF	09/02/22 05:03

Client Sample ID: SWFTS-BH24-SO-44.5-FD
Lab Sample ID: 550-189011-16
Date Collected: 08/15/22 13:10
Matrix: Solid
Date Received: 08/18/22 06:30

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	3050B			281981	GLW	EET PHX	08/19/22 05:00
Total/NA	Analysis	6010B		2	282160	CHS	EET PHX	08/22/22 15:12
Total/NA	Analysis	9060A		1	585938	ABW	EET DEN	09/02/22 12:23
Soluble	Leach	DI Leach			639709	KER	EET BUF	08/30/22 15:03
Soluble	Analysis	VFA-IC		1	640054	IMZ	EET BUF	09/02/22 05:33

Lab Chronicle

Client: Tetra Tech, Inc.
Job ID: 550-189011-1
Project/Site: NERT - Seep Well Field

Client Sample ID: SWFTS-BH23-SO-20.2
Lab Sample ID: 550-189011-17
Date Collected: 08/15/22 13:20
Matrix: Solid
Date Received: 08/18/22 06:30

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	3050B			281981	GLW	EET PHX	08/19/22 05:00
Total/NA	Analysis	6010B		1	282130	CHS	EET PHX	08/22/22 11:10
Total/NA	Analysis	9060A		1	585938	ABW	EET DEN	09/02/22 12:33
Soluble	Leach	DI Leach			639709	KER	EET BUF	08/30/22 15:03
Soluble	Analysis	VFA-IC		1	640054	IMZ	EET BUF	09/02/22 06:02

Client Sample ID: SWFTS-BH23-SO-24
Lab Sample ID: 550-189011-18
Date Collected: 08/15/22 13:25
Matrix: Solid
Date Received: 08/18/22 06:30

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	3050B			281981	GLW	EET PHX	08/19/22 05:00
Total/NA	Analysis	6010B		1	282130	CHS	EET PHX	08/22/22 11:13
Total/NA	Analysis	9060A		1	585938	ABW	EET DEN	09/02/22 13:02
Soluble	Leach	DI Leach			639709	KER	EET BUF	08/30/22 15:03
Soluble	Analysis	VFA-IC		1	640054	IMZ	EET BUF	09/02/22 06:31

Client Sample ID: SWFTS-BH23-SO-27
Lab Sample ID: 550-189011-19
Date Collected: 08/15/22 13:30
Matrix: Solid
Date Received: 08/18/22 06:30

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	3050B			281980	GLW	EET PHX	08/19/22 01:16
Total/NA	Analysis	6010B		1	282127	CHS	EET PHX	08/22/22 06:20
Total/NA	Analysis	9060A		1	585938	ABW	EET DEN	09/02/22 11:06
Soluble	Leach	DI Leach			639680	KER	EET BUF	08/30/22 12:28
Soluble	Analysis	VFA-IC		1	640054	IMZ	EET BUF	09/01/22 19:50

Client Sample ID: SWFTS-BH23-SO-31.3
Lab Sample ID: 550-189011-20
Date Collected: 08/15/22 13:35
Matrix: Solid
Date Received: 08/18/22 06:30

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	3050B			281981	GLW	EET PHX	08/19/22 05:00
Total/NA	Analysis	6010B		2	282160	CHS	EET PHX	08/22/22 15:15
Total/NA	Analysis	9060A		1	585938	ABW	EET DEN	09/02/22 13:21
Soluble	Leach	DI Leach			639709	KER	EET BUF	08/30/22 15:03
Soluble	Analysis	VFA-IC		1	640054	IMZ	EET BUF	09/02/22 07:00

Lab Chronicle

Client: Tetra Tech, Inc.
Job ID: 550-189011-1
Project/Site: NERT - Seep Well Field

Client Sample ID: SWFTS-BH23-SO-31.3-FD
Lab Sample ID: 550-189011-21
Date Collected: 08/15/22 13:35
Matrix: Solid
Date Received: 08/18/22 06:30

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	3050B			281981	GLW	EET PHX	08/19/22 05:00
Total/NA	Analysis	6010B		2	282160	CHS	EET PHX	08/22/22 15:18
Total/NA	Analysis	9060A		1	585938	ABW	EET DEN	09/02/22 13:12
Soluble	Leach	DI Leach			639709	KER	EET BUF	08/30/22 15:03
Soluble	Analysis	VFA-IC		1	640360	IMZ	EET BUF	09/07/22 07:19

Client Sample ID: SWFTS-BH23-SO-36.7
Lab Sample ID: 550-189011-22
Date Collected: 08/15/22 13:40
Matrix: Solid
Date Received: 08/18/22 06:30

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	3050B			281981	GLW	EET PHX	08/19/22 05:00
Total/NA	Analysis	6010B		1	282130	CHS	EET PHX	08/22/22 11:21
Total/NA	Analysis	9060A		1	585938	ABW	EET DEN	09/02/22 13:51
Soluble	Leach	DI Leach			639709	KER	EET BUF	08/30/22 15:03
Soluble	Analysis	VFA-IC		1	640360	IMZ	EET BUF	09/07/22 07:48

Client Sample ID: SWFTS-BH25-SO-17
Lab Sample ID: 550-189011-23
Date Collected: 08/15/22 15:00
Matrix: Solid
Date Received: 08/18/22 06:30

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	3050B			281981	GLW	EET PHX	08/19/22 05:00
Total/NA	Analysis	6010B		1	282130	CHS	EET PHX	08/22/22 11:24
Total/NA	Analysis	9060A		1	585938	ABW	EET DEN	09/02/22 14:00
Soluble	Leach	DI Leach			639709	KER	EET BUF	08/30/22 15:03
Soluble	Analysis	VFA-IC		1	640360	IMZ	EET BUF	09/07/22 08:17

Client Sample ID: SWFTS-BH25-SO-19.8
Lab Sample ID: 550-189011-24
Date Collected: 08/15/22 15:05
Matrix: Solid
Date Received: 08/18/22 06:30

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	3050B			281981	GLW	EET PHX	08/19/22 05:00
Total/NA	Analysis	6010B		1	282130	CHS	EET PHX	08/22/22 11:27
Total/NA	Analysis	9060A		1	585938	ABW	EET DEN	09/02/22 14:11
Soluble	Leach	DI Leach			639709	KER	EET BUF	08/30/22 15:03
Soluble	Analysis	VFA-IC		1	640360	IMZ	EET BUF	09/07/22 08:46

Lab Chronicle

Client: Tetra Tech, Inc.
Job ID: 550-189011-1
Project/Site: NERT - Seep Well Field

Client Sample ID: SWFTS-BH25-SO-26.5
Lab Sample ID: 550-189011-25
Date Collected: 08/15/22 15:10
Matrix: Solid
Date Received: 08/18/22 06:30

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	3050B			281981	GLW	EET PHX	08/19/22 05:00
Total/NA	Analysis	6010B		1	282130	CHS	EET PHX	08/22/22 11:30
Total/NA	Analysis	9060A		1	585938	ABW	EET DEN	09/02/22 15:28
Soluble	Leach	DI Leach			639709	KER	EET BUF	08/30/22 15:03
Soluble	Analysis	VFA-IC		1	640360	IMZ	EET BUF	09/07/22 09:15

Client Sample ID: SWFTS-BH25-SO-29.2
Lab Sample ID: 550-189011-26
Date Collected: 08/15/22 15:15
Matrix: Solid
Date Received: 08/18/22 06:30

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	3050B			281981	GLW	EET PHX	08/19/22 05:00
Total/NA	Analysis	6010B		1	282130	CHS	EET PHX	08/22/22 11:32
Total/NA	Analysis	9060A		1	585938	ABW	EET DEN	09/02/22 14:20
Soluble	Leach	DI Leach			639709	KER	EET BUF	08/30/22 15:03
Soluble	Analysis	VFA-IC		1	640360	IMZ	EET BUF	09/07/22 09:44

Client Sample ID: SWFTS-BH25-SO-34.8
Lab Sample ID: 550-189011-27
Date Collected: 08/15/22 15:20
Matrix: Solid
Date Received: 08/18/22 06:30

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	3050B			281981	GLW	EET PHX	08/19/22 05:00
Total/NA	Analysis	6010B		1	282130	CHS	EET PHX	08/22/22 11:35
Total/NA	Analysis	9060A		1	585938	ABW	EET DEN	09/02/22 14:30
Soluble	Leach	DI Leach			639709	KER	EET BUF	08/30/22 15:03
Soluble	Analysis	VFA-IC		1	640360	IMZ	EET BUF	09/07/22 10:14

Laboratory References:

EET BUF = Eurofins Buffalo, 10 Hazelwood Drive, Amherst, NY 14228-2298, TEL (716)691-2600

EET DEN = Eurofins Denver, 4955 Yarrow Street, Arvada, CO 80002, TEL (303)736-0100

EET PHX = Eurofins Phoenix, 4625 East Cotton Center Boulevard, Suite #189, Phoenix, AZ 85040, TEL (602)437-3340

Accreditation/Certification Summary

Client: Tetra Tech, Inc.
Job ID: 550-189011-1
Project/Site: NERT - Seep Well Field

Laboratory: Eurofins Phoenix

All accreditations/certifications held by this laboratory are listed. Not all accreditations/certifications are applicable to this report.

Authority	Program	Identification Number	Expiration Date
Arizona	State	AZ0728	06-10-23
California	State	2941	03-09-23
Oregon	NELAP	AZ100001	03-09-23
USDA	US Federal Programs	P330-19-00227	08-27-22

Laboratory: Eurofins Buffalo

All accreditations/certifications held by this laboratory are listed. Not all accreditations/certifications are applicable to this report.

Authority	Program	Identification Number	Expiration Date
Arkansas DEQ	State	88-0686	07-06-22 *
Connecticut	State	PH-0568	03-31-24
Florida	NELAP	E87672	06-30-23
Georgia	State	10026 (NY)	04-01-23
Georgia	State Program	N/A	03-31-09 *
Georgia (DW)	State	956	03-31-23
Illinois	NELAP	200003	09-30-22
Illinois	NELAP	200003	09-30-22
Iowa	State	374	03-01-23
Iowa	State Program	374	03-01-09 *
Kansas	NELAP	E-10187	01-31-23
Kentucky (DW)	State	90029	12-31-22
Kentucky (UST)	State	30	04-01-23
Kentucky (WW)	State	KY90029	12-31-22
Louisiana	NELAP	02031	06-30-23
Louisiana (All)	NELAP	02031	06-30-23
Maine	State	NY00044	12-04-22
Maryland	State	294	03-31-23
Massachusetts	State	M-NY044	06-30-23
Michigan	State	9937	03-31-23
Michigan	State Program	9937	04-01-09 *
New Hampshire	NELAP	2973	09-11-19 *
New Hampshire	NELAP	2337	11-17-22
New Jersey	NELAP	NY455	06-30-23
New York	NELAP	10026	03-31-23
Pennsylvania	NELAP	68-00281	07-31-23
Rhode Island	State	LAO00328	12-30-22
Tennessee	State	02970	04-01-23
Texas	NELAP	T104704412-18-10	07-31-23
USDA	US Federal Programs	P330-18-00039	03-25-24
Virginia	NELAP	460185	09-14-22
Washington	State	C784	02-10-23
Wisconsin	State	998310390	08-31-23

Laboratory: Eurofins Denver

All accreditations/certifications held by this laboratory are listed. Not all accreditations/certifications are applicable to this report.

Authority	Program	Identification Number	Expiration Date
A2LA	Dept. of Defense ELAP	2907.01	10-31-23
A2LA	ISO/IEC 17025	2907.01	10-31-23
Alabama	State Program	40730	09-30-12 *
Alaska (UST)	State	18-001	02-08-23

* Accreditation/Certification renewal pending - accreditation/certification considered valid.

Accreditation/Certification Summary

Client: Tetra Tech, Inc.
Job ID: 550-189011-1
Project/Site: NERT - Seep Well Field

Laboratory: Eurofins Denver (Continued)

All accreditations/certifications held by this laboratory are listed. Not all accreditations/certifications are applicable to this report.

Authority	Program	Identification Number	Expiration Date
Arizona	State	AZ0713	12-20-22
Arkansas DEQ	State	19-047-0	06-01-22 *
California	State	2513	01-08-23
Connecticut	State	PH-0686	09-30-22
Florida	NELAP	E87667-57	06-30-23
Georgia	State	4025-011	01-08-23
Illinois	NELAP	2000172019-1	04-30-23
Iowa	State	IA#370	12-02-22
Kansas	NELAP	E-10166	04-30-23
Kentucky (WW)	State	KY98047	12-31-22
Louisiana	NELAP	30785	06-30-14 *
Louisiana	NELAP	30785	06-30-23
Minnesota	NELAP	1788752	12-31-22
Nevada	State	CO000262020-1	07-31-22 *
New Hampshire	NELAP	205319	04-28-23
New Jersey	NELAP	190002	06-30-23
New York	NELAP	59923	04-01-23
North Carolina (WW/SW)	State	358	12-31-22
North Dakota	State	R-034	01-08-23
Oregon	NELAP	4025-011	01-09-23
Pennsylvania	NELAP	013	07-31-23
South Carolina	State	72002001	01-08-23
Texas	NELAP	TX104704183-08-TX	09-30-09 *
Texas	NELAP	T104704183-21-19	10-01-22
USDA	US Federal Programs	P330-20-00065	03-06-23
Utah	NELAP	QUAN5	06-30-13 *
Utah	NELAP	CO000262019-11	07-31-23
Virginia	NELAP	10490	06-14-23
Washington	State	C583-19	08-03-22 *
West Virginia DEP	State	354	11-30-22
Wyoming (UST)	A2LA	2907.01	10-31-22

* Accreditation/Certification renewal pending - accreditation/certification considered valid.

Method Summary

Client: Tetra Tech, Inc.
Project/Site: NERT - Seep Well Field

Job ID: 550-189011-1

Method	Method Description	Protocol	Laboratory
6010B	Metals (ICP)	SW846	EET PHX
9060A	Organic Carbon, Total (TOC)	SW846	EET DEN
VFA-IC	Volatile Fatty Acids, Ion Chromatography	TestAmerica SOP	EET BUF
3050B	Preparation, Metals	SW846	EET PHX
DI Leach	Deionized Water Leaching Procedure	ASTM	EET BUF

Protocol References:

ASTM = ASTM International

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

TestAmerica SOP = TestAmerica, Inc., Standard Operating Procedure

Laboratory References:

EET BUF = Eurofins Buffalo, 10 Hazelwood Drive, Amherst, NY 14228-2298, TEL (716)691-2600

EET DEN = Eurofins Denver, 4955 Yarrow Street, Arvada, CO 80002, TEL (303)736-0100

EET PHX = Eurofins Phoenix, 4625 East Cotton Center Boulevard, Suite #189, Phoenix, AZ 85040, TEL (602)437-3340

Tetra Tech
150 S Fourth Street, Unit A
Henderson, NV 89015
702-854-2295

TestAmerica
Las Vegas
219

CHAIN-OF-CUSTODY

189011

Laboratory Name: **Eurofins-Phoenix** (602) 437-3340	**Address: 4625 E. Cotton Center Blvd. Suite 189; Phoenix, AZ 85040**	**Contact: Rachel Sester (602) 659-7615**	Page 1 of 2
Project Name: **Seep Well Field**	Sampler: G. Schuler		
Project No. **M11** NERT	Project Contact: **Maureen McMyler**	Site Telephone No.: **(702) 767-2053**	
Report to: Maureen McMyler; Maureen.McMyler@tetratech.com; (865) 220-4762		Project Manager/Supervisor: **Dana Grady**	
Bill to: Sunshine Pryor, 350 Indiana St., Golden, CO 80401 (303) 217-5700			

Analysis and Method Requested

	Item No.	Sample Number	Date	Time	G - Grab C - Comp	Matrix	Sample Description	Number of Containers	TOC by 9060A	Total Calcium by 6010B	VFA by IC						Remarks
							Preservative		HCL	HNO3	None	None	None				Notes
	1	~~SWFTS-BH-EB3-20220815~~	↑	~~1535~~	~~G~~	~~W~~		~~8~~	~~4~~	~~1~~	~~3~~		GS				
-01	2	SWFTS-BH14-SO-12.8	8/15/22	0820	G	S		3	X	X	X						
-02	3	SWFTS-BH14-SO-15.5	↓	0830	↓	↓		↓	↓	↓	↓						
-03	4	SWFTS-BH14-SO-18		0840													
-04	5	SWFTS-BH14-SO-25.3		0850													
-05	6	SWFTS-BH14-SO-29		0900													
-06	7	SWFTS-BH19-SO-11		0940													
-07	8	SWFTS-BH19-SO-15.5		0950													
-08	9	SWFTS-BH19-SO-20.5		1000													
-09	10	SWFTS-BH19-SO-25.~~5~~ GS		1010													
-10	11	SWFTS-BH19-SO-28		1020													
-11	12	SWFTS-BH24-SO-19		1230													
-12	13	SWFTS-BH24-SO-24.5		1240													
-13	14	SWFTS-BH24-SO-27		1250													
-14	15	SWFTS-BH24-SO-44.5	↓	1300	↓	↓		↓	↓	↓	↓						

550-189011 Chain of Custody

Transfers Relinquished By (Signature)	Date/Time	Transfers Accepted By (Signature)	Date/Time
[signature]	8/17/22	TAM TALUS	8-17-22 1300
TAM TALUS	8-17-22 1600		
Drop Box		Laboratory ~~Bo~~ AL	EETA PHX 8/18/22 6:30

TAT: Standard

Special Instructions:

Level IV Package; EQuIS 4-file format EDD

FedEx Airbill No.:

Sampler's Signature: [signature]

TH 240 24.4/24.7

3.6 | 5.6 | 3.6 | 2.1 | 3.9 | 4.2

Tetra Tech
150 S Fourth Street, Unit A
Henderson, NV 89015
702-854-2295

TestAmerica
Las Vegas
219

CHAIN-OF-CUSTODY

189011

Laboratory Name: **Eurofins-Phoenix** (602) 437-3340 | **Address: 4625 E. Cotton Center Blvd. Suite 189; Phoenix, AZ 85040** | **Contact: Rachel Sester (602) 659-7615** | Page 2 of 2

Project Name: **Seep Well Field** | Sampler: G. Schuler

Project No. **M11** NERT | Project Contact: **Maureen McMyler** | Site Telephone No.: **(702) 767-2053**

Report to: Maureen McMyler; Maureen.McMyler@tetratech.com; (865) 220-4762 | Project Manager/Supervisor: **Dana Grady**

Bill to: Sunshine Pryor, 350 Indiana St., Golden, CO 80401 (303) 217-5700

Analysis and Method Requested

Item No.	Sample Number	Date	Time	G - Grab C - Comp	Matrix	Sample Description	Number of Containers	TOC by 9060A	Total Calcium by 6010B	VFA by IC						Remarks
						Preservative		HCL	HNO3	None	None	None				Notes
1	**SWFTS-BH-EB**			G	W		8	4	1	3						
2	SWFTS-BH24-SO-44.5	8/15/22	1310	G	S		3	X	X	X						
3	SWFTS-BH24-SO-44.5-FD		1310													
4	SWFTS-BH23-SO-20.2		1320													
5	SWFTS-BH23-SO-24		1325													
6	SWFTS-BH23-SO-27		1330													
7	SWFTS-BH23-SO-27-MS/SD		1330													
8	SWFTS-BH23-SO-31.3		~~1340~~ 1335			1335										
9	SWFTS-BH23-SO-31.3-FD		1335													
10	SWFTS-BH23-SO-36.7		1340													
11	SWFTS-BH25-SO-17		1500													
12	SWFTS-BH25-SO-19.8		1505													
13	SWFTS-BH25-SO-26.5		1510													
14	SWFTS-BH25-SO-29.2		1515													
15	SWFTS-BH25-SO-34.8		1520	✓	✓		↓	↓	↓	↓						

Transfers Relinquished By (Signature)	Date/Time	Transfers Accepted By (Signature)	Date/Time
	8/17	TAMTALVS	8-17-22 1300
TAMTALVS	8-17-22 1600		
Drop Box		Laboratory: EETA PHX	8/18/22 6:30

Special Instructions:

Level IVPackage; EQuIS 4-file format EDD

FedEx Airbill No.:

Sampler's Signature:

TAT: Standard

TAT 240 24.4/24.7

3.6 | 5.6 | 3.6 | 2.1 | 3.9 | 4.2 pH

Eurofins Phoenix
4625 East Cotton Center Boulevard Suite #189
Phoenix, AZ 85040
Phone: 602-437-3340

Chain of Custody Record

eurofins | Environment Testing America

Client Information (Sub Contract Lab)	Sampler:	Lab PM: Sester, Rachel E	Carrier Tracking No(s):	COC No: 550-34764.1
Client Contact: Shipping/Receiving	Phone:	E-Mail: Rachel.Sester@et.eurofinsus.com	State of Origin: Nevada	Page: Page 1 of 4
Company: TestAmerica Laboratories, Inc.		Accreditations Required (See note): State Program - Nevada		Job #: 550-189011-1
Address: 4955 Yarrow Street, ,	Due Date Requested: 8/31/2022			
City: Arvada	TAT Requested (days):			
State, Zip: CO, 80002				
Phone: 303-736-0100(Tel) 303-431-7171(Fax)	PO #:			
Email:	WO #:			
Project Name: NERT - M11 Soils	Project #: 55017858			
Site:	SSOW#:			

Analysis Requested

Preservation Codes:
A - HCL
B - NaOH
C - Zn Acetate
D - Nitric Acid
E - NaHSO4
F - MeOH
G - Amchlor
H - Ascorbic Acid
I - Ice
J - DI Water
K - EDTA
L - EDA
M - Hexane
N - None
O - AsNaO2
P - Na2O4S
Q - Na2SO3
R - Na2S2O3
S - H2SO4
T - TSP Dodecahydrate
U - Acetone
V - MCAA
W - pH 4-5
Y - Trizma
Z - other (specify)
Other:

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	9060A/ Solids - TOC	Total Number of containers	Special Instructions/Note:
			Preservation Code:						
SWFTS-BH14-SO-12.8 (550-189011-1)	8/15/22	08:20 Pacific		Solid			X	1	
SWFTS-BH14-SO-15.5 (550-189011-2)	8/15/22	08:30 Pacific		Solid			X	1	
SWFTS-BH14-SO-18 (550-189011-3)	8/15/22	08:40 Pacific		Solid			X	1	
SWFTS-BH14-SO-25.3 (550-189011-4)	8/15/22	08:50 Pacific		Solid			X	1	
SWFTS-BH14-SO-29 (550-189011-5)	8/15/22	09:00 Pacific		Solid			X	1	
SWFTS-BH19-SO-11 (550-189011-6)	8/15/22	09:40 Pacific		Solid			X	1	
SWFTS-BH19-SO-15.5 (550-189011-7)	8/15/22	09:50 Pacific		Solid			X	1	
SWFTS-BH19-SO-20.5 (550-189011-8)	8/15/22	10:00 Pacific		Solid			X	1	
SWFTS-BH19-SO-25 (550-189011-9)	8/15/22	10:10 Pacific		Solid			X	1	

Note: Since laboratory accreditations are subject to change, Eurofins Environment Testing Southwest, LLC places the ownership of method, analyte & accreditation compliance upon out subcontract laboratories. This sample shipment is forwarded under chain-of-custody. If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed, the samples must be shipped back to the Eurofins Environment Testing Southwest, LLC laboratory or other instructions will be provided. Any changes to accreditation status should be brought to Eurofins Environment Testing Southwest, LLC attention immediately. If all requested accreditations are current to date, return the signed Chain of Custody attesting to said complicance to Eurofins Environment Testing Southwest, LLC.

Possible Hazard Identification
Unconfirmed

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
☐ *Return To Client* ☐ *Disposal By Lab* ☐ *Archive For* _____ *Months*

Deliverable Requested: I, II, III, IV, Other (specify) Primary Deliverable Rank: 2

Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:

Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
Ernie 08-18-22	13:30	EETSW	Fedex		
Fed Ex			Atka	08/19/2022 0950	ETA DEM

Custody Seals Intact: Δ Yes Δ No	Custody Seal No.:	Cooler Temperature(s) °C and Other Remarks: 2.4 CF+0.0 IR#12

Ver: 06/08/2021

Eurofins Phoenix
4625 East Cotton Center Boulevard Suite #189
Phoenix, AZ 85040
Phone: 602-437-3340

Chain of Custody Record

eurofins Environment Testing America

Client Information (Sub Contract Lab)	Sampler:	Lab PM: Sester, Rachel E	Carrier Tracking No(s):	COC No: 550-34764.2
Client Contact: Shipping/Receiving	Phone:	E-Mail: Rachel.Sester@et.eurofinsus.com	State of Origin: Nevada	Page: Page 2 of 4
Company: TestAmerica Laboratories, Inc.		Accreditations Required (See note): State Program - Nevada		Job #: 550-189011-1
Address: 4955 Yarrow Street, ,	Due Date Requested: 8/31/2022			
City: Arvada	TAT Requested (days):			
State, Zip: CO, 80002				
Phone: 303-736-0100(Tel) 303-431-7171(Fax)	PO #:			
Email:	WO #:			
Project Name: NERT - M11 Soils	Project #: 55017858			
Site:	SSOW#:			

Analysis Requested

Preservation Codes:
A - HCL, B - NaOH, C - Zn Acetate, D - Nitric Acid, E - NaHSO4, F - MeOH, G - Amchlor, H - Ascorbic Acid, I - Ice, J - DI Water, K - EDTA, L - EDA, M - Hexane, N - None, O - AsNaO2, P - Na2O4S, Q - Na2SO3, R - Na2S2O3, S - H2SO4, T - TSP Dodecahydrate, U - Acetone, V - MCAA, W - pH 4-5, Y - Trizma, Z - other (specify)
Other:

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	9060A/ Solids - TOC	Total Number of containers	Special Instructions/Note:
			Preservation Code:						
SWFTS-BH19-SO-28 (550-189011-10)	8/15/22	10:20 Pacific		Solid			X	1	
SWFTS-BH24-SO-19 (550-189011-11)	8/15/22	12:30 Pacific		Solid			X	1	
SWFTS-BH24-SO-24.5 (550-189011-12)	8/15/22	12:40 Pacific		Solid			X	1	
SWFTS-BH24-SO-27 (550-189011-13)	8/15/22	12:50 Pacific		Solid			X	1	
SWFTS-BH24-SO-44.5 (550-189011-14)	8/15/22	13:00 Pacific		Solid			X	1	
SWFTS-BH24-SO-44.5 (550-189011-15)	8/15/22	13:10 Pacific		Solid			X	1	
SWFTS-BH24-SO-44.5-FD (550-189011-16)	8/15/22	13:10 Pacific		Solid			X	1	
SWFTS-BH23-SO-20.2 (550-189011-17)	8/15/22	13:20 Pacific		Solid			X	1	
SWFTS-BH23-SO-24 (550-189011-18)	8/15/22	13:25 Pacific		Solid			X	1	

Note Since laboratory accreditations are subject to change, Eurofins Environment Testing Southwest, LLC places the ownership of method, analyte & accreditation compliance upon out subcontract laboratories. This sample shipment is forwarded under chain-of-custody. If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed, the samples must be shipped back to the Eurofins Environment Testing Southwest, LLC laboratory or other instructions will be provided. Any changes to accreditation status should be brought to Eurofins Environment Testing Southwest, LLC attention immediately. If all requested accreditations are current to date, return the signed Chain of Custody attesting to said complicance to Eurofins Environment Testing Southwest, LLC.

Possible Hazard Identification	***Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)***
Unconfirmed	☐ *Return To Client* ☐ *Disposal By Lab* ☐ *Archive For* _____ *Months*
Deliverable Requested: I, II, III, IV, Other (specify) Primary Deliverable Rank: 2	Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:

	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
1	Rec 08-18-22	13:30	EATSW	Fedex		
2	Fed Ex			Aftan	08/19/2022 0950	EDD DEN
3						

Custody Seals Intact: ∆ Yes ∆ No	Custody Seal No.:	Cooler Temperature(s) °C and Other Remarks:

Ver: 06/08/2021

Eurofins Phoenix
4625 East Cotton Center Boulevard Suite #189
Phoenix, AZ 85040
Phone: 602-437-3340

Chain of Custody Record

eurofins | Environment Testing America

Client Information (Sub Contract Lab)	Sampler:	Lab PM: Sester, Rachel E	Carrier Tracking No(s):	COC No: 550-34764.3
Client Contact: Shipping/Receiving	Phone:	E-Mail: Rachel.Sester@et.eurofinsus.com	State of Origin: Nevada	Page: Page 3 of 4
Company: TestAmerica Laboratories, Inc.		Accreditations Required (See note): State Program - Nevada		Job #: 550-189011-1
Address: 4955 Yarrow Street, ,	Due Date Requested: 8/31/2022			
City: Arvada	TAT Requested (days):			
State, Zip: CO, 80002				
Phone: 303-736-0100(Tel) 303-431-7171(Fax)	PO #:			
Email:	WO #:			
Project Name: NERT - M11 Soils	Project #: 55017858			
Site:	SSOW#:			

Analysis Requested

Preservation Codes:

A - HCL, B - NaOH, C - Zn Acetate, D - Nitric Acid, E - NaHSO4, F - MeOH, G - Amchlor, H - Ascorbic Acid, I - Ice, J - DI Water, K - EDTA, L - EDA, M - Hexane, N - None, O - AsNaO2, P - Na2O4S, Q - Na2SO3, R - Na2S2O3, S - H2SO4, T - TSP Dodecahydrate, U - Acetone, V - MCAA, W - pH 4-5, Y - Trizma, Z - other (specify)

Other:

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	9060A/ Solids - TOC	Total Number of containers	Special Instructions/Note:
			Preservation Code:						
SWFTS-BH23-SO-27 (550-189011-19)	8/15/22	13:30 Pacific		Solid			X	2	
SWFTS-BH23-SO-27 (550-189011-19MS)	8/15/22	13:30 Pacific	MS	Solid			X	2	
SWFTS-BH23-SO-27 (550-189011-19MSD)	8/15/22	13:30 Pacific	MSD	Solid			X	2	
SWFTS-BH23-SO-31.3 (550-189011-20)	8/15/22	13:35 Pacific		Solid			X	1	
SWFTS-BH23-SO-31.3-FD (550-189011-21)	8/15/22	13:35 Pacific		Solid			X	1	
SWFTS-BH23-SO-36.7 (550-189011-22)	8/15/22	13:40 Pacific		Solid			X	1	
SWFTS-BH25-SO-17 (550-189011-23)	8/15/22	15:00 Pacific		Solid			X	1	
SWFTS-BH25-SO-19.8 (550-189011-24)	8/15/22	15:05 Pacific		Solid			X	1	
SWFTS-BH25-SO-26.5 (550-189011-25)	8/15/22	15:10 Pacific		Solid			X	1	

Note: Since laboratory accreditations are subject to change, Eurofins Environment Testing Southwest, LLC places the ownership of method, analyte & accreditation compliance upon out subcontract laboratories. This sample shipment is forwarded under chain-of-custody. If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed, the samples must be shipped back to the Eurofins Environment Testing Southwest, LLC laboratory or other instructions will be provided. Any changes to accreditation status should be brought to Eurofins Environment Testing Southwest, LLC attention immediately. If all requested accreditations are current to date, return the signed Chain of Custody attesting to said complicance to Eurofins Environment Testing Southwest, LLC.

Possible Hazard Identification	***Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)***
Unconfirmed	☐ *Return To Client* ☐ *Disposal By Lab* ☐ *Archive For* _____ *Months*
Deliverable Requested: I, II, III, IV, Other (specify) Primary Deliverable Rank: 2	Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:

Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
Relinquished by: Fed Ex	Date/Time:	Company	Received by:	Date/Time: 08/19/2022 0950	Company
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

Custody Seals Intact: Δ Yes Δ No	Custody Seal No.:	Cooler Temperature(s) °C and Other Remarks:

Ver: 06/08/2021

Eurofins Phoenix
4625 East Cotton Center Boulevard Suite #189
Phoenix, AZ 85040
Phone: 602-437-3340

Chain of Custody Record

eurofins | Environment Testing America

Client Information (Sub Contract Lab)	Sampler:	Lab PM: Sester, Rachel E	Carrier Tracking No(s):	COC No: 550-34764.4
Client Contact: Shipping/Receiving	Phone:	E-Mail: Rachel.Sester@et.eurofinsus.com	State of Origin: Nevada	Page: Page 4 of 4
Company: TestAmerica Laboratories, Inc.		Accreditations Required (See note): State Program - Nevada		Job #: 550-189011-1
Address: 4955 Yarrow Street, ,	Due Date Requested: 8/31/2022			
City: Arvada	TAT Requested (days):			
State, Zip: CO, 80002				
Phone: 303-736-0100(Tel) 303-431-7171(Fax)	PO #:			
Email:	WO #:			
Project Name: NERT - M11 Soils	Project #: 55017858			
Site:	SSOW#:			

Analysis Requested

Preservation Codes:

A - HCL, B - NaOH, C - Zn Acetate, D - Nitric Acid, E - NaHSO4, F - MeOH, G - Amchlor, H - Ascorbic Acid, I - Ice, J - DI Water, K - EDTA, L - EDA, M - Hexane, N - None, O - AsNaO2, P - Na2O4S, Q - Na2SO3, R - Na2S2O3, S - H2SO4, T - TSP Dodecahydrate, U - Acetone, V - MCAA, W - pH 4-5, Y - Trizma, Z - other (specify)

Other:

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	9060A/ Solids - TOC	Total Number of containers	Special Instructions/Note:
			Preservation Code:						
SWFTS-BH25-SO-29.2 (550-189011-26)	8/15/22	15:15 Pacific		Solid			X	1	
SWFTS-BH25-SO-34.8 (550-189011-27)	8/15/22	15:20 Pacific		Solid			X	1	

Note: Since laboratory accreditations are subject to change, Eurofins Environment Testing Southwest, LLC places the ownership of method, analyte & accreditation compliance upon out subcontract laboratories. This sample shipment is forwarded under chain-of-custody. If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed, the samples must be shipped back to the Eurofins Environment Testing Southwest, LLC laboratory or other instructions will be provided. Any changes to accreditation status should be brought to Eurofins Environment Testing Southwest, LLC attention immediately. If all requested accreditations are current to date, return the signed Chain of Custody attesting to said complicance to Eurofins Environment Testing Southwest, LLC

Possible Hazard Identification	***Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)***
Unconfirmed	☐ *Return To Client* ☐ *Disposal By Lab* ☐ *Archive For* _____ *Months*
Deliverable Requested: I, II, III, IV, Other (specify) Primary Deliverable Rank: 2	Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:

	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
1	08-18-22 fed Ex	13:30	EETSW	Fedex		
2					08/19/2022 0956	CA DSM
3						

Custody Seals Intact: Δ Yes Δ No	Custody Seal No.:	Cooler Temperature(s) °C and Other Remarks:

Ver: 06/08/2021

Login Sample Receipt Checklist

Client: Tetra Tech, Inc.

Job Number: 550-189011-1
SDG Number:

Login Number: 189011
List Number: 1
Creator: Gravlin, Andrea

List Source: Eurofins Phoenix

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	True	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	False	Refer to Job Narrative for details.
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	False	Check done at department level as required.

Login Sample Receipt Checklist

Client: Tetra Tech, Inc.

Job Number: 550-189011-1
SDG Number:

Login Number: 189011
List Number: 2
Creator: Yeager, Brian A

List Source: Eurofins Buffalo
List Creation: 08/19/22 01:48 PM

Question	Answer	Comment
Radioactivity either was not measured or, if measured, is at or below background	True	
The cooler's custody seal, if present, is intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	2.6 ICE
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the sample IDs on the containers and the COC.	True	
Samples are received within Holding Time (Excluding tests with immediate HTs)..	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
VOA sample vials do not have headspace or bubble is <6mm (1/4") in diameter.	True	
If necessary, staff have been informed of any short hold time or quick TAT needs	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Sampling Company provided.	True	
Samples received within 48 hours of sampling.	True	
Samples requiring field filtration have been filtered in the field.	True	
Chlorine Residual checked.	True	

Login Sample Receipt Checklist

Client: Tetra Tech, Inc.

Job Number: 550-189011-1
SDG Number:

Login Number: 189011
List Number: 3
Creator: Kazenga, Oliver M

List Source: Eurofins Denver
List Creation: 08/19/22 01:43 PM

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	True	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	N/A	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	N/A	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	N/A	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

Vilaboy, Monica

From: Schuler, George <George.Schuler@tetratech.com>
Sent: Friday, August 26, 2022 3:30 PM
To: Vilaboy, Monica; McMyler, Maureen
Cc: Bunkers, Jesse; Dabbs, Jenny
Subject: RE: Need reply / 4 discrepancies
Attachments: Need reply / 4 discrepancies

EXTERNAL EMAIL*

Hey Monica,

1) Sample 12: Sampling time on COC is12:40 whereas the container says 12:50 -please use 12:40 for the sampling time for sample 12

2) Sample 14: Sample description on COC is SWFT-BH24-SO-44.5 whereas the container says SWFT-BH24-SO-29.3 -please use SWFTS-BH24-SO-29.3 for sample 14

3) Sample 20: Sampling time on COC is 13:35 whereas the container says 13:40 -please use 13:35 for the sampling time for sample 20

4) FYI: we received three jobs at once (550-189011, 189012, 189014). One set of samples did not have labels. This job was missing the containers for Sample 23. We labeled the unlabeled samples #23. -if those were the only containers missing labels I would agree that those containers belong to sample 23

George Schuler | Environmental Scientist
Mobile **(480) 620-5186** | George.Schuler@tetratech.com

Tetra Tech | *Leading with Science®*
150 S Fourth St, Unit A | Henderson, NV 89015 | tetratech.com

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TETRA TECH

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ANALYTICAL REPORT

Eurofins Phoenix
4625 East Cotton Center Boulevard
Suite #189
Phoenix, AZ 85040
Tel: (602)437-3340

Laboratory Job ID: 550-189012-1
Client Project/Site: NERT - Seep Well Field

For:
Tetra Tech, Inc.
1093 Commerce Park Drive
Suite 100
Oak Ridge, Tennessee 37830

Attn: Ms. Maureen McMyler

Rachel F. Sester

Authorized for release by:
9/13/2022 5:37:43 PM

Rachel Sester, Project Manager I
(602)659-7615
Rachel.Sester@et.eurofinsus.com

LINKS

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www.eurofinsus.com/Env

This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.

Results relate only to the items tested and the sample(s) as received by the laboratory.

Table of Contents

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Definitions/Glossary

Client: Tetra Tech, Inc.
Project/Site: NERT - Seep Well Field

Job ID: 550-189012-1

Qualifiers

Metals

Qualifier	Qualifier Description
4	MS, MSD: The analyte present in the original sample is greater than 4 times the matrix spike concentration; therefore, control limits are not applicable.
B1	Target analyte detected in method blank at or above the method reporting limit.
E4	Concentration estimated. Analyte was detected below laboratory minimum reporting limit (MRL).

General Chemistry

Qualifier	Qualifier Description
B1	Target analyte detected in method blank at or above the method reporting limit.
E4	Concentration estimated. Analyte was detected below laboratory minimum reporting limit (MRL).
F1	MS and/or MSD recovery exceeds control limits.
F2	MS/MSD RPD exceeds control limits

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CFU	Colony Forming Unit
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MCL	EPA recommended "Maximum Contaminant Level"
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
MPN	Most Probable Number
MQL	Method Quantitation Limit
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
NEG	Negative / Absent
POS	Positive / Present
PQL	Practical Quantitation Limit
PRES	Presumptive
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)
TNTC	Too Numerous To Count

Job ID: 550-189012-1

Laboratory: Eurofins Phoenix

Narrative

Job Narrative
550-189012-1

Comments
No additional comments.

Receipt
The samples were received on 8/18/2022 6:30 AM. Unless otherwise noted below, the samples arrived in good condition, and where required, properly preserved and on ice. The temperature of the cooler at receipt time in Las Vegas was 24.7º C; the temperatures of the 6 coolers at receipt time in Phoenix were 2.1º C, 3.6º C, 3.6º C, 3.9º C, 4.2º C, and 5.6º C.

Receipt Exceptions
The following sample was submitted for analysis; however, it was not listed on the Chain-of-Custody (COC): The sample was added to the log in and put on hold. The client was contacted and would like the sample analyzed.
SWFTS-BH30-SO-37-FD (550-189012-28)

The following sample was submitted for analysis at the Denver laboratory; however, it was not listed on the Sub Contract Chain-of-Custody (COC): SWFTS-BH30-SO-37-FD (550-189012-28)

HPLC/IC
Method VFA-IC: The matrix spike / matrix spike duplicate (MS/MSD) recoveries for preparation batch 480-639740 and analytical batch 480-640070 were outside control limits. Sample matrix interference and/or non-homogeneity are suspected because the associated laboratory control sample (LCS) recovery was within acceptance limits.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

Metals
Method 6010B: The method blank for preparation batch 550-281982 and analytical batch 550-282128 contained Calcium above the method detection limit (MDL). Associated sample(s) were not re-extracted and/or re-analyzed because results were greater than 10X the value found in the method blank.

Method 6010B: The method blank for preparation batch 550-281981 and analytical batch 550-282130 contained Calcium above the method detection limit (MDL). Associated sample(s) were not re-extracted and/or re-analyzed because results were greater than 10X the value found in the method blank.

Method 6010B: The following samples were diluted to bring the concentration of target analytes within the calibration range: SWFTS-BH27-SO-28 (550-189012-5[MS]) and SWFTS-BH27-SO-28 (550-189012-5[MSD]). Elevated reporting limits (RLs) are provided.

Method 6010B: The following samples were diluted to bring the concentration of target analytes within the calibration range: SWFTS-BH29-SO-43.5 (550-189012-21) and SWFTS-BH28-SO-41 (550-189012-27). Elevated reporting limits (RLs) are provided.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

General Chemistry
Method 9060A: The matrix spike / matrix spike duplicate / sample duplicate (MS/MSD/DUP) precision for analytical batch 280-585938 was outside control limits. Sample matrix interference and/or non-homogeneity are suspected because the associated laboratory control sample / laboratory control sample duplicate (LCS/LCSD) precision was within acceptance limits.

Method 9060A: The matrix spike / matrix spike duplicate (MS/MSD) precision for analytical batch 280-586173 was outside control limits. Sample matrix interference is suspected.

Method 9060A: The matrix spike duplicate (MSD) recoveries for analytical batch 280-586173 were outside control limits. Sample matrix interference is suspected because the associated laboratory control sample (LCS) recovery was within acceptance limits.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

Sample Summary

Client: Tetra Tech, Inc.
Project/Site: NERT - Seep Well Field

Job ID: 550-189012-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
550-189012-1	SWFTS-BH27-SO-11.8	Solid	08/16/22 08:00	08/18/22 06:30
550-189012-2	SWFTS-BH27-SO-16.5	Solid	08/16/22 08:05	08/18/22 06:30
550-189012-3	SWFTS-BH27-SO-16.5-FD	Solid	08/16/22 08:05	08/18/22 06:30
550-189012-4	SWFTS-BH27-SO-23	Solid	08/16/22 08:10	08/18/22 06:30
550-189012-5	SWFTS-BH27-SO-28	Solid	08/16/22 08:15	08/18/22 06:30
550-189012-6	SWFTS-BH27-SO-36.2	Solid	08/16/22 08:20	08/18/22 06:30
550-189012-7	SWFTS-BH26-SO-16.3	Solid	08/16/22 09:10	08/18/22 06:30
550-189012-8	SWFTS-BH26-SO-18.5	Solid	08/16/22 09:15	08/18/22 06:30
550-189012-9	SWFTS-BH26-SO-22.3	Solid	08/16/22 09:20	08/18/22 06:30
550-189012-10	SWFTS-BH26-SO-31	Solid	08/16/22 09:25	08/18/22 06:30
550-189012-11	SWFTS-BH26-SO-48.5	Solid	08/16/22 09:30	08/18/22 06:30
550-189012-12	SWFTS-BH30-SO-18	Solid	08/16/22 12:00	08/18/22 06:30
550-189012-13	SWFTS-BH30-SO-22.8	Solid	08/16/22 12:05	08/18/22 06:30
550-189012-14	SWFTS-BH30-SO-24	Solid	08/16/22 12:10	08/18/22 06:30
550-189012-15	SWFTS-BH30-SO-29	Solid	08/16/22 12:15	08/18/22 06:30
550-189012-16	SWFTS-BH30-SO-37	Solid	08/16/22 12:20	08/18/22 06:30
550-189012-17	SWFTS-BH29-SO-24.5	Solid	08/16/22 12:40	08/18/22 06:30
550-189012-18	SWFTS-BH29-SO-28	Solid	08/16/22 12:45	08/18/22 06:30
550-189012-19	SWFTS-BH29-SO-36.5	Solid	08/16/22 12:50	08/18/22 06:30
550-189012-20	SWFTS-BH29-SO-40	Solid	08/16/22 12:55	08/18/22 06:30
550-189012-21	SWFTS-BH29-SO-43.5	Solid	08/16/22 13:00	08/18/22 06:30
550-189012-22	SWFTS-BH28-SO-17.3	Solid	08/16/22 15:05	08/18/22 06:30
550-189012-23	SWFTS-BH28-SO-17.3-FD	Solid	08/16/22 15:05	08/18/22 06:30
550-189012-24	SWFTS-BH28-SO-21	Solid	08/16/22 15:10	08/18/22 06:30
550-189012-25	SWFTS-BH28-SO-26	Solid	08/16/22 15:15	08/18/22 06:30
550-189012-26	SWFTS-BH28-SO-32.5	Solid	08/16/22 15:20	08/18/22 06:30
550-189012-27	SWFTS-BH28-SO-41	Solid	08/16/22 15:25	08/18/22 06:30
550-189012-28	SWFTS-BH30-SO-37-FD	Solid	08/16/22 12:20	08/18/22 06:30

Detection Summary

Client: Tetra Tech, Inc.
Project/Site: NERT - Seep Well Field

Job ID: 550-189012-1

Client Sample ID: SWFTS-BH27-SO-11.8 — Lab Sample ID: 550-189012-1

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Calcium	6200	B1	9.8	0.84	mg/Kg	1		6010B	Total/NA

Client Sample ID: SWFTS-BH27-SO-16.5 — Lab Sample ID: 550-189012-2

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Calcium	11000	B1	9.9	0.85	mg/Kg	1		6010B	Total/NA

Client Sample ID: SWFTS-BH27-SO-16.5-FD — Lab Sample ID: 550-189012-3

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Calcium	14000	B1	9.7	0.83	mg/Kg	1		6010B	Total/NA

Client Sample ID: SWFTS-BH27-SO-23 — Lab Sample ID: 550-189012-4

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Calcium	6900	B1	9.8	0.84	mg/Kg	1		6010B	Total/NA
Total Organic Carbon	0.99	B1 E4	4.0	0.90	g/Kg	1		9060A	Total/NA

Client Sample ID: SWFTS-BH27-SO-28 — Lab Sample ID: 550-189012-5

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Calcium	83000	B1	20	1.7	mg/Kg	2		6010B	Total/NA
Total Organic Carbon	1.7	B1 F2 E4	4.0	0.90	g/Kg	1		9060A	Total/NA

Client Sample ID: SWFTS-BH27-SO-36.2 — Lab Sample ID: 550-189012-6

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Calcium	60000	B1	9.9	0.84	mg/Kg	1		6010B	Total/NA
Total Organic Carbon	1.8	B1 E4	4.0	0.90	g/Kg	1		9060A	Total/NA

Client Sample ID: SWFTS-BH26-SO-16.3 — Lab Sample ID: 550-189012-7

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Calcium	4500	B1	9.7	0.83	mg/Kg	1		6010B	Total/NA
Total Organic Carbon	0.97	E4	4.0	0.90	g/Kg	1		9060A	Total/NA

Client Sample ID: SWFTS-BH26-SO-18.5 — Lab Sample ID: 550-189012-8

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Calcium	5700	B1	9.9	0.84	mg/Kg	1		6010B	Total/NA

Client Sample ID: SWFTS-BH26-SO-22.3 — Lab Sample ID: 550-189012-9

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Calcium	5000	B1	9.8	0.84	mg/Kg	1		6010B	Total/NA

Client Sample ID: SWFTS-BH26-SO-31 — Lab Sample ID: 550-189012-10

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Calcium	47000	B1	9.8	0.84	mg/Kg	1		6010B	Total/NA

Client Sample ID: SWFTS-BH26-SO-48.5 — Lab Sample ID: 550-189012-11

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Calcium	4300	B1	9.7	0.84	mg/Kg	1		6010B	Total/NA

This Detection Summary does not include radiochemical test results.

Eurofins Phoenix

Detection Summary

Client: Tetra Tech, Inc.
Project/Site: NERT - Seep Well Field

Job ID: 550-189012-1

Client Sample ID: SWFTS-BH30-SO-18 — Lab Sample ID: 550-189012-12

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Calcium	6100	B1	9.9	0.85	mg/Kg	1		6010B	Total/NA

Client Sample ID: SWFTS-BH30-SO-22.8 — Lab Sample ID: 550-189012-13

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Calcium	36000	B1	10	0.85	mg/Kg	1		6010B	Total/NA

Client Sample ID: SWFTS-BH30-SO-24 — Lab Sample ID: 550-189012-14

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Calcium	17000	B1	10	0.85	mg/Kg	1		6010B	Total/NA

Client Sample ID: SWFTS-BH30-SO-29 — Lab Sample ID: 550-189012-15

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Calcium	29000	B1	9.9	0.85	mg/Kg	1		6010B	Total/NA

Client Sample ID: SWFTS-BH30-SO-37 — Lab Sample ID: 550-189012-16

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Calcium	24000	B1	9.9	0.85	mg/Kg	1		6010B	Total/NA

Client Sample ID: SWFTS-BH29-SO-24.5 — Lab Sample ID: 550-189012-17

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Calcium	10000	B1	9.9	0.84	mg/Kg	1		6010B	Total/NA

Client Sample ID: SWFTS-BH29-SO-28 — Lab Sample ID: 550-189012-18

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Calcium	13000	B1	9.8	0.84	mg/Kg	1		6010B	Total/NA

Client Sample ID: SWFTS-BH29-SO-36.5 — Lab Sample ID: 550-189012-19

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Calcium	11000	B1	9.9	0.84	mg/Kg	1		6010B	Total/NA

Client Sample ID: SWFTS-BH29-SO-40 — Lab Sample ID: 550-189012-20

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Calcium	20000	B1	9.8	0.84	mg/Kg	1		6010B	Total/NA

Client Sample ID: SWFTS-BH29-SO-43.5 — Lab Sample ID: 550-189012-21

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Calcium	110000	B1	20	1.7	mg/Kg	2		6010B	Total/NA

Client Sample ID: SWFTS-BH28-SO-17.3 — Lab Sample ID: 550-189012-22

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Calcium	16000	B1	9.9	0.85	mg/Kg	1		6010B	Total/NA

Client Sample ID: SWFTS-BH28-SO-17.3-FD — Lab Sample ID: 550-189012-23

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Calcium	44000	B1	9.9	0.85	mg/Kg	1		6010B	Total/NA

This Detection Summary does not include radiochemical test results.

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Detection Summary

Client: Tetra Tech, Inc.
Project/Site: NERT - Seep Well Field

Job ID: 550-189012-1

Client Sample ID: SWFTS-BH28-SO-21 — Lab Sample ID: 550-189012-24

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Calcium	18000	B1	9.8	0.84	mg/Kg	1		6010B	Total/NA

Client Sample ID: SWFTS-BH28-SO-26 — Lab Sample ID: 550-189012-25

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Calcium	7100	B1	9.8	0.84	mg/Kg	1		6010B	Total/NA

Client Sample ID: SWFTS-BH28-SO-32.5 — Lab Sample ID: 550-189012-26

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Calcium	22000	B1	9.9	0.85	mg/Kg	1		6010B	Total/NA

Client Sample ID: SWFTS-BH28-SO-41 — Lab Sample ID: 550-189012-27

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Calcium	86000	B1	20	1.7	mg/Kg	2		6010B	Total/NA
Total Organic Carbon	0.94	E4	4.0	0.90	g/Kg	1		9060A	Total/NA

Client Sample ID: SWFTS-BH30-SO-37-FD — Lab Sample ID: 550-189012-28

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Calcium	23000	B1	9.8	0.84	mg/Kg	1		6010B	Total/NA

This Detection Summary does not include radiochemical test results.

Client Sample ID: SWFTS-BH27-SO-11.8

Lab Sample ID: 550-189012-1

Date Collected: 08/16/22 08:00

Matrix: Solid

Date Received: 08/18/22 06:30

Method: 6010B - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Calcium	6200	B1	9.8	0.84	mg/Kg		08/19/22 05:00	08/22/22 11:49	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon	ND		4.0	0.90	g/Kg			09/02/22 15:00	1

General Chemistry - Soluble

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetic acid	ND		9.9	1.5	mg/Kg			09/07/22 10:43	1
Formic-acid	ND		9.9	2.2	mg/Kg			09/07/22 10:43	1
Lactic acid	ND		9.9	3.0	mg/Kg			09/07/22 10:43	1
n-Butyric Acid	ND		9.9	1.6	mg/Kg			09/07/22 10:43	1
Propionic acid	ND		9.9	1.7	mg/Kg			09/07/22 10:43	1
Pyruvic Acid	ND		9.9	2.5	mg/Kg			09/07/22 10:43	1

Client Sample ID: SWFTS-BH27-SO-16.5

Lab Sample ID: 550-189012-2

Date Collected: 08/16/22 08:05

Matrix: Solid

Date Received: 08/18/22 06:30

Method: 6010B - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Calcium	11000	B1	9.9	0.85	mg/Kg		08/19/22 05:00	08/22/22 11:52	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon	ND		4.0	0.90	g/Kg			09/02/22 15:09	1

General Chemistry - Soluble

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetic acid	ND		9.9	1.5	mg/Kg			09/07/22 11:12	1
Formic-acid	ND		9.9	2.2	mg/Kg			09/07/22 11:12	1
Lactic acid	ND		9.9	3.0	mg/Kg			09/07/22 11:12	1
n-Butyric Acid	ND		9.9	1.6	mg/Kg			09/07/22 11:12	1
Propionic acid	ND		9.9	1.7	mg/Kg			09/07/22 11:12	1
Pyruvic Acid	ND		9.9	2.5	mg/Kg			09/07/22 11:12	1

Client Sample ID: SWFTS-BH27-SO-16.5-FD

Lab Sample ID: 550-189012-3

Date Collected: 08/16/22 08:05

Matrix: Solid

Date Received: 08/18/22 06:30

Method: 6010B - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Calcium	14000	B1	9.7	0.83	mg/Kg		08/19/22 05:00	08/22/22 11:55	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon	ND		4.0	0.90	g/Kg			09/02/22 15:19	1

General Chemistry - Soluble

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetic acid	ND		9.9	1.5	mg/Kg			09/01/22 18:59	1
Formic-acid	ND		9.9	2.2	mg/Kg			09/01/22 18:59	1

Client Sample ID: SWFTS-BH27-SO-16.5-FD

Lab Sample ID: 550-189012-3

Date Collected: 08/16/22 08:05

Matrix: Solid

Date Received: 08/18/22 06:30

General Chemistry - Soluble (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lactic acid	ND		9.9	3.0	mg/Kg			09/01/22 18:59	1
n-Butyric Acid	ND		9.9	1.6	mg/Kg			09/01/22 18:59	1
Propionic acid	ND		9.9	1.7	mg/Kg			09/01/22 18:59	1
Pyruvic Acid	ND		9.9	2.5	mg/Kg			09/01/22 18:59	1

Client Sample ID: SWFTS-BH27-SO-23

Lab Sample ID: 550-189012-4

Date Collected: 08/16/22 08:10

Matrix: Solid

Date Received: 08/18/22 06:30

Method: 6010B - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Calcium	6900	B1	9.8	0.84	mg/Kg		08/19/22 05:00	08/22/22 11:58	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon	0.99	B1 E4	4.0	0.90	g/Kg			09/07/22 16:17	1

General Chemistry - Soluble

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetic acid	ND		9.8	1.5	mg/Kg			09/01/22 19:28	1
Formic-acid	ND		9.8	2.2	mg/Kg			09/01/22 19:28	1
Lactic acid	ND		9.8	2.9	mg/Kg			09/01/22 19:28	1
n-Butyric Acid	ND		9.8	1.6	mg/Kg			09/01/22 19:28	1
Propionic acid	ND		9.8	1.7	mg/Kg			09/01/22 19:28	1
Pyruvic Acid	ND		9.8	2.5	mg/Kg			09/01/22 19:28	1

Client Sample ID: SWFTS-BH27-SO-28

Lab Sample ID: 550-189012-5

Date Collected: 08/16/22 08:15

Matrix: Solid

Date Received: 08/18/22 06:30

Method: 6010B - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Calcium	83000	B1	20	1.7	mg/Kg		08/19/22 05:00	08/22/22 15:10	2

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon	1.7	B1 F2 E4	4.0	0.90	g/Kg			09/07/22 12:28	1

General Chemistry - Soluble

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetic acid	ND		9.9	1.5	mg/Kg			09/02/22 07:29	1
Formic-acid	ND		9.9	2.2	mg/Kg			09/02/22 07:29	1
Lactic acid	ND		9.9	3.0	mg/Kg			09/02/22 07:29	1
n-Butyric Acid	ND		9.9	1.6	mg/Kg			09/02/22 07:29	1
Propionic acid	ND		9.9	1.7	mg/Kg			09/02/22 07:29	1
Pyruvic Acid	ND		9.9	2.5	mg/Kg			09/02/22 07:29	1

Client Sample ID: SWFTS-BH27-SO-36.2

Lab Sample ID: 550-189012-6

Date Collected: 08/16/22 08:20

Matrix: Solid

Date Received: 08/18/22 06:30

Method: 6010B - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Calcium	60000	B1	9.9	0.84	mg/Kg		08/19/22 05:00	08/22/22 12:01	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon	1.8	B1 E4	4.0	0.90	g/Kg			09/07/22 16:29	1

General Chemistry - Soluble

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetic acid	ND		10	1.5	mg/Kg			09/01/22 19:57	1
Formic-acid	ND		10	2.2	mg/Kg			09/01/22 19:57	1
Lactic acid	ND		10	3.0	mg/Kg			09/01/22 19:57	1
n-Butyric Acid	ND		10	1.6	mg/Kg			09/01/22 19:57	1
Propionic acid	ND		10	1.7	mg/Kg			09/01/22 19:57	1
Pyruvic Acid	ND		10	2.5	mg/Kg			09/01/22 19:57	1

Client Sample ID: SWFTS-BH26-SO-16.3

Lab Sample ID: 550-189012-7

Date Collected: 08/16/22 09:10

Matrix: Solid

Date Received: 08/18/22 06:30

Method: 6010B - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Calcium	4500	B1	9.7	0.83	mg/Kg		08/19/22 05:00	08/22/22 12:04	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon	0.97	E4	4.0	0.90	g/Kg			09/08/22 13:29	1

General Chemistry - Soluble

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetic acid	ND		9.9	1.5	mg/Kg			09/01/22 20:26	1
Formic-acid	ND		9.9	2.2	mg/Kg			09/01/22 20:26	1
Lactic acid	ND		9.9	3.0	mg/Kg			09/01/22 20:26	1
n-Butyric Acid	ND		9.9	1.6	mg/Kg			09/01/22 20:26	1
Propionic acid	ND		9.9	1.7	mg/Kg			09/01/22 20:26	1
Pyruvic Acid	ND		9.9	2.5	mg/Kg			09/01/22 20:26	1

Client Sample ID: SWFTS-BH26-SO-18.5

Lab Sample ID: 550-189012-8

Date Collected: 08/16/22 09:15

Matrix: Solid

Date Received: 08/18/22 06:30

Method: 6010B - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Calcium	5700	B1	9.9	0.84	mg/Kg		08/19/22 05:00	08/22/22 12:06	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon	ND		4.0	0.90	g/Kg			09/08/22 13:39	1

General Chemistry - Soluble

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetic acid	ND		9.9	1.5	mg/Kg			09/01/22 20:55	1
Formic-acid	ND		9.9	2.2	mg/Kg			09/01/22 20:55	1

Client Sample ID: SWFTS-BH26-SO-18.5

Lab Sample ID: 550-189012-8

Date Collected: 08/16/22 09:15

Matrix: Solid

Date Received: 08/18/22 06:30

General Chemistry - Soluble (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lactic acid	ND		9.9	3.0	mg/Kg			09/01/22 20:55	1
n-Butyric Acid	ND		9.9	1.6	mg/Kg			09/01/22 20:55	1
Propionic acid	ND		9.9	1.7	mg/Kg			09/01/22 20:55	1
Pyruvic Acid	ND		9.9	2.5	mg/Kg			09/01/22 20:55	1

Client Sample ID: SWFTS-BH26-SO-22.3

Lab Sample ID: 550-189012-9

Date Collected: 08/16/22 09:20

Matrix: Solid

Date Received: 08/18/22 06:30

Method: 6010B - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Calcium	5000	B1	9.8	0.84	mg/Kg		08/19/22 05:00	08/22/22 12:09	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon	ND		4.0	0.90	g/Kg			09/08/22 13:49	1

General Chemistry - Soluble

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetic acid	ND		9.9	1.5	mg/Kg			09/01/22 23:50	1
Formic-acid	ND		9.9	2.2	mg/Kg			09/01/22 23:50	1
Lactic acid	ND		9.9	3.0	mg/Kg			09/01/22 23:50	1
n-Butyric Acid	ND		9.9	1.6	mg/Kg			09/01/22 23:50	1
Propionic acid	ND		9.9	1.7	mg/Kg			09/01/22 23:50	1
Pyruvic Acid	ND		9.9	2.5	mg/Kg			09/01/22 23:50	1

Client Sample ID: SWFTS-BH26-SO-31

Lab Sample ID: 550-189012-10

Date Collected: 08/16/22 09:25

Matrix: Solid

Date Received: 08/18/22 06:30

Method: 6010B - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Calcium	47000	B1	9.8	0.84	mg/Kg		08/19/22 01:26	08/22/22 07:54	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon	ND		4.0	0.90	g/Kg			09/08/22 13:58	1

General Chemistry - Soluble

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetic acid	ND		9.5	1.4	mg/Kg			09/02/22 00:20	1
Formic-acid	ND		9.5	2.1	mg/Kg			09/02/22 00:20	1
Lactic acid	ND		9.5	2.9	mg/Kg			09/02/22 00:20	1
n-Butyric Acid	ND		9.5	1.5	mg/Kg			09/02/22 00:20	1
Propionic acid	ND		9.5	1.6	mg/Kg			09/02/22 00:20	1
Pyruvic Acid	ND		9.5	2.4	mg/Kg			09/02/22 00:20	1

Client Sample ID: SWFTS-BH26-SO-48.5

Lab Sample ID: 550-189012-11

Date Collected: 08/16/22 09:30
Matrix: Solid
Date Received: 08/18/22 06:30

Method: 6010B - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Calcium	4300	B1	9.7	0.84	mg/Kg		08/19/22 01:26	08/22/22 08:03	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon	ND		4.0	0.90	g/Kg			09/08/22 14:12	1

General Chemistry - Soluble

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetic acid	ND		9.8	1.5	mg/Kg			09/02/22 00:49	1
Formic-acid	ND		9.8	2.2	mg/Kg			09/02/22 00:49	1
Lactic acid	ND		9.8	2.9	mg/Kg			09/02/22 00:49	1
n-Butyric Acid	ND		9.8	1.6	mg/Kg			09/02/22 00:49	1
Propionic acid	ND		9.8	1.7	mg/Kg			09/02/22 00:49	1
Pyruvic Acid	ND		9.8	2.4	mg/Kg			09/02/22 00:49	1

Client Sample ID: SWFTS-BH30-SO-18

Lab Sample ID: 550-189012-12

Date Collected: 08/16/22 12:00
Matrix: Solid
Date Received: 08/18/22 06:30

Method: 6010B - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Calcium	6100	B1	9.9	0.85	mg/Kg		08/19/22 01:26	08/22/22 08:06	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon	ND		4.0	0.90	g/Kg			09/08/22 14:22	1

General Chemistry - Soluble

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetic acid	ND		9.9	1.5	mg/Kg			09/02/22 01:18	1
Formic-acid	ND		9.9	2.2	mg/Kg			09/02/22 01:18	1
Lactic acid	ND		9.9	3.0	mg/Kg			09/02/22 01:18	1
n-Butyric Acid	ND		9.9	1.6	mg/Kg			09/02/22 01:18	1
Propionic acid	ND		9.9	1.7	mg/Kg			09/02/22 01:18	1
Pyruvic Acid	ND		9.9	2.5	mg/Kg			09/02/22 01:18	1

Client Sample ID: SWFTS-BH30-SO-22.8

Lab Sample ID: 550-189012-13

Date Collected: 08/16/22 12:05
Matrix: Solid
Date Received: 08/18/22 06:30

Method: 6010B - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Calcium	36000	B1	10	0.85	mg/Kg		08/19/22 01:26	08/22/22 08:09	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon	ND		4.0	0.90	g/Kg			09/08/22 14:38	1

General Chemistry - Soluble

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetic acid	ND		9.9	1.5	mg/Kg			09/02/22 01:47	1
Formic-acid	ND		9.9	2.2	mg/Kg			09/02/22 01:47	1

Client Sample ID: SWFTS-BH30-SO-22.8
Lab Sample ID: 550-189012-13
Date Collected: 08/16/22 12:05
Matrix: Solid
Date Received: 08/18/22 06:30

General Chemistry - Soluble (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lactic acid	ND		9.9	3.0	mg/Kg			09/02/22 01:47	1
n-Butyric Acid	ND		9.9	1.6	mg/Kg			09/02/22 01:47	1
Propionic acid	ND		9.9	1.7	mg/Kg			09/02/22 01:47	1
Pyruvic Acid	ND		9.9	2.5	mg/Kg			09/02/22 01:47	1

Client Sample ID: SWFTS-BH30-SO-24
Lab Sample ID: 550-189012-14
Date Collected: 08/16/22 12:10
Matrix: Solid
Date Received: 08/18/22 06:30

Method: 6010B - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Calcium	17000	B1	10	0.85	mg/Kg		08/19/22 01:26	08/22/22 08:11	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon	ND		4.0	0.90	g/Kg			09/08/22 15:19	1

General Chemistry - Soluble

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetic acid	ND		9.9	1.5	mg/Kg			09/02/22 02:16	1
Formic-acid	ND		9.9	2.2	mg/Kg			09/02/22 02:16	1
Lactic acid	ND		9.9	3.0	mg/Kg			09/02/22 02:16	1
n-Butyric Acid	ND		9.9	1.6	mg/Kg			09/02/22 02:16	1
Propionic acid	ND		9.9	1.7	mg/Kg			09/02/22 02:16	1
Pyruvic Acid	ND		9.9	2.5	mg/Kg			09/02/22 02:16	1

Client Sample ID: SWFTS-BH30-SO-29
Lab Sample ID: 550-189012-15
Date Collected: 08/16/22 12:15
Matrix: Solid
Date Received: 08/18/22 06:30

Method: 6010B - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Calcium	29000	B1	9.9	0.85	mg/Kg		08/19/22 01:26	08/22/22 08:14	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon	ND		4.0	0.90	g/Kg			09/08/22 15:31	1

General Chemistry - Soluble

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetic acid	ND		9.9	1.5	mg/Kg			09/02/22 02:45	1
Formic-acid	ND		9.9	2.2	mg/Kg			09/02/22 02:45	1
Lactic acid	ND		9.9	3.0	mg/Kg			09/02/22 02:45	1
n-Butyric Acid	ND		9.9	1.6	mg/Kg			09/02/22 02:45	1
Propionic acid	ND		9.9	1.7	mg/Kg			09/02/22 02:45	1
Pyruvic Acid	ND		9.9	2.5	mg/Kg			09/02/22 02:45	1

Client Sample ID: SWFTS-BH30-SO-37

Lab Sample ID: 550-189012-16

Date Collected: 08/16/22 12:20

Matrix: Solid

Date Received: 08/18/22 06:30

Method: 6010B - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Calcium	24000	B1	9.9	0.85	mg/Kg		08/19/22 01:26	08/22/22 08:17	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon	ND		4.0	0.90	g/Kg			09/08/22 16:14	1

General Chemistry - Soluble

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetic acid	ND		9.2	1.4	mg/Kg			09/02/22 03:14	1
Formic-acid	ND		9.2	2.0	mg/Kg			09/02/22 03:14	1
Lactic acid	ND		9.2	2.8	mg/Kg			09/02/22 03:14	1
n-Butyric Acid	ND		9.2	1.5	mg/Kg			09/02/22 03:14	1
Propionic acid	ND		9.2	1.6	mg/Kg			09/02/22 03:14	1
Pyruvic Acid	ND		9.2	2.3	mg/Kg			09/02/22 03:14	1

Client Sample ID: SWFTS-BH29-SO-24.5

Lab Sample ID: 550-189012-17

Date Collected: 08/16/22 12:40

Matrix: Solid

Date Received: 08/18/22 06:30

Method: 6010B - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Calcium	10000	B1	9.9	0.84	mg/Kg		08/19/22 01:26	08/22/22 08:20	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon	ND		4.0	0.90	g/Kg			09/09/22 10:11	1

General Chemistry - Soluble

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetic acid	ND	F1	9.8	1.5	mg/Kg			09/02/22 03:44	1
Formic-acid	ND	F1	9.8	2.2	mg/Kg			09/02/22 03:44	1
Lactic acid	ND	F1	9.8	3.0	mg/Kg			09/02/22 03:44	1
n-Butyric Acid	ND	F1	9.8	1.6	mg/Kg			09/02/22 03:44	1
Propionic acid	ND		9.8	1.7	mg/Kg			09/02/22 03:44	1
Pyruvic Acid	ND		9.8	2.5	mg/Kg			09/02/22 03:44	1

Client Sample ID: SWFTS-BH29-SO-28

Lab Sample ID: 550-189012-18

Date Collected: 08/16/22 12:45

Matrix: Solid

Date Received: 08/18/22 06:30

Method: 6010B - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Calcium	13000	B1	9.8	0.84	mg/Kg		08/19/22 01:26	08/22/22 08:23	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon	ND		4.0	0.90	g/Kg			09/08/22 13:01	1

General Chemistry - Soluble

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetic acid	ND		9.9	1.5	mg/Kg			09/02/22 06:38	1
Formic-acid	ND		9.9	2.2	mg/Kg			09/02/22 06:38	1

Client Sample ID: SWFTS-BH29-SO-28
Lab Sample ID: 550-189012-18
Date Collected: 08/16/22 12:45
Matrix: Solid
Date Received: 08/18/22 06:30

General Chemistry - Soluble (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lactic acid	ND		9.9	3.0	mg/Kg			09/02/22 06:38	1
n-Butyric Acid	ND		9.9	1.6	mg/Kg			09/02/22 06:38	1
Propionic acid	ND		9.9	1.7	mg/Kg			09/02/22 06:38	1
Pyruvic Acid	ND		9.9	2.5	mg/Kg			09/02/22 06:38	1

Client Sample ID: SWFTS-BH29-SO-36.5
Lab Sample ID: 550-189012-19
Date Collected: 08/16/22 12:50
Matrix: Solid
Date Received: 08/18/22 06:30

Method: 6010B - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Calcium	11000	B1	9.9	0.84	mg/Kg		08/19/22 01:26	08/22/22 08:26	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon	ND		4.0	0.90	g/Kg			09/09/22 10:20	1

General Chemistry - Soluble

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetic acid	ND		9.8	1.5	mg/Kg			09/02/22 07:08	1
Formic-acid	ND		9.8	2.1	mg/Kg			09/02/22 07:08	1
Lactic acid	ND		9.8	2.9	mg/Kg			09/02/22 07:08	1
n-Butyric Acid	ND		9.8	1.6	mg/Kg			09/02/22 07:08	1
Propionic acid	ND		9.8	1.7	mg/Kg			09/02/22 07:08	1
Pyruvic Acid	ND		9.8	2.4	mg/Kg			09/02/22 07:08	1

Client Sample ID: SWFTS-BH29-SO-40
Lab Sample ID: 550-189012-20
Date Collected: 08/16/22 12:55
Matrix: Solid
Date Received: 08/18/22 06:30

Method: 6010B - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Calcium	20000	B1	9.8	0.84	mg/Kg		08/19/22 01:26	08/22/22 08:28	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon	ND		4.0	0.90	g/Kg			09/09/22 10:30	1

General Chemistry - Soluble

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetic acid	ND		9.8	1.5	mg/Kg			09/02/22 07:37	1
Formic-acid	ND		9.8	2.2	mg/Kg			09/02/22 07:37	1
Lactic acid	ND		9.8	2.9	mg/Kg			09/02/22 07:37	1
n-Butyric Acid	ND		9.8	1.6	mg/Kg			09/02/22 07:37	1
Propionic acid	ND		9.8	1.7	mg/Kg			09/02/22 07:37	1
Pyruvic Acid	ND		9.8	2.5	mg/Kg			09/02/22 07:37	1

Client Sample ID: SWFTS-BH29-SO-43.5
Lab Sample ID: 550-189012-21
Date Collected: 08/16/22 13:00
Matrix: Solid
Date Received: 08/18/22 06:30

Method: 6010B - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Calcium	110000	B1	20	1.7	mg/Kg		08/19/22 01:26	08/22/22 15:35	2

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon	ND		4.0	0.90	g/Kg			09/09/22 10:39	1

General Chemistry - Soluble

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetic acid	ND		10	1.5	mg/Kg			09/02/22 08:06	1
Formic-acid	ND		10	2.2	mg/Kg			09/02/22 08:06	1
Lactic acid	ND		10	3.0	mg/Kg			09/02/22 08:06	1
n-Butyric Acid	ND		10	1.6	mg/Kg			09/02/22 08:06	1
Propionic acid	ND		10	1.7	mg/Kg			09/02/22 08:06	1
Pyruvic Acid	ND		10	2.5	mg/Kg			09/02/22 08:06	1

Client Sample ID: SWFTS-BH28-SO-17.3
Lab Sample ID: 550-189012-22
Date Collected: 08/16/22 15:05
Matrix: Solid
Date Received: 08/18/22 06:30

Method: 6010B - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Calcium	16000	B1	9.9	0.85	mg/Kg		08/19/22 01:26	08/22/22 08:40	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon	ND		4.0	0.90	g/Kg			09/09/22 09:42	1

General Chemistry - Soluble

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetic acid	ND		9.7	1.5	mg/Kg			09/02/22 08:35	1
Formic-acid	ND		9.7	2.1	mg/Kg			09/02/22 08:35	1
Lactic acid	ND		9.7	2.9	mg/Kg			09/02/22 08:35	1
n-Butyric Acid	ND		9.7	1.6	mg/Kg			09/02/22 08:35	1
Propionic acid	ND		9.7	1.7	mg/Kg			09/02/22 08:35	1
Pyruvic Acid	ND		9.7	2.4	mg/Kg			09/02/22 08:35	1

Client Sample ID: SWFTS-BH28-SO-17.3-FD
Lab Sample ID: 550-189012-23
Date Collected: 08/16/22 15:05
Matrix: Solid
Date Received: 08/18/22 06:30

Method: 6010B - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Calcium	44000	B1	9.9	0.85	mg/Kg		08/19/22 01:26	08/22/22 08:42	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon	ND		4.0	0.90	g/Kg			09/09/22 10:52	1

General Chemistry - Soluble

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetic acid	ND		9.8	1.5	mg/Kg			09/02/22 11:30	1
Formic-acid	ND		9.8	2.2	mg/Kg			09/02/22 11:30	1

Client Sample ID: SWFTS-BH28-SO-17.3-FD

Lab Sample ID: 550-189012-23

Date Collected: 08/16/22 15:05

Matrix: Solid

Date Received: 08/18/22 06:30

General Chemistry - Soluble (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lactic acid	ND		9.8	2.9	mg/Kg			09/02/22 11:30	1
n-Butyric Acid	ND		9.8	1.6	mg/Kg			09/02/22 11:30	1
Propionic acid	ND		9.8	1.7	mg/Kg			09/02/22 11:30	1
Pyruvic Acid	ND		9.8	2.4	mg/Kg			09/02/22 11:30	1

Client Sample ID: SWFTS-BH28-SO-21

Lab Sample ID: 550-189012-24

Date Collected: 08/16/22 15:10

Matrix: Solid

Date Received: 08/18/22 06:30

Method: 6010B - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Calcium	**18000**	**B1**	9.8	0.84	mg/Kg		08/19/22 01:26	08/22/22 07:52	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon	ND	F1	4.0	0.90	g/Kg			09/07/22 15:16	1

General Chemistry - Soluble

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetic acid	ND		10	1.5	mg/Kg			09/01/22 21:25	1
Formic-acid	ND	F1	10	2.2	mg/Kg			09/01/22 21:25	1
Lactic acid	ND	F1 F2	10	3.0	mg/Kg			09/01/22 21:25	1
n-Butyric Acid	ND	F1	10	1.6	mg/Kg			09/01/22 21:25	1
Propionic acid	ND		10	1.7	mg/Kg			09/01/22 21:25	1
Pyruvic Acid	ND	F1	10	2.5	mg/Kg			09/01/22 21:25	1

Client Sample ID: SWFTS-BH28-SO-26

Lab Sample ID: 550-189012-25

Date Collected: 08/16/22 15:15

Matrix: Solid

Date Received: 08/18/22 06:30

Method: 6010B - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Calcium	**7100**	**B1**	9.8	0.84	mg/Kg		08/19/22 01:26	08/22/22 08:45	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon	ND		4.0	0.90	g/Kg			09/09/22 11:01	1

General Chemistry - Soluble

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetic acid	ND		9.9	1.5	mg/Kg			09/02/22 11:59	1
Formic-acid	ND		9.9	2.2	mg/Kg			09/02/22 11:59	1
Lactic acid	ND		9.9	3.0	mg/Kg			09/02/22 11:59	1
n-Butyric Acid	ND		9.9	1.6	mg/Kg			09/02/22 11:59	1
Propionic acid	ND		9.9	1.7	mg/Kg			09/02/22 11:59	1
Pyruvic Acid	ND		9.9	2.5	mg/Kg			09/02/22 11:59	1

Client Sample ID: SWFTS-BH28-SO-32.5
Lab Sample ID: 550-189012-26
Date Collected: 08/16/22 15:20
Matrix: Solid
Date Received: 08/18/22 06:30

Method: 6010B - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Calcium	22000	B1	9.9	0.85	mg/Kg		08/19/22 01:26	08/22/22 08:48	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon	ND		4.0	0.90	g/Kg			09/09/22 11:11	1

General Chemistry - Soluble

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetic acid	ND		9.5	1.4	mg/Kg			09/02/22 12:28	1
Formic-acid	ND		9.5	2.1	mg/Kg			09/02/22 12:28	1
Lactic acid	ND		9.5	2.9	mg/Kg			09/02/22 12:28	1
n-Butyric Acid	ND		9.5	1.5	mg/Kg			09/02/22 12:28	1
Propionic acid	ND		9.5	1.6	mg/Kg			09/02/22 12:28	1
Pyruvic Acid	ND		9.5	2.4	mg/Kg			09/02/22 12:28	1

Client Sample ID: SWFTS-BH28-SO-41
Lab Sample ID: 550-189012-27
Date Collected: 08/16/22 15:25
Matrix: Solid
Date Received: 08/18/22 06:30

Method: 6010B - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Calcium	86000	B1	20	1.7	mg/Kg		08/19/22 01:26	08/22/22 15:38	2

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon	0.94	E4	4.0	0.90	g/Kg			09/09/22 11:48	1

General Chemistry - Soluble

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetic acid	ND		9.9	1.5	mg/Kg			09/02/22 12:57	1
Formic-acid	ND		9.9	2.2	mg/Kg			09/02/22 12:57	1
Lactic acid	ND		9.9	3.0	mg/Kg			09/02/22 12:57	1
n-Butyric Acid	ND		9.9	1.6	mg/Kg			09/02/22 12:57	1
Propionic acid	ND		9.9	1.7	mg/Kg			09/02/22 12:57	1
Pyruvic Acid	ND		9.9	2.5	mg/Kg			09/02/22 12:57	1

Client Sample ID: SWFTS-BH30-SO-37-FD
Lab Sample ID: 550-189012-28
Date Collected: 08/16/22 12:20
Matrix: Solid
Date Received: 08/18/22 06:30

Method: 6010B - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Calcium	23000	B1	9.8	0.84	mg/Kg		08/29/22 10:28	08/30/22 18:42	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon	ND		4.0	0.90	g/Kg			09/09/22 11:58	1

General Chemistry - Soluble

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetic acid	ND		9.9	1.5	mg/Kg			09/02/22 13:27	1
Formic-acid	ND		9.9	2.2	mg/Kg			09/02/22 13:27	1

Client: Tetra Tech, Inc.
Job ID: 550-189012-1
Project/Site: NERT - Seep Well Field

Client Sample ID: SWFTS-BH30-SO-37-FD
Lab Sample ID: 550-189012-28
Date Collected: 08/16/22 12:20
Matrix: Solid
Date Received: 08/18/22 06:30

General Chemistry - Soluble (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lactic acid	ND		9.9	3.0	mg/Kg			09/02/22 13:27	1
n-Butyric Acid	ND		9.9	1.6	mg/Kg			09/02/22 13:27	1
Propionic acid	ND		9.9	1.7	mg/Kg			09/02/22 13:27	1
Pyruvic Acid	ND		9.9	2.5	mg/Kg			09/02/22 13:27	1

Method: 6010B - Metals (ICP)

Lab Sample ID: MB 550-281981/1-A
Matrix: Solid
Analysis Batch: 282130

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 281981

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Calcium	7.72	E4	9.9	0.85	mg/Kg		08/19/22 05:00	08/22/22 10:36	1

Lab Sample ID: LCS 550-281981/2-A
Matrix: Solid
Analysis Batch: 282130

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 281981

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Calcium	1030	1080		mg/Kg		105	84 - 110

Lab Sample ID: LCSD 550-281981/3-A
Matrix: Solid
Analysis Batch: 282130

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 281981

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Calcium	1040	1110		mg/Kg		106	84 - 110	2	20

Lab Sample ID: 550-189012-5 MS
Matrix: Solid
Analysis Batch: 282160

Client Sample ID: SWFTS-BH27-SO-28
Prep Type: Total/NA
Prep Batch: 281981

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Calcium	83000	B	1040	72000	4	mg/Kg		-1065	75 - 125

Lab Sample ID: 550-189012-5 MSD
Matrix: Solid
Analysis Batch: 282160

Client Sample ID: SWFTS-BH27-SO-28
Prep Type: Total/NA
Prep Batch: 281981

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Calcium	83000	B	1040	77800	4	mg/Kg		-518	75 - 125	8	20

Lab Sample ID: MB 550-281982/1-A
Matrix: Solid
Analysis Batch: 282128

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 281982

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Calcium	3.67	E4	9.7	0.83	mg/Kg		08/19/22 01:26	08/22/22 07:34	1

Lab Sample ID: LCS 550-281982/2-A
Matrix: Solid
Analysis Batch: 282128

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 281982

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Calcium	1040	1090		mg/Kg		105	84 - 110

Lab Sample ID: LCSD 550-281982/3-A
Matrix: Solid
Analysis Batch: 282128

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 281982

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Calcium	1050	1090		mg/Kg		104	84 - 110	0	20

Method: 6010B - Metals (ICP)

Lab Sample ID: 550-189012-24 MS
Matrix: Solid
Analysis Batch: 282128

Client Sample ID: SWFTS-BH28-SO-21
Prep Type: Total/NA
Prep Batch: 281982

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Calcium	18000	B	1030	16600	4	mg/Kg		-128	75 - 125

Lab Sample ID: 550-189012-24 MSD
Matrix: Solid
Analysis Batch: 282128

Client Sample ID: SWFTS-BH28-SO-21
Prep Type: Total/NA
Prep Batch: 281982

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Calcium	18000	B	1040	15900	4	mg/Kg		-190	75 - 125	4	20

Lab Sample ID: MB 550-282626/1-A
Matrix: Solid
Analysis Batch: 282808

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 282626

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Calcium	3.45	E4	9.9	0.85	mg/Kg		08/29/22 10:28	08/30/22 18:14	1

Lab Sample ID: LCS 550-282626/2-A
Matrix: Solid
Analysis Batch: 282808

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 282626

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Calcium	1040	1120		mg/Kg		107	84 - 110

Lab Sample ID: LCSD 550-282626/3-A
Matrix: Solid
Analysis Batch: 282808

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 282626

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Calcium	1040	1130		mg/Kg		108	84 - 110	1	20

Lab Sample ID: 550-189322-B-1-A MS
Matrix: Solid
Analysis Batch: 282808

Client Sample ID: Matrix Spike
Prep Type: Total/NA
Prep Batch: 282626

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Calcium	20000	B	1030	20800	4	mg/Kg		77	75 - 125

Lab Sample ID: 550-189322-B-1-B MSD
Matrix: Solid
Analysis Batch: 282808

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total/NA
Prep Batch: 282626

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Calcium	20000	B	1030	24000	4	mg/Kg		392	75 - 125	15	20

Method: 9060A - Organic Carbon, Total (TOC)

Lab Sample ID: MB 280-585938/5
Matrix: Solid
Analysis Batch: 585938

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon	ND		4.0	0.90	g/Kg			09/02/22 10:56	1

Lab Sample ID: LCS 280-585938/4
Matrix: Solid
Analysis Batch: 585938

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Total Organic Carbon	2.89	2.77	E4	g/Kg		96	46 - 130

Lab Sample ID: 550-189011-B-20 MS
Matrix: Solid
Analysis Batch: 585938

Client Sample ID: Matrix Spike
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Total Organic Carbon	ND	F2	11.8	14.9		g/Kg		126	46 - 130

Lab Sample ID: 550-189011-B-20 MSD
Matrix: Solid
Analysis Batch: 585938

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Total Organic Carbon	ND	F2	11.8	11.4	F2	g/Kg		97	46 - 130	26	20

Lab Sample ID: MB 280-586173/5
Matrix: Solid
Analysis Batch: 586173

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon	0.952	E4	4.0	0.90	g/Kg			09/07/22 12:18	1

Lab Sample ID: LCS 280-586173/4
Matrix: Solid
Analysis Batch: 586173

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Total Organic Carbon	2.89	2.12	E4	g/Kg		73	46 - 130

Lab Sample ID: 550-189012-5 MS
Matrix: Solid
Analysis Batch: 586173

Client Sample ID: SWFTS-BH27-SO-28
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Total Organic Carbon	1.7	J B F2	11.7	12.0		g/Kg		87	46 - 130

Lab Sample ID: 550-189012-5 MSD
Matrix: Solid
Analysis Batch: 586173

Client Sample ID: SWFTS-BH27-SO-28
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Total Organic Carbon	1.7	J B F2	11.8	15.0	F2	g/Kg		113	46 - 130	23	20

Method: 9060A - Organic Carbon, Total (TOC)

Lab Sample ID: 550-189012-24 MS
Matrix: Solid
Analysis Batch: 586173

Client Sample ID: SWFTS-BH28-SO-21
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Total Organic Carbon	ND	F1	11.7	15.3	F1	g/Kg		131	46 - 130

Lab Sample ID: 550-189012-24 MSD
Matrix: Solid
Analysis Batch: 586173

Client Sample ID: SWFTS-BH28-SO-21
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Total Organic Carbon	ND	F1	11.7	15.7	F1	g/Kg		134	46 - 130	3	20

Lab Sample ID: MB 280-586302/5
Matrix: Solid
Analysis Batch: 586302

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon	ND		4.0	0.90	g/Kg			09/08/22 12:48	1

Lab Sample ID: LCS 280-586302/4
Matrix: Solid
Analysis Batch: 586302

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Total Organic Carbon	2.89	1.96	E4	g/Kg		68	46 - 130

Lab Sample ID: 550-189012-18 MS
Matrix: Solid
Analysis Batch: 586302

Client Sample ID: SWFTS-BH29-SO-28
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Total Organic Carbon	ND		11.8	12.7		g/Kg		108	46 - 130

Lab Sample ID: 550-189012-18 MSD
Matrix: Solid
Analysis Batch: 586302

Client Sample ID: SWFTS-BH29-SO-28
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Total Organic Carbon	ND		11.8	12.0		g/Kg		102	46 - 130	6	20

Lab Sample ID: MB 280-586384/4
Matrix: Solid
Analysis Batch: 586384

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon	ND		4.0	0.90	g/Kg			09/09/22 09:32	1

Lab Sample ID: LCS 280-586384/3
Matrix: Solid
Analysis Batch: 586384

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Total Organic Carbon	2.89	1.65	E4	g/Kg		57	46 - 130

Method: 9060A - Organic Carbon, Total (TOC)

Lab Sample ID: 550-189012-22 MS
Matrix: Solid
Analysis Batch: 586384

Client Sample ID: SWFTS-BH28-SO-17.3
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Total Organic Carbon	ND		11.8	11.6		g/Kg		98	46 - 130

Lab Sample ID: 550-189012-22 MSD
Matrix: Solid
Analysis Batch: 586384

Client Sample ID: SWFTS-BH28-SO-17.3
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Total Organic Carbon	ND		11.7	10.9		g/Kg		93	46 - 130	6	20

Method: VFA-IC - Volatile Fatty Acids, Ion Chromatography

Lab Sample ID: MB 480-639709/1-A
Matrix: Solid
Analysis Batch: 640054

Client Sample ID: Method Blank
Prep Type: Soluble

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetic acid	ND		10	1.5	mg/Kg			09/02/22 04:05	1
Formic-acid	ND		10	2.2	mg/Kg			09/02/22 04:05	1
Lactic acid	ND		10	3.0	mg/Kg			09/02/22 04:05	1
n-Butyric Acid	ND		10	1.6	mg/Kg			09/02/22 04:05	1
Propionic acid	ND		10	1.7	mg/Kg			09/02/22 04:05	1
Pyruvic Acid	ND		10	2.5	mg/Kg			09/02/22 04:05	1

Lab Sample ID: LCS 480-639709/2-A
Matrix: Solid
Analysis Batch: 640054

Client Sample ID: Lab Control Sample
Prep Type: Soluble

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Acetic acid	98.9	104		mg/Kg		105	80 - 120
Formic-acid	99.5	99.5		mg/Kg		100	80 - 120
Lactic acid	99.9	117		mg/Kg		117	80 - 120
n-Butyric Acid	98.1	99.4		mg/Kg		101	80 - 120
Propionic acid	99.3	104		mg/Kg		105	80 - 120
Pyruvic Acid	100	106		mg/Kg		106	80 - 120

Lab Sample ID: 550-189012-5 MS
Matrix: Solid
Analysis Batch: 640054

Client Sample ID: SWFTS-BH27-SO-28
Prep Type: Soluble

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Acetic acid	ND		99.5	99.7		mg/Kg		100	80 - 120
Formic-acid	ND		100	100		mg/Kg		100	80 - 120
Lactic acid	ND		100	116		mg/Kg		116	80 - 120
n-Butyric Acid	ND		98.7	98.6		mg/Kg		100	80 - 120
Propionic acid	ND		99.9	101		mg/Kg		102	80 - 120
Pyruvic Acid	ND		101	110		mg/Kg		109	80 - 120

Method: VFA-IC - Volatile Fatty Acids, Ion Chromatography (Continued)

Lab Sample ID: 550-189012-5 MSD
Matrix: Solid
Analysis Batch: 640054

Client Sample ID: SWFTS-BH27-SO-28
Prep Type: Soluble

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Acetic acid	ND		99.3	104		mg/Kg		104	80 - 120	4	20
Formic-acid	ND		99.9	103		mg/Kg		103	80 - 120	2	20
Lactic acid	ND		100	119		mg/Kg		119	80 - 120	2	20
n-Butyric Acid	ND		98.5	99.9		mg/Kg		101	80 - 120	1	20
Propionic acid	ND		99.7	108		mg/Kg		109	80 - 120	7	20
Pyruvic Acid	ND		101	110		mg/Kg		109	80 - 120	1	20

Lab Sample ID: MB 480-639740/1-A
Matrix: Solid
Analysis Batch: 640070

Client Sample ID: Method Blank
Prep Type: Soluble

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetic acid	ND		10	1.5	mg/Kg			09/01/22 18:01	1
Formic-acid	ND		10	2.2	mg/Kg			09/01/22 18:01	1
Lactic acid	ND		10	3.0	mg/Kg			09/01/22 18:01	1
n-Butyric Acid	ND		10	1.6	mg/Kg			09/01/22 18:01	1
Propionic acid	ND		10	1.7	mg/Kg			09/01/22 18:01	1
Pyruvic Acid	ND		10	2.5	mg/Kg			09/01/22 18:01	1

Lab Sample ID: MB 480-639879/1-A
Matrix: Solid
Analysis Batch: 640070

Client Sample ID: Method Blank
Prep Type: Soluble

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetic acid	ND		10	1.5	mg/Kg			09/02/22 05:40	1
Formic-acid	ND		10	2.2	mg/Kg			09/02/22 05:40	1
Lactic acid	ND		10	3.0	mg/Kg			09/02/22 05:40	1
n-Butyric Acid	ND		10	1.6	mg/Kg			09/02/22 05:40	1
Propionic acid	ND		10	1.7	mg/Kg			09/02/22 05:40	1
Pyruvic Acid	ND		10	2.5	mg/Kg			09/02/22 05:40	1

Lab Sample ID: LCS 480-639740/2-A
Matrix: Solid
Analysis Batch: 640070

Client Sample ID: Lab Control Sample
Prep Type: Soluble

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Acetic acid			99.5	101		mg/Kg		101	80 - 120		
Formic-acid			100	93.1		mg/Kg		93	80 - 120		
Lactic acid			100	112		mg/Kg		111	80 - 120		
n-Butyric Acid			98.7	88.3		mg/Kg		90	80 - 120		
Propionic acid			99.9	96.3		mg/Kg		96	80 - 120		
Pyruvic Acid			101	92.6		mg/Kg		92	80 - 120		

Lab Sample ID: LCS 480-639879/2-A
Matrix: Solid
Analysis Batch: 640070

Client Sample ID: Lab Control Sample
Prep Type: Soluble

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Acetic acid			98.5	98.1		mg/Kg		100	80 - 120		

Method: VFA-IC - Volatile Fatty Acids, Ion Chromatography (Continued)

Lab Sample ID: LCS 480-639879/2-A
Matrix: Solid
Analysis Batch: 640070

Client Sample ID: Lab Control Sample
Prep Type: Soluble

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Formic-acid			99.1	92.9		mg/Kg		94	80 - 120		
Lactic acid			99.5	111		mg/Kg		112	80 - 120		
n-Butyric Acid			97.7	89.0		mg/Kg		91	80 - 120		
Propionic acid			98.9	92.4		mg/Kg		93	80 - 120		
Pyruvic Acid			100	91.6		mg/Kg		92	80 - 120		

Lab Sample ID: 550-189012-17 MS
Matrix: Solid
Analysis Batch: 640070

Client Sample ID: SWFTS-BH29-SO-24.5
Prep Type: Soluble

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits		
Acetic acid	ND	F1	97.4	57.9	F1	mg/Kg		59	80 - 120		
Formic-acid	ND	F1	98.0	77.4	F1	mg/Kg		79	80 - 120		
Lactic acid	ND	F1	98.3	58.5	F1	mg/Kg		60	80 - 120		
n-Butyric Acid	ND	F1	96.6	76.1	F1	mg/Kg		79	80 - 120		
Propionic acid	ND		97.8	81.3		mg/Kg		83	80 - 120		
Pyruvic Acid	ND		98.9	114		mg/Kg		115	80 - 120		

Lab Sample ID: 550-189012-24 MS
Matrix: Solid
Analysis Batch: 640070

Client Sample ID: SWFTS-BH28-SO-21
Prep Type: Soluble

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits		
Acetic acid	ND		99.5	90.1		mg/Kg		91	80 - 120		
Formic-acid	ND	F1	100	66.2	F1	mg/Kg		66	80 - 120		
Lactic acid	ND	F1 F2	100	11.9	F1	mg/Kg		12	80 - 120		
n-Butyric Acid	ND	F1	98.7	83.4		mg/Kg		84	80 - 120		
Propionic acid	ND		99.9	91.6		mg/Kg		92	80 - 120		
Pyruvic Acid	ND	F1	101	165	F1	mg/Kg		164	80 - 120		

Lab Sample ID: 550-189012-24 MSD
Matrix: Solid
Analysis Batch: 640070

Client Sample ID: SWFTS-BH28-SO-21
Prep Type: Soluble

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Acetic acid	ND		99.5	84.7		mg/Kg		85	80 - 120	6	20
Formic-acid	ND	F1	100	66.0	F1	mg/Kg		66	80 - 120	0	20
Lactic acid	ND	F1 F2	100	6.36	F1 F2 E4	mg/Kg		6	80 - 120	61	20
n-Butyric Acid	ND	F1	98.7	77.9	F1	mg/Kg		79	80 - 120	7	20
Propionic acid	ND		99.9	86.0		mg/Kg		86	80 - 120	6	20
Pyruvic Acid	ND	F1	101	165	F1	mg/Kg		163	80 - 120	0	20

Lab Sample ID: 550-189013-B-3-A MS
Matrix: Solid
Analysis Batch: 640070

Client Sample ID: Matrix Spike
Prep Type: Soluble

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits		
Acetic acid	ND		98.9	89.3		mg/Kg		90	80 - 120		
Formic-acid	ND		99.5	82.9		mg/Kg		83	80 - 120		
Lactic acid	ND		99.9	89.7		mg/Kg		90	80 - 120		

Method: VFA-IC - Volatile Fatty Acids, Ion Chromatography (Continued)

Lab Sample ID: 550-189013-B-3-A MS
Matrix: Solid
Analysis Batch: 640070

Client Sample ID: Matrix Spike
Prep Type: Soluble

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
n-Butyric Acid	ND		98.1	86.6		mg/Kg		88	80 - 120
Propionic acid	ND		99.3	85.4		mg/Kg		86	80 - 120
Pyruvic Acid	ND	F1	100	127	F1	mg/Kg		126	80 - 120

Lab Sample ID: 550-189013-B-3-B MSD
Matrix: Solid
Analysis Batch: 640070

Client Sample ID: Matrix Spike Duplicate
Prep Type: Soluble

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Acetic acid	ND		98.7	87.2		mg/Kg		88	80 - 120	2	20
Formic-acid	ND		99.3	83.4		mg/Kg		84	80 - 120	1	20
Lactic acid	ND		99.7	94.1		mg/Kg		94	80 - 120	5	20
n-Butyric Acid	ND		97.9	85.1		mg/Kg		87	80 - 120	2	20
Propionic acid	ND		99.1	83.4		mg/Kg		84	80 - 120	2	20
Pyruvic Acid	ND	F1	100	128	F1	mg/Kg		128	80 - 120	1	20

Lab Sample ID: MB 480-639709/1-A
Matrix: Solid
Analysis Batch: 640360

Client Sample ID: Method Blank
Prep Type: Soluble

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetic acid	ND		10	1.5	mg/Kg			09/07/22 06:20	1
Formic-acid	ND		10	2.2	mg/Kg			09/07/22 06:20	1
Lactic acid	ND		10	3.0	mg/Kg			09/07/22 06:20	1
n-Butyric Acid	ND		10	1.6	mg/Kg			09/07/22 06:20	1
Propionic acid	ND		10	1.7	mg/Kg			09/07/22 06:20	1
Pyruvic Acid	ND		10	2.5	mg/Kg			09/07/22 06:20	1

Lab Sample ID: LCS 480-639709/2-A
Matrix: Solid
Analysis Batch: 640360

Client Sample ID: Lab Control Sample
Prep Type: Soluble

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Acetic acid	98.9	109		mg/Kg		110	80 - 120
Formic-acid	99.5	105		mg/Kg		106	80 - 120
Lactic acid	99.9	120		mg/Kg		120	80 - 120
n-Butyric Acid	98.1	102		mg/Kg		104	80 - 120
Propionic acid	99.3	108		mg/Kg		108	80 - 120
Pyruvic Acid	100	106		mg/Kg		106	80 - 120

Lab Sample ID: 550-189012-2 MS
Matrix: Solid
Analysis Batch: 640360

Client Sample ID: SWFTS-BH27-SO-16.5
Prep Type: Soluble

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Acetic acid	ND		99.9	104		mg/Kg		104	80 - 120
Formic-acid	ND		100	107		mg/Kg		107	80 - 120
Lactic acid	ND		101	120		mg/Kg		119	80 - 120
n-Butyric Acid	ND		99.1	106		mg/Kg		107	80 - 120
Propionic acid	ND		100	107		mg/Kg		106	80 - 120

Method: VFA-IC - Volatile Fatty Acids, Ion Chromatography (Continued)

Lab Sample ID: 550-189012-2 MS
Matrix: Solid
Analysis Batch: 640360

Client Sample ID: SWFTS-BH27-SO-16.5
Prep Type: Soluble

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits		
Pyruvic Acid	ND		101	110		mg/Kg		108	80 - 120		

Metals

Prep Batch: 281981

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
550-189012-1	SWFTS-BH27-SO-11.8	Total/NA	Solid	3050B	
550-189012-2	SWFTS-BH27-SO-16.5	Total/NA	Solid	3050B	
550-189012-3	SWFTS-BH27-SO-16.5-FD	Total/NA	Solid	3050B	
550-189012-4	SWFTS-BH27-SO-23	Total/NA	Solid	3050B	
550-189012-5	SWFTS-BH27-SO-28	Total/NA	Solid	3050B	
550-189012-6	SWFTS-BH27-SO-36.2	Total/NA	Solid	3050B	
550-189012-7	SWFTS-BH26-SO-16.3	Total/NA	Solid	3050B	
550-189012-8	SWFTS-BH26-SO-18.5	Total/NA	Solid	3050B	
550-189012-9	SWFTS-BH26-SO-22.3	Total/NA	Solid	3050B	
MB 550-281981/1-A	Method Blank	Total/NA	Solid	3050B	
LCS 550-281981/2-A	Lab Control Sample	Total/NA	Solid	3050B	
LCSD 550-281981/3-A	Lab Control Sample Dup	Total/NA	Solid	3050B	
550-189012-5 MS	SWFTS-BH27-SO-28	Total/NA	Solid	3050B	
550-189012-5 MSD	SWFTS-BH27-SO-28	Total/NA	Solid	3050B	

Prep Batch: 281982

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
550-189012-10	SWFTS-BH26-SO-31	Total/NA	Solid	3050B	
550-189012-11	SWFTS-BH26-SO-48.5	Total/NA	Solid	3050B	
550-189012-12	SWFTS-BH30-SO-18	Total/NA	Solid	3050B	
550-189012-13	SWFTS-BH30-SO-22.8	Total/NA	Solid	3050B	
550-189012-14	SWFTS-BH30-SO-24	Total/NA	Solid	3050B	
550-189012-15	SWFTS-BH30-SO-29	Total/NA	Solid	3050B	
550-189012-16	SWFTS-BH30-SO-37	Total/NA	Solid	3050B	
550-189012-17	SWFTS-BH29-SO-24.5	Total/NA	Solid	3050B	
550-189012-18	SWFTS-BH29-SO-28	Total/NA	Solid	3050B	
550-189012-19	SWFTS-BH29-SO-36.5	Total/NA	Solid	3050B	
550-189012-20	SWFTS-BH29-SO-40	Total/NA	Solid	3050B	
550-189012-21	SWFTS-BH29-SO-43.5	Total/NA	Solid	3050B	
550-189012-22	SWFTS-BH28-SO-17.3	Total/NA	Solid	3050B	
550-189012-23	SWFTS-BH28-SO-17.3-FD	Total/NA	Solid	3050B	
550-189012-24	SWFTS-BH28-SO-21	Total/NA	Solid	3050B	
550-189012-25	SWFTS-BH28-SO-26	Total/NA	Solid	3050B	
550-189012-26	SWFTS-BH28-SO-32.5	Total/NA	Solid	3050B	
550-189012-27	SWFTS-BH28-SO-41	Total/NA	Solid	3050B	
MB 550-281982/1-A	Method Blank	Total/NA	Solid	3050B	
LCS 550-281982/2-A	Lab Control Sample	Total/NA	Solid	3050B	
LCSD 550-281982/3-A	Lab Control Sample Dup	Total/NA	Solid	3050B	
550-189012-24 MS	SWFTS-BH28-SO-21	Total/NA	Solid	3050B	
550-189012-24 MSD	SWFTS-BH28-SO-21	Total/NA	Solid	3050B	

Analysis Batch: 282128

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
550-189012-10	SWFTS-BH26-SO-31	Total/NA	Solid	6010B	281982
550-189012-11	SWFTS-BH26-SO-48.5	Total/NA	Solid	6010B	281982
550-189012-12	SWFTS-BH30-SO-18	Total/NA	Solid	6010B	281982
550-189012-13	SWFTS-BH30-SO-22.8	Total/NA	Solid	6010B	281982
550-189012-14	SWFTS-BH30-SO-24	Total/NA	Solid	6010B	281982
550-189012-15	SWFTS-BH30-SO-29	Total/NA	Solid	6010B	281982
550-189012-16	SWFTS-BH30-SO-37	Total/NA	Solid	6010B	281982
550-189012-17	SWFTS-BH29-SO-24.5	Total/NA	Solid	6010B	281982

Metals (Continued)

Analysis Batch: 282128 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
550-189012-18	SWFTS-BH29-SO-28	Total/NA	Solid	6010B	281982
550-189012-19	SWFTS-BH29-SO-36.5	Total/NA	Solid	6010B	281982
550-189012-20	SWFTS-BH29-SO-40	Total/NA	Solid	6010B	281982
550-189012-22	SWFTS-BH28-SO-17.3	Total/NA	Solid	6010B	281982
550-189012-23	SWFTS-BH28-SO-17.3-FD	Total/NA	Solid	6010B	281982
550-189012-24	SWFTS-BH28-SO-21	Total/NA	Solid	6010B	281982
550-189012-25	SWFTS-BH28-SO-26	Total/NA	Solid	6010B	281982
550-189012-26	SWFTS-BH28-SO-32.5	Total/NA	Solid	6010B	281982
MB 550-281982/1-A	Method Blank	Total/NA	Solid	6010B	281982
LCS 550-281982/2-A	Lab Control Sample	Total/NA	Solid	6010B	281982
LCSD 550-281982/3-A	Lab Control Sample Dup	Total/NA	Solid	6010B	281982
550-189012-24 MS	SWFTS-BH28-SO-21	Total/NA	Solid	6010B	281982
550-189012-24 MSD	SWFTS-BH28-SO-21	Total/NA	Solid	6010B	281982

Analysis Batch: 282130

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
550-189012-1	SWFTS-BH27-SO-11.8	Total/NA	Solid	6010B	281981
550-189012-2	SWFTS-BH27-SO-16.5	Total/NA	Solid	6010B	281981
550-189012-3	SWFTS-BH27-SO-16.5-FD	Total/NA	Solid	6010B	281981
550-189012-4	SWFTS-BH27-SO-23	Total/NA	Solid	6010B	281981
550-189012-6	SWFTS-BH27-SO-36.2	Total/NA	Solid	6010B	281981
550-189012-7	SWFTS-BH26-SO-16.3	Total/NA	Solid	6010B	281981
550-189012-8	SWFTS-BH26-SO-18.5	Total/NA	Solid	6010B	281981
550-189012-9	SWFTS-BH26-SO-22.3	Total/NA	Solid	6010B	281981
MB 550-281981/1-A	Method Blank	Total/NA	Solid	6010B	281981
LCS 550-281981/2-A	Lab Control Sample	Total/NA	Solid	6010B	281981
LCSD 550-281981/3-A	Lab Control Sample Dup	Total/NA	Solid	6010B	281981

Analysis Batch: 282160

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
550-189012-5	SWFTS-BH27-SO-28	Total/NA	Solid	6010B	281981
550-189012-5 MS	SWFTS-BH27-SO-28	Total/NA	Solid	6010B	281981
550-189012-5 MSD	SWFTS-BH27-SO-28	Total/NA	Solid	6010B	281981

Analysis Batch: 282163

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
550-189012-21	SWFTS-BH29-SO-43.5	Total/NA	Solid	6010B	281982
550-189012-27	SWFTS-BH28-SO-41	Total/NA	Solid	6010B	281982

Prep Batch: 282626

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
550-189012-28	SWFTS-BH30-SO-37-FD	Total/NA	Solid	3050B	
MB 550-282626/1-A	Method Blank	Total/NA	Solid	3050B	
LCS 550-282626/2-A	Lab Control Sample	Total/NA	Solid	3050B	
LCSD 550-282626/3-A	Lab Control Sample Dup	Total/NA	Solid	3050B	
550-189322-B-1-A MS	Matrix Spike	Total/NA	Solid	3050B	
550-189322-B-1-B MSD	Matrix Spike Duplicate	Total/NA	Solid	3050B	

Analysis Batch: 282808

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
550-189012-28	SWFTS-BH30-SO-37-FD	Total/NA	Solid	6010B	282626

Metals (Continued)

Analysis Batch: 282808 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
MB 550-282626/1-A	Method Blank	Total/NA	Solid	6010B	282626
LCS 550-282626/2-A	Lab Control Sample	Total/NA	Solid	6010B	282626
LCSD 550-282626/3-A	Lab Control Sample Dup	Total/NA	Solid	6010B	282626
550-189322-B-1-A MS	Matrix Spike	Total/NA	Solid	6010B	282626
550-189322-B-1-B MSD	Matrix Spike Duplicate	Total/NA	Solid	6010B	282626

General Chemistry

Analysis Batch: 585938

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
550-189012-1	SWFTS-BH27-SO-11.8	Total/NA	Solid	9060A	
550-189012-2	SWFTS-BH27-SO-16.5	Total/NA	Solid	9060A	
550-189012-3	SWFTS-BH27-SO-16.5-FD	Total/NA	Solid	9060A	
MB 280-585938/5	Method Blank	Total/NA	Solid	9060A	
LCS 280-585938/4	Lab Control Sample	Total/NA	Solid	9060A	
550-189011-B-20 MS	Matrix Spike	Total/NA	Solid	9060A	
550-189011-B-20 MSD	Matrix Spike Duplicate	Total/NA	Solid	9060A	

Analysis Batch: 586173

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
550-189012-4	SWFTS-BH27-SO-23	Total/NA	Solid	9060A	
550-189012-5	SWFTS-BH27-SO-28	Total/NA	Solid	9060A	
550-189012-6	SWFTS-BH27-SO-36.2	Total/NA	Solid	9060A	
550-189012-24	SWFTS-BH28-SO-21	Total/NA	Solid	9060A	
MB 280-586173/5	Method Blank	Total/NA	Solid	9060A	
LCS 280-586173/4	Lab Control Sample	Total/NA	Solid	9060A	
550-189012-5 MS	SWFTS-BH27-SO-28	Total/NA	Solid	9060A	
550-189012-5 MSD	SWFTS-BH27-SO-28	Total/NA	Solid	9060A	
550-189012-24 MS	SWFTS-BH28-SO-21	Total/NA	Solid	9060A	
550-189012-24 MSD	SWFTS-BH28-SO-21	Total/NA	Solid	9060A	

Analysis Batch: 586302

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
550-189012-7	SWFTS-BH26-SO-16.3	Total/NA	Solid	9060A	
550-189012-8	SWFTS-BH26-SO-18.5	Total/NA	Solid	9060A	
550-189012-9	SWFTS-BH26-SO-22.3	Total/NA	Solid	9060A	
550-189012-10	SWFTS-BH26-SO-31	Total/NA	Solid	9060A	
550-189012-11	SWFTS-BH26-SO-48.5	Total/NA	Solid	9060A	
550-189012-12	SWFTS-BH30-SO-18	Total/NA	Solid	9060A	
550-189012-13	SWFTS-BH30-SO-22.8	Total/NA	Solid	9060A	
550-189012-14	SWFTS-BH30-SO-24	Total/NA	Solid	9060A	
550-189012-15	SWFTS-BH30-SO-29	Total/NA	Solid	9060A	
550-189012-16	SWFTS-BH30-SO-37	Total/NA	Solid	9060A	
550-189012-18	SWFTS-BH29-SO-28	Total/NA	Solid	9060A	
MB 280-586302/5	Method Blank	Total/NA	Solid	9060A	
LCS 280-586302/4	Lab Control Sample	Total/NA	Solid	9060A	
550-189012-18 MS	SWFTS-BH29-SO-28	Total/NA	Solid	9060A	
550-189012-18 MSD	SWFTS-BH29-SO-28	Total/NA	Solid	9060A	

General Chemistry

Analysis Batch: 586384

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
550-189012-17	SWFTS-BH29-SO-24.5	Total/NA	Solid	9060A	
550-189012-19	SWFTS-BH29-SO-36.5	Total/NA	Solid	9060A	
550-189012-20	SWFTS-BH29-SO-40	Total/NA	Solid	9060A	
550-189012-21	SWFTS-BH29-SO-43.5	Total/NA	Solid	9060A	
550-189012-22	SWFTS-BH28-SO-17.3	Total/NA	Solid	9060A	
550-189012-23	SWFTS-BH28-SO-17.3-FD	Total/NA	Solid	9060A	
550-189012-25	SWFTS-BH28-SO-26	Total/NA	Solid	9060A	
550-189012-26	SWFTS-BH28-SO-32.5	Total/NA	Solid	9060A	
550-189012-27	SWFTS-BH28-SO-41	Total/NA	Solid	9060A	
550-189012-28	SWFTS-BH30-SO-37-FD	Total/NA	Solid	9060A	
MB 280-586384/4	Method Blank	Total/NA	Solid	9060A	
LCS 280-586384/3	Lab Control Sample	Total/NA	Solid	9060A	
550-189012-22 MS	SWFTS-BH28-SO-17.3	Total/NA	Solid	9060A	
550-189012-22 MSD	SWFTS-BH28-SO-17.3	Total/NA	Solid	9060A	

Leach Batch: 639709

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
550-189012-1	SWFTS-BH27-SO-11.8	Soluble	Solid	DI Leach	
550-189012-2	SWFTS-BH27-SO-16.5	Soluble	Solid	DI Leach	
550-189012-5	SWFTS-BH27-SO-28	Soluble	Solid	DI Leach	
MB 480-639709/1-A	Method Blank	Soluble	Solid	DI Leach	
LCS 480-639709/2-A	Lab Control Sample	Soluble	Solid	DI Leach	
550-189012-2 MS	SWFTS-BH27-SO-16.5	Soluble	Solid	DI Leach	
550-189012-5 MS	SWFTS-BH27-SO-28	Soluble	Solid	DI Leach	
550-189012-5 MSD	SWFTS-BH27-SO-28	Soluble	Solid	DI Leach	

Leach Batch: 639740

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
550-189012-3	SWFTS-BH27-SO-16.5-FD	Soluble	Solid	DI Leach	
550-189012-4	SWFTS-BH27-SO-23	Soluble	Solid	DI Leach	
550-189012-6	SWFTS-BH27-SO-36.2	Soluble	Solid	DI Leach	
550-189012-7	SWFTS-BH26-SO-16.3	Soluble	Solid	DI Leach	
550-189012-8	SWFTS-BH26-SO-18.5	Soluble	Solid	DI Leach	
550-189012-9	SWFTS-BH26-SO-22.3	Soluble	Solid	DI Leach	
550-189012-10	SWFTS-BH26-SO-31	Soluble	Solid	DI Leach	
550-189012-11	SWFTS-BH26-SO-48.5	Soluble	Solid	DI Leach	
550-189012-12	SWFTS-BH30-SO-18	Soluble	Solid	DI Leach	
550-189012-13	SWFTS-BH30-SO-22.8	Soluble	Solid	DI Leach	
550-189012-14	SWFTS-BH30-SO-24	Soluble	Solid	DI Leach	
550-189012-15	SWFTS-BH30-SO-29	Soluble	Solid	DI Leach	
550-189012-16	SWFTS-BH30-SO-37	Soluble	Solid	DI Leach	
550-189012-17	SWFTS-BH29-SO-24.5	Soluble	Solid	DI Leach	
550-189012-24	SWFTS-BH28-SO-21	Soluble	Solid	DI Leach	
MB 480-639740/1-A	Method Blank	Soluble	Solid	DI Leach	
LCS 480-639740/2-A	Lab Control Sample	Soluble	Solid	DI Leach	
550-189012-17 MS	SWFTS-BH29-SO-24.5	Soluble	Solid	DI Leach	
550-189012-24 MS	SWFTS-BH28-SO-21	Soluble	Solid	DI Leach	
550-189012-24 MSD	SWFTS-BH28-SO-21	Soluble	Solid	DI Leach	

General Chemistry

Leach Batch: 639879

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
550-189012-18	SWFTS-BH29-SO-28	Soluble	Solid	DI Leach	
550-189012-19	SWFTS-BH29-SO-36.5	Soluble	Solid	DI Leach	
550-189012-20	SWFTS-BH29-SO-40	Soluble	Solid	DI Leach	
550-189012-21	SWFTS-BH29-SO-43.5	Soluble	Solid	DI Leach	
550-189012-22	SWFTS-BH28-SO-17.3	Soluble	Solid	DI Leach	
550-189012-23	SWFTS-BH28-SO-17.3-FD	Soluble	Solid	DI Leach	
550-189012-25	SWFTS-BH28-SO-26	Soluble	Solid	DI Leach	
550-189012-26	SWFTS-BH28-SO-32.5	Soluble	Solid	DI Leach	
550-189012-27	SWFTS-BH28-SO-41	Soluble	Solid	DI Leach	
550-189012-28	SWFTS-BH30-SO-37-FD	Soluble	Solid	DI Leach	
MB 480-639879/1-A	Method Blank	Soluble	Solid	DI Leach	
LCS 480-639879/2-A	Lab Control Sample	Soluble	Solid	DI Leach	
550-189013-B-3-A MS	Matrix Spike	Soluble	Solid	DI Leach	
550-189013-B-3-B MSD	Matrix Spike Duplicate	Soluble	Solid	DI Leach	

Analysis Batch: 640054

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
550-189012-5	SWFTS-BH27-SO-28	Soluble	Solid	VFA-IC	639709
MB 480-639709/1-A	Method Blank	Soluble	Solid	VFA-IC	639709
LCS 480-639709/2-A	Lab Control Sample	Soluble	Solid	VFA-IC	639709
550-189012-5 MS	SWFTS-BH27-SO-28	Soluble	Solid	VFA-IC	639709
550-189012-5 MSD	SWFTS-BH27-SO-28	Soluble	Solid	VFA-IC	639709

Analysis Batch: 640070

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
550-189012-3	SWFTS-BH27-SO-16.5-FD	Soluble	Solid	VFA-IC	639740
550-189012-4	SWFTS-BH27-SO-23	Soluble	Solid	VFA-IC	639740
550-189012-6	SWFTS-BH27-SO-36.2	Soluble	Solid	VFA-IC	639740
550-189012-7	SWFTS-BH26-SO-16.3	Soluble	Solid	VFA-IC	639740
550-189012-8	SWFTS-BH26-SO-18.5	Soluble	Solid	VFA-IC	639740
550-189012-9	SWFTS-BH26-SO-22.3	Soluble	Solid	VFA-IC	639740
550-189012-10	SWFTS-BH26-SO-31	Soluble	Solid	VFA-IC	639740
550-189012-11	SWFTS-BH26-SO-48.5	Soluble	Solid	VFA-IC	639740
550-189012-12	SWFTS-BH30-SO-18	Soluble	Solid	VFA-IC	639740
550-189012-13	SWFTS-BH30-SO-22.8	Soluble	Solid	VFA-IC	639740
550-189012-14	SWFTS-BH30-SO-24	Soluble	Solid	VFA-IC	639740
550-189012-15	SWFTS-BH30-SO-29	Soluble	Solid	VFA-IC	639740
550-189012-16	SWFTS-BH30-SO-37	Soluble	Solid	VFA-IC	639740
550-189012-17	SWFTS-BH29-SO-24.5	Soluble	Solid	VFA-IC	639740
550-189012-18	SWFTS-BH29-SO-28	Soluble	Solid	VFA-IC	639879
550-189012-19	SWFTS-BH29-SO-36.5	Soluble	Solid	VFA-IC	639879
550-189012-20	SWFTS-BH29-SO-40	Soluble	Solid	VFA-IC	639879
550-189012-21	SWFTS-BH29-SO-43.5	Soluble	Solid	VFA-IC	639879
550-189012-22	SWFTS-BH28-SO-17.3	Soluble	Solid	VFA-IC	639879
550-189012-23	SWFTS-BH28-SO-17.3-FD	Soluble	Solid	VFA-IC	639879
550-189012-24	SWFTS-BH28-SO-21	Soluble	Solid	VFA-IC	639740
550-189012-25	SWFTS-BH28-SO-26	Soluble	Solid	VFA-IC	639879
550-189012-26	SWFTS-BH28-SO-32.5	Soluble	Solid	VFA-IC	639879
550-189012-27	SWFTS-BH28-SO-41	Soluble	Solid	VFA-IC	639879
550-189012-28	SWFTS-BH30-SO-37-FD	Soluble	Solid	VFA-IC	639879
MB 480-639740/1-A	Method Blank	Soluble	Solid	VFA-IC	639740

General Chemistry (Continued)

Analysis Batch: 640070 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
MB 480-639879/1-A	Method Blank	Soluble	Solid	VFA-IC	639879
LCS 480-639740/2-A	Lab Control Sample	Soluble	Solid	VFA-IC	639740
LCS 480-639879/2-A	Lab Control Sample	Soluble	Solid	VFA-IC	639879
550-189012-17 MS	SWFTS-BH29-SO-24.5	Soluble	Solid	VFA-IC	639740
550-189012-24 MS	SWFTS-BH28-SO-21	Soluble	Solid	VFA-IC	639740
550-189012-24 MSD	SWFTS-BH28-SO-21	Soluble	Solid	VFA-IC	639740
550-189013-B-3-A MS	Matrix Spike	Soluble	Solid	VFA-IC	639879
550-189013-B-3-B MSD	Matrix Spike Duplicate	Soluble	Solid	VFA-IC	639879

Analysis Batch: 640360

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
550-189012-1	SWFTS-BH27-SO-11.8	Soluble	Solid	VFA-IC	639709
550-189012-2	SWFTS-BH27-SO-16.5	Soluble	Solid	VFA-IC	639709
MB 480-639709/1-A	Method Blank	Soluble	Solid	VFA-IC	639709
LCS 480-639709/2-A	Lab Control Sample	Soluble	Solid	VFA-IC	639709
550-189012-2 MS	SWFTS-BH27-SO-16.5	Soluble	Solid	VFA-IC	639709

Lab Chronicle

Client: Tetra Tech, Inc.
Job ID: 550-189012-1
Project/Site: NERT - Seep Well Field

Client Sample ID: SWFTS-BH27-SO-11.8
Lab Sample ID: 550-189012-1
Date Collected: 08/16/22 08:00
Matrix: Solid
Date Received: 08/18/22 06:30

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	3050B			281981	GLW	EET PHX	08/19/22 05:00
Total/NA	Analysis	6010B		1	282130	CHS	EET PHX	08/22/22 11:49
Total/NA	Analysis	9060A		1	585938	ABW	EET DEN	09/02/22 15:00
Soluble	Leach	DI Leach			639709	KER	EET BUF	08/30/22 15:03
Soluble	Analysis	VFA-IC		1	640360	IMZ	EET BUF	09/07/22 10:43

Client Sample ID: SWFTS-BH27-SO-16.5
Lab Sample ID: 550-189012-2
Date Collected: 08/16/22 08:05
Matrix: Solid
Date Received: 08/18/22 06:30

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	3050B			281981	GLW	EET PHX	08/19/22 05:00
Total/NA	Analysis	6010B		1	282130	CHS	EET PHX	08/22/22 11:52
Total/NA	Analysis	9060A		1	585938	ABW	EET DEN	09/02/22 15:09
Soluble	Leach	DI Leach			639709	KER	EET BUF	08/30/22 15:03
Soluble	Analysis	VFA-IC		1	640360	IMZ	EET BUF	09/07/22 11:12

Client Sample ID: SWFTS-BH27-SO-16.5-FD
Lab Sample ID: 550-189012-3
Date Collected: 08/16/22 08:05
Matrix: Solid
Date Received: 08/18/22 06:30

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	3050B			281981	GLW	EET PHX	08/19/22 05:00
Total/NA	Analysis	6010B		1	282130	CHS	EET PHX	08/22/22 11:55
Total/NA	Analysis	9060A		1	585938	ABW	EET DEN	09/02/22 15:19
Soluble	Leach	DI Leach			639740	KER	EET BUF	08/30/22 17:24
Soluble	Analysis	VFA-IC		1	640070	IMZ	EET BUF	09/01/22 18:59

Client Sample ID: SWFTS-BH27-SO-23
Lab Sample ID: 550-189012-4
Date Collected: 08/16/22 08:10
Matrix: Solid
Date Received: 08/18/22 06:30

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	3050B			281981	GLW	EET PHX	08/19/22 05:00
Total/NA	Analysis	6010B		1	282130	CHS	EET PHX	08/22/22 11:58
Total/NA	Analysis	9060A		1	586173	KEG	EET DEN	09/07/22 16:17
Soluble	Leach	DI Leach			639740	KER	EET BUF	08/30/22 17:24
Soluble	Analysis	VFA-IC		1	640070	IMZ	EET BUF	09/01/22 19:28

Lab Chronicle

Client: Tetra Tech, Inc.
Job ID: 550-189012-1
Project/Site: NERT - Seep Well Field

Client Sample ID: SWFTS-BH27-SO-28
Lab Sample ID: 550-189012-5
Date Collected: 08/16/22 08:15
Matrix: Solid
Date Received: 08/18/22 06:30

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	3050B			281981	GLW	EET PHX	08/19/22 05:00
Total/NA	Analysis	6010B		2	282160	CHS	EET PHX	08/22/22 15:10
Total/NA	Analysis	9060A		1	586173	KEG	EET DEN	09/07/22 12:28
Soluble	Leach	DI Leach			639709	KER	EET BUF	08/30/22 15:03
Soluble	Analysis	VFA-IC		1	640054	IMZ	EET BUF	09/02/22 07:29

Client Sample ID: SWFTS-BH27-SO-36.2
Lab Sample ID: 550-189012-6
Date Collected: 08/16/22 08:20
Matrix: Solid
Date Received: 08/18/22 06:30

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	3050B			281981	GLW	EET PHX	08/19/22 05:00
Total/NA	Analysis	6010B		1	282130	CHS	EET PHX	08/22/22 12:01
Total/NA	Analysis	9060A		1	586173	KEG	EET DEN	09/07/22 16:29
Soluble	Leach	DI Leach			639740	KER	EET BUF	08/30/22 17:24
Soluble	Analysis	VFA-IC		1	640070	IMZ	EET BUF	09/01/22 19:57

Client Sample ID: SWFTS-BH26-SO-16.3
Lab Sample ID: 550-189012-7
Date Collected: 08/16/22 09:10
Matrix: Solid
Date Received: 08/18/22 06:30

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	3050B			281981	GLW	EET PHX	08/19/22 05:00
Total/NA	Analysis	6010B		1	282130	CHS	EET PHX	08/22/22 12:04
Total/NA	Analysis	9060A		1	586302	ABW	EET DEN	09/08/22 13:29
Soluble	Leach	DI Leach			639740	KER	EET BUF	08/30/22 17:24
Soluble	Analysis	VFA-IC		1	640070	IMZ	EET BUF	09/01/22 20:26

Client Sample ID: SWFTS-BH26-SO-18.5
Lab Sample ID: 550-189012-8
Date Collected: 08/16/22 09:15
Matrix: Solid
Date Received: 08/18/22 06:30

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	3050B			281981	GLW	EET PHX	08/19/22 05:00
Total/NA	Analysis	6010B		1	282130	CHS	EET PHX	08/22/22 12:06
Total/NA	Analysis	9060A		1	586302	ABW	EET DEN	09/08/22 13:39
Soluble	Leach	DI Leach			639740	KER	EET BUF	08/30/22 17:24
Soluble	Analysis	VFA-IC		1	640070	IMZ	EET BUF	09/01/22 20:55

Lab Chronicle

Client: Tetra Tech, Inc.
Job ID: 550-189012-1
Project/Site: NERT - Seep Well Field

Client Sample ID: SWFTS-BH26-SO-22.3
Lab Sample ID: 550-189012-9
Date Collected: 08/16/22 09:20
Matrix: Solid
Date Received: 08/18/22 06:30

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	3050B			281981	GLW	EET PHX	08/19/22 05:00
Total/NA	Analysis	6010B		1	282130	CHS	EET PHX	08/22/22 12:09
Total/NA	Analysis	9060A		1	586302	ABW	EET DEN	09/08/22 13:49
Soluble	Leach	DI Leach			639740	KER	EET BUF	08/30/22 17:24
Soluble	Analysis	VFA-IC		1	640070	IMZ	EET BUF	09/01/22 23:50

Client Sample ID: SWFTS-BH26-SO-31
Lab Sample ID: 550-189012-10
Date Collected: 08/16/22 09:25
Matrix: Solid
Date Received: 08/18/22 06:30

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	3050B			281982	GLW	EET PHX	08/19/22 01:26
Total/NA	Analysis	6010B		1	282128	CHS	EET PHX	08/22/22 07:54
Total/NA	Analysis	9060A		1	586302	ABW	EET DEN	09/08/22 13:58
Soluble	Leach	DI Leach			639740	KER	EET BUF	08/30/22 17:24
Soluble	Analysis	VFA-IC		1	640070	IMZ	EET BUF	09/02/22 00:20

Client Sample ID: SWFTS-BH26-SO-48.5
Lab Sample ID: 550-189012-11
Date Collected: 08/16/22 09:30
Matrix: Solid
Date Received: 08/18/22 06:30

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	3050B			281982	GLW	EET PHX	08/19/22 01:26
Total/NA	Analysis	6010B		1	282128	CHS	EET PHX	08/22/22 08:03
Total/NA	Analysis	9060A		1	586302	ABW	EET DEN	09/08/22 14:12
Soluble	Leach	DI Leach			639740	KER	EET BUF	08/30/22 17:24
Soluble	Analysis	VFA-IC		1	640070	IMZ	EET BUF	09/02/22 00:49

Client Sample ID: SWFTS-BH30-SO-18
Lab Sample ID: 550-189012-12
Date Collected: 08/16/22 12:00
Matrix: Solid
Date Received: 08/18/22 06:30

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	3050B			281982	GLW	EET PHX	08/19/22 01:26
Total/NA	Analysis	6010B		1	282128	CHS	EET PHX	08/22/22 08:06
Total/NA	Analysis	9060A		1	586302	ABW	EET DEN	09/08/22 14:22
Soluble	Leach	DI Leach			639740	KER	EET BUF	08/30/22 17:24
Soluble	Analysis	VFA-IC		1	640070	IMZ	EET BUF	09/02/22 01:18

Lab Chronicle

Client: Tetra Tech, Inc.
Job ID: 550-189012-1
Project/Site: NERT - Seep Well Field

Client Sample ID: SWFTS-BH30-SO-22.8
Lab Sample ID: 550-189012-13
Date Collected: 08/16/22 12:05
Matrix: Solid
Date Received: 08/18/22 06:30

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	3050B			281982	GLW	EET PHX	08/19/22 01:26
Total/NA	Analysis	6010B		1	282128	CHS	EET PHX	08/22/22 08:09
Total/NA	Analysis	9060A		1	586302	ABW	EET DEN	09/08/22 14:38
Soluble	Leach	DI Leach			639740	KER	EET BUF	08/30/22 17:24
Soluble	Analysis	VFA-IC		1	640070	IMZ	EET BUF	09/02/22 01:47

Client Sample ID: SWFTS-BH30-SO-24
Lab Sample ID: 550-189012-14
Date Collected: 08/16/22 12:10
Matrix: Solid
Date Received: 08/18/22 06:30

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	3050B			281982	GLW	EET PHX	08/19/22 01:26
Total/NA	Analysis	6010B		1	282128	CHS	EET PHX	08/22/22 08:11
Total/NA	Analysis	9060A		1	586302	ABW	EET DEN	09/08/22 15:19
Soluble	Leach	DI Leach			639740	KER	EET BUF	08/30/22 17:24
Soluble	Analysis	VFA-IC		1	640070	IMZ	EET BUF	09/02/22 02:16

Client Sample ID: SWFTS-BH30-SO-29
Lab Sample ID: 550-189012-15
Date Collected: 08/16/22 12:15
Matrix: Solid
Date Received: 08/18/22 06:30

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	3050B			281982	GLW	EET PHX	08/19/22 01:26
Total/NA	Analysis	6010B		1	282128	CHS	EET PHX	08/22/22 08:14
Total/NA	Analysis	9060A		1	586302	ABW	EET DEN	09/08/22 15:31
Soluble	Leach	DI Leach			639740	KER	EET BUF	08/30/22 17:24
Soluble	Analysis	VFA-IC		1	640070	IMZ	EET BUF	09/02/22 02:45

Client Sample ID: SWFTS-BH30-SO-37
Lab Sample ID: 550-189012-16
Date Collected: 08/16/22 12:20
Matrix: Solid
Date Received: 08/18/22 06:30

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	3050B			281982	GLW	EET PHX	08/19/22 01:26
Total/NA	Analysis	6010B		1	282128	CHS	EET PHX	08/22/22 08:17
Total/NA	Analysis	9060A		1	586302	ABW	EET DEN	09/08/22 16:14
Soluble	Leach	DI Leach			639740	KER	EET BUF	08/30/22 17:24
Soluble	Analysis	VFA-IC		1	640070	IMZ	EET BUF	09/02/22 03:14

Lab Chronicle

Client: Tetra Tech, Inc.
Job ID: 550-189012-1
Project/Site: NERT - Seep Well Field

Client Sample ID: SWFTS-BH29-SO-24.5
Lab Sample ID: 550-189012-17
Date Collected: 08/16/22 12:40
Matrix: Solid
Date Received: 08/18/22 06:30

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	3050B			281982	GLW	EET PHX	08/19/22 01:26
Total/NA	Analysis	6010B		1	282128	CHS	EET PHX	08/22/22 08:20
Total/NA	Analysis	9060A		1	586384	ABW	EET DEN	09/09/22 10:11
Soluble	Leach	DI Leach			639740	KER	EET BUF	08/30/22 17:24
Soluble	Analysis	VFA-IC		1	640070	IMZ	EET BUF	09/02/22 03:44

Client Sample ID: SWFTS-BH29-SO-28
Lab Sample ID: 550-189012-18
Date Collected: 08/16/22 12:45
Matrix: Solid
Date Received: 08/18/22 06:30

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	3050B			281982	GLW	EET PHX	08/19/22 01:26
Total/NA	Analysis	6010B		1	282128	CHS	EET PHX	08/22/22 08:23
Total/NA	Analysis	9060A		1	586302	ABW	EET DEN	09/08/22 13:01
Soluble	Leach	DI Leach			639879	KER	EET BUF	08/31/22 14:09
Soluble	Analysis	VFA-IC		1	640070	IMZ	EET BUF	09/02/22 06:38

Client Sample ID: SWFTS-BH29-SO-36.5
Lab Sample ID: 550-189012-19
Date Collected: 08/16/22 12:50
Matrix: Solid
Date Received: 08/18/22 06:30

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	3050B			281982	GLW	EET PHX	08/19/22 01:26
Total/NA	Analysis	6010B		1	282128	CHS	EET PHX	08/22/22 08:26
Total/NA	Analysis	9060A		1	586384	ABW	EET DEN	09/09/22 10:20
Soluble	Leach	DI Leach			639879	KER	EET BUF	08/31/22 14:09
Soluble	Analysis	VFA-IC		1	640070	IMZ	EET BUF	09/02/22 07:08

Client Sample ID: SWFTS-BH29-SO-40
Lab Sample ID: 550-189012-20
Date Collected: 08/16/22 12:55
Matrix: Solid
Date Received: 08/18/22 06:30

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	3050B			281982	GLW	EET PHX	08/19/22 01:26
Total/NA	Analysis	6010B		1	282128	CHS	EET PHX	08/22/22 08:28
Total/NA	Analysis	9060A		1	586384	ABW	EET DEN	09/09/22 10:30
Soluble	Leach	DI Leach			639879	KER	EET BUF	08/31/22 14:09
Soluble	Analysis	VFA-IC		1	640070	IMZ	EET BUF	09/02/22 07:37

Lab Chronicle

Client: Tetra Tech, Inc.
Job ID: 550-189012-1
Project/Site: NERT - Seep Well Field

Client Sample ID: SWFTS-BH29-SO-43.5
Lab Sample ID: 550-189012-21
Date Collected: 08/16/22 13:00
Matrix: Solid
Date Received: 08/18/22 06:30

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	3050B			281982	GLW	EET PHX	08/19/22 01:26
Total/NA	Analysis	6010B		2	282163	CHS	EET PHX	08/22/22 15:35
Total/NA	Analysis	9060A		1	586384	ABW	EET DEN	09/09/22 10:39
Soluble	Leach	DI Leach			639879	KER	EET BUF	08/31/22 14:09
Soluble	Analysis	VFA-IC		1	640070	IMZ	EET BUF	09/02/22 08:06

Client Sample ID: SWFTS-BH28-SO-17.3
Lab Sample ID: 550-189012-22
Date Collected: 08/16/22 15:05
Matrix: Solid
Date Received: 08/18/22 06:30

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	3050B			281982	GLW	EET PHX	08/19/22 01:26
Total/NA	Analysis	6010B		1	282128	CHS	EET PHX	08/22/22 08:40
Total/NA	Analysis	9060A		1	586384	ABW	EET DEN	09/09/22 09:42
Soluble	Leach	DI Leach			639879	KER	EET BUF	08/31/22 14:09
Soluble	Analysis	VFA-IC		1	640070	IMZ	EET BUF	09/02/22 08:35

Client Sample ID: SWFTS-BH28-SO-17.3-FD
Lab Sample ID: 550-189012-23
Date Collected: 08/16/22 15:05
Matrix: Solid
Date Received: 08/18/22 06:30

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	3050B			281982	GLW	EET PHX	08/19/22 01:26
Total/NA	Analysis	6010B		1	282128	CHS	EET PHX	08/22/22 08:42
Total/NA	Analysis	9060A		1	586384	ABW	EET DEN	09/09/22 10:52
Soluble	Leach	DI Leach			639879	KER	EET BUF	08/31/22 14:09
Soluble	Analysis	VFA-IC		1	640070	IMZ	EET BUF	09/02/22 11:30

Client Sample ID: SWFTS-BH28-SO-21
Lab Sample ID: 550-189012-24
Date Collected: 08/16/22 15:10
Matrix: Solid
Date Received: 08/18/22 06:30

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	3050B			281982	GLW	EET PHX	08/19/22 01:26
Total/NA	Analysis	6010B		1	282128	CHS	EET PHX	08/22/22 07:52
Total/NA	Analysis	9060A		1	586173	KEG	EET DEN	09/07/22 15:16
Soluble	Leach	DI Leach			639740	KER	EET BUF	08/30/22 17:24
Soluble	Analysis	VFA-IC		1	640070	IMZ	EET BUF	09/01/22 21:25

Lab Chronicle

Client: Tetra Tech, Inc.
Job ID: 550-189012-1
Project/Site: NERT - Seep Well Field

Client Sample ID: SWFTS-BH28-SO-26
Lab Sample ID: 550-189012-25
Date Collected: 08/16/22 15:15
Matrix: Solid
Date Received: 08/18/22 06:30

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	3050B			281982	GLW	EET PHX	08/19/22 01:26
Total/NA	Analysis	6010B		1	282128	CHS	EET PHX	08/22/22 08:45
Total/NA	Analysis	9060A		1	586384	ABW	EET DEN	09/09/22 11:01
Soluble	Leach	DI Leach			639879	KER	EET BUF	08/31/22 14:09
Soluble	Analysis	VFA-IC		1	640070	IMZ	EET BUF	09/02/22 11:59

Client Sample ID: SWFTS-BH28-SO-32.5
Lab Sample ID: 550-189012-26
Date Collected: 08/16/22 15:20
Matrix: Solid
Date Received: 08/18/22 06:30

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	3050B			281982	GLW	EET PHX	08/19/22 01:26
Total/NA	Analysis	6010B		1	282128	CHS	EET PHX	08/22/22 08:48
Total/NA	Analysis	9060A		1	586384	ABW	EET DEN	09/09/22 11:11
Soluble	Leach	DI Leach			639879	KER	EET BUF	08/31/22 14:09
Soluble	Analysis	VFA-IC		1	640070	IMZ	EET BUF	09/02/22 12:28

Client Sample ID: SWFTS-BH28-SO-41
Lab Sample ID: 550-189012-27
Date Collected: 08/16/22 15:25
Matrix: Solid
Date Received: 08/18/22 06:30

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	3050B			281982	GLW	EET PHX	08/19/22 01:26
Total/NA	Analysis	6010B		2	282163	CHS	EET PHX	08/22/22 15:38
Total/NA	Analysis	9060A		1	586384	ABW	EET DEN	09/09/22 11:48
Soluble	Leach	DI Leach			639879	KER	EET BUF	08/31/22 14:09
Soluble	Analysis	VFA-IC		1	640070	IMZ	EET BUF	09/02/22 12:57

Client Sample ID: SWFTS-BH30-SO-37-FD
Lab Sample ID: 550-189012-28
Date Collected: 08/16/22 12:20
Matrix: Solid
Date Received: 08/18/22 06:30

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	3050B			282626	SGO	EET PHX	08/29/22 10:28
Total/NA	Analysis	6010B		1	282808	CHS	EET PHX	08/30/22 18:42
Total/NA	Analysis	9060A		1	586384	ABW	EET DEN	09/09/22 11:58
Soluble	Leach	DI Leach			639879	KER	EET BUF	08/31/22 14:09
Soluble	Analysis	VFA-IC		1	640070	IMZ	EET BUF	09/02/22 13:27

Laboratory References:

EET BUF = Eurofins Buffalo, 10 Hazelwood Drive, Amherst, NY 14228-2298, TEL (716)691-2600

EET DEN = Eurofins Denver, 4955 Yarrow Street, Arvada, CO 80002, TEL (303)736-0100

EET PHX = Eurofins Phoenix, 4625 East Cotton Center Boulevard, Suite #189, Phoenix, AZ 85040, TEL (602)437-3340

Accreditation/Certification Summary

Client: Tetra Tech, Inc.
Job ID: 550-189012-1
Project/Site: NERT - Seep Well Field

Laboratory: Eurofins Phoenix

All accreditations/certifications held by this laboratory are listed. Not all accreditations/certifications are applicable to this report.

Authority	Program	Identification Number	Expiration Date
Arizona	State	AZ0728	06-10-23
California	State	2941	03-09-23
Nevada	State	AZ1030	07-31-23
Oregon	NELAP	AZ100001	03-09-23
USDA	US Federal Programs	P330-19-00227	08-27-22 *

Laboratory: Eurofins Buffalo

All accreditations/certifications held by this laboratory are listed. Not all accreditations/certifications are applicable to this report.

Authority	Program	Identification Number	Expiration Date
Arkansas DEQ	State	88-0686	07-06-22 *
Connecticut	State	PH-0568	03-31-24
Florida	NELAP	E87672	06-30-23
Georgia	State	10026 (NY)	04-01-23
Georgia	State Program	N/A	03-31-09 *
Georgia (DW)	State	956	03-31-23
Illinois	NELAP	200003	09-30-22
Illinois	NELAP	200003	09-30-22
Iowa	State	374	03-01-23
Iowa	State Program	374	03-01-09 *
Kansas	NELAP	E-10187	01-31-23
Kentucky (DW)	State	90029	12-31-22
Kentucky (UST)	State	30	04-01-23
Kentucky (WW)	State	KY90029	12-31-22
Louisiana	NELAP	02031	06-30-23
Louisiana (All)	NELAP	02031	06-30-23
Maine	State	NY00044	12-04-22
Maryland	State	294	03-31-23
Massachusetts	State	M-NY044	06-30-23
Michigan	State	9937	03-31-23
Michigan	State Program	9937	04-01-09 *
New Hampshire	NELAP	2973	09-11-19 *
New Hampshire	NELAP	2337	11-17-22
New Jersey	NELAP	NY455	06-30-23
New York	NELAP	10026	03-31-23
Pennsylvania	NELAP	68-00281	09-11-22
Rhode Island	State	LAO00328	12-30-22
Tennessee	State	02970	04-01-23
Texas	NELAP	T104704412-18-10	07-31-23
USDA	US Federal Programs	P330-18-00039	03-25-24
Virginia	NELAP	460185	09-14-22
Washington	State	C784	02-10-23
Wisconsin	State	998310390	08-31-23

Laboratory: Eurofins Denver

All accreditations/certifications held by this laboratory are listed. Not all accreditations/certifications are applicable to this report.

Authority	Program	Identification Number	Expiration Date
A2LA	Dept. of Defense ELAP	2907.01	10-31-23
A2LA	ISO/IEC 17025	2907.01	10-31-23
Alabama	State Program	40730	09-30-12 *

* Accreditation/Certification renewal pending - accreditation/certification considered valid.

Accreditation/Certification Summary

Client: Tetra Tech, Inc.
Job ID: 550-189012-1
Project/Site: NERT - Seep Well Field

Laboratory: Eurofins Denver (Continued)

All accreditations/certifications held by this laboratory are listed. Not all accreditations/certifications are applicable to this report.

Authority	Program	Identification Number	Expiration Date
Alaska (UST)	State	18-001	02-08-23
Arizona	State	AZ0713	12-20-22
Arkansas DEQ	State	19-047-0	06-01-22 *
California	State	2513	01-08-23
Connecticut	State	PH-0686	09-30-22
Florida	NELAP	E87667-57	06-30-23
Georgia	State	4025-011	01-08-23
Illinois	NELAP	2000172019-1	04-30-23
Iowa	State	IA#370	12-02-22
Kansas	NELAP	E-10166	04-30-23
Kentucky (WW)	State	KY98047	12-31-22
Louisiana	NELAP	30785	06-30-14 *
Louisiana	NELAP	30785	06-30-23
Minnesota	NELAP	1788752	12-31-22
Nevada	State	CO000262020-1	07-31-22 *
New Hampshire	NELAP	205319	04-28-23
New Jersey	NELAP	190002	06-30-23
New York	NELAP	59923	04-01-23
North Carolina (WW/SW)	State	358	12-31-22
North Dakota	State	R-034	01-08-23
Oklahoma	NELAP	8614	08-31-22 *
Oregon	NELAP	4025-011	01-09-23
Pennsylvania	NELAP	013	07-31-23
South Carolina	State	72002001	01-08-23
Texas	NELAP	TX104704183-08-TX	09-30-09 *
Texas	NELAP	T104704183-21-19	10-01-22
USDA	US Federal Programs	P330-20-00065	03-06-23
Utah	NELAP	QUAN5	06-30-13 *
Utah	NELAP	CO000262019-11	07-31-23
Virginia	NELAP	10490	06-14-23
Washington	State	C583-19	08-03-22 *
West Virginia DEP	State	354	11-30-22
Wyoming (UST)	A2LA	2907.01	10-31-22

* Accreditation/Certification renewal pending - accreditation/certification considered valid.

Method Summary

Client: Tetra Tech, Inc.
Project/Site: NERT - Seep Well Field

Job ID: 550-189012-1

Method	Method Description	Protocol	Laboratory
6010B	Metals (ICP)	SW846	EET PHX
9060A	Organic Carbon, Total (TOC)	SW846	EET DEN
VFA-IC	Volatile Fatty Acids, Ion Chromatography	TestAmerica SOP	EET BUF
3050B	Preparation, Metals	SW846	EET PHX
DI Leach	Deionized Water Leaching Procedure	ASTM	EET BUF

Protocol References:

ASTM = ASTM International

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

TestAmerica SOP = TestAmerica, Inc., Standard Operating Procedure

Laboratory References:

EET BUF = Eurofins Buffalo, 10 Hazelwood Drive, Amherst, NY 14228-2298, TEL (716)691-2600

EET DEN = Eurofins Denver, 4955 Yarrow Street, Arvada, CO 80002, TEL (303)736-0100

EET PHX = Eurofins Phoenix, 4625 East Cotton Center Boulevard, Suite #189, Phoenix, AZ 85040, TEL (602)437-3340

Tetra Tech
150 S Fourth Street, Unit A
Henderson, NV 89015
702-854-2295

TestAmerica
Las Vegas
219

CHAIN-OF-CUSTODY

189012

9/13/2022

Laboratory Name: **Eurofins-Phoenix** (602) 437-3340						**Address: 4625 E. Cotton Center Blvd. Suite 189; Phoenix, AZ 85040**										**Contact: Rachel Sester (602) 659-7615**	**Page 1 of 2**
Project Name: **Seep Well Field**						Sampler: G. Schuler											
Project No. **M11** NERT			Project Contact **Maureen McMyler**			Site Telephone No. **(702) 767-2053**											
Report to: Maureen McMyler; Maureen.McMyler@tetratech.com; (865) 220-4762						Project Manager/Supervisor **Dana Grady**											
Bill to: Sunshine Pryor, 350 Indiana St., Golden, CO 80401 (303) 217-5700						Sample Description											
Item No.	Sample Number	Date	Time	G - Grab C - Comp	Matrix		Number of Containers	TOC by 9060A	Calcium by 6010B	VFA by IC							
						Preservative	3	None	None	None	None	None					Notes
01	1 **SWFTS-BH27-SO-11.8**	8/16/2022	**0800**	G	S		3	1	1	1							
02	2 **SWFTS-BH27-SO-16.5**	8/16/2022	**0805**	G	S		3	1	1	1							
03	3 **SWFTS-BH27-SO-16.5-FD**	8/16/2022	**0805**	G	S		3	1	1	1							
04	4 **SWFTS-BH27-SO-23**	8/16/2022	**0810**	G	S		3	1	1	1							
05	5 **SWFTS-BH27-SO-28**	8/16/2022	**0815**	G	S		3	1	1	1							
05	6 **SWFTS-BH27-SO-28-MS/MSD**	8/16/2022	**0815**	G	S		3	1	1	1							
06	7 **SWFTS-BH27-SO-36.2**	8/16/2022	**0820**	G	S		3	1	1	1							
07	8 **SWFTS-BH26-SO-16.3**	8/16/2022	**0910**	G	S		3	1	1	1							
08	9 **SWFTS-BH26-SO-18.5**	8/16/2022	**0915**	G	S		3	1	1	1							
09	10 **SWFTS-BH26-SO-22.3**	8/16/2022	**0920**	G	S		3	1	1	1							
10	11 **SWFTS-BH26-SO-31**	8/16/2022	**0925**	G	S		3	1	1	1							
11	12 **SWFTS-BH26-SO-48.5**	8/16/2022	**0930**	G	S		3	1	1	1							
12	13 **SWFTS-BH30-SO-18**	8/16/2022	**1200**	G	S		3	1	1	1							
13	14 **SWFTS-BH30-SO-22.8**	8/16/2022	**1205**	G	S		3	1	1	1							
14	15 **SWFTS-BH30-SO-24**	8/16/2022	**1210**	G	S		3	1	1	1							

550-189012 Chain of Custody

Transfers Relinquished By (Signature)	Date/Time	Transfers Accepted By (Signature)	Date/Time	Special Instructions:
G. Schuler	8/17/22	JTAM TALVS	8-17-22 1300	
JTAM TALVS	8-17-22 1600			Level IVPackage; EQuIS 4-file format EDD
				FedEx Airbill No.:
DROP BOX		Laboratory EETA PHX	8/18/22 6:30	Sampler's Signature

TAT: Standard

TH240 14.4/24.7

3.6|5.6|3.6|2.1|3.9|4.2 PH2

Tetra Tech
150 S Fourth Street, Unit A
Henderson, NV 89015
702-854-2295

TestAmerica
Las Vegas
219

CHAIN-OF-CUSTODY

189012

9/13/2022

Laboratory Name: **Eurofins-Phoenix** (602) 437-3340						Address: 4625 E. Cotton Center Blvd. Suite 189; Phoenix, AZ 85040			Contact: Rachel Sester (602) 659-7615							Page 2 of 2
Project Name: **Seep Well Field**						Sampler G. Schuler	Analysis and Method Requested									Remarks
Project No. **M11** NERT			Project Contact **Maureen McMyler**			Site Telephone No. **(702) 767-2053**	Number of Containers	TOC by 9060A	Calcium by 6010B	VFA by IC						
Report to: Maureen McMyler; Maureen.McMyler@tetratech.com; (865) 220-4762						Project Manager/Supervisor **Dana Grady**										
Bill to: Sunshine Pryor, 350 Indiana St., Golden, CO 80401 (303) 217-5700						Sample Description										
Item No.	Sample Number	Date	Time	G - Grab C - Comp	Matrix											
						Preservative		None	None	None	None	None				Notes
15	1 **SWFTS-BH30-SO-29**	8/16/2022	**1215**	**G**	**S**		**3**	**1**	**1**	**1**						
16	2 **SWFTS-BH30-SO-37**	8/16/2022	**1220**	**G**	**S**		**3**	**1**	**1**	**1**						
17	3 **SWFTS-BH29-SO-24.5**	8/16/2022	**1240**	**G**	**S**		**3**	**1**	**1**	**1**						
18	4 **SWFTS-BH29-SO-28**	8/16/2022	**1245**	**G**	**S**		**3**	**1**	**1**	**1**						
19	5 **SWFTS-BH29-SO-36.5**	8/16/2022	**1250**	**G**	**S**		**3**	**1**	**1**	**1**						
20	6 **SWFTS-BH29-SO-40**	8/16/2022	**1255**	**G**	**S**		**3**	**1**	**1**	**1**						
21	7 **SWFTS-BH29-SO-43.5**	8/16/2022	**1300**	**G**	**S**		**3**	**1**	**1**	**1**						
22	8 **SWFTS-BH28-SO-17.3**	8/16/2022	**1505**	**G**	**S**		**3**	**1**	**1**	**1**						
23	9 **SWFTS-BH28-SO-17.3-FD**	8/16/2022	**1505**	**G**	**S**		**3**	**1**	**1**	**1**						
24	10 **SWFTS-BH28-SO-21**	8/16/2022	**1510**	**G**	**S**		**3**	**1**	**1**	**1**						
24	11 **SWFTS-BH28-SO-21-MS/MSD**	8/16/2022	**1510**	**G**	**S**		**3**	**1**	**1**	**1**						
25	12 **SWFTS-BH28-SO-26**	8/16/2022	**1515**	**G**	**S**		**3**	**1**	**1**	**1**						
26	13 **SWFTS-BH28-SO-32.5**	8/16/2022	**1520**	**G**	**S**		**3**	**1**	**1**	**1**						
27	14 **SWFTS-BH28-SO-41**	8/16/2022	**1525**	**G**	**S**											
	15															

Transfers Relinquished By (Signature)	Date/Time	Transfers Accepted By (Signature)	Date/Time	Special Instructions:
[signature]	8/17/22	TOM TALVS	8-17-22 1300	
TOM TALVS 8-17-22 1600				**Level IV**Package; EQuIS 4-file format EDD
				FedEx Airbill No.:
Drop Box		Laboratory [signature] EETA PHX	8/18/22 6:30	Sampler's Signature [signature]
TAT: Standard		TH240 24.4/24.7		

Eurofins Phoenix
4625 East Cotton Center Boulevard Suite #189
Phoenix, AZ 85040
Phone: 602-437-3340

Chain of Custody Record

eurofins | Environment Testing America

Client Information (Sub Contract Lab)	Sampler:	Lab PM: Sester, Rachel E	Carrier Tracking No(s):	COC No: 550-34764.1
Client Contact: Shipping/Receiving	Phone:	E-Mail: Rachel.Sester@et.eurofinsus.com	State of Origin: Nevada	Page: Page 1 of 4
Company: TestAmerica Laboratories, Inc.		Accreditations Required (See note): State Program - Nevada		Job #: 550-189012-1
Address: 4955 Yarrow Street, ,	Due Date Requested: 8/31/2022			
City: Arvada	TAT Requested (days):			
State, Zip: CO, 80002				
Phone: 303-736-0100(Tel) 303-431-7171(Fax)	PO #:			
Email:	WO #:			
Project Name: Seep Well Field	Project #: 55017858			
Site:	SSOW#:			

Analysis Requested

Preservation Codes:
A - HCL, B - NaOH, C - Zn Acetate, D - Nitric Acid, E - NaHSO4, F - MeOH, G - Amchlor, H - Ascorbic Acid, I - Ice, J - DI Water, K - EDTA, L - EDA, M - Hexane, N - None, O - AsNaO2, P - Na2O4S, Q - Na2SO3, R - Na2S2O3, S - H2SO4, T - TSP Dodecahydrate, U - Acetone, V - MCAA, W - pH 4-5, Y - Trizma, Z - other (specify)
Other:

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	9060A/ Solids - TOC	Total Number of containers	Special Instructions/Note:
			Preservation Code:						
SWFTS-BH27-SO-11.8 (550-189012-1)	8/16/22	08:00 Pacific		Solid			X	1	
SWFTS-BH27-SO-16.5 (550-189012-2)	8/16/22	08:05 Pacific		Solid			X	1	
SWFTS-BH27-SO-16.5-FD (550-189012-3)	8/16/22	08:05 Pacific		Solid			X	1	
SWFTS-BH27-SO-23 (550-189012-4)	8/16/22	08:10 Pacific		Solid			X	1	
SWFTS-BH27-SO-28 (550-189012-5)	8/16/22	08:15 Pacific		Solid			X	2	
SWFTS-BH27-SO-28 (550-189012-5MS)	8/16/22	08:15 Pacific	MS	Solid			X	2	
SWFTS-BH27-SO-28 (550-189012-5MSD)	8/16/22	08:15 Pacific	MSD	Solid			X	2	
SWFTS-BH27-SO-36.2 (550-189012-6)	8/16/22	08:20 Pacific		Solid			X	1	
SWFTS-BH26-SO-16.3 (550-189012-7)	8/16/22	09:10 Pacific		Solid			X	1	

Note: Since laboratory accreditations are subject to change, Eurofins Environment Testing Southwest, LLC places the ownership of method, analyte & accreditation compliance upon out subcontract laboratories. This sample shipment is forwarded under chain-of-custody. If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed, the samples must be shipped back to the Eurofins Environment Testing Southwest, LLC laboratory or other instructions will be provided. Any changes to accreditation status should be brought to Eurofins Environment Testing Southwest, LLC attention immediately. If all requested accreditations are current to date, return the signed Chain of Custody attesting to said complicance to Eurofins Environment Testing Southwest, LLC.

Possible Hazard Identification	***Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)***
Unconfirmed	☐ *Return To Client* ☐ *Disposal By Lab* ☐ *Archive For* _____ *Months*
Deliverable Requested: I, II, III, IV, Other (specify) Primary Deliverable Rank: 2	Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:

	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
1	[signature] 08-18-22 Fed Ex	13:30	EET SW	Fedex		
2				[signature]	08/19/2022 0950	EQA DEH
3						

Custody Seals Intact: ∆ Yes ∆ No	Custody Seal No.:	Cooler Temperature(s) °C and Other Remarks: 1.4 CF+0.0 IR-A12

Ver: 06/08/2021

Eurofins Phoenix
4625 East Cotton Center Boulevard Suite #189
Phoenix, AZ 85040
Phone: 602-437-3340

Chain of Custody Record

eurofins | Environment Testing America

Client Information (Sub Contract Lab)	Sampler:	Lab PM: Sester, Rachel E	Carrier Tracking No(s):	COC No: 550-34764.2
Client Contact: Shipping/Receiving	Phone:	E-Mail: Rachel.Sester@et.eurofinsus.com	State of Origin: Nevada	Page: Page 2 of 4
Company: TestAmerica Laboratories, Inc.		Accreditations Required (See note): State Program - Nevada		Job #: 550-189012-1
Address: 4955 Yarrow Street, ,	Due Date Requested: 8/31/2022			
City: Arvada	TAT Requested (days):			
State, Zip: CO, 80002				
Phone: 303-736-0100(Tel) 303-431-7171(Fax)	PO #:			
Email:	WO #:			
Project Name: Seep Well Field	Project #: 55017858			
Site:	SSOW#:			

Analysis Requested

Preservation Codes:
A - HCL
B - NaOH
C - Zn Acetate
D - Nitric Acid
E - NaHSO4
F - MeOH
G - Amchlor
H - Ascorbic Acid
I - Ice
J - DI Water
K - EDTA
L - EDA
M - Hexane
N - None
O - AsNaO2
P - Na2O4S
Q - Na2SO3
R - Na2S2O3
S - H2SO4
T - TSP Dodecahydrate
U - Acetone
V - MCAA
W - pH 4-5
Y - Trizma
Z - other (specify)
Other:

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	9060A/ Solids - TOC	Total Number of containers	Special Instructions/Note:
			Preservation Code:						
SWFTS-BH26-SO-18.5 (550-189012-8)	8/16/22	09:15 Pacific		Solid			X	1	
SWFTS-BH26-SO-22.3 (550-189012-9)	8/16/22	09:20 Pacific		Solid			X	1	
SWFTS-BH26-SO-31 (550-189012-10)	8/16/22	09:25 Pacific		Solid			X	1	
SWFTS-BH26-SO-48.5 (550-189012-11)	8/16/22	09:30 Pacific		Solid			X	1	
SWFTS-BH30-SO-18 (550-189012-12)	8/16/22	12:00 Pacific		Solid			X	1	
SWFTS-BH30-SO-22.8 (550-189012-13)	8/16/22	12:05 Pacific		Solid			X	1	
SWFTS-BH30-SO-24 (550-189012-14)	8/16/22	12:10 Pacific		Solid			X	1	
SWFTS-BH30-SO-29 (550-189012-15)	8/16/22	12:15 Pacific		Solid			X	1	
SWFTS-BH30-SO-37 (550-189012-16)	8/16/22	12:20 Pacific		Solid			X	1	

Note: Since laboratory accreditations are subject to change, Eurofins Environment Testing Southwest, LLC places the ownership of method, analyte & accreditation compliance upon out subcontract laboratories. This sample shipment is forwarded under chain-of-custody. If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed, the samples must be shipped back to the Eurofins Environment Testing Southwest, LLC laboratory or other instructions will be provided. Any changes to accreditation status should be brought to Eurofins Environment Testing Southwest, LLC attention immediately. If all requested accreditations are current to date, return the signed Chain of Custody attesting to said complicance to Eurofins Environment Testing Southwest, LLC.

Possible Hazard Identification
Unconfirmed

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
☐ *Return To Client* ☐ *Disposal By Lab* ☐ *Archive For _____ Months*

Deliverable Requested: I, II, III, IV, Other (specify) Primary Deliverable Rank: 2

Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:

Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
Ene 8-18-22	13:30	EETSW	Fedex		
Fed Ex			Atka	08/19/2022 0950	ETA DEW

Custody Seals Intact: Δ Yes Δ No	Custody Seal No.:	Cooler Temperature(s) °C and Other Remarks:

Ver: 06/08/2021

Eurofins Phoenix
4625 East Cotton Center Boulevard Suite #189
Phoenix, AZ 85040
Phone: 602-437-3340

Chain of Custody Record

eurofins | Environment Testing America

Client Information (Sub Contract Lab)	Sampler:	Lab PM. Sester, Rachel E	Carrier Tracking No(s):	COC No: 550-34764.3
Client Contact: Shipping/Receiving	Phone:	E-Mail: Rachel.Sester@et.eurofinsus.com	State of Origin: Nevada	Page: Page 3 of 4
Company: TestAmerica Laboratories, Inc.		Accreditations Required (See note): State Program - Nevada		Job #: 550-189012-1
Address: 4955 Yarrow Street, ,	Due Date Requested: 8/31/2022			
City: Arvada	TAT Requested (days):			
State, Zip: CO, 80002				
Phone: 303-736-0100(Tel) 303-431-7171(Fax)	PO #:			
Email:	WO #:			
Project Name: Seep Well Field	Project #: 55017858			
Site:	SSOW#:			

Analysis Requested

Preservation Codes:
A - HCL
B - NaOH
C - Zn Acetate
D - Nitric Acid
E - NaHSO4
F - MeOH
G - Amchlor
H - Ascorbic Acid
I - Ice
J - DI Water
K - EDTA
L - EDA
M - Hexane
N - None
O - AsNaO2
P - Na2O4S
Q - Na2SO3
R - Na2S2O3
S - H2SO4
T - TSP Dodecahydrate
U - Acetone
V - MCAA
W - pH 4-5
Y - Trizma
Z - other (specify)
Other:

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	9060A/ Solids - TOC	Total Number of containers	Special Instructions/Note:
			Preservation Code:						
SWFTS-BH29-SO-24.5 (550-189012-17)	8/16/22	12:40 Pacific		Solid			X	1	
SWFTS-BH29-SO-28 (550-189012-18)	8/16/22	12:45 Pacific		Solid			X	1	
SWFTS-BH29-SO-36.5 (550-189012-19)	8/16/22	12:50 Pacific		Solid			X	1	
SWFTS-BH29-SO-40 (550-189012-20)	8/16/22	12:55 Pacific		Solid			X	1	
SWFTS-BH29-SO-43.5 (550-189012-21)	8/16/22	13:00 Pacific		Solid			X	1	
SWFTS-BH28-SO-17.3 (550-189012-22)	8/16/22	15:05 Pacific		Solid			X	1	
SWFTS-BH28-SO-17.3-FD (550-189012-23)	8/16/22	15:05 Pacific		Solid			X	1	
SWFTS-BH28-SO-21 (550-189012-24)	8/16/22	15:10 Pacific		Solid			X	2	
SWFTS-BH28-SO-21 (550-189012-24MS)	8/16/22	15:10 Pacific	MS	Solid			X	2	

Note. Since laboratory accreditations are subject to change, Eurofins Environment Testing Southwest, LLC places the ownership of method, analyte & accreditation compliance upon out subcontract laboratories. This sample shipment is forwarded under chain-of-custody. If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed, the samples must be shipped back to the Eurofins Environment Testing Southwest, LLC laboratory or other instructions will be provided. Any changes to accreditation status should be brought to Eurofins Environment Testing Southwest, LLC attention immediately. If all requested accreditations are current to date, return the signed Chain of Custody attesting to said complicance to Eurofins Environment Testing Southwest, LLC.

Possible Hazard Identification
Unconfirmed

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
☐ *Return To Client* ☐ *Disposal By Lab* ☐ *Archive For _____ Months*

Deliverable Requested: I, II, III, IV, Other (specify) Primary Deliverable Rank: 2

Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:		
Relinquished by: Eme 08-18-22	Date/Time: 13:30 EE	Company: SW	Received by: Fedex	Date/Time:	Company
Relinquished by: Fed Ex	Date/Time:	Company	Received by: [illegible]	Date/Time: 08/19/2022 0950	Company: ETA DEN
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
Custody Seals Intact: Δ Yes Δ No	Custody Seal No.:		Cooler Temperature(s) °C and Other Remarks:		

Ver: 06/08/2021

Eurofins Phoenix
4625 East Cotton Center Boulevard Suite #189
Phoenix, AZ 85040
Phone: 602-437-3340

Chain of Custody Record

eurofins | Environment Testing America

Client Information (Sub Contract Lab)	Sampler:	Lab PM. Sester, Rachel E	Carrier Tracking No(s):	COC No: 550-34764.4
Client Contact: Shipping/Receiving	Phone:	E-Mail: Rachel.Sester@et.eurofinsus.com	State of Origin: Nevada	Page: Page 4 of 4
Company: TestAmerica Laboratories, Inc.		Accreditations Required (See note): State Program - Nevada		Job #: 550-189012-1
Address: 4955 Yarrow Street, ,	Due Date Requested: 8/31/2022			
City: Arvada	TAT Requested (days):			
State, Zip: CO, 80002				
Phone: 303-736-0100(Tel) 303-431-7171(Fax)	PO #:			
Email:	WO #:			
Project Name: Seep Well Field	Project #: 55017858			
Site:	SSOW#:			

Analysis Requested

Preservation Codes:
A - HCL
B - NaOH
C - Zn Acetate
D - Nitric Acid
E - NaHSO4
F - MeOH
G - Amchlor
H - Ascorbic Acid
I - Ice
J - DI Water
K - EDTA
L - EDA
M - Hexane
N - None
O - AsNaO2
P - Na2O4S
Q - Na2SO3
R - Na2S2O3
S - H2SO4
T - TSP Dodecahydrate
U - Acetone
V - MCAA
W - pH 4-5
Y - Trizma
Z - other (specify)
Other:

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	9060A/ Solids - TOC	Total Number of containers	Special Instructions/Note:
			Preservation Code:						
SWFTS-BH28-SO-21 (550-189012-24MSD)	8/16/22	15:10 Pacific	MSD	Solid			X	2	
SWFTS-BH28-SO-26 (550-189012-25)	8/16/22	15:15 Pacific		Solid			X	1	
SWFTS-BH28-SO-32.5 (550-189012-26)	8/16/22	15:20 Pacific		Solid			X	1	
SWFTS-BH28-SO-41 (550-189012-27)	8/16/22	15:25 Pacific		Solid			X	1	

Note: Since laboratory accreditations are subject to change, Eurofins Environment Testing Southwest, LLC places the ownership of method, analyte & accreditation compliance upon out subcontract laboratories. This sample shipment is forwarded under chain-of-custody. If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed, the samples must be shipped back to the Eurofins Environment Testing Southwest, LLC laboratory or other instructions will be provided. Any changes to accreditation status should be brought to Eurofins Environment Testing Southwest, LLC attention immediately. If all requested accreditations are current to date, return the signed Chain of Custody attesting to said complicance to Eurofins Environment Testing Southwest, LLC.

Possible Hazard Identification
Unconfirmed

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
☐ *Return To Client* ☐ *Disposal By Lab* ☐ *Archive For* _____ *Months*

Deliverable Requested: I, II, III, IV, Other (specify) Primary Deliverable Rank: 2

Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:

Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
Eric 08-18-22	13:30	EETSW	Fedex		
Fedex			AlKaz	08/19/2022 0950	EDA Den

Custody Seals Intact: Δ Yes Δ No	Custody Seal No.:	Cooler Temperature(s) °C and Other Remarks:

Ver: 06/08/2021

Login Sample Receipt Checklist

Client: Tetra Tech, Inc.

Job Number: 550-189012-1

Login Number: 189012
List Number: 1
Creator: Gravlin, Andrea

List Source: Eurofins Phoenix

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	True	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	False	Received extra samples not listed on COC.
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

Login Sample Receipt Checklist

Client: Tetra Tech, Inc.

Job Number: 550-189012-1

Login Number: 189012
List Number: 2
Creator: Yeager, Brian A

List Source: Eurofins Buffalo
List Creation: 08/19/22 01:44 PM

Question	Answer	Comment
Radioactivity either was not measured or, if measured, is at or below background	True	
The cooler's custody seal, if present, is intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	2.9 ICE
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the sample IDs on the containers and the COC.	True	
Samples are received within Holding Time (Excluding tests with immediate HTs)..	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
VOA sample vials do not have headspace or bubble is <6mm (1/4") in diameter.	True	
If necessary, staff have been informed of any short hold time or quick TAT needs	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Sampling Company provided.	True	
Samples received within 48 hours of sampling.	True	
Samples requiring field filtration have been filtered in the field.	True	
Chlorine Residual checked.	True	

Login Sample Receipt Checklist

Client: Tetra Tech, Inc.

Job Number: 550-189012-1

Login Number: 189012
List Number: 3
Creator: Kazenga, Oliver M

List Source: Eurofins Denver
List Creation: 08/19/22 01:47 PM

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	True	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	N/A	
There are no discrepancies between the containers received and the COC.	False	Received extra samples not listed on COC.
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	N/A	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	N/A	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

Vilaboy, Monica

From: McMyler, Maureen <Maureen.McMyler@tetratech.com>
Sent: Monday, August 29, 2022 9:42 AM
To: Vilaboy, Monica; Schuler, George
Subject: RE: Need reply/ 550-189012 / we received an extra sample - do you want it analyzed

EXTERNAL EMAIL*

Yes, please analyze it.

From: Monica Vilaboy <Monica.Vilaboy@et.eurofinsus.com>
Sent: Monday, August 29, 2022 12:01 PM
To: Schuler, George <George.Schuler@tetratech.com>; McMyler, Maureen <Maureen.McMyler@tetratech.com>
Subject: Need reply/ 550-189012 / we received an extra sample - do you want it analyzed

Hello,

We received a sample not on the COC: SWFTS-BH30-SO-37-FD. We labeled it as sample 28 and put it on hold until you tell us if you want it analyzed or not

Thank you.

Monica Vilaboy
Project Manager Assistant

Eurofins Phoenix
Phone: 602-437-3340

E-mail: Monica.Vilaboy@et.eurofinsus.com
www.eurofinsus.com/env

Reference: [550-470400]
Attachments: 1

* WARNING - EXTERNAL: This email originated from outside of Eurofins Environment Testing America. Do not click any links or open any attachments unless you trust the sender and know that the content is safe!

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ANALYTICAL REPORT

Eurofins Phoenix
4625 East Cotton Center Boulevard
Suite #189
Phoenix, AZ 85040
Tel: (602)437-3340

Laboratory Job ID: 550-189013-1
Client Project/Site: NERT - M11 Soils

For:
Tetra Tech, Inc.
1093 Commerce Park Drive
Suite 100
Oak Ridge, Tennessee 37830

Attn: Ms. Maureen McMyler

Rachel F. Sester

Authorized for release by:
9/8/2022 6:10:41 PM

Rachel Sester, Project Manager I
(602)659-7615
Rachel.Sester@et.eurofinsus.com

LINKS

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This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.

Results relate only to the items tested and the sample(s) as received by the laboratory.

Table of Contents

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Definitions/Glossary

Client: Tetra Tech, Inc.
Project/Site: NERT - M11 Soils

Job ID: 550-189013-1

Qualifiers

Metals

Qualifier	Qualifier Description
4	MS, MSD: The analyte present in the original sample is greater than 4 times the matrix spike concentration; therefore, control limits are not applicable.
B1	Target analyte detected in method blank at or above the method reporting limit.
E4	Concentration estimated. Analyte was detected below laboratory minimum reporting limit (MRL).

General Chemistry

Qualifier	Qualifier Description
B1	Target analyte detected in method blank at or above the method reporting limit.
E4	Concentration estimated. Analyte was detected below laboratory minimum reporting limit (MRL).
F1	MS and/or MSD recovery exceeds control limits.
F2	MS/MSD RPD exceeds control limits

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CFU	Colony Forming Unit
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MCL	EPA recommended "Maximum Contaminant Level"
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
MPN	Most Probable Number
MQL	Method Quantitation Limit
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
NEG	Negative / Absent
POS	Positive / Present
PQL	Practical Quantitation Limit
PRES	Presumptive
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)
TNTC	Too Numerous To Count

Job ID: 550-189013-1

Laboratory: Eurofins Phoenix

Narrative

Job Narrative
550-189013-1

Comments
No additional comments.

Receipt
The samples were received on 8/18/2022 6:30 AM. Unless otherwise noted below, the samples arrived in good condition, and where required, properly preserved and on ice. The temperature of the cooler at receipt time in Las Vegas was 24.7º C; the temperatures of the 5 coolers at receipt time in Phoenix were 2.1º C, 3.6º C, 3.6º C, 3.9º C and 5.6º C.

HPLC/IC
Method VFA-IC: The matrix spike / matrix spike duplicate (MS/MSD) recoveries for preparation batch 480-640037 and analytical batch 480-640360 were outside control limits. Sample matrix interference is suspected because the associated laboratory control sample (LCS) recovery was within acceptance limits.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

Metals
Method 6010B: The method blank for preparation batch 550-281982 and analytical batch 550-282128 contained Calcium above the method detection limit (MDL). Associated sample(s) were not re-extracted and/or re-analyzed because results were greater than 10X the value found in the method blank.

Method 6010B: The method blank for preparation batch 550-281983 and analytical batch 550-282129 contained Calcium above the method detection limit (MDL). Associated sample(s) were not re-extracted and/or re-analyzed because results were greater than 10X the value found in the method blank.

Method 6010B: The following samples were diluted to bring the concentration of target analytes within the calibration range: SWFTS-BH22-SO-36 (550-189013-10) and SWFTS-BH22-SO-49 (550-189013-11). Elevated reporting limits (RLs) are provided.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

General Chemistry
Method 9060A: The matrix spike / matrix spike duplicate (MS/MSD) recoveries and precision for analytical batch 280-585252 were outside control limits. Sample matrix interference and/or non-homogeneity are suspected because the associated laboratory control sample / laboratory sample control duplicate (LCS/LCSD) precision was within acceptance limits.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

Sample Summary

Client: Tetra Tech, Inc.
Project/Site: NERT - M11 Soils

Job ID: 550-189013-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
550-189013-1	SWFTS-BH20-SO-13.7	Solid	08/13/22 08:00	08/18/22 06:30
550-189013-2	SWFTS-BH20-SO-13.7-FD	Solid	08/13/22 08:00	08/18/22 06:30
550-189013-3	SWFTS-BH20-SO-24.2	Solid	08/13/22 08:10	08/18/22 06:30
550-189013-4	SWFTS-BH20-SO-26	Solid	08/13/22 08:20	08/18/22 06:30
550-189013-5	SWFTS-BH20-SO-31	Solid	08/13/22 08:30	08/18/22 06:30
550-189013-6	SWFTS-BH20-SO-35.5	Solid	08/13/22 08:40	08/18/22 06:30
550-189013-7	SWFTS-BH22-SO-12.4	Solid	08/13/22 12:00	08/18/22 06:30
550-189013-8	SWFTS-BH22-SO-20.5	Solid	08/13/22 12:10	08/18/22 06:30
550-189013-9	SWFTS-BH22-SO-28.5	Solid	08/13/22 12:20	08/18/22 06:30
550-189013-10	SWFTS-BH22-SO-36	Solid	08/13/22 12:30	08/18/22 06:30
550-189013-11	SWFTS-BH22-SO-49	Solid	08/13/22 12:40	08/18/22 06:30
550-189013-12	SWFTS-BH21-SO-16.5	Solid	08/13/22 14:30	08/18/22 06:30
550-189013-13	SWFTS-BH21-SO-16.5-FD	Solid	08/13/22 14:30	08/18/22 06:30
550-189013-14	SWFTS-BH21-SO-19.5	Solid	08/13/22 14:40	08/18/22 06:30
550-189013-15	SWFTS-BH21-SO-23.2	Solid	08/13/22 14:50	08/18/22 06:30
550-189013-16	SWFTS-BH21-SO-28	Solid	08/13/22 15:00	08/18/22 06:30
550-189013-17	SWFTS-BH21-SO-32	Solid	08/13/22 15:10	08/18/22 06:30

Detection Summary

Client: Tetra Tech, Inc.
Project/Site: NERT - M11 Soils

Job ID: 550-189013-1

Client Sample ID: SWFTS-BH20-SO-13.7 — Lab Sample ID: 550-189013-1

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Calcium	8600	B1	9.8	0.84	mg/Kg	1		6010B	Total/NA
Total Organic Carbon	1.3	B1 E4	4.0	0.90	g/Kg	1		9060A	Total/NA

Client Sample ID: SWFTS-BH20-SO-13.7-FD — Lab Sample ID: 550-189013-2

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Calcium	4900	B1	9.9	0.85	mg/Kg	1		6010B	Total/NA
Total Organic Carbon	1.3	B1 E4	4.0	0.90	g/Kg	1		9060A	Total/NA

Client Sample ID: SWFTS-BH20-SO-24.2 — Lab Sample ID: 550-189013-3

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Calcium	16000	B1	9.8	0.84	mg/Kg	1		6010B	Total/NA
Total Organic Carbon	1.2	B1 E4	4.0	0.90	g/Kg	1		9060A	Total/NA

Client Sample ID: SWFTS-BH20-SO-26 — Lab Sample ID: 550-189013-4

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Calcium	7800	B1	9.8	0.84	mg/Kg	1		6010B	Total/NA
Total Organic Carbon	0.98	B1 E4	4.0	0.90	g/Kg	1		9060A	Total/NA

Client Sample ID: SWFTS-BH20-SO-31 — Lab Sample ID: 550-189013-5

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Calcium	61000	B1	9.8	0.84	mg/Kg	1		6010B	Total/NA

Client Sample ID: SWFTS-BH20-SO-35.5 — Lab Sample ID: 550-189013-6

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Calcium	44000	B1	9.9	0.85	mg/Kg	1		6010B	Total/NA
Total Organic Carbon	4.2	B1	4.0	0.90	g/Kg	1		9060A	Total/NA

Client Sample ID: SWFTS-BH22-SO-12.4 — Lab Sample ID: 550-189013-7

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Calcium	7100	B1	9.9	0.85	mg/Kg	1		6010B	Total/NA
Total Organic Carbon	1.2	B1 E4	4.0	0.90	g/Kg	1		9060A	Total/NA

Client Sample ID: SWFTS-BH22-SO-20.5 — Lab Sample ID: 550-189013-8

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Calcium	5200	B1	9.9	0.85	mg/Kg	1		6010B	Total/NA
Total Organic Carbon	1.0	B1 E4	4.0	0.90	g/Kg	1		9060A	Total/NA

Client Sample ID: SWFTS-BH22-SO-28.5 — Lab Sample ID: 550-189013-9

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Calcium	4300	B1	9.7	0.83	mg/Kg	1		6010B	Total/NA

Client Sample ID: SWFTS-BH22-SO-36 — Lab Sample ID: 550-189013-10

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Calcium	68000	B1	20	1.7	mg/Kg	2		6010B	Total/NA
Total Organic Carbon	1.4	B1 E4	4.0	0.90	g/Kg	1		9060A	Total/NA

This Detection Summary does not include radiochemical test results.

Eurofins Phoenix

Detection Summary

Client: Tetra Tech, Inc.
Project/Site: NERT - M11 Soils

Job ID: 550-189013-1

Client Sample ID: SWFTS-BH22-SO-49 — Lab Sample ID: 550-189013-11

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Calcium	170000	B1	40	3.4	mg/Kg	4		6010B	Total/NA

Client Sample ID: SWFTS-BH21-SO-16.5 — Lab Sample ID: 550-189013-12

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Calcium	9400	B1	9.8	0.84	mg/Kg	1		6010B	Total/NA

Client Sample ID: SWFTS-BH21-SO-16.5-FD — Lab Sample ID: 550-189013-13

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Calcium	8500	B1	9.9	0.85	mg/Kg	1		6010B	Total/NA

Client Sample ID: SWFTS-BH21-SO-19.5 — Lab Sample ID: 550-189013-14

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Calcium	9400	B1	9.8	0.84	mg/Kg	1		6010B	Total/NA
Total Organic Carbon	1.1	B1 E4	4.0	0.90	g/Kg	1		9060A	Total/NA

Client Sample ID: SWFTS-BH21-SO-23.2 — Lab Sample ID: 550-189013-15

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Calcium	6200	B1	9.9	0.84	mg/Kg	1		6010B	Total/NA

Client Sample ID: SWFTS-BH21-SO-28 — Lab Sample ID: 550-189013-16

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Calcium	5100	B1	9.9	0.84	mg/Kg	1		6010B	Total/NA
Total Organic Carbon	0.95	B1 E4	4.0	0.90	g/Kg	1		9060A	Total/NA

Client Sample ID: SWFTS-BH21-SO-32 — Lab Sample ID: 550-189013-17

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Calcium	11000	B1	9.7	0.83	mg/Kg	1		6010B	Total/NA
Total Organic Carbon	0.98	B1 E4	4.0	0.90	g/Kg	1		9060A	Total/NA

This Detection Summary does not include radiochemical test results.

Client Sample ID: SWFTS-BH20-SO-13.7

Lab Sample ID: 550-189013-1
Date Collected: 08/13/22 08:00
Matrix: Solid
Date Received: 08/18/22 06:30

Method: 6010B - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Calcium	8600	B1	9.8	0.84	mg/Kg		08/19/22 01:26	08/22/22 08:54	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon	1.3	B1 E4	4.0	0.90	g/Kg			08/25/22 13:48	1

General Chemistry - Soluble

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetic acid	ND		9.9	1.5	mg/Kg			09/02/22 13:56	1
Formic-acid	ND		9.9	2.2	mg/Kg			09/02/22 13:56	1
Lactic acid	ND		9.9	3.0	mg/Kg			09/02/22 13:56	1
n-Butyric Acid	ND		9.9	1.6	mg/Kg			09/02/22 13:56	1
Propionic acid	ND		9.9	1.7	mg/Kg			09/02/22 13:56	1
Pyruvic Acid	ND		9.9	2.5	mg/Kg			09/02/22 13:56	1

Client Sample ID: SWFTS-BH20-SO-13.7-FD

Lab Sample ID: 550-189013-2
Date Collected: 08/13/22 08:00
Matrix: Solid
Date Received: 08/18/22 06:30

Method: 6010B - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Calcium	4900	B1	9.9	0.85	mg/Kg		08/19/22 01:26	08/22/22 08:57	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon	1.3	B1 E4	4.0	0.90	g/Kg			08/25/22 13:59	1

General Chemistry - Soluble

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetic acid	ND		9.9	1.5	mg/Kg			09/02/22 14:25	1
Formic-acid	ND		9.9	2.2	mg/Kg			09/02/22 14:25	1
Lactic acid	ND		9.9	3.0	mg/Kg			09/02/22 14:25	1
n-Butyric Acid	ND		9.9	1.6	mg/Kg			09/02/22 14:25	1
Propionic acid	ND		9.9	1.7	mg/Kg			09/02/22 14:25	1
Pyruvic Acid	ND		9.9	2.5	mg/Kg			09/02/22 14:25	1

Client Sample ID: SWFTS-BH20-SO-24.2

Lab Sample ID: 550-189013-3
Date Collected: 08/13/22 08:10
Matrix: Solid
Date Received: 08/18/22 06:30

Method: 6010B - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Calcium	16000	B1	9.8	0.84	mg/Kg		08/19/22 01:32	08/22/22 09:22	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon	1.2	B1 E4	4.0	0.90	g/Kg			08/25/22 13:13	1

General Chemistry - Soluble

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetic acid	ND		9.7	1.5	mg/Kg			09/02/22 09:04	1
Formic-acid	ND		9.7	2.1	mg/Kg			09/02/22 09:04	1

Client Sample ID: SWFTS-BH20-SO-24.2

Lab Sample ID: 550-189013-3

Date Collected: 08/13/22 08:10
Matrix: Solid
Date Received: 08/18/22 06:30

General Chemistry - Soluble (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lactic acid	ND		9.7	2.9	mg/Kg			09/02/22 09:04	1
n-Butyric Acid	ND		9.7	1.6	mg/Kg			09/02/22 09:04	1
Propionic acid	ND		9.7	1.7	mg/Kg			09/02/22 09:04	1
Pyruvic Acid	ND	F1	9.7	2.4	mg/Kg			09/02/22 09:04	1

Client Sample ID: SWFTS-BH20-SO-26

Lab Sample ID: 550-189013-4

Date Collected: 08/13/22 08:20
Matrix: Solid
Date Received: 08/18/22 06:30

Method: 6010B - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Calcium	**7800**	**B1**	9.8	0.84	mg/Kg		08/19/22 01:32	08/22/22 09:25	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon	**0.98**	**B1 E4**	4.0	0.90	g/Kg			08/25/22 14:09	1

General Chemistry - Soluble

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetic acid	ND		9.5	1.4	mg/Kg			09/02/22 14:54	1
Formic-acid	ND		9.5	2.1	mg/Kg			09/02/22 14:54	1
Lactic acid	ND		9.5	2.9	mg/Kg			09/02/22 14:54	1
n-Butyric Acid	ND		9.5	1.5	mg/Kg			09/02/22 14:54	1
Propionic acid	ND		9.5	1.6	mg/Kg			09/02/22 14:54	1
Pyruvic Acid	ND		9.5	2.4	mg/Kg			09/02/22 14:54	1

Client Sample ID: SWFTS-BH20-SO-31

Lab Sample ID: 550-189013-5

Date Collected: 08/13/22 08:30
Matrix: Solid
Date Received: 08/18/22 06:30

Method: 6010B - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Calcium	**61000**	**B1**	9.8	0.84	mg/Kg		08/19/22 01:32	08/22/22 09:34	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon	ND		4.0	0.90	g/Kg			08/25/22 14:18	1

General Chemistry - Soluble

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetic acid	ND		9.9	1.5	mg/Kg			09/02/22 15:23	1
Formic-acid	ND		9.9	2.2	mg/Kg			09/02/22 15:23	1
Lactic acid	ND		9.9	3.0	mg/Kg			09/02/22 15:23	1
n-Butyric Acid	ND		9.9	1.6	mg/Kg			09/02/22 15:23	1
Propionic acid	ND		9.9	1.7	mg/Kg			09/02/22 15:23	1
Pyruvic Acid	ND	F1	9.9	2.5	mg/Kg			09/02/22 15:23	1

Client Sample ID: SWFTS-BH20-SO-35.5

Lab Sample ID: 550-189013-6
Date Collected: 08/13/22 08:40
Matrix: Solid
Date Received: 08/18/22 06:30

Method: 6010B - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Calcium	44000	B1	9.9	0.85	mg/Kg		08/19/22 01:32	08/22/22 09:36	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon	4.2	B1	4.0	0.90	g/Kg			08/25/22 14:28	1

General Chemistry - Soluble

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetic acid	ND		10	1.5	mg/Kg			09/06/22 15:17	1
Formic-acid	ND		10	2.2	mg/Kg			09/06/22 15:17	1
Lactic acid	ND		10	3.0	mg/Kg			09/06/22 15:17	1
n-Butyric Acid	ND		10	1.6	mg/Kg			09/06/22 15:17	1
Propionic acid	ND		10	1.7	mg/Kg			09/06/22 15:17	1
Pyruvic Acid	ND		10	2.5	mg/Kg			09/06/22 15:17	1

Client Sample ID: SWFTS-BH22-SO-12.4

Lab Sample ID: 550-189013-7
Date Collected: 08/13/22 12:00
Matrix: Solid
Date Received: 08/18/22 06:30

Method: 6010B - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Calcium	7100	B1	9.9	0.85	mg/Kg		08/19/22 01:32	08/22/22 09:39	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon	1.2	B1 E4	4.0	0.90	g/Kg			08/25/22 14:43	1

General Chemistry - Soluble

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetic acid	ND		10	1.5	mg/Kg			09/06/22 15:46	1
Formic-acid	ND		10	2.2	mg/Kg			09/06/22 15:46	1
Lactic acid	ND		10	3.0	mg/Kg			09/06/22 15:46	1
n-Butyric Acid	ND		10	1.6	mg/Kg			09/06/22 15:46	1
Propionic acid	ND		10	1.7	mg/Kg			09/06/22 15:46	1
Pyruvic Acid	ND		10	2.5	mg/Kg			09/06/22 15:46	1

Client Sample ID: SWFTS-BH22-SO-20.5

Lab Sample ID: 550-189013-8
Date Collected: 08/13/22 12:10
Matrix: Solid
Date Received: 08/18/22 06:30

Method: 6010B - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Calcium	5200	B1	9.9	0.85	mg/Kg		08/19/22 01:32	08/22/22 09:42	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon	1.0	B1 E4	4.0	0.90	g/Kg			08/25/22 14:53	1

General Chemistry - Soluble

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetic acid	ND		9.9	1.5	mg/Kg			09/06/22 16:15	1
Formic-acid	ND		9.9	2.2	mg/Kg			09/06/22 16:15	1

Client Sample ID: SWFTS-BH22-SO-20.5

Lab Sample ID: 550-189013-8

Date Collected: 08/13/22 12:10
Matrix: Solid
Date Received: 08/18/22 06:30

General Chemistry - Soluble (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lactic acid	ND		9.9	3.0	mg/Kg			09/06/22 16:15	1
n-Butyric Acid	ND		9.9	1.6	mg/Kg			09/06/22 16:15	1
Propionic acid	ND		9.9	1.7	mg/Kg			09/06/22 16:15	1
Pyruvic Acid	ND		9.9	2.5	mg/Kg			09/06/22 16:15	1

Client Sample ID: SWFTS-BH22-SO-28.5

Lab Sample ID: 550-189013-9

Date Collected: 08/13/22 12:20
Matrix: Solid
Date Received: 08/18/22 06:30

Method: 6010B - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Calcium	**4300**	**B1**	9.7	0.83	mg/Kg		08/19/22 01:32	08/22/22 09:45	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon	ND		4.0	0.90	g/Kg			08/25/22 15:23	1

General Chemistry - Soluble

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetic acid	ND		10	1.5	mg/Kg			09/06/22 16:44	1
Formic-acid	ND		10	2.2	mg/Kg			09/06/22 16:44	1
Lactic acid	ND		10	3.0	mg/Kg			09/06/22 16:44	1
n-Butyric Acid	ND		10	1.6	mg/Kg			09/06/22 16:44	1
Propionic acid	ND		10	1.7	mg/Kg			09/06/22 16:44	1
Pyruvic Acid	ND		10	2.5	mg/Kg			09/06/22 16:44	1

Client Sample ID: SWFTS-BH22-SO-36

Lab Sample ID: 550-189013-10

Date Collected: 08/13/22 12:30
Matrix: Solid
Date Received: 08/18/22 06:30

Method: 6010B - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Calcium	**68000**	**B1**	20	1.7	mg/Kg		08/19/22 01:32	08/22/22 14:58	2

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon	**1.4**	**B1 E4**	4.0	0.90	g/Kg			08/25/22 15:33	1

General Chemistry - Soluble

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetic acid	ND		9.5	1.4	mg/Kg			09/06/22 17:13	1
Formic-acid	ND		9.5	2.1	mg/Kg			09/06/22 17:13	1
Lactic acid	ND		9.5	2.9	mg/Kg			09/06/22 17:13	1
n-Butyric Acid	ND		9.5	1.5	mg/Kg			09/06/22 17:13	1
Propionic acid	ND		9.5	1.6	mg/Kg			09/06/22 17:13	1
Pyruvic Acid	ND		9.5	2.4	mg/Kg			09/06/22 17:13	1

Client Sample ID: SWFTS-BH22-SO-49

Lab Sample ID: 550-189013-11
Date Collected: 08/13/22 12:40
Matrix: Solid
Date Received: 08/18/22 06:30

Method: 6010B - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Calcium	170000	B1	40	3.4	mg/Kg		08/19/22 01:32	08/22/22 14:55	4

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon	ND		4.0	0.90	g/Kg			08/26/22 10:41	1

General Chemistry - Soluble

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetic acid	ND		9.9	1.5	mg/Kg			09/06/22 17:43	1
Formic-acid	ND		9.9	2.2	mg/Kg			09/06/22 17:43	1
Lactic acid	ND	F1	9.9	3.0	mg/Kg			09/06/22 17:43	1
n-Butyric Acid	ND		9.9	1.6	mg/Kg			09/06/22 17:43	1
Propionic acid	ND		9.9	1.7	mg/Kg			09/06/22 17:43	1
Pyruvic Acid	ND		9.9	2.5	mg/Kg			09/06/22 17:43	1

Client Sample ID: SWFTS-BH21-SO-16.5

Lab Sample ID: 550-189013-12
Date Collected: 08/13/22 14:30
Matrix: Solid
Date Received: 08/18/22 06:30

Method: 6010B - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Calcium	9400	B1	9.8	0.84	mg/Kg		08/19/22 01:32	08/22/22 09:53	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon	ND		4.0	0.90	g/Kg			08/26/22 10:53	1

General Chemistry - Soluble

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetic acid	ND		9.8	1.5	mg/Kg			09/06/22 20:08	1
Formic-acid	ND		9.8	2.2	mg/Kg			09/06/22 20:08	1
Lactic acid	ND		9.8	2.9	mg/Kg			09/06/22 20:08	1
n-Butyric Acid	ND		9.8	1.6	mg/Kg			09/06/22 20:08	1
Propionic acid	ND		9.8	1.7	mg/Kg			09/06/22 20:08	1
Pyruvic Acid	ND		9.8	2.5	mg/Kg			09/06/22 20:08	1

Client Sample ID: SWFTS-BH21-SO-16.5-FD

Lab Sample ID: 550-189013-13
Date Collected: 08/13/22 14:30
Matrix: Solid
Date Received: 08/18/22 06:30

Method: 6010B - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Calcium	8500	B1	9.9	0.85	mg/Kg		08/19/22 01:32	08/22/22 09:56	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon	ND		4.0	0.90	g/Kg			08/26/22 11:03	1

General Chemistry - Soluble

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetic acid	ND		9.9	1.5	mg/Kg			09/06/22 20:37	1
Formic-acid	ND		9.9	2.2	mg/Kg			09/06/22 20:37	1

Client Sample ID: SWFTS-BH21-SO-16.5-FD

Lab Sample ID: 550-189013-13

Date Collected: 08/13/22 14:30
Matrix: Solid
Date Received: 08/18/22 06:30

General Chemistry - Soluble (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lactic acid	ND		9.9	3.0	mg/Kg			09/06/22 20:37	1
n-Butyric Acid	ND		9.9	1.6	mg/Kg			09/06/22 20:37	1
Propionic acid	ND		9.9	1.7	mg/Kg			09/06/22 20:37	1
Pyruvic Acid	ND		9.9	2.5	mg/Kg			09/06/22 20:37	1

Client Sample ID: SWFTS-BH21-SO-19.5

Lab Sample ID: 550-189013-14

Date Collected: 08/13/22 14:40
Matrix: Solid
Date Received: 08/18/22 06:30

Method: 6010B - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Calcium	**9400**	**B1**	9.8	0.84	mg/Kg		08/19/22 01:32	08/22/22 09:59	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon	**1.1**	**B1 E4**	4.0	0.90	g/Kg			08/26/22 11:13	1

General Chemistry - Soluble

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetic acid	ND		9.9	1.5	mg/Kg			09/06/22 21:07	1
Formic-acid	ND		9.9	2.2	mg/Kg			09/06/22 21:07	1
Lactic acid	ND		9.9	3.0	mg/Kg			09/06/22 21:07	1
n-Butyric Acid	ND		9.9	1.6	mg/Kg			09/06/22 21:07	1
Propionic acid	ND		9.9	1.7	mg/Kg			09/06/22 21:07	1
Pyruvic Acid	ND		9.9	2.5	mg/Kg			09/06/22 21:07	1

Client Sample ID: SWFTS-BH21-SO-23.2

Lab Sample ID: 550-189013-15

Date Collected: 08/13/22 14:50
Matrix: Solid
Date Received: 08/18/22 06:30

Method: 6010B - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Calcium	**6200**	**B1**	9.9	0.84	mg/Kg		08/19/22 01:32	08/22/22 10:07	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon	ND	F1 F2	4.0	0.90	g/Kg			08/25/22 15:47	1

General Chemistry - Soluble

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetic acid	ND		10	1.5	mg/Kg			09/06/22 21:36	1
Formic-acid	ND		10	2.2	mg/Kg			09/06/22 21:36	1
Lactic acid	ND		10	3.0	mg/Kg			09/06/22 21:36	1
n-Butyric Acid	ND		10	1.6	mg/Kg			09/06/22 21:36	1
Propionic acid	ND		10	1.7	mg/Kg			09/06/22 21:36	1
Pyruvic Acid	ND		10	2.5	mg/Kg			09/06/22 21:36	1

Client Sample ID: SWFTS-BH21-SO-28

Lab Sample ID: 550-189013-16

Date Collected: 08/13/22 15:00
Matrix: Solid
Date Received: 08/18/22 06:30

Method: 6010B - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Calcium	5100	B1	9.9	0.84	mg/Kg		08/19/22 01:32	08/22/22 10:10	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon	0.95	B1 E4	4.0	0.90	g/Kg			08/26/22 11:23	1

General Chemistry - Soluble

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetic acid	ND		9.8	1.5	mg/Kg			09/06/22 22:05	1
Formic-acid	ND		9.8	2.2	mg/Kg			09/06/22 22:05	1
Lactic acid	ND		9.8	2.9	mg/Kg			09/06/22 22:05	1
n-Butyric Acid	ND		9.8	1.6	mg/Kg			09/06/22 22:05	1
Propionic acid	ND		9.8	1.7	mg/Kg			09/06/22 22:05	1
Pyruvic Acid	ND		9.8	2.4	mg/Kg			09/06/22 22:05	1

Client Sample ID: SWFTS-BH21-SO-32

Lab Sample ID: 550-189013-17

Date Collected: 08/13/22 15:10
Matrix: Solid
Date Received: 08/18/22 06:30

Method: 6010B - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Calcium	11000	B1	9.7	0.83	mg/Kg		08/19/22 01:32	08/22/22 10:13	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon	0.98	B1 E4	4.0	0.90	g/Kg			08/26/22 11:53	1

General Chemistry - Soluble

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetic acid	ND		9.9	1.5	mg/Kg			09/06/22 22:34	1
Formic-acid	ND		9.9	2.2	mg/Kg			09/06/22 22:34	1
Lactic acid	ND		9.9	3.0	mg/Kg			09/06/22 22:34	1
n-Butyric Acid	ND		9.9	1.6	mg/Kg			09/06/22 22:34	1
Propionic acid	ND		9.9	1.7	mg/Kg			09/06/22 22:34	1
Pyruvic Acid	ND		9.9	2.5	mg/Kg			09/06/22 22:34	1

Method: 6010B - Metals (ICP)

Lab Sample ID: MB 550-281982/1-A
Matrix: Solid
Analysis Batch: 282128

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 281982

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Calcium	3.67	E4	9.7	0.83	mg/Kg		08/19/22 01:26	08/22/22 07:34	1

Lab Sample ID: LCS 550-281982/2-A
Matrix: Solid
Analysis Batch: 282128

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 281982

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Calcium	1040	1090		mg/Kg		105	84 - 110

Lab Sample ID: LCSD 550-281982/3-A
Matrix: Solid
Analysis Batch: 282128

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 281982

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Calcium	1050	1090		mg/Kg		104	84 - 110	0	20

Lab Sample ID: 550-189012-E-24-A MS
Matrix: Solid
Analysis Batch: 282128

Client Sample ID: Matrix Spike
Prep Type: Total/NA
Prep Batch: 281982

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Calcium	18000	B	1030	16600	4	mg/Kg		-128	75 - 125

Lab Sample ID: 550-189012-E-24-B MSD
Matrix: Solid
Analysis Batch: 282128

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total/NA
Prep Batch: 281982

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Calcium	18000	B	1040	15900	4	mg/Kg		-190	75 - 125	4	20

Lab Sample ID: MB 550-281983/1-A
Matrix: Solid
Analysis Batch: 282129

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 281983

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Calcium	9.56	E4	9.9	0.85	mg/Kg		08/19/22 01:32	08/22/22 09:05	1

Lab Sample ID: LCS 550-281983/2-A
Matrix: Solid
Analysis Batch: 282129

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 281983

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Calcium	1040	1030		mg/Kg		99	84 - 110

Lab Sample ID: LCSD 550-281983/3-A
Matrix: Solid
Analysis Batch: 282129

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 281983

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Calcium	1030	980		mg/Kg		95	84 - 110	5	20

Method: 6010B - Metals (ICP)

Lab Sample ID: 550-189013-3 MS
Matrix: Solid
Analysis Batch: 282129

Client Sample ID: SWFTS-BH20-SO-24.2
Prep Type: Total/NA
Prep Batch: 281983

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Calcium	16000	B	1030	15700	4	mg/Kg		-60	75 - 125

Lab Sample ID: 550-189013-3 MSD
Matrix: Solid
Analysis Batch: 282129

Client Sample ID: SWFTS-BH20-SO-24.2
Prep Type: Total/NA
Prep Batch: 281983

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Calcium	16000	B	1030	15500	4	mg/Kg		-79	75 - 125	1	20

Method: 9060A - Organic Carbon, Total (TOC)

Lab Sample ID: MB 280-585252/4
Matrix: Solid
Analysis Batch: 585252

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon	1.19	E4	4.0	0.90	g/Kg			08/25/22 13:02	1

Lab Sample ID: LCS 280-585252/3
Matrix: Solid
Analysis Batch: 585252

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Total Organic Carbon	2.89	2.88	E4	g/Kg		100	46 - 130

Lab Sample ID: 550-189013-3 MS
Matrix: Solid
Analysis Batch: 585252

Client Sample ID: SWFTS-BH20-SO-24.2
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Total Organic Carbon	1.2	J B	11.8	14.6		g/Kg		114	46 - 130

Lab Sample ID: 550-189013-3 MSD
Matrix: Solid
Analysis Batch: 585252

Client Sample ID: SWFTS-BH20-SO-24.2
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Total Organic Carbon	1.2	J B	11.7	14.2		g/Kg		111	46 - 130	3	20

Lab Sample ID: 550-189013-15 MS
Matrix: Solid
Analysis Batch: 585252

Client Sample ID: SWFTS-BH21-SO-23.2
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Total Organic Carbon	ND	F1 F2	11.8	13.3		g/Kg		113	46 - 130

Method: 9060A - Organic Carbon, Total (TOC) (Continued)

Lab Sample ID: 550-189013-15 MSD
Matrix: Solid
Analysis Batch: 585252

Client Sample ID: SWFTS-BH21-SO-23.2
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Total Organic Carbon	ND	F1 F2	11.8	17.4	F1 F2	g/Kg		147	46 - 130	26	20

Method: VFA-IC - Volatile Fatty Acids, Ion Chromatography

Lab Sample ID: MB 480-639879/1-A
Matrix: Solid
Analysis Batch: 640070

Client Sample ID: Method Blank
Prep Type: Soluble

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetic acid	ND		10	1.5	mg/Kg			09/02/22 05:40	1
Formic-acid	ND		10	2.2	mg/Kg			09/02/22 05:40	1
Lactic acid	ND		10	3.0	mg/Kg			09/02/22 05:40	1
n-Butyric Acid	ND		10	1.6	mg/Kg			09/02/22 05:40	1
Propionic acid	ND		10	1.7	mg/Kg			09/02/22 05:40	1
Pyruvic Acid	ND		10	2.5	mg/Kg			09/02/22 05:40	1

Lab Sample ID: LCS 480-639879/2-A
Matrix: Solid
Analysis Batch: 640070

Client Sample ID: Lab Control Sample
Prep Type: Soluble

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Acetic acid	98.5	98.1		mg/Kg		100	80 - 120
Formic-acid	99.1	92.9		mg/Kg		94	80 - 120
Lactic acid	99.5	111		mg/Kg		112	80 - 120
n-Butyric Acid	97.7	89.0		mg/Kg		91	80 - 120
Propionic acid	98.9	92.4		mg/Kg		93	80 - 120
Pyruvic Acid	100	91.6		mg/Kg		92	80 - 120

Lab Sample ID: 550-189013-3 MS
Matrix: Solid
Analysis Batch: 640070

Client Sample ID: SWFTS-BH20-SO-24.2
Prep Type: Soluble

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Acetic acid	ND		98.9	89.3		mg/Kg		90	80 - 120
Formic-acid	ND		99.5	82.9		mg/Kg		83	80 - 120
Lactic acid	ND		99.9	89.7		mg/Kg		90	80 - 120
n-Butyric Acid	ND		98.1	86.6		mg/Kg		88	80 - 120
Propionic acid	ND		99.3	85.4		mg/Kg		86	80 - 120
Pyruvic Acid	ND	F1	100	127	F1	mg/Kg		126	80 - 120

Lab Sample ID: 550-189013-3 MSD
Matrix: Solid
Analysis Batch: 640070

Client Sample ID: SWFTS-BH20-SO-24.2
Prep Type: Soluble

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Acetic acid	ND		98.7	87.2		mg/Kg		88	80 - 120	2	20
Formic-acid	ND		99.3	83.4		mg/Kg		84	80 - 120	1	20
Lactic acid	ND		99.7	94.1		mg/Kg		94	80 - 120	5	20
n-Butyric Acid	ND		97.9	85.1		mg/Kg		87	80 - 120	2	20
Propionic acid	ND		99.1	83.4		mg/Kg		84	80 - 120	2	20

Method: VFA-IC - Volatile Fatty Acids, Ion Chromatography (Continued)

Lab Sample ID: 550-189013-3 MSD
Matrix: Solid
Analysis Batch: 640070

Client Sample ID: SWFTS-BH20-SO-24.2
Prep Type: Soluble

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Pyruvic Acid	ND	F1	100	128	F1	mg/Kg		128	80 - 120	1	20

Lab Sample ID: 550-189013-5 MS
Matrix: Solid
Analysis Batch: 640070

Client Sample ID: SWFTS-BH20-SO-31
Prep Type: Soluble

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Acetic acid	ND		98.5	87.1		mg/Kg		88	80 - 120
Formic-acid	ND		99.1	82.6		mg/Kg		83	80 - 120
Lactic acid	ND		99.5	91.9		mg/Kg		92	80 - 120
n-Butyric Acid	ND		97.7	88.4		mg/Kg		90	80 - 120
Propionic acid	ND		98.9	85.9		mg/Kg		87	80 - 120
Pyruvic Acid	ND	F1	100	133	F1	mg/Kg		133	80 - 120

Lab Sample ID: MB 480-640037/1-A
Matrix: Solid
Analysis Batch: 640360

Client Sample ID: Method Blank
Prep Type: Soluble

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetic acid	ND		9.9	1.5	mg/Kg			09/06/22 14:18	1
Formic-acid	ND		9.9	2.2	mg/Kg			09/06/22 14:18	1
Lactic acid	ND		9.9	3.0	mg/Kg			09/06/22 14:18	1
n-Butyric Acid	ND		9.9	1.6	mg/Kg			09/06/22 14:18	1
Propionic acid	ND		9.9	1.7	mg/Kg			09/06/22 14:18	1
Pyruvic Acid	ND		9.9	2.5	mg/Kg			09/06/22 14:18	1

Lab Sample ID: LCS 480-640037/2-A
Matrix: Solid
Analysis Batch: 640360

Client Sample ID: Lab Control Sample
Prep Type: Soluble

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Acetic acid	96.3	107		mg/Kg		111	80 - 120
Formic-acid	96.8	96.0		mg/Kg		99	80 - 120
Lactic acid	97.2	102		mg/Kg		104	80 - 120
n-Butyric Acid	95.5	96.0		mg/Kg		101	80 - 120
Propionic acid	96.6	103		mg/Kg		106	80 - 120
Pyruvic Acid	97.8	90.6		mg/Kg		93	80 - 120

Lab Sample ID: 550-189013-11 MS
Matrix: Solid
Analysis Batch: 640360

Client Sample ID: SWFTS-BH22-SO-49
Prep Type: Soluble

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Acetic acid	ND		100	87.7		mg/Kg		88	80 - 120
Formic-acid	ND		101	87.1		mg/Kg		86	80 - 120
Lactic acid	ND	F1	101	78.2	F1	mg/Kg		77	80 - 120
n-Butyric Acid	ND		99.3	98.3		mg/Kg		99	80 - 120
Propionic acid	ND		100	94.9		mg/Kg		94	80 - 120
Pyruvic Acid	ND		102	104		mg/Kg		102	80 - 120

Method: VFA-IC - Volatile Fatty Acids, Ion Chromatography (Continued)

Lab Sample ID: 550-189013-11 MSD
Matrix: Solid
Analysis Batch: 640360

Client Sample ID: SWFTS-BH22-SO-49
Prep Type: Soluble

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Acetic acid	ND		100	93.4		mg/Kg		93	80 - 120	6	20
Formic-acid	ND		101	91.1		mg/Kg		90	80 - 120	5	20
Lactic acid	ND	F1	101	81.3		mg/Kg		80	80 - 120	4	20
n-Butyric Acid	ND		99.5	102		mg/Kg		103	80 - 120	4	20
Propionic acid	ND		101	101		mg/Kg		101	80 - 120	6	20
Pyruvic Acid	ND		102	100		mg/Kg		98	80 - 120	3	20

Metals

Prep Batch: 281982

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
550-189013-1	SWFTS-BH20-SO-13.7	Total/NA	Solid	3050B	
550-189013-2	SWFTS-BH20-SO-13.7-FD	Total/NA	Solid	3050B	
MB 550-281982/1-A	Method Blank	Total/NA	Solid	3050B	
LCS 550-281982/2-A	Lab Control Sample	Total/NA	Solid	3050B	
LCSD 550-281982/3-A	Lab Control Sample Dup	Total/NA	Solid	3050B	
550-189012-E-24-A MS	Matrix Spike	Total/NA	Solid	3050B	
550-189012-E-24-B MSD	Matrix Spike Duplicate	Total/NA	Solid	3050B	

Prep Batch: 281983

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
550-189013-3	SWFTS-BH20-SO-24.2	Total/NA	Solid	3050B	
550-189013-4	SWFTS-BH20-SO-26	Total/NA	Solid	3050B	
550-189013-5	SWFTS-BH20-SO-31	Total/NA	Solid	3050B	
550-189013-6	SWFTS-BH20-SO-35.5	Total/NA	Solid	3050B	
550-189013-7	SWFTS-BH22-SO-12.4	Total/NA	Solid	3050B	
550-189013-8	SWFTS-BH22-SO-20.5	Total/NA	Solid	3050B	
550-189013-9	SWFTS-BH22-SO-28.5	Total/NA	Solid	3050B	
550-189013-10	SWFTS-BH22-SO-36	Total/NA	Solid	3050B	
550-189013-11	SWFTS-BH22-SO-49	Total/NA	Solid	3050B	
550-189013-12	SWFTS-BH21-SO-16.5	Total/NA	Solid	3050B	
550-189013-13	SWFTS-BH21-SO-16.5-FD	Total/NA	Solid	3050B	
550-189013-14	SWFTS-BH21-SO-19.5	Total/NA	Solid	3050B	
550-189013-15	SWFTS-BH21-SO-23.2	Total/NA	Solid	3050B	
550-189013-16	SWFTS-BH21-SO-28	Total/NA	Solid	3050B	
550-189013-17	SWFTS-BH21-SO-32	Total/NA	Solid	3050B	
MB 550-281983/1-A	Method Blank	Total/NA	Solid	3050B	
LCS 550-281983/2-A	Lab Control Sample	Total/NA	Solid	3050B	
LCSD 550-281983/3-A	Lab Control Sample Dup	Total/NA	Solid	3050B	
550-189013-3 MS	SWFTS-BH20-SO-24.2	Total/NA	Solid	3050B	
550-189013-3 MSD	SWFTS-BH20-SO-24.2	Total/NA	Solid	3050B	

Analysis Batch: 282128

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
550-189013-1	SWFTS-BH20-SO-13.7	Total/NA	Solid	6010B	281982
550-189013-2	SWFTS-BH20-SO-13.7-FD	Total/NA	Solid	6010B	281982
MB 550-281982/1-A	Method Blank	Total/NA	Solid	6010B	281982
LCS 550-281982/2-A	Lab Control Sample	Total/NA	Solid	6010B	281982
LCSD 550-281982/3-A	Lab Control Sample Dup	Total/NA	Solid	6010B	281982
550-189012-E-24-A MS	Matrix Spike	Total/NA	Solid	6010B	281982
550-189012-E-24-B MSD	Matrix Spike Duplicate	Total/NA	Solid	6010B	281982

Analysis Batch: 282129

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
550-189013-3	SWFTS-BH20-SO-24.2	Total/NA	Solid	6010B	281983
550-189013-4	SWFTS-BH20-SO-26	Total/NA	Solid	6010B	281983
550-189013-5	SWFTS-BH20-SO-31	Total/NA	Solid	6010B	281983
550-189013-6	SWFTS-BH20-SO-35.5	Total/NA	Solid	6010B	281983
550-189013-7	SWFTS-BH22-SO-12.4	Total/NA	Solid	6010B	281983
550-189013-8	SWFTS-BH22-SO-20.5	Total/NA	Solid	6010B	281983
550-189013-9	SWFTS-BH22-SO-28.5	Total/NA	Solid	6010B	281983
550-189013-12	SWFTS-BH21-SO-16.5	Total/NA	Solid	6010B	281983

Metals (Continued)

Analysis Batch: 282129 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
550-189013-13	SWFTS-BH21-SO-16.5-FD	Total/NA	Solid	6010B	281983
550-189013-14	SWFTS-BH21-SO-19.5	Total/NA	Solid	6010B	281983
550-189013-15	SWFTS-BH21-SO-23.2	Total/NA	Solid	6010B	281983
550-189013-16	SWFTS-BH21-SO-28	Total/NA	Solid	6010B	281983
550-189013-17	SWFTS-BH21-SO-32	Total/NA	Solid	6010B	281983
MB 550-281983/1-A	Method Blank	Total/NA	Solid	6010B	281983
LCS 550-281983/2-A	Lab Control Sample	Total/NA	Solid	6010B	281983
LCSD 550-281983/3-A	Lab Control Sample Dup	Total/NA	Solid	6010B	281983
550-189013-3 MS	SWFTS-BH20-SO-24.2	Total/NA	Solid	6010B	281983
550-189013-3 MSD	SWFTS-BH20-SO-24.2	Total/NA	Solid	6010B	281983

Analysis Batch: 282158

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
550-189013-10	SWFTS-BH22-SO-36	Total/NA	Solid	6010B	281983
550-189013-11	SWFTS-BH22-SO-49	Total/NA	Solid	6010B	281983

General Chemistry

Analysis Batch: 585252

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
550-189013-1	SWFTS-BH20-SO-13.7	Total/NA	Solid	9060A	
550-189013-2	SWFTS-BH20-SO-13.7-FD	Total/NA	Solid	9060A	
550-189013-3	SWFTS-BH20-SO-24.2	Total/NA	Solid	9060A	
550-189013-4	SWFTS-BH20-SO-26	Total/NA	Solid	9060A	
550-189013-5	SWFTS-BH20-SO-31	Total/NA	Solid	9060A	
550-189013-6	SWFTS-BH20-SO-35.5	Total/NA	Solid	9060A	
550-189013-7	SWFTS-BH22-SO-12.4	Total/NA	Solid	9060A	
550-189013-8	SWFTS-BH22-SO-20.5	Total/NA	Solid	9060A	
550-189013-9	SWFTS-BH22-SO-28.5	Total/NA	Solid	9060A	
550-189013-10	SWFTS-BH22-SO-36	Total/NA	Solid	9060A	
550-189013-11	SWFTS-BH22-SO-49	Total/NA	Solid	9060A	
550-189013-12	SWFTS-BH21-SO-16.5	Total/NA	Solid	9060A	
550-189013-13	SWFTS-BH21-SO-16.5-FD	Total/NA	Solid	9060A	
550-189013-14	SWFTS-BH21-SO-19.5	Total/NA	Solid	9060A	
550-189013-15	SWFTS-BH21-SO-23.2	Total/NA	Solid	9060A	
550-189013-16	SWFTS-BH21-SO-28	Total/NA	Solid	9060A	
550-189013-17	SWFTS-BH21-SO-32	Total/NA	Solid	9060A	
MB 280-585252/4	Method Blank	Total/NA	Solid	9060A	
LCS 280-585252/3	Lab Control Sample	Total/NA	Solid	9060A	
550-189013-3 MS	SWFTS-BH20-SO-24.2	Total/NA	Solid	9060A	
550-189013-3 MSD	SWFTS-BH20-SO-24.2	Total/NA	Solid	9060A	
550-189013-15 MS	SWFTS-BH21-SO-23.2	Total/NA	Solid	9060A	
550-189013-15 MSD	SWFTS-BH21-SO-23.2	Total/NA	Solid	9060A	

Leach Batch: 639879

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
550-189013-1	SWFTS-BH20-SO-13.7	Soluble	Solid	DI Leach	
550-189013-2	SWFTS-BH20-SO-13.7-FD	Soluble	Solid	DI Leach	
550-189013-3	SWFTS-BH20-SO-24.2	Soluble	Solid	DI Leach	
550-189013-4	SWFTS-BH20-SO-26	Soluble	Solid	DI Leach	
550-189013-5	SWFTS-BH20-SO-31	Soluble	Solid	DI Leach	

General Chemistry (Continued)

Leach Batch: 639879 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
MB 480-639879/1-A	Method Blank	Soluble	Solid	DI Leach	
LCS 480-639879/2-A	Lab Control Sample	Soluble	Solid	DI Leach	
550-189013-3 MS	SWFTS-BH20-SO-24.2	Soluble	Solid	DI Leach	
550-189013-3 MSD	SWFTS-BH20-SO-24.2	Soluble	Solid	DI Leach	
550-189013-5 MS	SWFTS-BH20-SO-31	Soluble	Solid	DI Leach	

Leach Batch: 640037

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
550-189013-6	SWFTS-BH20-SO-35.5	Soluble	Solid	DI Leach	
550-189013-7	SWFTS-BH22-SO-12.4	Soluble	Solid	DI Leach	
550-189013-8	SWFTS-BH22-SO-20.5	Soluble	Solid	DI Leach	
550-189013-9	SWFTS-BH22-SO-28.5	Soluble	Solid	DI Leach	
550-189013-10	SWFTS-BH22-SO-36	Soluble	Solid	DI Leach	
550-189013-11	SWFTS-BH22-SO-49	Soluble	Solid	DI Leach	
550-189013-12	SWFTS-BH21-SO-16.5	Soluble	Solid	DI Leach	
550-189013-13	SWFTS-BH21-SO-16.5-FD	Soluble	Solid	DI Leach	
550-189013-14	SWFTS-BH21-SO-19.5	Soluble	Solid	DI Leach	
550-189013-15	SWFTS-BH21-SO-23.2	Soluble	Solid	DI Leach	
550-189013-16	SWFTS-BH21-SO-28	Soluble	Solid	DI Leach	
550-189013-17	SWFTS-BH21-SO-32	Soluble	Solid	DI Leach	
MB 480-640037/1-A	Method Blank	Soluble	Solid	DI Leach	
LCS 480-640037/2-A	Lab Control Sample	Soluble	Solid	DI Leach	
550-189013-11 MS	SWFTS-BH22-SO-49	Soluble	Solid	DI Leach	
550-189013-11 MSD	SWFTS-BH22-SO-49	Soluble	Solid	DI Leach	

Analysis Batch: 640070

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
550-189013-1	SWFTS-BH20-SO-13.7	Soluble	Solid	VFA-IC	639879
550-189013-2	SWFTS-BH20-SO-13.7-FD	Soluble	Solid	VFA-IC	639879
550-189013-3	SWFTS-BH20-SO-24.2	Soluble	Solid	VFA-IC	639879
550-189013-4	SWFTS-BH20-SO-26	Soluble	Solid	VFA-IC	639879
550-189013-5	SWFTS-BH20-SO-31	Soluble	Solid	VFA-IC	639879
MB 480-639879/1-A	Method Blank	Soluble	Solid	VFA-IC	639879
LCS 480-639879/2-A	Lab Control Sample	Soluble	Solid	VFA-IC	639879
550-189013-3 MS	SWFTS-BH20-SO-24.2	Soluble	Solid	VFA-IC	639879
550-189013-3 MSD	SWFTS-BH20-SO-24.2	Soluble	Solid	VFA-IC	639879
550-189013-5 MS	SWFTS-BH20-SO-31	Soluble	Solid	VFA-IC	639879

Analysis Batch: 640360

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
550-189013-6	SWFTS-BH20-SO-35.5	Soluble	Solid	VFA-IC	640037
550-189013-7	SWFTS-BH22-SO-12.4	Soluble	Solid	VFA-IC	640037
550-189013-8	SWFTS-BH22-SO-20.5	Soluble	Solid	VFA-IC	640037
550-189013-9	SWFTS-BH22-SO-28.5	Soluble	Solid	VFA-IC	640037
550-189013-10	SWFTS-BH22-SO-36	Soluble	Solid	VFA-IC	640037
550-189013-11	SWFTS-BH22-SO-49	Soluble	Solid	VFA-IC	640037
550-189013-12	SWFTS-BH21-SO-16.5	Soluble	Solid	VFA-IC	640037
550-189013-13	SWFTS-BH21-SO-16.5-FD	Soluble	Solid	VFA-IC	640037
550-189013-14	SWFTS-BH21-SO-19.5	Soluble	Solid	VFA-IC	640037
550-189013-15	SWFTS-BH21-SO-23.2	Soluble	Solid	VFA-IC	640037
550-189013-16	SWFTS-BH21-SO-28	Soluble	Solid	VFA-IC	640037

General Chemistry (Continued)

Analysis Batch: 640360 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
550-189013-17	SWFTS-BH21-SO-32	Soluble	Solid	VFA-IC	640037
MB 480-640037/1-A	Method Blank	Soluble	Solid	VFA-IC	640037
LCS 480-640037/2-A	Lab Control Sample	Soluble	Solid	VFA-IC	640037
550-189013-11 MS	SWFTS-BH22-SO-49	Soluble	Solid	VFA-IC	640037
550-189013-11 MSD	SWFTS-BH22-SO-49	Soluble	Solid	VFA-IC	640037

Lab Chronicle

Client: Tetra Tech, Inc.
Project/Site: NERT - M11 Soils

Job ID: 550-189013-1

Client Sample ID: SWFTS-BH20-SO-13.7

Lab Sample ID: 550-189013-1
Matrix: Solid
Date Collected: 08/13/22 08:00
Date Received: 08/18/22 06:30

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	3050B			281982	GLW	EET PHX	08/19/22 01:26
Total/NA	Analysis	6010B		1	282128	CHS	EET PHX	08/22/22 08:54
Total/NA	Analysis	9060A		1	585252	ABW	EET DEN	08/25/22 13:48
Soluble	Leach	DI Leach			639879	KER	EET BUF	08/31/22 14:09
Soluble	Analysis	VFA-IC		1	640070	IMZ	EET BUF	09/02/22 13:56

Client Sample ID: SWFTS-BH20-SO-13.7-FD

Lab Sample ID: 550-189013-2
Matrix: Solid
Date Collected: 08/13/22 08:00
Date Received: 08/18/22 06:30

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	3050B			281982	GLW	EET PHX	08/19/22 01:26
Total/NA	Analysis	6010B		1	282128	CHS	EET PHX	08/22/22 08:57
Total/NA	Analysis	9060A		1	585252	ABW	EET DEN	08/25/22 13:59
Soluble	Leach	DI Leach			639879	KER	EET BUF	08/31/22 14:09
Soluble	Analysis	VFA-IC		1	640070	IMZ	EET BUF	09/02/22 14:25

Client Sample ID: SWFTS-BH20-SO-24.2

Lab Sample ID: 550-189013-3
Matrix: Solid
Date Collected: 08/13/22 08:10
Date Received: 08/18/22 06:30

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	3050B			281983	GLW	EET PHX	08/19/22 01:32
Total/NA	Analysis	6010B		1	282129	CHS	EET PHX	08/22/22 09:22
Total/NA	Analysis	9060A		1	585252	ABW	EET DEN	08/25/22 13:13
Soluble	Leach	DI Leach			639879	KER	EET BUF	08/31/22 14:09
Soluble	Analysis	VFA-IC		1	640070	IMZ	EET BUF	09/02/22 09:04

Client Sample ID: SWFTS-BH20-SO-26

Lab Sample ID: 550-189013-4
Matrix: Solid
Date Collected: 08/13/22 08:20
Date Received: 08/18/22 06:30

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	3050B			281983	GLW	EET PHX	08/19/22 01:32
Total/NA	Analysis	6010B		1	282129	CHS	EET PHX	08/22/22 09:25
Total/NA	Analysis	9060A		1	585252	ABW	EET DEN	08/25/22 14:09
Soluble	Leach	DI Leach			639879	KER	EET BUF	08/31/22 14:09
Soluble	Analysis	VFA-IC		1	640070	IMZ	EET BUF	09/02/22 14:54

Lab Chronicle

Client: Tetra Tech, Inc.
Project/Site: NERT - M11 Soils

Job ID: 550-189013-1

Client Sample ID: SWFTS-BH20-SO-31

Lab Sample ID: 550-189013-5

Date Collected: 08/13/22 08:30

Matrix: Solid

Date Received: 08/18/22 06:30

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	3050B			281983	GLW	EET PHX	08/19/22 01:32
Total/NA	Analysis	6010B		1	282129	CHS	EET PHX	08/22/22 09:34
Total/NA	Analysis	9060A		1	585252	ABW	EET DEN	08/25/22 14:18
Soluble	Leach	DI Leach			639879	KER	EET BUF	08/31/22 14:09
Soluble	Analysis	VFA-IC		1	640070	IMZ	EET BUF	09/02/22 15:23

Client Sample ID: SWFTS-BH20-SO-35.5

Lab Sample ID: 550-189013-6

Date Collected: 08/13/22 08:40

Matrix: Solid

Date Received: 08/18/22 06:30

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	3050B			281983	GLW	EET PHX	08/19/22 01:32
Total/NA	Analysis	6010B		1	282129	CHS	EET PHX	08/22/22 09:36
Total/NA	Analysis	9060A		1	585252	ABW	EET DEN	08/25/22 14:28
Soluble	Leach	DI Leach			640037	KER	EET BUF	09/01/22 12:15
Soluble	Analysis	VFA-IC		1	640360	IMZ	EET BUF	09/06/22 15:17

Client Sample ID: SWFTS-BH22-SO-12.4

Lab Sample ID: 550-189013-7

Date Collected: 08/13/22 12:00

Matrix: Solid

Date Received: 08/18/22 06:30

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	3050B			281983	GLW	EET PHX	08/19/22 01:32
Total/NA	Analysis	6010B		1	282129	CHS	EET PHX	08/22/22 09:39
Total/NA	Analysis	9060A		1	585252	ABW	EET DEN	08/25/22 14:43
Soluble	Leach	DI Leach			640037	KER	EET BUF	09/01/22 12:15
Soluble	Analysis	VFA-IC		1	640360	IMZ	EET BUF	09/06/22 15:46

Client Sample ID: SWFTS-BH22-SO-20.5

Lab Sample ID: 550-189013-8

Date Collected: 08/13/22 12:10

Matrix: Solid

Date Received: 08/18/22 06:30

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	3050B			281983	GLW	EET PHX	08/19/22 01:32
Total/NA	Analysis	6010B		1	282129	CHS	EET PHX	08/22/22 09:42
Total/NA	Analysis	9060A		1	585252	ABW	EET DEN	08/25/22 14:53
Soluble	Leach	DI Leach			640037	KER	EET BUF	09/01/22 12:15
Soluble	Analysis	VFA-IC		1	640360	IMZ	EET BUF	09/06/22 16:15

Lab Chronicle

Client: Tetra Tech, Inc.
Job ID: 550-189013-1
Project/Site: NERT - M11 Soils

Client Sample ID: SWFTS-BH22-SO-28.5
Lab Sample ID: 550-189013-9
Date Collected: 08/13/22 12:20
Matrix: Solid
Date Received: 08/18/22 06:30

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	3050B			281983	GLW	EET PHX	08/19/22 01:32
Total/NA	Analysis	6010B		1	282129	CHS	EET PHX	08/22/22 09:45
Total/NA	Analysis	9060A		1	585252	ABW	EET DEN	08/25/22 15:23
Soluble	Leach	DI Leach			640037	KER	EET BUF	09/01/22 12:15
Soluble	Analysis	VFA-IC		1	640360	IMZ	EET BUF	09/06/22 16:44

Client Sample ID: SWFTS-BH22-SO-36
Lab Sample ID: 550-189013-10
Date Collected: 08/13/22 12:30
Matrix: Solid
Date Received: 08/18/22 06:30

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	3050B			281983	GLW	EET PHX	08/19/22 01:32
Total/NA	Analysis	6010B		2	282158	CHS	EET PHX	08/22/22 14:58
Total/NA	Analysis	9060A		1	585252	ABW	EET DEN	08/25/22 15:33
Soluble	Leach	DI Leach			640037	KER	EET BUF	09/01/22 12:15
Soluble	Analysis	VFA-IC		1	640360	IMZ	EET BUF	09/06/22 17:13

Client Sample ID: SWFTS-BH22-SO-49
Lab Sample ID: 550-189013-11
Date Collected: 08/13/22 12:40
Matrix: Solid
Date Received: 08/18/22 06:30

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	3050B			281983	GLW	EET PHX	08/19/22 01:32
Total/NA	Analysis	6010B		4	282158	CHS	EET PHX	08/22/22 14:55
Total/NA	Analysis	9060A		1	585252	ABW	EET DEN	08/26/22 10:41
Soluble	Leach	DI Leach			640037	KER	EET BUF	09/01/22 12:15
Soluble	Analysis	VFA-IC		1	640360	IMZ	EET BUF	09/06/22 17:43

Client Sample ID: SWFTS-BH21-SO-16.5
Lab Sample ID: 550-189013-12
Date Collected: 08/13/22 14:30
Matrix: Solid
Date Received: 08/18/22 06:30

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	3050B			281983	GLW	EET PHX	08/19/22 01:32
Total/NA	Analysis	6010B		1	282129	CHS	EET PHX	08/22/22 09:53
Total/NA	Analysis	9060A		1	585252	ABW	EET DEN	08/26/22 10:53
Soluble	Leach	DI Leach			640037	KER	EET BUF	09/01/22 12:15
Soluble	Analysis	VFA-IC		1	640360	IMZ	EET BUF	09/06/22 20:08

Lab Chronicle

Client: Tetra Tech, Inc.
Job ID: 550-189013-1
Project/Site: NERT - M11 Soils

Client Sample ID: SWFTS-BH21-SO-16.5-FD
Lab Sample ID: 550-189013-13
Date Collected: 08/13/22 14:30
Matrix: Solid
Date Received: 08/18/22 06:30

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	3050B			281983	GLW	EET PHX	08/19/22 01:32
Total/NA	Analysis	6010B		1	282129	CHS	EET PHX	08/22/22 09:56
Total/NA	Analysis	9060A		1	585252	ABW	EET DEN	08/26/22 11:03
Soluble	Leach	DI Leach			640037	KER	EET BUF	09/01/22 12:15
Soluble	Analysis	VFA-IC		1	640360	IMZ	EET BUF	09/06/22 20:37

Client Sample ID: SWFTS-BH21-SO-19.5
Lab Sample ID: 550-189013-14
Date Collected: 08/13/22 14:40
Matrix: Solid
Date Received: 08/18/22 06:30

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	3050B			281983	GLW	EET PHX	08/19/22 01:32
Total/NA	Analysis	6010B		1	282129	CHS	EET PHX	08/22/22 09:59
Total/NA	Analysis	9060A		1	585252	ABW	EET DEN	08/26/22 11:13
Soluble	Leach	DI Leach			640037	KER	EET BUF	09/01/22 12:15
Soluble	Analysis	VFA-IC		1	640360	IMZ	EET BUF	09/06/22 21:07

Client Sample ID: SWFTS-BH21-SO-23.2
Lab Sample ID: 550-189013-15
Date Collected: 08/13/22 14:50
Matrix: Solid
Date Received: 08/18/22 06:30

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	3050B			281983	GLW	EET PHX	08/19/22 01:32
Total/NA	Analysis	6010B		1	282129	CHS	EET PHX	08/22/22 10:07
Total/NA	Analysis	9060A		1	585252	ABW	EET DEN	08/25/22 15:47
Soluble	Leach	DI Leach			640037	KER	EET BUF	09/01/22 12:15
Soluble	Analysis	VFA-IC		1	640360	IMZ	EET BUF	09/06/22 21:36

Client Sample ID: SWFTS-BH21-SO-28
Lab Sample ID: 550-189013-16
Date Collected: 08/13/22 15:00
Matrix: Solid
Date Received: 08/18/22 06:30

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	3050B			281983	GLW	EET PHX	08/19/22 01:32
Total/NA	Analysis	6010B		1	282129	CHS	EET PHX	08/22/22 10:10
Total/NA	Analysis	9060A		1	585252	ABW	EET DEN	08/26/22 11:23
Soluble	Leach	DI Leach			640037	KER	EET BUF	09/01/22 12:15
Soluble	Analysis	VFA-IC		1	640360	IMZ	EET BUF	09/06/22 22:05

Lab Chronicle

Client: Tetra Tech, Inc.
Job ID: 550-189013-1
Project/Site: NERT - M11 Soils

Client Sample ID: SWFTS-BH21-SO-32
Lab Sample ID: 550-189013-17

Date Collected: 08/13/22 15:10
Matrix: Solid
Date Received: 08/18/22 06:30

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	3050B			281983	GLW	EET PHX	08/19/22 01:32
Total/NA	Analysis	6010B		1	282129	CHS	EET PHX	08/22/22 10:13
Total/NA	Analysis	9060A		1	585252	ABW	EET DEN	08/26/22 11:53
Soluble	Leach	DI Leach			640037	KER	EET BUF	09/01/22 12:15
Soluble	Analysis	VFA-IC		1	640360	IMZ	EET BUF	09/06/22 22:34

Laboratory References:

EET BUF = Eurofins Buffalo, 10 Hazelwood Drive, Amherst, NY 14228-2298, TEL (716)691-2600

EET DEN = Eurofins Denver, 4955 Yarrow Street, Arvada, CO 80002, TEL (303)736-0100

EET PHX = Eurofins Phoenix, 4625 East Cotton Center Boulevard, Suite #189, Phoenix, AZ 85040, TEL (602)437-3340

Accreditation/Certification Summary

Client: Tetra Tech, Inc.
Project/Site: NERT - M11 Soils

Job ID: 550-189013-1

Laboratory: Eurofins Phoenix

Unless otherwise noted, all analytes for this laboratory were covered under each accreditation/certification below.

Authority	Program	Identification Number	Expiration Date
Arizona	State	AZ0728	06-10-23

The following analytes are included in this report, but the laboratory is not certified by the governing authority. This list may include analytes for which the agency does not offer certification.

Analysis Method	Prep Method	Matrix	Analyte
6010B	3050B	Solid	Calcium

Laboratory: Eurofins Buffalo

All accreditations/certifications held by this laboratory are listed. Not all accreditations/certifications are applicable to this report.

Authority	Program	Identification Number	Expiration Date
Arkansas DEQ	State	88-0686	07-06-22 *
Connecticut	State	PH-0568	03-31-24
Florida	NELAP	E87672	06-30-23
Georgia	State	10026 (NY)	04-01-23
Georgia	State Program	N/A	03-31-09 *
Georgia (DW)	State	956	03-31-23
Illinois	NELAP	200003	09-30-22
Illinois	NELAP	200003	09-30-22
Iowa	State	374	03-01-23
Iowa	State Program	374	03-01-09 *
Kansas	NELAP	E-10187	01-31-23
Kentucky (DW)	State	90029	12-31-22
Kentucky (UST)	State	30	04-01-23
Kentucky (WW)	State	KY90029	12-31-22
Louisiana	NELAP	02031	06-30-23
Louisiana (All)	NELAP	02031	06-30-23
Maine	State	NY00044	12-04-22
Maryland	State	294	03-31-23
Massachusetts	State	M-NY044	06-30-23
Michigan	State	9937	03-31-23
Michigan	State Program	9937	04-01-09 *
New Hampshire	NELAP	2973	09-11-19 *
New Hampshire	NELAP	2337	11-17-22
New Jersey	NELAP	NY455	06-30-23
New York	NELAP	10026	03-31-23
Pennsylvania	NELAP	68-00281	07-31-23
Rhode Island	State	LAO00328	12-30-22
Tennessee	State	02970	04-01-23
Texas	NELAP	T104704412-18-10	07-31-23
USDA	US Federal Programs	P330-18-00039	03-25-24
Virginia	NELAP	460185	09-14-22
Washington	State	C784	02-10-23
Wisconsin	State	998310390	08-31-23

Laboratory: Eurofins Denver

All accreditations/certifications held by this laboratory are listed. Not all accreditations/certifications are applicable to this report.

Authority	Program	Identification Number	Expiration Date
A2LA	Dept. of Defense ELAP	2907.01	10-31-23
A2LA	ISO/IEC 17025	2907.01	10-31-23

* Accreditation/Certification renewal pending - accreditation/certification considered valid.

Accreditation/Certification Summary

Client: Tetra Tech, Inc.
Project/Site: NERT - M11 Soils

Job ID: 550-189013-1

Laboratory: Eurofins Denver (Continued)

All accreditations/certifications held by this laboratory are listed. Not all accreditations/certifications are applicable to this report.

Authority	Program	Identification Number	Expiration Date
Alabama	State Program	40730	09-30-12 *
Alaska (UST)	State	18-001	02-08-23
Arizona	State	AZ0713	12-20-22
Arkansas DEQ	State	19-047-0	06-01-22 *
California	State	2513	01-08-23
Connecticut	State	PH-0686	09-30-22
Florida	NELAP	E87667-57	06-30-23
Georgia	State	4025-011	01-08-23
Illinois	NELAP	2000172019-1	04-30-23
Iowa	State	IA#370	12-02-22
Kansas	NELAP	E-10166	04-30-23
Kentucky (WW)	State	KY98047	12-31-22
Louisiana	NELAP	30785	06-30-14 *
Louisiana	NELAP	30785	06-30-23
Minnesota	NELAP	1788752	12-31-22
Nevada	State	CO000262020-1	07-31-22 *
New Hampshire	NELAP	205319	04-28-23
New Jersey	NELAP	190002	06-30-23
New York	NELAP	59923	04-01-23
North Carolina (WW/SW)	State	358	12-31-22
North Dakota	State	R-034	01-08-23
Oklahoma	NELAP	8614	08-31-22
Oregon	NELAP	4025-011	01-09-23
Pennsylvania	NELAP	013	07-31-23
South Carolina	State	72002001	01-08-23
Texas	NELAP	TX104704183-08-TX	09-30-09 *
Texas	NELAP	T104704183-21-19	10-01-22
USDA	US Federal Programs	P330-20-00065	03-06-23
Utah	NELAP	QUAN5	06-30-13 *
Utah	NELAP	CO000262019-11	07-31-23
Virginia	NELAP	10490	06-14-23
Washington	State	C583-19	08-03-22 *
West Virginia DEP	State	354	11-30-22
Wisconsin	State	999615430	08-31-22
Wyoming (UST)	A2LA	2907.01	10-31-22

* Accreditation/Certification renewal pending - accreditation/certification considered valid.

Method Summary

Client: Tetra Tech, Inc.
Project/Site: NERT - M11 Soils

Job ID: 550-189013-1

Method	Method Description	Protocol	Laboratory
6010B	Metals (ICP)	SW846	EET PHX
9060A	Organic Carbon, Total (TOC)	SW846	EET DEN
VFA-IC	Volatile Fatty Acids, Ion Chromatography	TestAmerica SOP	EET BUF
3050B	Preparation, Metals	SW846	EET PHX
DI Leach	Deionized Water Leaching Procedure	ASTM	EET BUF

Protocol References:

ASTM = ASTM International

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

TestAmerica SOP = TestAmerica, Inc., Standard Operating Procedure

Laboratory References:

EET BUF = Eurofins Buffalo, 10 Hazelwood Drive, Amherst, NY 14228-2298, TEL (716)691-2600

EET DEN = Eurofins Denver, 4955 Yarrow Street, Arvada, CO 80002, TEL (303)736-0100

EET PHX = Eurofins Phoenix, 4625 East Cotton Center Boulevard, Suite #189, Phoenix, AZ 85040, TEL (602)437-3340

Tetra Tech
150 S Fourth Street, Unit A
Henderson, NV 89015
702-854-2295

TestAmerica
Las Vegas
219

CHAIN-OF-CUSTODY

189013

9/8/2022

Laboratory Name: **Eurofins-Phoenix** (602) 437-3340						**Address: 4625 E. Cotton Center Blvd. Suite 189; Phoenix, AZ 85040**										**Contact: Rachel Sester (602) 659-7615**	**Page** 1 of 2
Project Name: **Seep Well Field**						Sampler G. Schuler	**Analysis and Method Requested**										Remarks
Project No. **M11** NERT			Project Contact **Maureen McMyler**			Site Telephone No. **(702) 767-2053**	Number of Containers	**TOC by 9060A**	**Calcium by 6010B**	**VFA by IC**							
Report to: Maureen McMyler; Maureen.McMyler@tetratech.com; (865) 220-4762						Project Manager/Supervisor **Dana Grady**											
Bill to: Sunshine Pryor, 350 Indiana St., Golden, CO 80401 (303) 217-5700						Sample Description											
Item No.	Sample Number	Date	Time	G - Grab C - Comp	Matrix												
						Preservative	3	**None**	**None**	**None**	**None**	**None**					Notes
-01 1	**SWFTS-BH20-SO-13.7**	8/13/2022	**0800**	**G**	**S**		3	1	1	1							
-02 2	**SWFTS-BH20-SO-13.7-FD**	8/13/2022	**0800**	**G**	**S**		3	1	1	1							
-03 3	**SWFTS-BH20-SO-24.2**	8/13/2022	**0810**	**G**	**S**		3	1	1	1							
-03 4	**SWFTS-BH20-SO-24.2-MS/MSD**	8/13/2022	**0810**	**G**	**S**		3	1	1	1							
-04 5	**SWFTS-BH20-SO-26**	8/13/2022	**0820**	**G**	**S**		3	1	1	1							
-05 6	**SWFTS-BH20-SO-31**	8/13/2022	**0830**	**G**	**S**		3	1	1	1							
-06 7	**SWFTS-BH20-SO-35.5**	8/13/2022	**0840**	**G**	**S**		3	1	1	1							
-07 8	**SWFTS-BH22-SO-12.4**	8/13/2022	**1200**	**G**	**S**		3	1	1	1							
-08 9	**SWFTS-BH22-SO-20.5**	8/13/2022	**1210**	**G**	**S**		3	1	1	1							
-09 10	**SWFTS-BH22-SO-28.5**	8/13/2022	**1220**	**G**	**S**		3	1	1	1							
-10 11	**SWFTS-BH22-SO-36**	8/13/2022	**1230**	**G**	**S**		3	1	1	1							
-11 12	**SWFTS-BH22-SO-49**	8/13/2022	**1240**	**G**	**S**		3	1	1	1							
-12 13	**SWFTS-BH21-SO-16.5**	8/13/2022	**1430**	**G**	**S**		3	1	1	1							
-13 14	**SWFTS-BH21-SO-16.5-FD**	8/13/2022	**1430**	**G**	**S**		3	1	1	1							
-14 15	**SWFTS-BH21-SO-19.5**	8/13/2022	**1440**	**G**	**S**		3	1	1	1							

Transfers Relinquished By (Signature)	Date/Time		Transfers Accepted By (Signature)	Date/Time	Special Instructions:
G Schuler	8/17/22		JTAM TALUS	8-17-22 1300	
JTAM TALUS	8-17-22 1600				**Level IV**Package; EQuIS 4-file format EDD
Drop Box			Laboratory EETA PHX	8/18/22	FedEx Airbill No.:
TAT: Standard				6.3C	Sampler's Signature

Tot 240 24.4/24.7

3.6/5.6/3.6/2.1/3.9/4.2 PHL

550-189013 Chain of Custody

Tetra Tech
150 S Fourth Street, Unit A
Henderson, NV 89015
702-854-2295

TestAmerica Las Vegas 219

CHAIN-OF-CUSTODY

189013

9/8/2022

Laboratory Name: **Eurofins-Phoenix** (602) 437-3340						**Address: 4625 E. Cotton Center Blvd. Suite 189; Phoenix, AZ 85040**			**Contact: Rachel Sester (602) 659-7615**								**Page 2 of 2**
Project Name: **Seep Well Field**						Sampler: G. Schuler	**Analysis and Method Requested**										Remarks
Project No. **M11** NERT			Project Contact: **Maureen McMyler**			Site Telephone No.: **(702) 767-2053**	Number of Containers	**TOC by 9060A**	**Calcium by 6010B**	**VFA by IC**							
Report to: Maureen McMyler; Maureen.McMyler@tetratech.com; (865) 220-4762						Project Manager/Supervisor: **Dana Grady**											
Bill to: Sunshine Pryor, 350 Indiana St., Golden, CO 80401 (303) 217-5700						Sample Description											
Item No.	Sample Number	Date	Time	G - Grab C - Comp	Matrix												
						Preservative	3	**None**	**None**	**None**	**None**	**None**					Notes
-15 1	**SWFTS-BH21-SO-23.2**	8/13/2022	**1450**	**G**	**S**		3	1	1	1							
-16 2	**SWFTS-BH21-SO-28**	8/13/2022	**1500**	**G**	**S**		3	1	1	1							
-17 3	**SWFTS-BH21-SO-32**	8/13/2022	**1510**	**G**	**S**		3	1	1	1							
4																	
5																	
6																	
7																	
8																	
9																	
10																	
11																	
12																	
13																	
14																	
15																	

Transfers Relinquished By (Signature)	Date/Time		Transfers Accepted By (Signature)	Date/Time
	8/17/22		JTAM TALVS	8-17-22 1300
JTAM TALVS 8-17-22 1400				
Drop Box			Laboratory: EETA PHX	8/18/22 6:30

Special Instructions:

Level IVPackage; EQuIS 4-file format EDD

FedEx Airbill No.:

Sampler's Signature:

TAT: Standard

TAT 240 24.4/34.7

Eurofins Phoenix
4625 East Cotton Center Boulevard Suite #189
Phoenix, AZ 85040
Phone: 602-437-3340

Chain of Custody Record

eurofins | Environment Testing America

Client Information (Sub Contract Lab)	Sampler:	Lab PM: Sester, Rachel E	Carrier Tracking No(s):	COC No: 550-34764.1
Client Contact: Shipping/Receiving	Phone:	E-Mail: Rachel.Sester@et.eurofinsus.com	State of Origin: Nevada	Page: Page 1 of 3
Company: TestAmerica Laboratories, Inc.		Accreditations Required (See note): State Program - Nevada		Job #: 550-189013-1
Address: 4955 Yarrow Street, ,	Due Date Requested: 8/31/2022			
City: Arvada	TAT Requested (days):			
State, Zip: CO, 80002				
Phone: 303-736-0100(Tel) 303-431-7171(Fax)	PO #:			
Email:	WO #:			
Project Name: NERT - M11 Soils	Project #: 55017858			
Site:	SSOW#:			

Analysis Requested

Preservation Codes:

A - HCL, B - NaOH, C - Zn Acetate, D - Nitric Acid, E - NaHSO4, F - MeOH, G - Amchlor, H - Ascorbic Acid, I - Ice, J - DI Water, K - EDTA, L - EDA, M - Hexane, N - None, O - AsNaO2, P - Na2O4S, Q - Na2SO3, R - Na2S2O3, S - H2SO4, T - TSP Dodecahydrate, U - Acetone, V - MCAA, W - pH 4-5, Y - Trizma, Z - other (specify)

Other:

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	9060A/ Solids - TOC	Total Number of containers	Special Instructions/Note:
			Preservation Code:						
SWFTS-BH20-SO-13.7 (550-189013-1)	8/13/22	08:00 Pacific		Solid			X	1	
SWFTS-BH20-SO-13.7-FD (550-189013-2)	8/13/22	08:00 Pacific		Solid			X	1	
SWFTS-BH20-SO-24.2 (550-189013-3)	8/13/22	08:10 Pacific		Solid			X	2	
SWFTS-BH20-SO-24.2 (550-189013-3MS)	8/13/22	08:10 Pacific	MS	Solid			X	2	
SWFTS-BH20-SO-24.2 (550-189013-3MSD)	8/13/22	08:10 Pacific	MSD	Solid			X	2	
SWFTS-BH20-SO-26 (550-189013-4)	8/13/22	08:20 Pacific		Solid			X	1	
SWFTS-BH20-SO-31 (550-189013-5)	8/13/22	08:30 Pacific		Solid			X	1	
SWFTS-BH20-SO-35.5 (550-189013-6)	8/13/22	08:40 Pacific		Solid			X	1	
SWFTS-BH22-SO-12.4 (550-189013-7)	8/13/22	12:00 Pacific		Solid			X	1	

Note: Since laboratory accreditations are subject to change, Eurofins Environment Testing Southwest, LLC places the ownership of method, analyte & accreditation compliance upon out subcontract laboratories. This sample shipment is forwarded under chain-of-custody. If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed, the samples must be shipped back to the Eurofins Environment Testing Southwest, LLC laboratory or other instructions will be provided. Any changes to accreditation status should be brought to Eurofins Environment Testing Southwest, LLC attention immediately. If all requested accreditations are current to date, return the signed Chain of Custody attesting to said complicance to Eurofins Environment Testing Southwest, LLC.

Possible Hazard Identification	***Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)***
Unconfirmed	☐ *Return To Client* ☐ *Disposal By Lab* ☐ *Archive For* _____ *Months*
Deliverable Requested: I, II, III, IV, Other (specify) Primary Deliverable Rank: 2	Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:

Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
Fred 08-18-22	13:30	EESW	Fedex		
Relinquished by: Fed Ex	Date/Time:	Company	Received by:	Date/Time: 08/19/2022 0950	Company GA DEy
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

Custody Seals Intact: Δ Yes Δ No	Custody Seal No.:	Cooler Temperature(s) °C and Other Remarks: 1.7 CF+0.0 IR #12

Ver: 06/08/2021

Eurofins Phoenix
4625 East Cotton Center Boulevard Suite #189
Phoenix, AZ 85040
Phone: 602-437-3340

Chain of Custody Record

eurofins | Environment Testing America

Client Information (Sub Contract Lab)	Sampler:	Lab PM: Sester, Rachel E	Carrier Tracking No(s):	COC No: 550-34764.2
Client Contact: Shipping/Receiving	Phone:	E-Mail: Rachel.Sester@et.eurofinsus.com	State of Origin: Nevada	Page: Page 2 of 3
Company: TestAmerica Laboratories, Inc.		Accreditations Required (See note): State Program - Nevada		Job #: 550-189013-1
Address: 4955 Yarrow Street, ,	Due Date Requested: 8/31/2022			
City: Arvada	TAT Requested (days):			
State, Zip: CO, 80002				
Phone: 303-736-0100(Tel) 303-431-7171(Fax)	PO #:			
Email:	WO #:			
Project Name: NERT - M11 Soils	Project #: 55017858			
Site:	SSOW#:			

Analysis Requested

Preservation Codes:

A - HCL, B - NaOH, C - Zn Acetate, D - Nitric Acid, E - NaHSO4, F - MeOH, G - Amchlor, H - Ascorbic Acid, I - Ice, J - DI Water, K - EDTA, L - EDA, M - Hexane, N - None, O - AsNaO2, P - Na2O4S, Q - Na2SO3, R - Na2S2O3, S - H2SO4, T - TSP Dodecahydrate, U - Acetone, V - MCAA, W - pH 4-5, Y - Trizma, Z - other (specify)

Other:

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	9060A/ Solids - TOC	Total Number of containers	Special Instructions/Note:
			Preservation Code:						
SWFTS-BH22-SO-20.5 (550-189013-8)	8/13/22	12:10 Pacific		Solid			X	1	
SWFTS-BH22-SO-28.5 (550-189013-9)	8/13/22	12:20 Pacific		Solid			X	1	
SWFTS-BH22-SO-36 (550-189013-10)	8/13/22	12:30 Pacific		Solid			X	1	
SWFTS-BH22-SO-49 (550-189013-11)	8/13/22	12:40 Pacific		Solid			X	1	
SWFTS-BH21-SO-16.5 (550-189013-12)	8/13/22	14:30 Pacific		Solid			X	1	
SWFTS-BH21-SO-16.5-FD (550-189013-13)	8/13/22	14:30 Pacific		Solid			X	1	
SWFTS-BH21-SO-19.5 (550-189013-14)	8/13/22	14:40 Pacific		Solid			X	1	
SWFTS-BH21-SO-23.2 (550-189013-15)	8/13/22	14:50 Pacific		Solid			X	1	
SWFTS-BH21-SO-28 (550-189013-16)	8/13/22	15:00 Pacific		Solid			X	1	

Note: Since laboratory accreditations are subject to change, Eurofins Environment Testing Southwest, LLC places the ownership of method, analyte & accreditation compliance upon out subcontract laboratories. This sample shipment is forwarded under chain-of-custody. If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed, the samples must be shipped back to the Eurofins Environment Testing Southwest, LLC laboratory or other instructions will be provided. Any changes to accreditation status should be brought to Eurofins Environment Testing Southwest, LLC attention immediately. If all requested accreditations are current to date, return the signed Chain of Custody attesting to said complicance to Eurofins Environment Testing Southwest, LLC.

Possible Hazard Identification	***Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)***
Unconfirmed	☐ *Return To Client* ☐ *Disposal By Lab* ☐ *Archive For _____ Months*
Deliverable Requested: I, II, III, IV, Other (specify) Primary Deliverable Rank: 2	Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:

Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
[illegible] 8-18-22	15:30	EETSW	FedEx		
Relinquished by: FedEx	Date/Time:	Company	Received by: [illegible]	Date/Time: 08/19/2022 0950	Company [illegible]
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

Custody Seals Intact: Δ Yes Δ No	Custody Seal No.:	Cooler Temperature(s) °C and Other Remarks:

Ver: 06/08/2021

Eurofins Phoenix
4625 East Cotton Center Boulevard Suite #189
Phoenix, AZ 85040
Phone: 602-437-3340

Chain of Custody Record

eurofins Environment Testing America

Client Information (Sub Contract Lab)	Sampler:	Lab PM: Sester, Rachel E	Carrier Tracking No(s):	COC No: 550-34764.3
Client Contact: Shipping/Receiving	Phone:	E-Mail: Rachel.Sester@et.eurofinsus.com	State of Origin: Nevada	Page: Page 3 of 3
Company: TestAmerica Laboratories, Inc.		Accreditations Required (See note): State Program - Nevada		Job #: 550-189013-1
Address: 4955 Yarrow Street, ,	Due Date Requested: 8/31/2022			
City: Arvada	TAT Requested (days):			
State, Zip: CO, 80002				
Phone: 303-736-0100(Tel) 303-431-7171(Fax)	PO #:			
Email:	WO #:			
Project Name: NERT - M11 Soils	Project #: 55017858			
Site:	SSOW#:			

Analysis Requested

Preservation Codes:
A - HCL
B - NaOH
C - Zn Acetate
D - Nitric Acid
E - NaHSO4
F - MeOH
G - Amchlor
H - Ascorbic Acid
I - Ice
J - DI Water
K - EDTA
L - EDA
M - Hexane
N - None
O - AsNaO2
P - Na2O4S
Q - Na2SO3
R - Na2S2O3
S - H2SO4
T - TSP Dodecahydrate
U - Acetone
V - MCAA
W - pH 4-5
Y - Trizma
Z - other (specify)
Other:

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	9060A/ Solids - TOC	Total Number of containers	Special Instructions/Note:
			Preservation Code:						
SWFTS-BH21-SO-32 (550-189013-17)	8/13/22	15:10 Pacific		Solid			X	1	

Note: Since laboratory accreditations are subject to change, Eurofins Environment Testing Southwest, LLC places the ownership of method, analyte & accreditation compliance upon out subcontract laboratories This sample shipment is forwarded under chain-of-custody. If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed, the samples must be shipped back to the Eurofins Environment Testing Southwest, LLC laboratory or other instructions will be provided. Any changes to accreditation status should be brought to Eurofins Environment Testing Southwest, LLC attention immediately. If all requested accreditations are current to date, return the signed Chain of Custody attesting to said complicance to Eurofins Environment Testing Southwest, LLC.

Possible Hazard Identification *Unconfirmed*	***Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)*** ☐ *Return To Client* ☐ *Disposal By Lab* ☐ *Archive For* _____ *Months*
Deliverable Requested: I, II, III, IV, Other (specify) Primary Deliverable Rank: 2	Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:		
Relinquished by: [signature] 08-18-22	Date/Time: 13:30 EETSW	Company	Received by: Fedex	Date/Time:	Company
Relinquished by: fed ex	Date/Time:	Company	Received by: [signature]	Date/Time: 08/19/2022 0950	Company EJA DEM
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
Custody Seals Intact: Δ Yes Δ No	Custody Seal No.:		Cooler Temperature(s) °C and Other Remarks:		

Ver: 06/08/2021

Login Sample Receipt Checklist

Client: Tetra Tech, Inc.

Job Number: 550-189013-1

Login Number: 189013
List Number: 1
Creator: Gravlin, Andrea

List Source: Eurofins Phoenix

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	True	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

Login Sample Receipt Checklist

Client: Tetra Tech, Inc.

Job Number: 550-189013-1

Login Number: 189013
List Number: 2
Creator: Yeager, Brian A

List Source: Eurofins Buffalo
List Creation: 08/19/22 01:45 PM

Question	Answer	Comment
Radioactivity either was not measured or, if measured, is at or below background	True	
The cooler's custody seal, if present, is intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	3.1 ICE
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the sample IDs on the containers and the COC.	True	
Samples are received within Holding Time (Excluding tests with immediate HTs)..	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
VOA sample vials do not have headspace or bubble is <6mm (1/4") in diameter.	True	
If necessary, staff have been informed of any short hold time or quick TAT needs	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Sampling Company provided.	True	
Samples received within 48 hours of sampling.	True	
Samples requiring field filtration have been filtered in the field.	True	
Chlorine Residual checked.	True	

Login Sample Receipt Checklist

Client: Tetra Tech, Inc.

Job Number: 550-189013-1

Login Number: 189013
List Number: 3
Creator: Kazenga, Oliver M

List Source: Eurofins Denver
List Creation: 08/19/22 01:53 PM

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	True	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	N/A	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	N/A	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	N/A	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

eurofins | Environment Testing America

ANALYTICAL REPORT

Eurofins Phoenix
4625 East Cotton Center Boulevard
Suite #189
Phoenix, AZ 85040
Tel: (602)437-3340

Laboratory Job ID: 550-189014-1
Client Project/Site: Seep Well Field

For:
Tetra Tech, Inc.
1093 Commerce Park Drive
Suite 100
Oak Ridge, Tennessee 37830

Attn: Ms. Maureen McMyler

Authorized for release by:
9/7/2022 2:21:05 PM

Rachel Sester, Project Manager I
(602)659-7615
Rachel.Sester@et.eurofinsus.com

LINKS

Review your project results through my EOL

Have a Question? Ask The Expert

Visit us at: www.eurofinsus.com/Env

This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.

Results relate only to the items tested and the sample(s) as received by the laboratory.

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Definitions/Glossary

Client: Tetra Tech, Inc.
Project/Site: Seep Well Field

Job ID: 550-189014-1

Qualifiers

Metals

Qualifier	Qualifier Description
E4	Concentration estimated. Analyte was detected below laboratory minimum reporting limit (MRL).

General Chemistry

Qualifier	Qualifier Description
E4	Concentration estimated. Analyte was detected below laboratory minimum reporting limit (MRL).
F1	MS and/or MSD recovery exceeds control limits.
F2	MS/MSD RPD exceeds control limits

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CFU	Colony Forming Unit
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MCL	EPA recommended "Maximum Contaminant Level"
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
MPN	Most Probable Number
MQL	Method Quantitation Limit
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
NEG	Negative / Absent
POS	Positive / Present
PQL	Practical Quantitation Limit
PRES	Presumptive
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)
TNTC	Too Numerous To Count

Case Narrative

Client: Tetra Tech, Inc.
Project/Site: Seep Well Field

Job ID: 550-189014-1

Job ID: 550-189014-1

Laboratory: Eurofins Phoenix

Narrative

Job Narrative
550-189014-1

Comments
No additional comments.

Receipt
The samples were received on 8/18/2022 6:30 AM. Unless otherwise noted below, the samples arrived in good condition, and where required, properly preserved and on ice. The temperatures of the 2 coolers at receipt time were 3.6º C and 24.7º C.

HPLC/IC
Method VFA-IC: The following samples were diluted due to the nature of the sample matrix: SWFTS-BH-EB1-20220813 (550-189014-1), SWFTS-BH-EB2-20220813 (550-189014-2), SWFTS-BH-EB3-20220815 (550-189014-3), SWFTS-BH-EB4-20220816 (550-189014-4) and SWFTS-BH-EB5-20220816 (550-189014-5). Elevated reporting limits (RLs) are provided.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

Metals
No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

General Chemistry
Method SM 5310B: The matrix spike (MS) recovery for analytical batch 550-282149 was outside control limits. Sample matrix interference was suspected because the associated laboratory control sample (LCS) recovery was within acceptance limits.

Method SM 5310B: The matrix spike / matrix spike duplicate (MS/MSD) recoveries for 550-282308 were outside control limits for Total Organic Carbon. Sample matrix interference was suspected because the associated laboratory control sample (LCS) recovery was within acceptance limits.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

Sample Summary

Client: Tetra Tech, Inc.
Project/Site: Seep Well Field

Job ID: 550-189014-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
550-189014-1	SWFTS-BH-EB1-20220813	Water	08/13/22 08:50	08/18/22 06:30
550-189014-2	SWFTS-BH-EB2-20220813	Water	08/13/22 15:30	08/18/22 06:30
550-189014-3	SWFTS-BH-EB3-20220815	Water	08/15/22 15:35	08/18/22 06:30
550-189014-4	SWFTS-BH-EB4-20220816	Water	08/16/22 08:30	08/18/22 06:30
550-189014-5	SWFTS-BH-EB5-20220816	Water	08/16/22 15:30	08/18/22 06:30

Detection Summary

Client: Tetra Tech, Inc.
Project/Site: Seep Well Field

Job ID: 550-189014-1

Client Sample ID: SWFTS-BH-EB1-20220813 — Lab Sample ID: 550-189014-1

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Calcium	0.15	E4	0.40	0.015	mg/L	1		6010B	Total/NA
Total Organic Carbon	0.50		0.50	0.26	mg/L	1		SM 5310B	Total/NA
Lactic acid	5.0	E4	10	3.1	mg/L	10		VFA-IC	Total/NA

Client Sample ID: SWFTS-BH-EB2-20220813 — Lab Sample ID: 550-189014-2

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Calcium	0.13	E4	0.40	0.015	mg/L	1		6010B	Total/NA
Total Organic Carbon	0.47	E4	0.50	0.26	mg/L	1		SM 5310B	Total/NA
Lactic acid	4.9	E4	10	3.1	mg/L	10		VFA-IC	Total/NA

Client Sample ID: SWFTS-BH-EB3-20220815 — Lab Sample ID: 550-189014-3

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Calcium	0.11	E4	0.40	0.015	mg/L	1		6010B	Total/NA
Total Organic Carbon	0.70		0.50	0.26	mg/L	1		SM 5310B	Total/NA
Lactic acid	4.3	E4	10	3.1	mg/L	10		VFA-IC	Total/NA

Client Sample ID: SWFTS-BH-EB4-20220816 — Lab Sample ID: 550-189014-4

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Calcium	61		0.40	0.015	mg/L	1		6010B	Total/NA
Total Organic Carbon	2.8		0.50	0.26	mg/L	1		SM 5310B	Total/NA

Client Sample ID: SWFTS-BH-EB5-20220816 — Lab Sample ID: 550-189014-5

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Calcium	0.15	E4	0.40	0.015	mg/L	1		6010B	Total/NA
Total Organic Carbon	0.41	E4	0.50	0.26	mg/L	1		SM 5310B	Total/NA
Lactic acid	4.9	E4	10	3.1	mg/L	10		VFA-IC	Total/NA

This Detection Summary does not include radiochemical test results.

Client Sample ID: SWFTS-BH-EB1-20220813

Lab Sample ID: 550-189014-1

Date Collected: 08/13/22 08:50

Matrix: Water

Date Received: 08/18/22 06:30

Method: 6010B - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Calcium	0.15	E4	0.40	0.015	mg/L		08/19/22 09:59	08/22/22 05:21	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon	0.50		0.50	0.26	mg/L			08/24/22 04:53	1
Acetic acid	ND		10	2.9	mg/L			09/01/22 08:05	10
Formic-acid	ND		10	2.6	mg/L			09/01/22 08:05	10
Lactic acid	5.0	E4	10	3.1	mg/L			09/01/22 08:05	10
n-Butyric Acid	ND		10	2.6	mg/L			09/01/22 08:05	10
Propionic acid	ND		10	3.5	mg/L			09/01/22 08:05	10
Pyruvic Acid	ND		15	3.7	mg/L			09/01/22 08:05	10

Client Sample ID: SWFTS-BH-EB2-20220813

Lab Sample ID: 550-189014-2

Date Collected: 08/13/22 15:30

Matrix: Water

Date Received: 08/18/22 06:30

Method: 6010B - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Calcium	0.13	E4	0.40	0.015	mg/L		08/19/22 09:59	08/22/22 05:24	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon	0.47	E4	0.50	0.26	mg/L			08/20/22 18:27	1
Acetic acid	ND		10	2.9	mg/L			09/01/22 08:34	10
Formic-acid	ND		10	2.6	mg/L			09/01/22 08:34	10
Lactic acid	4.9	E4	10	3.1	mg/L			09/01/22 08:34	10
n-Butyric Acid	ND		10	2.6	mg/L			09/01/22 08:34	10
Propionic acid	ND		10	3.5	mg/L			09/01/22 08:34	10
Pyruvic Acid	ND		15	3.7	mg/L			09/01/22 08:34	10

Client Sample ID: SWFTS-BH-EB3-20220815

Lab Sample ID: 550-189014-3

Date Collected: 08/15/22 15:35

Matrix: Water

Date Received: 08/18/22 06:30

Method: 6010B - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Calcium	0.11	E4	0.40	0.015	mg/L		08/19/22 09:59	08/22/22 05:27	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon	0.70		0.50	0.26	mg/L			08/20/22 18:40	1
Acetic acid	ND		10	2.9	mg/L			09/01/22 09:04	10
Formic-acid	ND		10	2.6	mg/L			09/01/22 09:04	10
Lactic acid	4.3	E4	10	3.1	mg/L			09/01/22 09:04	10
n-Butyric Acid	ND		10	2.6	mg/L			09/01/22 09:04	10
Propionic acid	ND		10	3.5	mg/L			09/01/22 09:04	10
Pyruvic Acid	ND		15	3.7	mg/L			09/01/22 09:04	10

Client Sample ID: SWFTS-BH-EB4-20220816

Lab Sample ID: 550-189014-4

Date Collected: 08/16/22 08:30

Matrix: Water

Date Received: 08/18/22 06:30

Method: 6010B - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Calcium	**61**		0.40	0.015	mg/L		08/19/22 09:59	08/22/22 05:30	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon	**2.8**		0.50	0.26	mg/L			08/20/22 19:21	1
Acetic acid	ND		10	2.9	mg/L			09/01/22 09:33	10
Formic-acid	ND		10	2.6	mg/L			09/01/22 09:33	10
Lactic acid	ND		10	3.1	mg/L			09/01/22 09:33	10
n-Butyric Acid	ND		10	2.6	mg/L			09/01/22 09:33	10
Propionic acid	ND		10	3.5	mg/L			09/01/22 09:33	10
Pyruvic Acid	ND		15	3.7	mg/L			09/01/22 09:33	10

Client Sample ID: SWFTS-BH-EB5-20220816

Lab Sample ID: 550-189014-5

Date Collected: 08/16/22 15:30

Matrix: Water

Date Received: 08/18/22 06:30

Method: 6010B - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Calcium	**0.15**	**E4**	0.40	0.015	mg/L		08/19/22 09:59	08/22/22 05:33	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon	**0.41**	**E4**	0.50	0.26	mg/L			08/20/22 19:34	1
Acetic acid	ND		10	2.9	mg/L			09/01/22 10:02	10
Formic-acid	ND		10	2.6	mg/L			09/01/22 10:02	10
Lactic acid	**4.9**	**E4**	10	3.1	mg/L			09/01/22 10:02	10
n-Butyric Acid	ND		10	2.6	mg/L			09/01/22 10:02	10
Propionic acid	ND	F2	10	3.5	mg/L			09/01/22 10:02	10
Pyruvic Acid	ND		15	3.7	mg/L			09/01/22 10:02	10

Method: 6010B - Metals (ICP)

Lab Sample ID: MB 550-282018/1-A
Matrix: Water
Analysis Batch: 282125

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 282018

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Calcium	ND		0.40	0.015	mg/L		08/19/22 09:59	08/22/22 05:04	1

Lab Sample ID: LCS 550-282018/2-A
Matrix: Water
Analysis Batch: 282125

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 282018

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Calcium	21.0	22.4		mg/L		107	88 - 112

Lab Sample ID: LCSD 550-282018/3-A
Matrix: Water
Analysis Batch: 282125

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 282018

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Calcium	21.0	22.4		mg/L		107	88 - 112	0	20

Lab Sample ID: 550-189014-1 MS
Matrix: Water
Analysis Batch: 282125

Client Sample ID: SWFTS-BH-EB1-20220813
Prep Type: Total/NA
Prep Batch: 282018

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Calcium	0.15	J	21.0	22.3		mg/L		105	75 - 125

Lab Sample ID: 550-189014-1 MSD
Matrix: Water
Analysis Batch: 282125

Client Sample ID: SWFTS-BH-EB1-20220813
Prep Type: Total/NA
Prep Batch: 282018

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Calcium	0.15	J	21.0	22.4		mg/L		106	75 - 125	1	20

Method: SM 5310B - Organic Carbon, Total (TOC)

Lab Sample ID: MB 550-282149/14
Matrix: Water
Analysis Batch: 282149

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon	ND		0.50	0.26	mg/L			08/20/22 15:36	1

Lab Sample ID: LCS 550-282149/15
Matrix: Water
Analysis Batch: 282149

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Total Organic Carbon	20.0	21.5		mg/L		108	90 - 110

Method: SM 5310B - Organic Carbon, Total (TOC) (Continued)

Lab Sample ID: LCSD 550-282149/16
Matrix: Water
Analysis Batch: 282149

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Total Organic Carbon			20.0	21.0		mg/L		105	90 - 110	2	20

Lab Sample ID: 550-188842-D-4 MS ^10
Matrix: Water
Analysis Batch: 282149

Client Sample ID: Matrix Spike
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits		
Total Organic Carbon	8.4	D F1	200	242	F1	mg/L		117	90 - 110		

Lab Sample ID: 550-188842-D-4 MSD ^10
Matrix: Water
Analysis Batch: 282149

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Total Organic Carbon	8.4	D F1	200	217		mg/L		104	90 - 110	11	20

Lab Sample ID: MB 550-282308/19
Matrix: Water
Analysis Batch: 282308

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon	ND		0.50	0.26	mg/L			08/24/22 01:37	1

Lab Sample ID: LCS 550-282308/20
Matrix: Water
Analysis Batch: 282308

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Total Organic Carbon			20.0	19.8		mg/L		99	90 - 110		

Lab Sample ID: LCSD 550-282308/21
Matrix: Water
Analysis Batch: 282308

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Total Organic Carbon			20.0	18.8		mg/L		94	90 - 110	5	20

Lab Sample ID: 550-189215-B-1 MS
Matrix: Water
Analysis Batch: 282308

Client Sample ID: Matrix Spike
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits		
Total Organic Carbon	12	F1	20.0	28.0	F1	mg/L		80	90 - 110		

Lab Sample ID: 550-189215-C-1 MSD
Matrix: Water
Analysis Batch: 282308

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Total Organic Carbon	12	F1	20.0	29.6	F1	mg/L		89	90 - 110	6	20

Method: VFA-IC - Volatile Fatty Acids, Ion Chromatography

Lab Sample ID: MB 480-639917/29
Matrix: Water
Analysis Batch: 639917

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetic acid	ND		1.0	0.29	mg/L			09/01/22 06:38	1
Formic-acid	ND		1.0	0.26	mg/L			09/01/22 06:38	1
Lactic acid	ND		1.0	0.31	mg/L			09/01/22 06:38	1
n-Butyric Acid	ND		1.0	0.26	mg/L			09/01/22 06:38	1
Propionic acid	ND		1.0	0.35	mg/L			09/01/22 06:38	1
Pyruvic Acid	ND		1.5	0.37	mg/L			09/01/22 06:38	1

Lab Sample ID: LCS 480-639917/30
Matrix: Water
Analysis Batch: 639917

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Acetic acid	10.0	9.71		mg/L		97	80 - 120
Formic-acid	10.1	9.09		mg/L		90	80 - 120
Lactic acid	10.1	10.4		mg/L		102	80 - 120
n-Butyric Acid	9.95	9.05		mg/L		91	80 - 120
Propionic acid	10.1	9.49		mg/L		94	80 - 120
Pyruvic Acid	10.2	9.09		mg/L		89	80 - 120

Lab Sample ID: 550-189014-5 MS
Matrix: Water
Analysis Batch: 639917

Client Sample ID: SWFTS-BH-EB5-20220816
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Acetic acid	ND		100	91.0		mg/L		91	80 - 120
Formic-acid	ND		101	85.5		mg/L		85	80 - 120
Lactic acid	4.9	J	101	99.8		mg/L		94	80 - 120
n-Butyric Acid	ND		99.5	86.0		mg/L		86	80 - 120
Propionic acid	ND	F2	101	87.7		mg/L		87	80 - 120
Pyruvic Acid	ND		102	85.0		mg/L		83	80 - 120

Lab Sample ID: 550-189014-5 MSD
Matrix: Water
Analysis Batch: 639917

Client Sample ID: SWFTS-BH-EB5-20220816
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Acetic acid	ND		100	109		mg/L		109	80 - 120	18	20
Formic-acid	ND		101	103		mg/L		102	80 - 120	18	20
Lactic acid	4.9	J	101	119		mg/L		112	80 - 120	17	20
n-Butyric Acid	ND		99.5	104		mg/L		104	80 - 120	19	20
Propionic acid	ND	F2	101	108	F2	mg/L		107	80 - 120	21	20
Pyruvic Acid	ND		102	101		mg/L		99	80 - 120	18	20

Metals

Prep Batch: 282018

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
550-189014-1	SWFTS-BH-EB1-20220813	Total/NA	Water	3005A	
550-189014-2	SWFTS-BH-EB2-20220813	Total/NA	Water	3005A	
550-189014-3	SWFTS-BH-EB3-20220815	Total/NA	Water	3005A	
550-189014-4	SWFTS-BH-EB4-20220816	Total/NA	Water	3005A	
550-189014-5	SWFTS-BH-EB5-20220816	Total/NA	Water	3005A	
MB 550-282018/1-A	Method Blank	Total/NA	Water	3005A	
LCS 550-282018/2-A	Lab Control Sample	Total/NA	Water	3005A	
LCSD 550-282018/3-A	Lab Control Sample Dup	Total/NA	Water	3005A	
550-189014-1 MS	SWFTS-BH-EB1-20220813	Total/NA	Water	3005A	
550-189014-1 MSD	SWFTS-BH-EB1-20220813	Total/NA	Water	3005A	

Analysis Batch: 282125

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
550-189014-1	SWFTS-BH-EB1-20220813	Total/NA	Water	6010B	282018
550-189014-2	SWFTS-BH-EB2-20220813	Total/NA	Water	6010B	282018
550-189014-3	SWFTS-BH-EB3-20220815	Total/NA	Water	6010B	282018
550-189014-4	SWFTS-BH-EB4-20220816	Total/NA	Water	6010B	282018
550-189014-5	SWFTS-BH-EB5-20220816	Total/NA	Water	6010B	282018
MB 550-282018/1-A	Method Blank	Total/NA	Water	6010B	282018
LCS 550-282018/2-A	Lab Control Sample	Total/NA	Water	6010B	282018
LCSD 550-282018/3-A	Lab Control Sample Dup	Total/NA	Water	6010B	282018
550-189014-1 MS	SWFTS-BH-EB1-20220813	Total/NA	Water	6010B	282018
550-189014-1 MSD	SWFTS-BH-EB1-20220813	Total/NA	Water	6010B	282018

General Chemistry

Analysis Batch: 282149

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
550-189014-2	SWFTS-BH-EB2-20220813	Total/NA	Water	SM 5310B	
550-189014-3	SWFTS-BH-EB3-20220815	Total/NA	Water	SM 5310B	
550-189014-4	SWFTS-BH-EB4-20220816	Total/NA	Water	SM 5310B	
550-189014-5	SWFTS-BH-EB5-20220816	Total/NA	Water	SM 5310B	
MB 550-282149/14	Method Blank	Total/NA	Water	SM 5310B	
LCS 550-282149/15	Lab Control Sample	Total/NA	Water	SM 5310B	
LCSD 550-282149/16	Lab Control Sample Dup	Total/NA	Water	SM 5310B	
550-188842-D-4 MS ^10	Matrix Spike	Total/NA	Water	SM 5310B	
550-188842-D-4 MSD ^10	Matrix Spike Duplicate	Total/NA	Water	SM 5310B	

Analysis Batch: 282308

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
550-189014-1	SWFTS-BH-EB1-20220813	Total/NA	Water	SM 5310B	
MB 550-282308/19	Method Blank	Total/NA	Water	SM 5310B	
LCS 550-282308/20	Lab Control Sample	Total/NA	Water	SM 5310B	
LCSD 550-282308/21	Lab Control Sample Dup	Total/NA	Water	SM 5310B	
550-189215-B-1 MS	Matrix Spike	Total/NA	Water	SM 5310B	
550-189215-C-1 MSD	Matrix Spike Duplicate	Total/NA	Water	SM 5310B	

Analysis Batch: 639917

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
550-189014-1	SWFTS-BH-EB1-20220813	Total/NA	Water	VFA-IC	
550-189014-2	SWFTS-BH-EB2-20220813	Total/NA	Water	VFA-IC	

General Chemistry (Continued)

Analysis Batch: 639917 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
550-189014-3	SWFTS-BH-EB3-20220815	Total/NA	Water	VFA-IC	
550-189014-4	SWFTS-BH-EB4-20220816	Total/NA	Water	VFA-IC	
550-189014-5	SWFTS-BH-EB5-20220816	Total/NA	Water	VFA-IC	
MB 480-639917/29	Method Blank	Total/NA	Water	VFA-IC	
LCS 480-639917/30	Lab Control Sample	Total/NA	Water	VFA-IC	
550-189014-5 MS	SWFTS-BH-EB5-20220816	Total/NA	Water	VFA-IC	
550-189014-5 MSD	SWFTS-BH-EB5-20220816	Total/NA	Water	VFA-IC	

Lab Chronicle

Client: Tetra Tech, Inc.
Project/Site: Seep Well Field

Job ID: 550-189014-1

Client Sample ID: SWFTS-BH-EB1-20220813
Lab Sample ID: 550-189014-1
Date Collected: 08/13/22 08:50
Matrix: Water
Date Received: 08/18/22 06:30

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	3005A			282018	SGO	EET PHX	08/19/22 09:59
Total/NA	Analysis	6010B		1	282125	CHS	EET PHX	08/22/22 05:21
Total/NA	Analysis	SM 5310B		1	282308	MEG	EET PHX	08/24/22 04:53
Total/NA	Analysis	VFA-IC		10	639917	IMZ	EET BUF	09/01/22 08:05

Client Sample ID: SWFTS-BH-EB2-20220813
Lab Sample ID: 550-189014-2
Date Collected: 08/13/22 15:30
Matrix: Water
Date Received: 08/18/22 06:30

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	3005A			282018	SGO	EET PHX	08/19/22 09:59
Total/NA	Analysis	6010B		1	282125	CHS	EET PHX	08/22/22 05:24
Total/NA	Analysis	SM 5310B		1	282149	MEG	EET PHX	08/20/22 18:27
Total/NA	Analysis	VFA-IC		10	639917	IMZ	EET BUF	09/01/22 08:34

Client Sample ID: SWFTS-BH-EB3-20220815
Lab Sample ID: 550-189014-3
Date Collected: 08/15/22 15:35
Matrix: Water
Date Received: 08/18/22 06:30

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	3005A			282018	SGO	EET PHX	08/19/22 09:59
Total/NA	Analysis	6010B		1	282125	CHS	EET PHX	08/22/22 05:27
Total/NA	Analysis	SM 5310B		1	282149	MEG	EET PHX	08/20/22 18:40
Total/NA	Analysis	VFA-IC		10	639917	IMZ	EET BUF	09/01/22 09:04

Client Sample ID: SWFTS-BH-EB4-20220816
Lab Sample ID: 550-189014-4
Date Collected: 08/16/22 08:30
Matrix: Water
Date Received: 08/18/22 06:30

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	3005A			282018	SGO	EET PHX	08/19/22 09:59
Total/NA	Analysis	6010B		1	282125	CHS	EET PHX	08/22/22 05:30
Total/NA	Analysis	SM 5310B		1	282149	MEG	EET PHX	08/20/22 19:21
Total/NA	Analysis	VFA-IC		10	639917	IMZ	EET BUF	09/01/22 09:33

Client Sample ID: SWFTS-BH-EB5-20220816
Lab Sample ID: 550-189014-5
Date Collected: 08/16/22 15:30
Matrix: Water
Date Received: 08/18/22 06:30

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	3005A			282018	SGO	EET PHX	08/19/22 09:59
Total/NA	Analysis	6010B		1	282125	CHS	EET PHX	08/22/22 05:33
Total/NA	Analysis	SM 5310B		1	282149	MEG	EET PHX	08/20/22 19:34
Total/NA	Analysis	VFA-IC		10	639917	IMZ	EET BUF	09/01/22 10:02

Lab Chronicle

Client: Tetra Tech, Inc.
Project/Site: Seep Well Field

Job ID: 550-189014-1

Laboratory References:

EET BUF = Eurofins Buffalo, 10 Hazelwood Drive, Amherst, NY 14228-2298, TEL (716)691-2600

EET PHX = Eurofins Phoenix, 4625 East Cotton Center Boulevard, Suite #189, Phoenix, AZ 85040, TEL (602)437-3340

Accreditation/Certification Summary

Client: Tetra Tech, Inc.
Project/Site: Seep Well Field

Job ID: 550-189014-1

Laboratory: Eurofins Phoenix

All accreditations/certifications held by this laboratory are listed. Not all accreditations/certifications are applicable to this report.

Authority	Program	Identification Number	Expiration Date
Arizona	State	AZ0728	06-10-23
California	State	2941	03-09-23
Nevada	State	AZ1030	07-31-23
Oregon	NELAP	AZ100001	03-09-23
USDA	US Federal Programs	P330-19-00227	08-27-22

Laboratory: Eurofins Buffalo

All accreditations/certifications held by this laboratory are listed. Not all accreditations/certifications are applicable to this report.

Authority	Program	Identification Number	Expiration Date
Arkansas DEQ	State	88-0686	07-06-22 *
Connecticut	State	PH-0568	03-31-24
Florida	NELAP	E87672	06-30-23
Georgia	State	10026 (NY)	04-01-23
Georgia	State Program	N/A	03-31-09 *
Georgia (DW)	State	956	03-31-23
Illinois	NELAP	200003	09-30-22
Illinois	NELAP	200003	09-30-22
Iowa	State	374	03-01-23
Iowa	State Program	374	03-01-09 *
Kansas	NELAP	E-10187	01-31-23
Kentucky (DW)	State	90029	12-31-22
Kentucky (UST)	State	30	04-01-23
Kentucky (WW)	State	KY90029	12-31-22
Louisiana	NELAP	02031	06-30-23
Louisiana (All)	NELAP	02031	06-30-23
Maine	State	NY00044	12-04-22
Maryland	State	294	03-31-23
Massachusetts	State	M-NY044	06-30-23
Michigan	State	9937	03-31-23
Michigan	State Program	9937	04-01-09 *
New Hampshire	NELAP	2973	09-11-19 *
New Hampshire	NELAP	2337	11-17-22
New Jersey	NELAP	NY455	06-30-23
New York	NELAP	10026	03-31-23
Pennsylvania	NELAP	68-00281	07-31-23
Rhode Island	State	LAO00328	12-30-22
Tennessee	State	02970	04-01-23
Texas	NELAP	T104704412-18-10	07-31-23
USDA	US Federal Programs	P330-18-00039	03-25-24
Virginia	NELAP	460185	09-14-22
Washington	State	C784	02-10-23
Wisconsin	State	998310390	08-31-23

* Accreditation/Certification renewal pending - accreditation/certification considered valid.

Method Summary

Client: Tetra Tech, Inc.
Project/Site: Seep Well Field

Job ID: 550-189014-1

Method	Method Description	Protocol	Laboratory
6010B	Metals (ICP)	SW846	EET PHX
SM 5310B	Organic Carbon, Total (TOC)	SM	EET PHX
VFA-IC	Volatile Fatty Acids, Ion Chromatography	TestAmerica SOP	EET BUF
3005A	Preparation, Total Metals	SW846	EET PHX

Protocol References:

SM = "Standard Methods For The Examination Of Water And Wastewater"

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

TestAmerica SOP = TestAmerica, Inc., Standard Operating Procedure

Laboratory References:

EET BUF = Eurofins Buffalo, 10 Hazelwood Drive, Amherst, NY 14228-2298, TEL (716)691-2600

EET PHX = Eurofins Phoenix, 4625 East Cotton Center Boulevard, Suite #189, Phoenix, AZ 85040, TEL (602)437-3340

Tetra Tech
150 S Fourth Street, Unit A
Henderson, NV 89015
702-854-2295

TestAmerica
Las Vegas
219

CHAIN-OF-CUSTODY

189014

9/7/2022

Laboratory Name: **Eurofins-Phoenix** (602) 437-3340						**Address: 4625 E. Cotton Center Blvd. Suite 189; Phoenix, AZ 85040**			**Contact: Rachel Sester (602) 659-7615**							**Page 1 of 1**
Project Name: **Seep Well Field**						Sampler: G. Schuler			**Analysis and Method Requested**							Remarks
Project No. **M11** NERT			Project Contact: **Maureen McMyler**			Site Telephone No.: **(702) 767-2053**										
Report to: Maureen McMyler; Maureen.McMyler@tetratech.com; (865) 220-4762						Project Manager/Supervisor: **Dana Grady**										
Bill to: Sunshine Pryor, 350 Indiana St., Golden, CO 80401 (303) 217-5700						Sample Description										
Item No.	Sample Number	Date	Time	G - Grab C - Comp	Matrix		Number of Containers	TOC by 9060A	Total Calcium by 6010B	VFA by IC						
						Preservative		**HCL**	**HNO3**	**None**	**None**	**None**				Notes
1	**SWFTS-BH-EB1-20220813**	8/13/2022	**0850**	**G**	**W**		**8**	**4**	**1**	**3**						
2	**SWFTS-BH-EB2-20220813**	8/13/2022	**1530**	**G**	**W**		**8**	**4**	**1**	**3**						
3	**SWFTS-BH-EB3-20220815**	8/15/2022	**1535**	**G**	**W**		**8**	**4**	**1**	**3**						
4	**SWFTS-BH-EB4-20220816**	8/16/2022	**0830**	**G**	**W**		**8**	**4**	**1**	**3**						
5	**SWFTS-BH-EB5-20220816**	8/16/2022	**1530**	**G**	**W**		**8**	**4**	**1**	**3**						
6																
7																
8																
9																
10																
11																
12																
13																
14																
15																

-01
-02
-03
-04
-05

550-189014 Chain of Custody

Transfers Relinquished By (Signature)	Date/Time		Transfers Accepted By (Signature)	Date/Time
G. Schuler	8/17/22		TAM TALUS	8/17/22 1800
TAM TALUS	8-17-22 1600			
			Laboratory: Mar St EETA-Phx	8-18-22 6:30

Special Instructions:

Level IVPackage; EQuIS 4-file format EDD

FedEx Airbill No.:

Sampler's Signature:

TAT: Standard

TH240 24.4/34.7

3.6°C PB-ice

Login Sample Receipt Checklist

Client: Tetra Tech, Inc.

Job Number: 550-189014-1

Login Number: 189014
List Number: 1
Creator: Gravlin, Andrea

List Source: Eurofins Phoenix

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	True	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

Login Sample Receipt Checklist

Client: Tetra Tech, Inc.

Job Number: 550-189014-1

Login Number: 189014
List Number: 2
Creator: Yeager, Brian A

List Source: Eurofins Buffalo
List Creation: 08/19/22 01:47 PM

Question	Answer	Comment
Radioactivity either was not measured or, if measured, is at or below background	True	
The cooler's custody seal, if present, is intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	3.1 ICE
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the sample IDs on the containers and the COC.	True	
Samples are received within Holding Time (Excluding tests with immediate HTs)..	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
VOA sample vials do not have headspace or bubble is <6mm (1/4") in diameter.	True	
If necessary, staff have been informed of any short hold time or quick TAT needs	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Sampling Company provided.	True	
Samples received within 48 hours of sampling.	True	
Samples requiring field filtration have been filtered in the field.	True	
Chlorine Residual checked.	True	

eurofins | Environment Testing America

ANALYTICAL REPORT

Eurofins Phoenix
4625 East Cotton Center Boulevard
Suite #189
Phoenix, AZ 85040
Tel: (602)437-3340

Laboratory Job ID: 550-189088-1
Client Project/Site: Seep Well Field

For:
Tetra Tech, Inc.
1093 Commerce Park Drive
Suite 100
Oak Ridge, Tennessee 37830

Attn: Ms. Maureen McMyler

Authorized for release by:
9/8/2022 6:21:31 PM

Rachel Sester, Project Manager I
(602)659-7615
Rachel.Sester@et.eurofinsus.com

LINKS

Review your project results through my EOL

Have a Question? Ask The Expert

Visit us at: www.eurofinsus.com/Env

This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.

Results relate only to the items tested and the sample(s) as received by the laboratory.

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Definitions/Glossary

Client: Tetra Tech, Inc.
Project/Site: Seep Well Field

Job ID: 550-189088-1

Qualifiers

Metals

Qualifier	Qualifier Description
4	MS, MSD: The analyte present in the original sample is greater than 4 times the matrix spike concentration; therefore, control limits are not applicable.
B1	Target analyte detected in method blank at or above the method reporting limit.
E4	Concentration estimated. Analyte was detected below laboratory minimum reporting limit (MRL).

General Chemistry

Qualifier	Qualifier Description
B1	Target analyte detected in method blank at or above the method reporting limit.
E4	Concentration estimated. Analyte was detected below laboratory minimum reporting limit (MRL).

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CFU	Colony Forming Unit
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MCL	EPA recommended "Maximum Contaminant Level"
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
MPN	Most Probable Number
MQL	Method Quantitation Limit
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
NEG	Negative / Absent
POS	Positive / Present
PQL	Practical Quantitation Limit
PRES	Presumptive
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)
TNTC	Too Numerous To Count

Job ID: 550-189088-1

Laboratory: Eurofins Phoenix

Narrative

Job Narrative
550-189088-1

Comments
No additional comments.

Receipt
The samples were received on 8/18/2022 6:30 AM. Unless otherwise noted below, the samples arrived in good condition, and where required, properly preserved and on ice. The temperatures of the 6 coolers at receipt time in Phoenix were 2.1º C, 3.6º C, 3.6º C, 3.9º C and 5.6º C.

HPLC/IC
No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

Metals
Method 6010B: The method blank for preparation batch 550-281983 and analytical batch 550-282129 contained Calcium above the method detection limit (MDL). Associated sample(s) were not re-extracted and/or re-analyzed because results were greater than 10X the value found in the method blank.

Method 6010B: The method blank for preparation batch 550-282075 and analytical batch 550-282165 contained Calcium above the method detection limit (MDL). Associated sample(s) were not re-extracted and/or re-analyzed because results were greater than 10X the value found in the method blank.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

General Chemistry
No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

Sample Summary

Client: Tetra Tech, Inc.
Project/Site: Seep Well Field

Job ID: 550-189088-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
550-189088-1	SWFTS-BH17-SO-13	Solid	08/12/22 12:00	08/18/22 06:30
550-189088-2	SWFTS-BH17-SO-17	Solid	08/12/22 12:10	08/18/22 06:30
550-189088-3	SWFTS-BH17-SO-17-FD	Solid	08/12/22 12:10	08/18/22 06:30
550-189088-4	SWFTS-BH17-SO-23	Solid	08/12/22 12:30	08/18/22 06:30
550-189088-5	SWFTS-BH17-SO-26	Solid	08/12/22 12:40	08/18/22 06:30
550-189088-6	SWFTS-BH17-SO-40	Solid	08/12/22 12:50	08/18/22 06:30

Detection Summary

Client: Tetra Tech, Inc.
Project/Site: Seep Well Field

Job ID: 550-189088-1

Client Sample ID: SWFTS-BH17-SO-13 — Lab Sample ID: 550-189088-1

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Calcium	4300	B1	9.8	0.84	mg/Kg	1		6010B	Total/NA

Client Sample ID: SWFTS-BH17-SO-17 — Lab Sample ID: 550-189088-2

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Calcium	12000	B1	9.9	0.85	mg/Kg	1		6010B	Total/NA

Client Sample ID: SWFTS-BH17-SO-17-FD — Lab Sample ID: 550-189088-3

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Calcium	15000	B1	9.8	0.84	mg/Kg	1		6010B	Total/NA
Total Organic Carbon	1.1	B1 E4	4.0	0.90	g/Kg	1		9060A	Total/NA

Client Sample ID: SWFTS-BH17-SO-23 — Lab Sample ID: 550-189088-4

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Calcium	9400	B1	9.9	0.85	mg/Kg	1		6010B	Total/NA
Total Organic Carbon	1.0	B1 E4	4.0	0.90	g/Kg	1		9060A	Total/NA

Client Sample ID: SWFTS-BH17-SO-26 — Lab Sample ID: 550-189088-5

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Calcium	5300	B1	9.9	0.85	mg/Kg	1		6010B	Total/NA
Total Organic Carbon	1.0	B1 E4	4.0	0.90	g/Kg	1		9060A	Total/NA

Client Sample ID: SWFTS-BH17-SO-40 — Lab Sample ID: 550-189088-6

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Calcium	53000	B1	9.8	0.84	mg/Kg	1		6010B	Total/NA

This Detection Summary does not include radiochemical test results.

Eurofins Phoenix

Client Sample ID: SWFTS-BH17-SO-13

Lab Sample ID: 550-189088-1
Date Collected: 08/12/22 12:00
Matrix: Solid
Date Received: 08/18/22 06:30

Method: 6010B - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Calcium	4300	B1	9.8	0.84	mg/Kg		08/19/22 01:32	08/22/22 10:16	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon	ND		4.0	0.90	g/Kg			08/26/22 12:02	1

General Chemistry - Soluble

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetic acid	ND		9.8	1.5	mg/Kg			09/06/22 23:03	1
Formic-acid	ND		9.8	2.2	mg/Kg			09/06/22 23:03	1
Lactic acid	ND		9.8	3.0	mg/Kg			09/06/22 23:03	1
n-Butyric Acid	ND		9.8	1.6	mg/Kg			09/06/22 23:03	1
Propionic acid	ND		9.8	1.7	mg/Kg			09/06/22 23:03	1
Pyruvic Acid	ND		9.8	2.5	mg/Kg			09/06/22 23:03	1

Client Sample ID: SWFTS-BH17-SO-17

Lab Sample ID: 550-189088-2
Date Collected: 08/12/22 12:10
Matrix: Solid
Date Received: 08/18/22 06:30

Method: 6010B - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Calcium	12000	B1	9.9	0.85	mg/Kg		08/19/22 01:32	08/22/22 10:19	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon	ND		4.0	0.90	g/Kg			08/26/22 12:12	1

General Chemistry - Soluble

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetic acid	ND		10	1.5	mg/Kg			09/06/22 23:32	1
Formic-acid	ND		10	2.2	mg/Kg			09/06/22 23:32	1
Lactic acid	ND		10	3.0	mg/Kg			09/06/22 23:32	1
n-Butyric Acid	ND		10	1.6	mg/Kg			09/06/22 23:32	1
Propionic acid	ND		10	1.7	mg/Kg			09/06/22 23:32	1
Pyruvic Acid	ND		10	2.5	mg/Kg			09/06/22 23:32	1

Client Sample ID: SWFTS-BH17-SO-17-FD

Lab Sample ID: 550-189088-3
Date Collected: 08/12/22 12:10
Matrix: Solid
Date Received: 08/18/22 06:30

Method: 6010B - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Calcium	15000	B1	9.8	0.84	mg/Kg		08/19/22 01:32	08/22/22 10:22	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon	1.1	B1 E4	4.0	0.90	g/Kg			08/26/22 12:50	1

General Chemistry - Soluble

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetic acid	ND		9.9	1.5	mg/Kg			09/07/22 00:01	1
Formic-acid	ND		9.9	2.2	mg/Kg			09/07/22 00:01	1

Client Sample ID: SWFTS-BH17-SO-17-FD

Lab Sample ID: 550-189088-3

Date Collected: 08/12/22 12:10

Matrix: Solid

Date Received: 08/18/22 06:30

General Chemistry - Soluble (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lactic acid	ND		9.9	3.0	mg/Kg			09/07/22 00:01	1
n-Butyric Acid	ND		9.9	1.6	mg/Kg			09/07/22 00:01	1
Propionic acid	ND		9.9	1.7	mg/Kg			09/07/22 00:01	1
Pyruvic Acid	ND		9.9	2.5	mg/Kg			09/07/22 00:01	1

Client Sample ID: SWFTS-BH17-SO-23

Lab Sample ID: 550-189088-4

Date Collected: 08/12/22 12:30

Matrix: Solid

Date Received: 08/18/22 06:30

Method: 6010B - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Calcium	9400	B1	9.9	0.85	mg/Kg		08/19/22 01:32	08/22/22 10:24	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon	1.0	B1 E4	4.0	0.90	g/Kg			08/26/22 12:21	1

General Chemistry - Soluble

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetic acid	ND		10	1.5	mg/Kg			09/07/22 02:56	1
Formic-acid	ND		10	2.2	mg/Kg			09/07/22 02:56	1
Lactic acid	ND		10	3.0	mg/Kg			09/07/22 02:56	1
n-Butyric Acid	ND		10	1.6	mg/Kg			09/07/22 02:56	1
Propionic acid	ND		10	1.7	mg/Kg			09/07/22 02:56	1
Pyruvic Acid	ND		10	2.5	mg/Kg			09/07/22 02:56	1

Client Sample ID: SWFTS-BH17-SO-26

Lab Sample ID: 550-189088-5

Date Collected: 08/12/22 12:40

Matrix: Solid

Date Received: 08/18/22 06:30

Method: 6010B - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Calcium	5300	B1	9.9	0.85	mg/Kg		08/19/22 01:32	08/22/22 10:27	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon	1.0	B1 E4	4.0	0.90	g/Kg			08/26/22 13:00	1

General Chemistry - Soluble

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetic acid	ND		9.3	1.4	mg/Kg			09/07/22 03:26	1
Formic-acid	ND		9.3	2.1	mg/Kg			09/07/22 03:26	1
Lactic acid	ND		9.3	2.8	mg/Kg			09/07/22 03:26	1
n-Butyric Acid	ND		9.3	1.5	mg/Kg			09/07/22 03:26	1
Propionic acid	ND		9.3	1.6	mg/Kg			09/07/22 03:26	1
Pyruvic Acid	ND		9.3	2.3	mg/Kg			09/07/22 03:26	1

Client Sample Results

Client: Tetra Tech, Inc.
Project/Site: Seep Well Field

Job ID: 550-189088-1

Client Sample ID: SWFTS-BH17-SO-40

Date Collected: 08/12/22 12:50
Date Received: 08/18/22 06:30

Lab Sample ID: 550-189088-6

Matrix: Solid

Method: 6010B - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Calcium	53000	B1	9.8	0.84	mg/Kg		08/22/22 05:07	08/22/22 16:46	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon	ND		4.0	0.90	g/Kg			08/26/22 13:10	1

General Chemistry - Soluble

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetic acid	ND		9.8	1.5	mg/Kg			09/07/22 03:55	1
Formic-acid	ND		9.8	2.2	mg/Kg			09/07/22 03:55	1
Lactic acid	ND		9.8	3.0	mg/Kg			09/07/22 03:55	1
n-Butyric Acid	ND		9.8	1.6	mg/Kg			09/07/22 03:55	1
Propionic acid	ND		9.8	1.7	mg/Kg			09/07/22 03:55	1
Pyruvic Acid	ND		9.8	2.5	mg/Kg			09/07/22 03:55	1

Method: 6010B - Metals (ICP)

Lab Sample ID: MB 550-281983/1-A
Matrix: Solid
Analysis Batch: 282129

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 281983

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Calcium	9.56	E4	9.9	0.85	mg/Kg		08/19/22 01:32	08/22/22 09:05	1

Lab Sample ID: LCS 550-281983/2-A
Matrix: Solid
Analysis Batch: 282129

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 281983

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Calcium	1040	1030		mg/Kg		99	84 - 110

Lab Sample ID: LCSD 550-281983/3-A
Matrix: Solid
Analysis Batch: 282129

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 281983

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Calcium	1030	980		mg/Kg		95	84 - 110	5	20

Lab Sample ID: 550-189013-E-3-A MS
Matrix: Solid
Analysis Batch: 282129

Client Sample ID: Matrix Spike
Prep Type: Total/NA
Prep Batch: 281983

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Calcium	16000	B	1030	15700	4	mg/Kg		-60	75 - 125

Lab Sample ID: 550-189013-E-3-B MSD
Matrix: Solid
Analysis Batch: 282129

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total/NA
Prep Batch: 281983

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Calcium	16000	B	1030	15500	4	mg/Kg		-79	75 - 125	1	20

Lab Sample ID: MB 550-282075/1-A
Matrix: Solid
Analysis Batch: 282165

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 282075

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Calcium	4.14	E4	9.9	0.85	mg/Kg		08/22/22 05:07	08/22/22 16:29	1

Lab Sample ID: LCS 550-282075/2-A
Matrix: Solid
Analysis Batch: 282165

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 282075

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Calcium	1050	1070		mg/Kg		102	84 - 110

Lab Sample ID: LCSD 550-282075/3-A
Matrix: Solid
Analysis Batch: 282165

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 282075

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Calcium	1030	1040		mg/Kg		101	84 - 110	3	20

Method: 6010B - Metals (ICP)

Lab Sample ID: 550-189088-6 MS
Matrix: Solid
Analysis Batch: 282165

Client Sample ID: SWFTS-BH17-SO-40
Prep Type: Total/NA
Prep Batch: 282075

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Calcium	53000	B	1040	51000	4	mg/Kg		-236	75 - 125

Lab Sample ID: 550-189088-6 MSD
Matrix: Solid
Analysis Batch: 282165

Client Sample ID: SWFTS-BH17-SO-40
Prep Type: Total/NA
Prep Batch: 282075

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Calcium	53000	B	1030	60700	4	mg/Kg		699	75 - 125	17	20

Method: 9060A - Organic Carbon, Total (TOC)

Lab Sample ID: MB 280-585252/4
Matrix: Solid
Analysis Batch: 585252

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon	1.19	E4	4.0	0.90	g/Kg			08/25/22 13:02	1

Lab Sample ID: LCS 280-585252/3
Matrix: Solid
Analysis Batch: 585252

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Total Organic Carbon	2.89	2.88	E4	g/Kg		100	46 - 130

Lab Sample ID: 550-189088-4 MS
Matrix: Solid
Analysis Batch: 585252

Client Sample ID: SWFTS-BH17-SO-23
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Total Organic Carbon	1.0	J B	11.7	15.7		g/Kg		125	46 - 130

Lab Sample ID: 550-189088-4 MSD
Matrix: Solid
Analysis Batch: 585252

Client Sample ID: SWFTS-BH17-SO-23
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Total Organic Carbon	1.0	J B	11.7	15.1		g/Kg		120	46 - 130	4	20

Method: VFA-IC - Volatile Fatty Acids, Ion Chromatography

Lab Sample ID: MB 480-640037/1-A
Matrix: Solid
Analysis Batch: 640360

Client Sample ID: Method Blank
Prep Type: Soluble

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetic acid	ND		9.9	1.5	mg/Kg			09/06/22 14:18	1
Formic-acid	ND		9.9	2.2	mg/Kg			09/06/22 14:18	1
Lactic acid	ND		9.9	3.0	mg/Kg			09/06/22 14:18	1
n-Butyric Acid	ND		9.9	1.6	mg/Kg			09/06/22 14:18	1

Method: VFA-IC - Volatile Fatty Acids, Ion Chromatography (Continued)

Lab Sample ID: MB 480-640037/1-A
Matrix: Solid
Analysis Batch: 640360

Client Sample ID: Method Blank
Prep Type: Soluble

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Propionic acid	ND		9.9	1.7	mg/Kg			09/06/22 14:18	1
Pyruvic Acid	ND		9.9	2.5	mg/Kg			09/06/22 14:18	1

Lab Sample ID: MB 480-640037/21-A
Matrix: Solid
Analysis Batch: 640360

Client Sample ID: Method Blank
Prep Type: Soluble

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetic acid	ND		9.8	1.5	mg/Kg			09/07/22 01:58	1
Formic-acid	ND		9.8	2.2	mg/Kg			09/07/22 01:58	1
Lactic acid	ND		9.8	2.9	mg/Kg			09/07/22 01:58	1
n-Butyric Acid	ND		9.8	1.6	mg/Kg			09/07/22 01:58	1
Propionic acid	ND		9.8	1.7	mg/Kg			09/07/22 01:58	1
Pyruvic Acid	ND		9.8	2.5	mg/Kg			09/07/22 01:58	1

Lab Sample ID: LCS 480-640037/22-A
Matrix: Solid
Analysis Batch: 640360

Client Sample ID: Lab Control Sample
Prep Type: Soluble

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Acetic acid	99.3	109		mg/Kg		110	80 - 120
Formic-acid	99.9	102		mg/Kg		103	80 - 120
Lactic acid	100	111		mg/Kg		111	80 - 120
n-Butyric Acid	98.5	102		mg/Kg		103	80 - 120
Propionic acid	99.7	105		mg/Kg		106	80 - 120
Pyruvic Acid	101	97.3		mg/Kg		96	80 - 120

Lab Sample ID: LCS 480-640037/2-A
Matrix: Solid
Analysis Batch: 640360

Client Sample ID: Lab Control Sample
Prep Type: Soluble

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Acetic acid	96.3	107		mg/Kg		111	80 - 120
Formic-acid	96.8	96.0		mg/Kg		99	80 - 120
Lactic acid	97.2	102		mg/Kg		104	80 - 120
n-Butyric Acid	95.5	96.0		mg/Kg		101	80 - 120
Propionic acid	96.6	103		mg/Kg		106	80 - 120
Pyruvic Acid	97.8	90.6		mg/Kg		93	80 - 120

Lab Sample ID: 550-189088-3 MS
Matrix: Solid
Analysis Batch: 640360

Client Sample ID: SWFTS-BH17-SO-17-FD
Prep Type: Soluble

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Acetic acid	ND		98.9	99.1		mg/Kg		100	80 - 120
Formic-acid	ND		99.5	92.8		mg/Kg		93	80 - 120
Lactic acid	ND		99.9	101		mg/Kg		102	80 - 120
n-Butyric Acid	ND		98.1	96.6		mg/Kg		98	80 - 120
Propionic acid	ND		99.3	100		mg/Kg		101	80 - 120
Pyruvic Acid	ND		100	99.5		mg/Kg		99	80 - 120

Method: VFA-IC - Volatile Fatty Acids, Ion Chromatography

Lab Sample ID: 550-189088-6 MS
Matrix: Solid
Analysis Batch: 640360

Client Sample ID: SWFTS-BH17-SO-40
Prep Type: Soluble

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Acetic acid	ND		99.9	97.9		mg/Kg		98	80 - 120
Formic-acid	ND		100	99.6		mg/Kg		99	80 - 120
Lactic acid	ND		101	105		mg/Kg		104	80 - 120
n-Butyric Acid	ND		99.1	101		mg/Kg		102	80 - 120
Propionic acid	ND		100	103		mg/Kg		103	80 - 120
Pyruvic Acid	ND		101	111		mg/Kg		110	80 - 120

Lab Sample ID: 550-189088-6 MSD
Matrix: Solid
Analysis Batch: 640360

Client Sample ID: SWFTS-BH17-SO-40
Prep Type: Soluble

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Acetic acid	ND		99.9	98.4		mg/Kg		98	80 - 120	0	20
Formic-acid	ND		100	100		mg/Kg		100	80 - 120	0	20
Lactic acid	ND		101	105		mg/Kg		104	80 - 120	0	20
n-Butyric Acid	ND		99.1	100		mg/Kg		101	80 - 120	1	20
Propionic acid	ND		100	105		mg/Kg		105	80 - 120	2	20
Pyruvic Acid	ND		101	108		mg/Kg		107	80 - 120	3	20

QC Association Summary

Client: Tetra Tech, Inc.
Project/Site: Seep Well Field

Job ID: 550-189088-1

Metals

Prep Batch: 281983

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
550-189088-1	SWFTS-BH17-SO-13	Total/NA	Solid	3050B	
550-189088-2	SWFTS-BH17-SO-17	Total/NA	Solid	3050B	
550-189088-3	SWFTS-BH17-SO-17-FD	Total/NA	Solid	3050B	
550-189088-4	SWFTS-BH17-SO-23	Total/NA	Solid	3050B	
550-189088-5	SWFTS-BH17-SO-26	Total/NA	Solid	3050B	
MB 550-281983/1-A	Method Blank	Total/NA	Solid	3050B	
LCS 550-281983/2-A	Lab Control Sample	Total/NA	Solid	3050B	
LCSD 550-281983/3-A	Lab Control Sample Dup	Total/NA	Solid	3050B	
550-189013-E-3-A MS	Matrix Spike	Total/NA	Solid	3050B	
550-189013-E-3-B MSD	Matrix Spike Duplicate	Total/NA	Solid	3050B	

Prep Batch: 282075

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
550-189088-6	SWFTS-BH17-SO-40	Total/NA	Solid	3050B	
MB 550-282075/1-A	Method Blank	Total/NA	Solid	3050B	
LCS 550-282075/2-A	Lab Control Sample	Total/NA	Solid	3050B	
LCSD 550-282075/3-A	Lab Control Sample Dup	Total/NA	Solid	3050B	
550-189088-6 MS	SWFTS-BH17-SO-40	Total/NA	Solid	3050B	
550-189088-6 MSD	SWFTS-BH17-SO-40	Total/NA	Solid	3050B	

Analysis Batch: 282129

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
550-189088-1	SWFTS-BH17-SO-13	Total/NA	Solid	6010B	281983
550-189088-2	SWFTS-BH17-SO-17	Total/NA	Solid	6010B	281983
550-189088-3	SWFTS-BH17-SO-17-FD	Total/NA	Solid	6010B	281983
550-189088-4	SWFTS-BH17-SO-23	Total/NA	Solid	6010B	281983
550-189088-5	SWFTS-BH17-SO-26	Total/NA	Solid	6010B	281983
MB 550-281983/1-A	Method Blank	Total/NA	Solid	6010B	281983
LCS 550-281983/2-A	Lab Control Sample	Total/NA	Solid	6010B	281983
LCSD 550-281983/3-A	Lab Control Sample Dup	Total/NA	Solid	6010B	281983
550-189013-E-3-A MS	Matrix Spike	Total/NA	Solid	6010B	281983
550-189013-E-3-B MSD	Matrix Spike Duplicate	Total/NA	Solid	6010B	281983

Analysis Batch: 282165

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
550-189088-6	SWFTS-BH17-SO-40	Total/NA	Solid	6010B	282075
MB 550-282075/1-A	Method Blank	Total/NA	Solid	6010B	282075
LCS 550-282075/2-A	Lab Control Sample	Total/NA	Solid	6010B	282075
LCSD 550-282075/3-A	Lab Control Sample Dup	Total/NA	Solid	6010B	282075
550-189088-6 MS	SWFTS-BH17-SO-40	Total/NA	Solid	6010B	282075
550-189088-6 MSD	SWFTS-BH17-SO-40	Total/NA	Solid	6010B	282075

General Chemistry

Analysis Batch: 585252

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
550-189088-1	SWFTS-BH17-SO-13	Total/NA	Solid	9060A	
550-189088-2	SWFTS-BH17-SO-17	Total/NA	Solid	9060A	
550-189088-3	SWFTS-BH17-SO-17-FD	Total/NA	Solid	9060A	
550-189088-4	SWFTS-BH17-SO-23	Total/NA	Solid	9060A	
550-189088-5	SWFTS-BH17-SO-26	Total/NA	Solid	9060A	

General Chemistry (Continued)

Analysis Batch: 585252 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
550-189088-6	SWFTS-BH17-SO-40	Total/NA	Solid	9060A	
MB 280-585252/4	Method Blank	Total/NA	Solid	9060A	
LCS 280-585252/3	Lab Control Sample	Total/NA	Solid	9060A	
550-189088-4 MS	SWFTS-BH17-SO-23	Total/NA	Solid	9060A	
550-189088-4 MSD	SWFTS-BH17-SO-23	Total/NA	Solid	9060A	

Leach Batch: 640037

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
550-189088-1	SWFTS-BH17-SO-13	Soluble	Solid	DI Leach	
550-189088-2	SWFTS-BH17-SO-17	Soluble	Solid	DI Leach	
550-189088-3	SWFTS-BH17-SO-17-FD	Soluble	Solid	DI Leach	
550-189088-4	SWFTS-BH17-SO-23	Soluble	Solid	DI Leach	
550-189088-5	SWFTS-BH17-SO-26	Soluble	Solid	DI Leach	
550-189088-6	SWFTS-BH17-SO-40	Soluble	Solid	DI Leach	
MB 480-640037/1-A	Method Blank	Soluble	Solid	DI Leach	
MB 480-640037/21-A	Method Blank	Soluble	Solid	DI Leach	
LCS 480-640037/22-A	Lab Control Sample	Soluble	Solid	DI Leach	
LCS 480-640037/2-A	Lab Control Sample	Soluble	Solid	DI Leach	
550-189088-3 MS	SWFTS-BH17-SO-17-FD	Soluble	Solid	DI Leach	
550-189088-6 MS	SWFTS-BH17-SO-40	Soluble	Solid	DI Leach	
550-189088-6 MSD	SWFTS-BH17-SO-40	Soluble	Solid	DI Leach	

Analysis Batch: 640360

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
550-189088-1	SWFTS-BH17-SO-13	Soluble	Solid	VFA-IC	640037
550-189088-2	SWFTS-BH17-SO-17	Soluble	Solid	VFA-IC	640037
550-189088-3	SWFTS-BH17-SO-17-FD	Soluble	Solid	VFA-IC	640037
550-189088-4	SWFTS-BH17-SO-23	Soluble	Solid	VFA-IC	640037
550-189088-5	SWFTS-BH17-SO-26	Soluble	Solid	VFA-IC	640037
550-189088-6	SWFTS-BH17-SO-40	Soluble	Solid	VFA-IC	640037
MB 480-640037/1-A	Method Blank	Soluble	Solid	VFA-IC	640037
MB 480-640037/21-A	Method Blank	Soluble	Solid	VFA-IC	640037
LCS 480-640037/22-A	Lab Control Sample	Soluble	Solid	VFA-IC	640037
LCS 480-640037/2-A	Lab Control Sample	Soluble	Solid	VFA-IC	640037
550-189088-3 MS	SWFTS-BH17-SO-17-FD	Soluble	Solid	VFA-IC	640037
550-189088-6 MS	SWFTS-BH17-SO-40	Soluble	Solid	VFA-IC	640037
550-189088-6 MSD	SWFTS-BH17-SO-40	Soluble	Solid	VFA-IC	640037

Lab Chronicle

Client: Tetra Tech, Inc.
Project/Site: Seep Well Field

Job ID: 550-189088-1

Client Sample ID: SWFTS-BH17-SO-13
Lab Sample ID: 550-189088-1
Date Collected: 08/12/22 12:00
Matrix: Solid
Date Received: 08/18/22 06:30

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	3050B			281983	GLW	EET PHX	08/19/22 01:32
Total/NA	Analysis	6010B		1	282129	CHS	EET PHX	08/22/22 10:16
Total/NA	Analysis	9060A		1	585252	ABW	EET DEN	08/26/22 12:02
Soluble	Leach	DI Leach			640037	KER	EET BUF	09/01/22 12:15
Soluble	Analysis	VFA-IC		1	640360	IMZ	EET BUF	09/06/22 23:03

Client Sample ID: SWFTS-BH17-SO-17
Lab Sample ID: 550-189088-2
Date Collected: 08/12/22 12:10
Matrix: Solid
Date Received: 08/18/22 06:30

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	3050B			281983	GLW	EET PHX	08/19/22 01:32
Total/NA	Analysis	6010B		1	282129	CHS	EET PHX	08/22/22 10:19
Total/NA	Analysis	9060A		1	585252	ABW	EET DEN	08/26/22 12:12
Soluble	Leach	DI Leach			640037	KER	EET BUF	09/01/22 12:15
Soluble	Analysis	VFA-IC		1	640360	IMZ	EET BUF	09/06/22 23:32

Client Sample ID: SWFTS-BH17-SO-17-FD
Lab Sample ID: 550-189088-3
Date Collected: 08/12/22 12:10
Matrix: Solid
Date Received: 08/18/22 06:30

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	3050B			281983	GLW	EET PHX	08/19/22 01:32
Total/NA	Analysis	6010B		1	282129	CHS	EET PHX	08/22/22 10:22
Total/NA	Analysis	9060A		1	585252	ABW	EET DEN	08/26/22 12:50
Soluble	Leach	DI Leach			640037	KER	EET BUF	09/01/22 12:15
Soluble	Analysis	VFA-IC		1	640360	IMZ	EET BUF	09/07/22 00:01

Client Sample ID: SWFTS-BH17-SO-23
Lab Sample ID: 550-189088-4
Date Collected: 08/12/22 12:30
Matrix: Solid
Date Received: 08/18/22 06:30

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	3050B			281983	GLW	EET PHX	08/19/22 01:32
Total/NA	Analysis	6010B		1	282129	CHS	EET PHX	08/22/22 10:24
Total/NA	Analysis	9060A		1	585252	ABW	EET DEN	08/26/22 12:21
Soluble	Leach	DI Leach			640037	KER	EET BUF	09/01/22 12:15
Soluble	Analysis	VFA-IC		1	640360	IMZ	EET BUF	09/07/22 02:56

Lab Chronicle

Client: Tetra Tech, Inc.
Project/Site: Seep Well Field

Job ID: 550-189088-1

Client Sample ID: SWFTS-BH17-SO-26

Lab Sample ID: 550-189088-5

Date Collected: 08/12/22 12:40

Matrix: Solid

Date Received: 08/18/22 06:30

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	3050B			281983	GLW	EET PHX	08/19/22 01:32
Total/NA	Analysis	6010B		1	282129	CHS	EET PHX	08/22/22 10:27
Total/NA	Analysis	9060A		1	585252	ABW	EET DEN	08/26/22 13:00
Soluble	Leach	DI Leach			640037	KER	EET BUF	09/01/22 12:15
Soluble	Analysis	VFA-IC		1	640360	IMZ	EET BUF	09/07/22 03:26

Client Sample ID: SWFTS-BH17-SO-40

Lab Sample ID: 550-189088-6

Date Collected: 08/12/22 12:50

Matrix: Solid

Date Received: 08/18/22 06:30

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	3050B			282075	SGO	EET PHX	08/22/22 05:07
Total/NA	Analysis	6010B		1	282165	CHS	EET PHX	08/22/22 16:46
Total/NA	Analysis	9060A		1	585252	ABW	EET DEN	08/26/22 13:10
Soluble	Leach	DI Leach			640037	KER	EET BUF	09/01/22 12:15
Soluble	Analysis	VFA-IC		1	640360	IMZ	EET BUF	09/07/22 03:55

Laboratory References:

EET BUF = Eurofins Buffalo, 10 Hazelwood Drive, Amherst, NY 14228-2298, TEL (716)691-2600

EET DEN = Eurofins Denver, 4955 Yarrow Street, Arvada, CO 80002, TEL (303)736-0100

EET PHX = Eurofins Phoenix, 4625 East Cotton Center Boulevard, Suite #189, Phoenix, AZ 85040, TEL (602)437-3340

Accreditation/Certification Summary

Client: Tetra Tech, Inc.
Project/Site: Seep Well Field

Job ID: 550-189088-1

Laboratory: Eurofins Phoenix

All accreditations/certifications held by this laboratory are listed. Not all accreditations/certifications are applicable to this report.

Authority	Program	Identification Number	Expiration Date
Arizona	State	AZ0728	06-10-23
California	State	2941	03-09-23
Oregon	NELAP	AZ100001	03-09-23
USDA	US Federal Programs	P330-19-00227	08-27-22

Laboratory: Eurofins Buffalo

All accreditations/certifications held by this laboratory are listed. Not all accreditations/certifications are applicable to this report.

Authority	Program	Identification Number	Expiration Date
Arkansas DEQ	State	88-0686	07-06-22 *
Connecticut	State	PH-0568	03-31-24
Florida	NELAP	E87672	06-30-23
Georgia	State	10026 (NY)	04-01-23
Georgia	State Program	N/A	03-31-09 *
Georgia (DW)	State	956	03-31-23
Illinois	NELAP	200003	09-30-22
Illinois	NELAP	200003	09-30-22
Iowa	State	374	03-01-23
Iowa	State Program	374	03-01-09 *
Kansas	NELAP	E-10187	01-31-23
Kentucky (DW)	State	90029	12-31-22
Kentucky (UST)	State	30	04-01-23
Kentucky (WW)	State	KY90029	12-31-22
Louisiana	NELAP	02031	06-30-23
Louisiana (All)	NELAP	02031	06-30-23
Maine	State	NY00044	12-04-22
Maryland	State	294	03-31-23
Massachusetts	State	M-NY044	06-30-23
Michigan	State	9937	03-31-23
Michigan	State Program	9937	04-01-09 *
New Hampshire	NELAP	2973	09-11-19 *
New Hampshire	NELAP	2337	11-17-22
New Jersey	NELAP	NY455	06-30-23
New York	NELAP	10026	03-31-23
Pennsylvania	NELAP	68-00281	07-31-23
Rhode Island	State	LAO00328	12-30-22
Tennessee	State	02970	04-01-23
Texas	NELAP	T104704412-18-10	07-31-23
USDA	US Federal Programs	P330-18-00039	03-25-24
Virginia	NELAP	460185	09-14-22
Washington	State	C784	02-10-23
Wisconsin	State	998310390	08-31-23

Laboratory: Eurofins Denver

All accreditations/certifications held by this laboratory are listed. Not all accreditations/certifications are applicable to this report.

Authority	Program	Identification Number	Expiration Date
A2LA	Dept. of Defense ELAP	2907.01	10-31-23
A2LA	ISO/IEC 17025	2907.01	10-31-23
Alabama	State Program	40730	09-30-12 *
Alaska (UST)	State	18-001	02-08-23

* Accreditation/Certification renewal pending - accreditation/certification considered valid.

Accreditation/Certification Summary

Client: Tetra Tech, Inc.
Project/Site: Seep Well Field

Job ID: 550-189088-1

Laboratory: Eurofins Denver (Continued)

All accreditations/certifications held by this laboratory are listed. Not all accreditations/certifications are applicable to this report.

Authority	Program	Identification Number	Expiration Date
Arizona	State	AZ0713	12-20-22
Arkansas DEQ	State	19-047-0	06-01-22 *
California	State	2513	01-08-23
Connecticut	State	PH-0686	09-30-22
Florida	NELAP	E87667-57	06-30-23
Georgia	State	4025-011	01-08-23
Illinois	NELAP	2000172019-1	04-30-23
Iowa	State	IA#370	12-02-22
Kansas	NELAP	E-10166	04-30-23
Kentucky (WW)	State	KY98047	12-31-22
Louisiana	NELAP	30785	06-30-14 *
Louisiana	NELAP	30785	06-30-23
Minnesota	NELAP	1788752	12-31-22
Nevada	State	CO000262020-1	07-31-22 *
New Hampshire	NELAP	205319	04-28-23
New Jersey	NELAP	190002	06-30-23
New York	NELAP	59923	04-01-23
North Carolina (WW/SW)	State	358	12-31-22
North Dakota	State	R-034	01-08-23
Oklahoma	NELAP	8614	08-31-22
Oregon	NELAP	4025-011	01-09-23
Pennsylvania	NELAP	013	07-31-23
South Carolina	State	72002001	01-08-23
Texas	NELAP	TX104704183-08-TX	09-30-09 *
Texas	NELAP	T104704183-21-19	10-01-22
USDA	US Federal Programs	P330-20-00065	03-06-23
Utah	NELAP	QUAN5	06-30-13 *
Utah	NELAP	CO000262019-11	07-31-23
Virginia	NELAP	10490	06-14-23
Washington	State	C583-19	08-03-22 *
West Virginia DEP	State	354	11-30-22
Wisconsin	State	999615430	08-31-22
Wyoming (UST)	A2LA	2907.01	10-31-22

* Accreditation/Certification renewal pending - accreditation/certification considered valid.

Method Summary

Client: Tetra Tech, Inc.
Project/Site: Seep Well Field

Job ID: 550-189088-1

Method	Method Description	Protocol	Laboratory
6010B	Metals (ICP)	SW846	EET PHX
9060A	Organic Carbon, Total (TOC)	SW846	EET DEN
VFA-IC	Volatile Fatty Acids, Ion Chromatography	TestAmerica SOP	EET BUF
3050B	Preparation, Metals	SW846	EET PHX
DI Leach	Deionized Water Leaching Procedure	ASTM	EET BUF

Protocol References:

ASTM = ASTM International

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

TestAmerica SOP = TestAmerica, Inc., Standard Operating Procedure

Laboratory References:

EET BUF = Eurofins Buffalo, 10 Hazelwood Drive, Amherst, NY 14228-2298, TEL (716)691-2600

EET DEN = Eurofins Denver, 4955 Yarrow Street, Arvada, CO 80002, TEL (303)736-0100

EET PHX = Eurofins Phoenix, 4625 East Cotton Center Boulevard, Suite #189, Phoenix, AZ 85040, TEL (602)437-3340

1 2 3 4 5 6 7 8 9 10 11 12 13 14

Tetra Tech
150 S Fourth Street, Unit A
Henderson, NV 89015
702-854-2295

CHAIN-OF-CUSTODY

189088

Laboratory Name: **Eurofins-Phoenix (602) 437-3340**
Address: **4625 E. Cotton Center Blvd. Suite 189; Phoenix, AZ 85040**
Contact: **Rachel Sester (602) 659-7615**
Page 1 of 1

Project Name: **Seep Well Field**
Sampler: J. Bunkers
Project No. **M11** NERT
Project Contact: **Maureen McMyler**
Site Telephone No.: **(702) 767-2053**
Report to: Maureen McMyler; Maureen.McMyler@tetratech.com; (865) 220-4762
Bill to: Sunshine Pryor, 350 Indiana St., Golden, CO 80401 (303) 217-5700
Project Manager/Supervisor: **Dana Grady**

Analysis and Method Requested

Item No.	Sample Number	Date	Time	G - Grab C - Comp	Matrix	Sample Description	Number of Containers	TOC by 9060A	Calcium by 6010B	VFA by IC				Remarks
						Preservative		None	None	None	None	None		Notes
1	SWFTS-BH17-SO-13	8/12/2022	12:00	G	S		3	1	1	1			-01	
2	SWFTS-BH17-SO-17	8/12/2022	12:10	G	S		3	1	1	1			-02	
3	SWFTS-BH17-SO-17-FD	8/12/2022	12:10	G	S		3	1	1	1			-03	
4	SWFTS-BH17-SO-23	8/12/2022	12:30	G	S		3	1	1	1			-04	
5	SWFTS-BH17-SO-26	8/12/2022	12:40	G	S		3	1	1	1			-05	
6	SWFTS-BH17-SO-40	8/12/2022	12:50	G	S		3	1	1	1			-06	
7														
8														
9														
10														
11														
12														
13														
14														
15														

550-189088 Chain of Custody

Transfers Relinquished By (Signature)	Date/Time	Transfers Accepted By (Signature)	Date/Time
G. Schuler	8/12/22		
Drop Box		Laboratory: EETA PHX	8/18/22 6:30

Special Instructions:
Level IVPackage; EQuIS 4-file format EDD
FedEx Airbill No.:
Sampler's Signature:
TAT: Standard

3.6/5.6/3.6/2.1/3.9/4.2°

Eurofins Phoenix
4625 East Cotton Center Boulevard Suite #189
Phoenix, AZ 85040
Phone: 602-437-3340

Chain of Custody Record

eurofins | Environment Testing America

Client Information (Sub Contract Lab)	Sampler:	Lab PM: Sester, Rachel E	Carrier Tracking No(s):	COC No: 550-34773.1
Client Contact: Shipping/Receiving	Phone:	E-Mail: Rachel.Sester@et.eurofinsus.com	State of Origin: Nevada	Page: Page 1 of 1
Company: TestAmerica Laboratories, Inc.		Accreditations Required (See note): State Program - Nevada		Job #: 550-189088-1
Address: 4955 Yarrow Street, ,	Due Date Requested: 8/31/2022			
City: Arvada	TAT Requested (days):			
State, Zip: CO, 80002				
Phone: 303-736-0100(Tel) 303-431-7171(Fax)	PO #:			
Email:	WO #:			
Project Name: Seep Well Field	Project #: 55017858			
Site:	SSOW#:			

Analysis Requested

Preservation Codes:
A - HCL, B - NaOH, C - Zn Acetate, D - Nitric Acid, E - NaHSO4, F - MeOH, G - Amchlor, H - Ascorbic Acid, I - Ice, J - DI Water, K - EDTA, L - EDA, M - Hexane, N - None, O - AsNaO2, P - Na2O4S, Q - Na2SO3, R - Na2S2O3, S - H2SO4, T - TSP Dodecahydrate, U - Acetone, V - MCAA, W - pH 4-5, Y - Trizma, Z - other (specify)
Other:

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	9060A/ Solids - TOC	Total Number of containers	Special Instructions/Note:
			Preservation Code:						
SWFTS-BH17-SO-13 (550-189088-1)	8/12/22	12:00 Pacific		Solid			X	1	
SWFTS-BH17-SO-17 (550-189088-2)	8/12/22	12:10 Pacific		Solid			X	1	
SWFTS-BH17-SO-17-FD (550-189088-3)	8/12/22	12:10 Pacific		Solid			X	1	
SWFTS-BH17-SO-23 (550-189088-4)	8/12/22	12:30 Pacific		Solid			X	1	
SWFTS-BH17-SO-26 (550-189088-5)	8/12/22	12:40 Pacific		Solid			X	1	
SWFTS-BH17-SO-40 (550-189088-6)	8/12/22	12:50 Pacific		Solid			X	1	

Note. Since laboratory accreditations are subject to change, Eurofins Environment Testing Southwest, LLC places the ownership of method, analyte & accreditation compliance upon out subcontract laboratories. This sample shipment is forwarded under chain-of-custody. If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed, the samples must be shipped back to the Eurofins Environment Testing Southwest, LLC laboratory or other instructions will be provided. Any changes to accreditation status should be brought to Eurofins Environment Testing Southwest, LLC attention immediately. If all requested accreditations are current to date, return the signed Chain of Custody attesting to said complicance to Eurofins Environment Testing Southwest, LLC.

Possible Hazard Identification	***Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)***
Unconfirmed	☐ *Return To Client* ☐ *Disposal By Lab* ☐ *Archive For* _____ *Months*
Deliverable Requested: I, II, III, IV, Other (specify) Primary Deliverable Rank: 2	Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:

Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
[illegible] 08-19-22	15:10	EETSW	FedEx		
Relinquished by: FedEx	Date/Time:	Company	Received by:	Date/Time: 8/20/22 1010	Company EHAD-W
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

Custody Seals Intact: Δ Yes Δ No	Custody Seal No.:	Cooler Temperature(s) °C and Other Remarks: 1.7 IR2 CF0.0

Ver: 06/08/2021

Login Sample Receipt Checklist

Client: Tetra Tech, Inc.

Job Number: 550-189088-1

Login Number: 189088
List Number: 1
Creator: Gravlin, Andrea

List Source: Eurofins Phoenix

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	True	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

Login Sample Receipt Checklist

Client: Tetra Tech, Inc.

Job Number: 550-189088-1

Login Number: 189088
List Number: 3
Creator: Yeager, Brian A

List Source: Eurofins Buffalo
List Creation: 08/22/22 10:21 AM

Question	Answer	Comment
Radioactivity either was not measured or, if measured, is at or below background	True	
The cooler's custody seal, if present, is intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	3.2 ice
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the sample IDs on the containers and the COC.	True	
Samples are received within Holding Time (Excluding tests with immediate HTs)..	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
VOA sample vials do not have headspace or bubble is <6mm (1/4") in diameter.	True	
If necessary, staff have been informed of any short hold time or quick TAT needs	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Sampling Company provided.	True	
Samples received within 48 hours of sampling.	True	
Samples requiring field filtration have been filtered in the field.	True	
Chlorine Residual checked.	True	

Login Sample Receipt Checklist

Client: Tetra Tech, Inc.

Job Number: 550-189088-1

Login Number: 189088
List Number: 2
Creator: Rystrom, Joshua R

List Source: Eurofins Denver
List Creation: 08/20/22 02:47 PM

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	True	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	N/A	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	N/A	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

eurofins | Environment Testing America

ANALYTICAL REPORT

Eurofins Phoenix
4625 East Cotton Center Boulevard
Suite #189
Phoenix, AZ 85040
Tel: (602)437-3340

Laboratory Job ID: 550-190412-1
Client Project/Site: Tetra Tech M11 SWF Treatability Study

For:
Tetra Tech, Inc.
1093 Commerce Park Drive
Suite 100
Oak Ridge, Tennessee 37830

Attn: Dana Grady

Rachel S. Sester

Authorized for release by:
9/26/2022 3:00:29 PM

Rachel Sester, Project Manager I
(602)659-7615
Rachel.Sester@et.eurofinsus.com

LINKS

Review your project results through my EOL

Have a Question? Ask The Expert

Visit us at: www.eurofinsus.com/Env

This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.

Results relate only to the items tested and the sample(s) as received by the laboratory.

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Definitions/Glossary

Client: Tetra Tech, Inc. Job ID: 550-190412-1
Project/Site: Tetra Tech M11 SWF Treatability Study

Qualifiers

HPLC/IC

Qualifier	Qualifier Description
D	Sample results are obtained from a dilution; the surrogate or matrix spike recoveries reported are calculated from diluted samples.
E	Result exceeded calibration range.
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

General Chemistry

Qualifier	Qualifier Description
F1	MS and/or MSD recovery exceeds control limits.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CFU	Colony Forming Unit
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MCL	EPA recommended "Maximum Contaminant Level"
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
MPN	Most Probable Number
MQL	Method Quantitation Limit
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
NEG	Negative / Absent
POS	Positive / Present
PQL	Practical Quantitation Limit
PRES	Presumptive
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)
TNTC	Too Numerous To Count

Job ID: 550-190412-1

Laboratory: Eurofins Phoenix

Narrative

Job Narrative
550-190412-1

Comments
No additional comments.

Receipt
The samples were received on 9/14/2022 6:30 AM. Unless otherwise noted below, the samples arrived in good condition, and where required, properly preserved and on ice. The temperatures of the 2 coolers at receipt time were 2.6º C and 24.4º C.

HPLC/IC
Method 300.0: Due to the high concentration of Sulfate, the matrix spike / matrix spike duplicate (MS/MSD) for analytical batch 550-283923 could not be evaluated for accuracy and precision. The associated laboratory control sample (LCS) met acceptance criteria.

Method 300.0: Due to the high concentration of Sulfate, the matrix spike / matrix spike duplicate (MS/MSD) for analytical batch 550-283927 could not be evaluated for accuracy and precision. The associated laboratory control sample (LCS) met acceptance criteria.

Method 300.0: The following samples were diluted due to the nature of the sample matrix: SWFTS-MW03-EM39 (550-190412-8), SWFTS-MW09A-EM39 (550-190412-9) and SWFTS-MW01-EM39 (550-190412-10). Elevated reporting limits (RLs) are provided.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

General Chemistry
Method SM 5310B: The matrix spike duplicate (MSD) recovery for Total Organic Carbon (TOC) in analytical batch 550-284166 was outside control limits. Sample matrix interference was suspected because the associated laboratory control sample (LCS) recovery was within acceptance limits.

Method SM 5310B: The matrix spike / matrix spike duplicate (MS/MSD) recoveries and precision for Total Organic Carbon (TOC) inanalytical batch 550-284166 were outside control limits. Sample matrix interference and/or non-homogeneity were suspected because the associated laboratory control sample / laboratory control sample duplicate (LCS/LCSD) recoveries and precision were within acceptance limits.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

Sample Summary

Client: Tetra Tech, Inc.
Job ID: 550-190412-1
Project/Site: Tetra Tech M11 SWF Treatability Study

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
550-190412-1	SWFTS-MW09B-EM39	Water	09/13/22 07:10	09/14/22 06:30
550-190412-2	SWFTS-MW10A-EM39	Water	09/13/22 09:10	09/14/22 06:30
550-190412-3	SWFTS-MW11-EM39	Water	09/13/22 10:15	09/14/22 06:30
550-190412-4	SWFTS-MW11-EM39-FD	Water	09/13/22 10:15	09/14/22 06:30
550-190412-5	SWFTS-MW12-EM39	Water	09/13/22 11:10	09/14/22 06:30
550-190412-6	SWFTS-MW13-EM39	Water	09/13/22 12:00	09/14/22 06:30
550-190412-7	SWFTS-MW14-EM39	Water	09/13/22 13:20	09/14/22 06:30
550-190412-8	SWFTS-MW03-EM39	Water	09/13/22 08:25	09/14/22 06:30
550-190412-9	SWFTS-MW09A-EM39	Water	09/13/22 10:00	09/14/22 06:30
550-190412-10	SWFTS-MW01-EM39	Water	09/13/22 11:45	09/14/22 06:30
550-190412-11	SWFTS-EM39-FB1	Water	09/13/22 12:15	09/14/22 06:30
550-190412-12	SWFTS-EM39-EB1	Water	09/13/22 12:25	09/14/22 06:30

Detection Summary

Client: Tetra Tech, Inc.
Job ID: 550-190412-1
Project/Site: Tetra Tech M11 SWF Treatability Study

Client Sample ID: SWFTS-MW09B-EM39 — Lab Sample ID: 550-190412-1

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Nitrate as N	16		0.25	0.070	mg/L	5		300.0	Total/NA
Sulfate	1800		100	21	mg/L	50		300.0	Total/NA
Chlorate	18000		2000	490	ug/L	100		300.1B	Total/NA
Perchlorate	12000		500	160	ug/L	500		314.0	Total/NA
Total Organic Carbon	1.6		0.50	0.26	mg/L	1		SM 5310B	Total/NA

Client Sample ID: SWFTS-MW10A-EM39 — Lab Sample ID: 550-190412-2

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Nitrate as N	16		0.10	0.028	mg/L	2		300.0	Total/NA
Sulfate	1900		100	21	mg/L	50		300.0	Total/NA
Chlorate	30000		2000	490	ug/L	100		300.1B	Total/NA
Perchlorate	17000		1000	310	ug/L	1000		314.0	Total/NA
Total Organic Carbon	2.0	F1	0.50	0.26	mg/L	1		SM 5310B	Total/NA

Client Sample ID: SWFTS-MW11-EM39 — Lab Sample ID: 550-190412-3

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Nitrate as N	21		0.25	0.070	mg/L	5		300.0	Total/NA
Sulfate	2100		100	21	mg/L	50		300.0	Total/NA
Chlorate	25000		2000	490	ug/L	100		300.1B	Total/NA
Perchlorate	8300		500	160	ug/L	500		314.0	Total/NA
Total Organic Carbon	1.8		0.50	0.26	mg/L	1		SM 5310B	Total/NA

Client Sample ID: SWFTS-MW11-EM39-FD — Lab Sample ID: 550-190412-4

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Nitrate as N	21		0.25	0.070	mg/L	5		300.0	Total/NA
Sulfate	2100		100	21	mg/L	50		300.0	Total/NA
Chlorate	21000		2000	490	ug/L	100		300.1B	Total/NA
Perchlorate	8300		500	160	ug/L	500		314.0	Total/NA
Total Organic Carbon	1.8		0.50	0.26	mg/L	1		SM 5310B	Total/NA

Client Sample ID: SWFTS-MW12-EM39 — Lab Sample ID: 550-190412-5

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Nitrate as N	0.23		0.050	0.014	mg/L	1		300.0	Total/NA
Sulfate	1500		100	21	mg/L	50		300.0	Total/NA
Chlorate	820		100	24	ug/L	5		300.1B	Total/NA
Perchlorate	360		10	3.1	ug/L	10		314.0	Total/NA
Total Organic Carbon	3.8		0.50	0.26	mg/L	1		SM 5310B	Total/NA

Client Sample ID: SWFTS-MW13-EM39 — Lab Sample ID: 550-190412-6

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Nitrate as N	18		0.25	0.070	mg/L	5		300.0	Total/NA
Sulfate	2500		100	21	mg/L	50		300.0	Total/NA
Chlorate	35000		4000	980	ug/L	200		300.1B	Total/NA
Perchlorate	4600		200	63	ug/L	200		314.0	Total/NA
Total Organic Carbon	0.99		0.50	0.26	mg/L	1		SM 5310B	Total/NA

This Detection Summary does not include radiochemical test results.

Eurofins Phoenix

Detection Summary

Client: Tetra Tech, Inc.
Job ID: 550-190412-1
Project/Site: Tetra Tech M11 SWF Treatability Study

Client Sample ID: SWFTS-MW14-EM39 — Lab Sample ID: 550-190412-7

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Nitrate as N	5.1		0.050	0.014	mg/L	1		300.0	Total/NA
Sulfate	2200		100	21	mg/L	50		300.0	Total/NA
Chlorate	1500		100	24	ug/L	5		300.1B	Total/NA
Perchlorate	7800		200	63	ug/L	200		314.0	Total/NA
Total Organic Carbon	2.7		1.0	0.52	mg/L	2		SM 5310B	Total/NA

Client Sample ID: SWFTS-MW03-EM39 — Lab Sample ID: 550-190412-8

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Nitrate as N	8.8	D	0.10	0.028	mg/L	2		300.0	Total/NA
Sulfate	2100		100	21	mg/L	50		300.0	Total/NA
Chlorate	7500		1000	240	ug/L	50		300.1B	Total/NA
Perchlorate	4300		200	63	ug/L	200		314.0	Total/NA
Total Organic Carbon	1.4	F1	0.50	0.26	mg/L	1		SM 5310B	Total/NA

Client Sample ID: SWFTS-MW09A-EM39 — Lab Sample ID: 550-190412-9

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Nitrate as N	10	D	0.10	0.028	mg/L	2		300.0	Total/NA
Sulfate	1700		100	21	mg/L	50		300.0	Total/NA
Chlorate	14000		2000	490	ug/L	100		300.1B	Total/NA
Perchlorate	8500		200	63	ug/L	200		314.0	Total/NA
Total Organic Carbon	1.6		0.50	0.26	mg/L	1		SM 5310B	Total/NA

Client Sample ID: SWFTS-MW01-EM39 — Lab Sample ID: 550-190412-10

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Nitrate as N	8.1	D	0.10	0.028	mg/L	2		300.0	Total/NA
Sulfate	1600		100	21	mg/L	50		300.0	Total/NA
Chlorate	8900		1000	240	ug/L	50		300.1B	Total/NA
Perchlorate	9600		200	63	ug/L	200		314.0	Total/NA
Total Organic Carbon	1.8		0.50	0.26	mg/L	1		SM 5310B	Total/NA

Client Sample ID: SWFTS-EM39-FB1 — Lab Sample ID: 550-190412-11

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Sulfate	0.43	J	2.0	0.43	mg/L	1		300.0	Total/NA

Client Sample ID: SWFTS-EM39-EB1 — Lab Sample ID: 550-190412-12

No Detections.

This Detection Summary does not include radiochemical test results.

Eurofins Phoenix

Client Sample ID: SWFTS-MW09B-EM39 — Lab Sample ID: 550-190412-1

Date Collected: 09/13/22 07:10 — **Matrix: Water**
Date Received: 09/14/22 06:30

Method: 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Nitrate as N	16		0.25	0.070	mg/L			09/14/22 13:58	5
Sulfate	1800		100	21	mg/L			09/14/22 21:20	50

Method: 300.1B - Disinfection By-Products, (IC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chlorate	18000		2000	490	ug/L			09/22/22 01:35	100

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Dichloroacetic acid(Surr)	*95*		*90 - 115*		*09/22/22 01:35*	*100*

Method: 314.0 - Perchlorate (IC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perchlorate	12000		500	160	ug/L			09/14/22 16:51	500

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon	1.6		0.50	0.26	mg/L			09/16/22 16:54	1

Client Sample ID: SWFTS-MW10A-EM39 — Lab Sample ID: 550-190412-2

Date Collected: 09/13/22 09:10 — **Matrix: Water**
Date Received: 09/14/22 06:30

Method: 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Nitrate as N	16		0.10	0.028	mg/L			09/14/22 13:12	2
Sulfate	1900		100	21	mg/L			09/14/22 13:40	50

Method: 300.1B - Disinfection By-Products, (IC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chlorate	30000		2000	490	ug/L			09/22/22 06:00	100

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Dichloroacetic acid(Surr)	*94*		*90 - 115*		*09/22/22 06:00*	*100*

Method: 314.0 - Perchlorate (IC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perchlorate	17000		1000	310	ug/L			09/14/22 15:19	1000

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon	2.0	F1	0.50	0.26	mg/L			09/15/22 20:18	1

Client Sample ID: SWFTS-MW11-EM39 — Lab Sample ID: 550-190412-3

Date Collected: 09/13/22 10:15 — **Matrix: Water**
Date Received: 09/14/22 06:30

Method: 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Nitrate as N	21		0.25	0.070	mg/L			09/14/22 14:17	5
Sulfate	2100		100	21	mg/L			09/14/22 21:38	50

Client Sample ID: SWFTS-MW11-EM39 — Lab Sample ID: 550-190412-3

Date Collected: 09/13/22 10:15 — **Matrix: Water**
Date Received: 09/14/22 06:30

Method: 300.1B - Disinfection By-Products, (IC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chlorate	25000		2000	490	ug/L			09/22/22 07:29	100

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Dichloroacetic acid(Surr)	*94*		*90 - 115*		*09/22/22 07:29*	*100*

Method: 314.0 - Perchlorate (IC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perchlorate	8300		500	160	ug/L			09/14/22 17:14	500

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon	1.8		0.50	0.26	mg/L			09/16/22 17:05	1

Client Sample ID: SWFTS-MW11-EM39-FD — Lab Sample ID: 550-190412-4

Date Collected: 09/13/22 10:15 — **Matrix: Water**
Date Received: 09/14/22 06:30

Method: 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Nitrate as N	21		0.25	0.070	mg/L			09/14/22 14:35	5
Sulfate	2100		100	21	mg/L			09/14/22 21:57	50

Method: 300.1B - Disinfection By-Products, (IC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chlorate	21000		2000	490	ug/L			09/22/22 07:58	100

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Dichloroacetic acid(Surr)	*93*		*90 - 115*		*09/22/22 07:58*	*100*

Method: 314.0 - Perchlorate (IC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perchlorate	8300		500	160	ug/L			09/14/22 17:37	500

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon	1.8		0.50	0.26	mg/L			09/16/22 17:18	1

Client Sample ID: SWFTS-MW12-EM39 — Lab Sample ID: 550-190412-5

Date Collected: 09/13/22 11:10 — **Matrix: Water**
Date Received: 09/14/22 06:30

Method: 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Nitrate as N	0.23		0.050	0.014	mg/L			09/14/22 13:40	1
Sulfate	1500		100	21	mg/L			09/14/22 21:02	50

Method: 300.1B - Disinfection By-Products, (IC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chlorate	820		100	24	ug/L			09/22/22 08:28	5

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Dichloroacetic acid(Surr)	*94*		*90 - 115*		*09/22/22 08:28*	*5*

Client Sample ID: SWFTS-MW12-EM39 — Lab Sample ID: 550-190412-5

Date Collected: 09/13/22 11:10 — **Matrix: Water**
Date Received: 09/14/22 06:30

Method: 314.0 - Perchlorate (IC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perchlorate	360		10	3.1	ug/L			09/14/22 18:00	10

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon	3.8		0.50	0.26	mg/L			09/16/22 17:29	1

Client Sample ID: SWFTS-MW13-EM39 — Lab Sample ID: 550-190412-6

Date Collected: 09/13/22 12:00 — **Matrix: Water**
Date Received: 09/14/22 06:30

Method: 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Nitrate as N	18		0.25	0.070	mg/L			09/14/22 17:02	5
Sulfate	2500		100	21	mg/L			09/16/22 05:40	50

Method: 300.1B - Disinfection By-Products, (IC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chlorate	35000		4000	980	ug/L			09/22/22 08:57	200

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Dichloroacetic acid(Surr)	*96*		*90 - 115*		*09/22/22 08:57*	*200*

Method: 314.0 - Perchlorate (IC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perchlorate	4600		200	63	ug/L			09/14/22 18:23	200

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon	0.99		0.50	0.26	mg/L			09/16/22 17:40	1

Client Sample ID: SWFTS-MW14-EM39 — Lab Sample ID: 550-190412-7

Date Collected: 09/13/22 13:20 — **Matrix: Water**
Date Received: 09/14/22 06:30

Method: 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Nitrate as N	5.1		0.050	0.014	mg/L			09/14/22 16:07	1
Sulfate	2200		100	21	mg/L			09/14/22 22:15	50

Method: 300.1B - Disinfection By-Products, (IC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chlorate	1500		100	24	ug/L			09/22/22 09:26	5

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Dichloroacetic acid(Surr)	*100*		*90 - 115*		*09/22/22 09:26*	*5*

Method: 314.0 - Perchlorate (IC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perchlorate	7800		200	63	ug/L			09/14/22 18:46	200

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon	2.7		1.0	0.52	mg/L			09/16/22 20:03	2

Client Sample ID: SWFTS-MW03-EM39 — Lab Sample ID: 550-190412-8

Date Collected: 09/13/22 08:25 — **Matrix: Water**
Date Received: 09/14/22 06:30

Method: 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Nitrate as N	8.8	D	0.10	0.028	mg/L			09/14/22 12:26	2
Sulfate	2100		100	21	mg/L			09/15/22 00:24	50

Method: 300.1B - Disinfection By-Products, (IC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chlorate	7500		1000	240	ug/L			09/23/22 16:33	50

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Dichloroacetic acid(Surr)	*90*		*90 - 115*		*09/23/22 16:33*	*50*

Method: 314.0 - Perchlorate (IC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perchlorate	4300		200	63	ug/L			09/15/22 11:47	200

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon	1.4	F1	0.50	0.26	mg/L			09/16/22 16:09	1

Client Sample ID: SWFTS-MW09A-EM39 — Lab Sample ID: 550-190412-9

Date Collected: 09/13/22 10:00 — **Matrix: Water**
Date Received: 09/14/22 06:30

Method: 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Nitrate as N	10	D	0.10	0.028	mg/L			09/14/22 16:25	2
Sulfate	1700		100	21	mg/L			09/16/22 05:58	50

Method: 300.1B - Disinfection By-Products, (IC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chlorate	14000		2000	490	ug/L			09/22/22 09:56	100

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Dichloroacetic acid(Surr)	*107*		*90 - 115*		*09/22/22 09:56*	*100*

Method: 314.0 - Perchlorate (IC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perchlorate	8500		200	63	ug/L			09/14/22 19:54	200

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon	1.6		0.50	0.26	mg/L			09/16/22 17:51	1

Client Sample ID: SWFTS-MW01-EM39 — Lab Sample ID: 550-190412-10

Date Collected: 09/13/22 11:45 — **Matrix: Water**
Date Received: 09/14/22 06:30

Method: 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Nitrate as N	8.1	D	0.10	0.028	mg/L			09/14/22 16:44	2
Sulfate	1600		100	21	mg/L			09/16/22 06:17	50

Client Sample ID: SWFTS-MW01-EM39 — Lab Sample ID: 550-190412-10

Date Collected: 09/13/22 11:45 — **Matrix: Water**
Date Received: 09/14/22 06:30

Method: 300.1B - Disinfection By-Products, (IC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chlorate	**8900**		1000	240	ug/L			09/22/22 10:25	50

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Dichloroacetic acid(Surr)	*97*		*90 - 115*		*09/22/22 10:25*	*50*

Method: 314.0 - Perchlorate (IC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perchlorate	**9600**		200	63	ug/L			09/14/22 20:17	200

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon	**1.8**		0.50	0.26	mg/L			09/16/22 18:02	1

Client Sample ID: SWFTS-EM39-FB1 — Lab Sample ID: 550-190412-11

Date Collected: 09/13/22 12:15 — **Matrix: Water**
Date Received: 09/14/22 06:30

Method: 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Nitrate as N	ND		0.050	0.014	mg/L			09/14/22 17:21	1
Sulfate	**0.43**	**J**	2.0	0.43	mg/L			09/14/22 17:21	1

Method: 300.1B - Disinfection By-Products, (IC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chlorate	ND		20	4.9	ug/L			09/22/22 13:22	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Dichloroacetic acid(Surr)	*97*		*90 - 115*		*09/22/22 13:22*	*1*

Method: 314.0 - Perchlorate (IC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perchlorate	ND		1.0	0.31	ug/L			09/14/22 20:40	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon	ND		0.50	0.26	mg/L			09/16/22 18:13	1

Client Sample ID: SWFTS-EM39-EB1 — Lab Sample ID: 550-190412-12

Date Collected: 09/13/22 12:25 — **Matrix: Water**
Date Received: 09/14/22 06:30

Method: 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Nitrate as N	ND		0.050	0.014	mg/L			09/14/22 14:53	1
Sulfate	ND		2.0	0.43	mg/L			09/14/22 14:53	1

Method: 300.1B - Disinfection By-Products, (IC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chlorate	ND		20	4.9	ug/L			09/22/22 13:51	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Dichloroacetic acid(Surr)	*98*		*90 - 115*		*09/22/22 13:51*	*1*

Client Sample Results

Client: Tetra Tech, Inc.
Job ID: 550-190412-1
Project/Site: Tetra Tech M11 SWF Treatability Study

Client Sample ID: SWFTS-EM39-EB1
Lab Sample ID: 550-190412-12
Date Collected: 09/13/22 12:25
Matrix: Water
Date Received: 09/14/22 06:30

Method: 314.0 - Perchlorate (IC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perchlorate	ND		1.0	0.31	ug/L			09/14/22 21:03	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon	ND		0.50	0.26	mg/L			09/16/22 18:23	1

Surrogate Summary

Client: Tetra Tech, Inc.
Job ID: 550-190412-1
Project/Site: Tetra Tech M11 SWF Treatability Study

Method: 300.1B - Disinfection By-Products, (IC)

Matrix: Water **Prep Type: Total/NA**

		Percent Surrogate Recovery (Acceptance Limits)
Lab Sample ID	Client Sample ID	DCAA (90-115)
550-190236-E-5 MS ^100	Matrix Spike	101
550-190236-E-5 MSD ^100	Matrix Spike Duplicate	98
550-190412-1	SWFTS-MW09B-EM39	95
550-190412-2	SWFTS-MW10A-EM39	94
550-190412-2 MS	SWFTS-MW10A-EM39	98
550-190412-2 MSD	SWFTS-MW10A-EM39	97
550-190412-3	SWFTS-MW11-EM39	94
550-190412-4	SWFTS-MW11-EM39-FD	93
550-190412-5	SWFTS-MW12-EM39	94
550-190412-6	SWFTS-MW13-EM39	96
550-190412-7	SWFTS-MW14-EM39	100
550-190412-8	SWFTS-MW03-EM39	90
550-190412-8 MS	SWFTS-MW03-EM39	98
550-190412-8 MSD	SWFTS-MW03-EM39	107
550-190412-9	SWFTS-MW09A-EM39	107
550-190412-10	SWFTS-MW01-EM39	97
550-190412-11	SWFTS-EM39-FB1	97
550-190412-12	SWFTS-EM39-EB1	98
LCS 550-284509/6	Lab Control Sample	96
LCS 550-284524/6	Lab Control Sample	96
LCS 550-284727/6	Lab Control Sample	94
LCSD 550-284509/7	Lab Control Sample Dup	95
LCSD 550-284524/7	Lab Control Sample Dup	97
LCSD 550-284727/7	Lab Control Sample Dup	101
MB 550-284509/5	Method Blank	96
MB 550-284524/5	Method Blank	96
MB 550-284727/5	Method Blank	101

Surrogate Legend

DCAA = Dichloroacetic acid(Surr)

Method: 300.1B - Disinfection By-Products, (IC)

Matrix: Water **Prep Type: Total/NA**

		Percent Surrogate Recovery (Acceptance Limits)
Lab Sample ID	Client Sample ID	DCAA (50-150)
MRL 550-284509/1003	Lab Control Sample	90
MRL 550-284524/1003	Lab Control Sample	98
MRL 550-284727/1003	Lab Control Sample	98

Surrogate Legend

DCAA = Dichloroacetic acid(Surr)

Method: 300.0 - Anions, Ion Chromatography

Lab Sample ID: MB 550-283923/2
Matrix: Water
Analysis Batch: 283923

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Nitrate as N	ND		0.050	0.014	mg/L			09/14/22 10:54	1
Sulfate	ND		2.0	0.43	mg/L			09/14/22 10:54	1

Lab Sample ID: LCS 550-283923/5
Matrix: Water
Analysis Batch: 283923

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Nitrate as N	4.00	4.26		mg/L		107	90 - 110
Sulfate	20.0	21.0		mg/L		105	90 - 110

Lab Sample ID: LCSD 550-283923/6
Matrix: Water
Analysis Batch: 283923

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Nitrate as N	4.00	4.26		mg/L		106	90 - 110	0	20
Sulfate	20.0	21.0		mg/L		105	90 - 110	0	20

Lab Sample ID: 550-190412-8 MS
Matrix: Water
Analysis Batch: 283923

Client Sample ID: SWFTS-MW03-EM39
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Nitrate as N	8.8	D	8.00	17.0	D	mg/L		102	80 - 120

Lab Sample ID: 550-190412-8 MSD
Matrix: Water
Analysis Batch: 283923

Client Sample ID: SWFTS-MW03-EM39
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Nitrate as N	8.8	D	8.00	17.0	D	mg/L		103	80 - 120	0	20

Lab Sample ID: MB 550-283924/1043
Matrix: Water
Analysis Batch: 283924

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Nitrate as N	ND		0.050	0.014	mg/L			09/14/22 23:29	1
Sulfate	ND		2.0	0.43	mg/L			09/14/22 23:29	1

Lab Sample ID: LCS 550-283924/44
Matrix: Water
Analysis Batch: 283924

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Nitrate as N	4.00	4.25		mg/L		106	90 - 110
Sulfate	20.0	21.1		mg/L		105	90 - 110

Method: 300.0 - Anions, Ion Chromatography (Continued)

Lab Sample ID: LCSD 550-283924/45
Matrix: Water
Analysis Batch: 283924

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Nitrate as N			4.00	4.24		mg/L		106	90 - 110	0	20
Sulfate			20.0	21.1		mg/L		105	90 - 110	0	20

Lab Sample ID: 550-190412-8 MS
Matrix: Water
Analysis Batch: 283924

Client Sample ID: SWFTS-MW03-EM39
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Sulfate	2100		1000	3060		mg/L		99	80 - 120

Lab Sample ID: 550-190412-8 MSD
Matrix: Water
Analysis Batch: 283924

Client Sample ID: SWFTS-MW03-EM39
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Sulfate	2100		1000	3050		mg/L		98	80 - 120	0	20

Lab Sample ID: MB 550-283926/2
Matrix: Water
Analysis Batch: 283926

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Nitrate as N	ND		0.050	0.014	mg/L			09/14/22 11:21	1
Sulfate	ND		2.0	0.43	mg/L			09/14/22 11:21	1

Lab Sample ID: LCS 550-283926/5
Matrix: Water
Analysis Batch: 283926

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Nitrate as N			4.00	4.09		mg/L		102	90 - 110
Sulfate			20.0	20.4		mg/L		102	90 - 110

Lab Sample ID: LCSD 550-283926/6
Matrix: Water
Analysis Batch: 283926

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Nitrate as N			4.00	4.11		mg/L		103	90 - 110	0	20
Sulfate			20.0	20.3		mg/L		102	90 - 110	0	20

Lab Sample ID: 550-190412-2 MS
Matrix: Water
Analysis Batch: 283926

Client Sample ID: SWFTS-MW10A-EM39
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Sulfate	1900		1000	2980		mg/L		104	80 - 120

Method: 300.0 - Anions, Ion Chromatography (Continued)

Lab Sample ID: 550-190412-2 MSD
Matrix: Water
Analysis Batch: 283926

Client Sample ID: SWFTS-MW10A-EM39
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Sulfate	1900		1000	2980		mg/L		105	80 - 120	0	20

Lab Sample ID: MB 550-283927/2
Matrix: Water
Analysis Batch: 283927

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Nitrate as N	ND		0.050	0.014	mg/L			09/14/22 10:53	1
Sulfate	ND		2.0	0.43	mg/L			09/14/22 10:53	1

Lab Sample ID: LCS 550-283927/5
Matrix: Water
Analysis Batch: 283927

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Nitrate as N	4.00	4.14		mg/L		104	90 - 110
Sulfate	20.0	20.6		mg/L		103	90 - 110

Lab Sample ID: LCSD 550-283927/6
Matrix: Water
Analysis Batch: 283927

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Nitrate as N	4.00	4.14		mg/L		104	90 - 110	0	20
Sulfate	20.0	20.6		mg/L		103	90 - 110	0	20

Lab Sample ID: 550-190412-2 MS
Matrix: Water
Analysis Batch: 283927

Client Sample ID: SWFTS-MW10A-EM39
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Nitrate as N	16		8.00	24.4		mg/L		103	80 - 120

Lab Sample ID: 550-190412-2 MSD
Matrix: Water
Analysis Batch: 283927

Client Sample ID: SWFTS-MW10A-EM39
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Nitrate as N	16		8.00	24.4		mg/L		103	80 - 120	0	20

Lab Sample ID: MB 550-284056/1043
Matrix: Water
Analysis Batch: 284056

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Nitrate as N	ND		0.050	0.014	mg/L			09/15/22 23:32	1
Sulfate	ND		2.0	0.43	mg/L			09/15/22 23:32	1

Method: 300.0 - Anions, Ion Chromatography (Continued)

Lab Sample ID: LCS 550-284056/44
Matrix: Water
Analysis Batch: 284056

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Nitrate as N			4.00	4.21		mg/L		105	90 - 110		
Sulfate			20.0	20.9		mg/L		104	90 - 110		

Lab Sample ID: LCSD 550-284056/45
Matrix: Water
Analysis Batch: 284056

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Nitrate as N			4.00	4.20		mg/L		105	90 - 110	0	20
Sulfate			20.0	20.9		mg/L		104	90 - 110	0	20

Lab Sample ID: 550-190504-F-1 MS ^50
Matrix: Water
Analysis Batch: 284056

Client Sample ID: Matrix Spike
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits		
Nitrate as N	10		200	217		mg/L		104	80 - 120		
Sulfate	1500		1000	2530		mg/L		104	80 - 120		

Lab Sample ID: 550-190504-F-1 MSD ^50
Matrix: Water
Analysis Batch: 284056

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Nitrate as N	10		200	218		mg/L		104	80 - 120	0	20
Sulfate	1500		1000	2550		mg/L		106	80 - 120	1	20

Method: 300.1B - Disinfection By-Products, (IC)

Lab Sample ID: MB 550-284509/5
Matrix: Water
Analysis Batch: 284509

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chlorate	ND		20	4.9	ug/L			09/21/22 13:48	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Dichloroacetic acid(Surr)	*96*		*90 - 115*		*09/21/22 13:48*	*1*

Lab Sample ID: LCS 550-284509/6
Matrix: Water
Analysis Batch: 284509

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Chlorate			100	94.7		ug/L		95	75 - 125		

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
Dichloroacetic acid(Surr)	*96*		*90 - 115*

Method: 300.1B - Disinfection By-Products, (IC) (Continued)

Lab Sample ID: LCSD 550-284509/7
Matrix: Water
Analysis Batch: 284509

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Chlorate			100	96.7		ug/L		97	75 - 125	2	25

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
Dichloroacetic acid(Surr)	*95*		*90 - 115*

Lab Sample ID: MRL 550-284509/1003
Matrix: Water
Analysis Batch: 284509

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte			Spike Added	MRL Result	MRL Qualifier	Unit	D	%Rec	%Rec Limits		
Chlorate			20.0	19.1	J	ug/L		96	50 - 150		

Surrogate	*MRL %Recovery*	*MRL Qualifier*	*Limits*
Dichloroacetic acid(Surr)	*90*		*50 - 150*

Lab Sample ID: 550-190236-E-5 MS ^100
Matrix: Water
Analysis Batch: 284509

Client Sample ID: Matrix Spike
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits		
Chlorate	6600		10000	17000		ug/L		105	75 - 125		

Surrogate	*MS %Recovery*	*MS Qualifier*	*Limits*
Dichloroacetic acid(Surr)	*101*		*90 - 115*

Lab Sample ID: 550-190236-E-5 MSD ^100
Matrix: Water
Analysis Batch: 284509

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Chlorate	6600		10000	18100		ug/L		115	75 - 125	6	25

Surrogate	*MSD %Recovery*	*MSD Qualifier*	*Limits*
Dichloroacetic acid(Surr)	*98*		*90 - 115*

Lab Sample ID: MB 550-284524/5
Matrix: Water
Analysis Batch: 284524

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chlorate	ND		20	4.9	ug/L			09/22/22 04:32	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Dichloroacetic acid(Surr)	*96*		*90 - 115*		*09/22/22 04:32*	*1*

Method: 300.1B - Disinfection By-Products, (IC) (Continued)

Lab Sample ID: LCS 550-284524/6
Matrix: Water
Analysis Batch: 284524

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Chlorate			100	100		ug/L		100	75 - 125		

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
Dichloroacetic acid(Surr)	*96*		*90 - 115*

Lab Sample ID: LCSD 550-284524/7
Matrix: Water
Analysis Batch: 284524

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Chlorate			100	96.3		ug/L		96	75 - 125	4	25

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
Dichloroacetic acid(Surr)	*97*		*90 - 115*

Lab Sample ID: MRL 550-284524/1003
Matrix: Water
Analysis Batch: 284524

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte			Spike Added	MRL Result	MRL Qualifier	Unit	D	%Rec	%Rec Limits		
Chlorate			20.0	23.3		ug/L		116	50 - 150		

Surrogate	*MRL %Recovery*	*MRL Qualifier*	*Limits*
Dichloroacetic acid(Surr)	*98*		*50 - 150*

Lab Sample ID: 550-190412-2 MS
Matrix: Water
Analysis Batch: 284524

Client Sample ID: SWFTS-MW10A-EM39
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits		
Chlorate	30000		10000	40500	E	ug/L		108	75 - 125		

Surrogate	*MS %Recovery*	*MS Qualifier*	*Limits*
Dichloroacetic acid(Surr)	*98*		*90 - 115*

Lab Sample ID: 550-190412-2 MSD
Matrix: Water
Analysis Batch: 284524

Client Sample ID: SWFTS-MW10A-EM39
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Chlorate	30000		10000	38600		ug/L		89	75 - 125	5	25

Surrogate	*MSD %Recovery*	*MSD Qualifier*	*Limits*
Dichloroacetic acid(Surr)	*97*		*90 - 115*

Method: 300.1B - Disinfection By-Products, (IC) (Continued)

Lab Sample ID: MB 550-284727/5
Matrix: Water
Analysis Batch: 284727

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chlorate	ND		20	4.9	ug/L			09/23/22 15:04	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Dichloroacetic acid(Surr)	*101*		*90 - 115*		*09/23/22 15:04*	*1*

Lab Sample ID: LCS 550-284727/6
Matrix: Water
Analysis Batch: 284727

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Chlorate			100	95.1		ug/L		95	75 - 125		

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
Dichloroacetic acid(Surr)	*94*		*90 - 115*

Lab Sample ID: LCSD 550-284727/7
Matrix: Water
Analysis Batch: 284727

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Chlorate			100	101		ug/L		101	75 - 125	6	25

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
Dichloroacetic acid(Surr)	*101*		*90 - 115*

Lab Sample ID: MRL 550-284727/1003
Matrix: Water
Analysis Batch: 284727

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte			Spike Added	MRL Result	MRL Qualifier	Unit	D	%Rec	%Rec Limits		
Chlorate			20.0	22.1		ug/L		110	50 - 150		

Surrogate	*MRL %Recovery*	*MRL Qualifier*	*Limits*
Dichloroacetic acid(Surr)	*98*		*50 - 150*

Lab Sample ID: 550-190412-8 MS
Matrix: Water
Analysis Batch: 284727

Client Sample ID: SWFTS-MW03-EM39
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits		
Chlorate	7500		5000	11300		ug/L		75	75 - 125		

Surrogate	*MS %Recovery*	*MS Qualifier*	*Limits*
Dichloroacetic acid(Surr)	*98*		*90 - 115*

Method: 300.1B - Disinfection By-Products, (IC) (Continued)

Lab Sample ID: 550-190412-8 MSD
Matrix: Water
Analysis Batch: 284727

Client Sample ID: SWFTS-MW03-EM39
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Chlorate	7500		5000	11800		ug/L		86	75 - 125	5	25

Surrogate	*MSD %Recovery*	*MSD Qualifier*	*Limits*
Dichloroacetic acid(Surr)	*107*		*90 - 115*

Method: 314.0 - Perchlorate (IC)

Lab Sample ID: MB 550-283893/11
Matrix: Water
Analysis Batch: 283893

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perchlorate	ND		1.0	0.31	ug/L			09/14/22 14:11	1

Lab Sample ID: LCS 550-283893/12
Matrix: Water
Analysis Batch: 283893

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Perchlorate	25.0	27.1		ug/L		108	85 - 115

Lab Sample ID: LCSD 550-283893/13
Matrix: Water
Analysis Batch: 283893

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Perchlorate	25.0	26.5		ug/L		106	85 - 115	2	15

Lab Sample ID: 550-190412-2 MS
Matrix: Water
Analysis Batch: 283893

Client Sample ID: SWFTS-MW10A-EM39
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Perchlorate	17000		25000	41500		ug/L		99	80 - 120

Lab Sample ID: 550-190412-2 MSD
Matrix: Water
Analysis Batch: 283893

Client Sample ID: SWFTS-MW10A-EM39
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Perchlorate	17000		25000	41700		ug/L		100	80 - 120	0	15

Lab Sample ID: MB 550-283995/1002
Matrix: Water
Analysis Batch: 283995

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perchlorate	ND		1.0	0.31	ug/L			09/15/22 10:16	1

Method: 314.0 - Perchlorate (IC) (Continued)

Lab Sample ID: LCS 550-283995/4
Matrix: Water
Analysis Batch: 283995

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Perchlorate			25.0	25.4		ug/L		102	85 - 115		

Lab Sample ID: LCSD 550-283995/5
Matrix: Water
Analysis Batch: 283995

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Perchlorate			25.0	25.9		ug/L		104	85 - 115	2	15

Lab Sample ID: MRL 550-283995/1003
Matrix: Water
Analysis Batch: 283995

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte			Spike Added	MRL Result	MRL Qualifier	Unit	D	%Rec	%Rec Limits		
Perchlorate			1.00	0.787	J	ug/L		79	75 - 125		

Lab Sample ID: 550-190412-8 MS
Matrix: Water
Analysis Batch: 283995

Client Sample ID: SWFTS-MW03-EM39
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits		
Perchlorate	4300		5000	9160		ug/L		97	80 - 120		

Lab Sample ID: 550-190412-8 MSD
Matrix: Water
Analysis Batch: 283995

Client Sample ID: SWFTS-MW03-EM39
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Perchlorate	4300		5000	9170		ug/L		97	80 - 120	0	15

Method: SM 5310B - Organic Carbon, Total (TOC)

Lab Sample ID: MB 550-284107/5
Matrix: Water
Analysis Batch: 284107

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon	ND		0.50	0.26	mg/L			09/15/22 19:29	1

Lab Sample ID: LCS 550-284107/6
Matrix: Water
Analysis Batch: 284107

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Total Organic Carbon			20.0	19.1		mg/L		95	90 - 110		

Method: SM 5310B - Organic Carbon, Total (TOC) (Continued)

Lab Sample ID: LCSD 550-284107/7
Matrix: Water
Analysis Batch: 284107

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Total Organic Carbon			20.0	19.3		mg/L		96	90 - 110	1	20

Lab Sample ID: 550-190412-2 MS
Matrix: Water
Analysis Batch: 284107

Client Sample ID: SWFTS-MW10A-EM39
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits		
Total Organic Carbon	2.0	F1	20.0	17.5	F1	mg/L		77	90 - 110		

Lab Sample ID: 550-190412-2 MSD
Matrix: Water
Analysis Batch: 284107

Client Sample ID: SWFTS-MW10A-EM39
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Total Organic Carbon	2.0	F1	20.0	19.7	F1	mg/L		88	90 - 110	12	20

Lab Sample ID: MB 550-284166/5
Matrix: Water
Analysis Batch: 284166

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon	ND		0.50	0.26	mg/L			09/16/22 15:33	1

Lab Sample ID: LCS 550-284166/6
Matrix: Water
Analysis Batch: 284166

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Total Organic Carbon			20.0	18.9		mg/L		94	90 - 110		

Lab Sample ID: LCSD 550-284166/7
Matrix: Water
Analysis Batch: 284166

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Total Organic Carbon			20.0	18.8		mg/L		94	90 - 110	0	20

Lab Sample ID: 550-190412-8 MS
Matrix: Water
Analysis Batch: 284166

Client Sample ID: SWFTS-MW03-EM39
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits		
Total Organic Carbon	1.4	F1	20.0	19.6		mg/L		91	90 - 110		

Lab Sample ID: 550-190412-8 MSD
Matrix: Water
Analysis Batch: 284166

Client Sample ID: SWFTS-MW03-EM39
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Total Organic Carbon	1.4	F1	20.0	19.3	F1	mg/L		89	90 - 110	2	20

HPLC/IC

Analysis Batch: 283893

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
550-190412-1	SWFTS-MW09B-EM39	Total/NA	Water	314.0	
550-190412-2	SWFTS-MW10A-EM39	Total/NA	Water	314.0	
550-190412-3	SWFTS-MW11-EM39	Total/NA	Water	314.0	
550-190412-4	SWFTS-MW11-EM39-FD	Total/NA	Water	314.0	
550-190412-5	SWFTS-MW12-EM39	Total/NA	Water	314.0	
550-190412-6	SWFTS-MW13-EM39	Total/NA	Water	314.0	
550-190412-7	SWFTS-MW14-EM39	Total/NA	Water	314.0	
550-190412-9	SWFTS-MW09A-EM39	Total/NA	Water	314.0	
550-190412-10	SWFTS-MW01-EM39	Total/NA	Water	314.0	
550-190412-11	SWFTS-EM39-FB1	Total/NA	Water	314.0	
550-190412-12	SWFTS-EM39-EB1	Total/NA	Water	314.0	
MB 550-283893/11	Method Blank	Total/NA	Water	314.0	
LCS 550-283893/12	Lab Control Sample	Total/NA	Water	314.0	
LCSD 550-283893/13	Lab Control Sample Dup	Total/NA	Water	314.0	
550-190412-2 MS	SWFTS-MW10A-EM39	Total/NA	Water	314.0	
550-190412-2 MSD	SWFTS-MW10A-EM39	Total/NA	Water	314.0	

Analysis Batch: 283923

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
550-190412-1	SWFTS-MW09B-EM39	Total/NA	Water	300.0	
550-190412-1	SWFTS-MW09B-EM39	Total/NA	Water	300.0	
550-190412-3	SWFTS-MW11-EM39	Total/NA	Water	300.0	
550-190412-3	SWFTS-MW11-EM39	Total/NA	Water	300.0	
550-190412-4	SWFTS-MW11-EM39-FD	Total/NA	Water	300.0	
550-190412-4	SWFTS-MW11-EM39-FD	Total/NA	Water	300.0	
550-190412-5	SWFTS-MW12-EM39	Total/NA	Water	300.0	
550-190412-5	SWFTS-MW12-EM39	Total/NA	Water	300.0	
550-190412-6	SWFTS-MW13-EM39	Total/NA	Water	300.0	
550-190412-7	SWFTS-MW14-EM39	Total/NA	Water	300.0	
550-190412-7	SWFTS-MW14-EM39	Total/NA	Water	300.0	
550-190412-8	SWFTS-MW03-EM39	Total/NA	Water	300.0	
550-190412-9	SWFTS-MW09A-EM39	Total/NA	Water	300.0	
550-190412-10	SWFTS-MW01-EM39	Total/NA	Water	300.0	
550-190412-11	SWFTS-EM39-FB1	Total/NA	Water	300.0	
550-190412-12	SWFTS-EM39-EB1	Total/NA	Water	300.0	
MB 550-283923/2	Method Blank	Total/NA	Water	300.0	
LCS 550-283923/5	Lab Control Sample	Total/NA	Water	300.0	
LCSD 550-283923/6	Lab Control Sample Dup	Total/NA	Water	300.0	
550-190412-8 MS	SWFTS-MW03-EM39	Total/NA	Water	300.0	
550-190412-8 MSD	SWFTS-MW03-EM39	Total/NA	Water	300.0	

Analysis Batch: 283924

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
550-190412-8	SWFTS-MW03-EM39	Total/NA	Water	300.0	
MB 550-283924/1043	Method Blank	Total/NA	Water	300.0	
LCS 550-283924/44	Lab Control Sample	Total/NA	Water	300.0	
LCSD 550-283924/45	Lab Control Sample Dup	Total/NA	Water	300.0	
550-190412-8 MS	SWFTS-MW03-EM39	Total/NA	Water	300.0	
550-190412-8 MSD	SWFTS-MW03-EM39	Total/NA	Water	300.0	

HPLC/IC

Analysis Batch: 283926

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
550-190412-2	SWFTS-MW10A-EM39	Total/NA	Water	300.0	
MB 550-283926/2	Method Blank	Total/NA	Water	300.0	
LCS 550-283926/5	Lab Control Sample	Total/NA	Water	300.0	
LCSD 550-283926/6	Lab Control Sample Dup	Total/NA	Water	300.0	
550-190412-2 MS	SWFTS-MW10A-EM39	Total/NA	Water	300.0	
550-190412-2 MSD	SWFTS-MW10A-EM39	Total/NA	Water	300.0	

Analysis Batch: 283927

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
550-190412-2	SWFTS-MW10A-EM39	Total/NA	Water	300.0	
MB 550-283927/2	Method Blank	Total/NA	Water	300.0	
LCS 550-283927/5	Lab Control Sample	Total/NA	Water	300.0	
LCSD 550-283927/6	Lab Control Sample Dup	Total/NA	Water	300.0	
550-190412-2 MS	SWFTS-MW10A-EM39	Total/NA	Water	300.0	
550-190412-2 MSD	SWFTS-MW10A-EM39	Total/NA	Water	300.0	

Analysis Batch: 283995

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
550-190412-8	SWFTS-MW03-EM39	Total/NA	Water	314.0	
MB 550-283995/1002	Method Blank	Total/NA	Water	314.0	
LCS 550-283995/4	Lab Control Sample	Total/NA	Water	314.0	
LCSD 550-283995/5	Lab Control Sample Dup	Total/NA	Water	314.0	
MRL 550-283995/1003	Lab Control Sample	Total/NA	Water	314.0	
550-190412-8 MS	SWFTS-MW03-EM39	Total/NA	Water	314.0	
550-190412-8 MSD	SWFTS-MW03-EM39	Total/NA	Water	314.0	

Analysis Batch: 284056

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
550-190412-6	SWFTS-MW13-EM39	Total/NA	Water	300.0	
550-190412-9	SWFTS-MW09A-EM39	Total/NA	Water	300.0	
550-190412-10	SWFTS-MW01-EM39	Total/NA	Water	300.0	
MB 550-284056/1043	Method Blank	Total/NA	Water	300.0	
LCS 550-284056/44	Lab Control Sample	Total/NA	Water	300.0	
LCSD 550-284056/45	Lab Control Sample Dup	Total/NA	Water	300.0	
550-190504-F-1 MS ^50	Matrix Spike	Total/NA	Water	300.0	
550-190504-F-1 MSD ^50	Matrix Spike Duplicate	Total/NA	Water	300.0	

Analysis Batch: 284509

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
550-190412-1	SWFTS-MW09B-EM39	Total/NA	Water	300.1B	
MB 550-284509/5	Method Blank	Total/NA	Water	300.1B	
LCS 550-284509/6	Lab Control Sample	Total/NA	Water	300.1B	
LCSD 550-284509/7	Lab Control Sample Dup	Total/NA	Water	300.1B	
MRL 550-284509/1003	Lab Control Sample	Total/NA	Water	300.1B	
550-190236-E-5 MS ^100	Matrix Spike	Total/NA	Water	300.1B	
550-190236-E-5 MSD ^100	Matrix Spike Duplicate	Total/NA	Water	300.1B	

Analysis Batch: 284524

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
550-190412-2	SWFTS-MW10A-EM39	Total/NA	Water	300.1B	
550-190412-3	SWFTS-MW11-EM39	Total/NA	Water	300.1B	

HPLC/IC (Continued)

Analysis Batch: 284524 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
550-190412-4	SWFTS-MW11-EM39-FD	Total/NA	Water	300.1B	
550-190412-5	SWFTS-MW12-EM39	Total/NA	Water	300.1B	
550-190412-6	SWFTS-MW13-EM39	Total/NA	Water	300.1B	
550-190412-7	SWFTS-MW14-EM39	Total/NA	Water	300.1B	
550-190412-9	SWFTS-MW09A-EM39	Total/NA	Water	300.1B	
550-190412-10	SWFTS-MW01-EM39	Total/NA	Water	300.1B	
550-190412-11	SWFTS-EM39-FB1	Total/NA	Water	300.1B	
550-190412-12	SWFTS-EM39-EB1	Total/NA	Water	300.1B	
MB 550-284524/5	Method Blank	Total/NA	Water	300.1B	
LCS 550-284524/6	Lab Control Sample	Total/NA	Water	300.1B	
LCSD 550-284524/7	Lab Control Sample Dup	Total/NA	Water	300.1B	
MRL 550-284524/1003	Lab Control Sample	Total/NA	Water	300.1B	
550-190412-2 MS	SWFTS-MW10A-EM39	Total/NA	Water	300.1B	
550-190412-2 MSD	SWFTS-MW10A-EM39	Total/NA	Water	300.1B	

Analysis Batch: 284727

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
550-190412-8	SWFTS-MW03-EM39	Total/NA	Water	300.1B	
MB 550-284727/5	Method Blank	Total/NA	Water	300.1B	
LCS 550-284727/6	Lab Control Sample	Total/NA	Water	300.1B	
LCSD 550-284727/7	Lab Control Sample Dup	Total/NA	Water	300.1B	
MRL 550-284727/1003	Lab Control Sample	Total/NA	Water	300.1B	
550-190412-8 MS	SWFTS-MW03-EM39	Total/NA	Water	300.1B	
550-190412-8 MSD	SWFTS-MW03-EM39	Total/NA	Water	300.1B	

General Chemistry

Analysis Batch: 284107

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
550-190412-2	SWFTS-MW10A-EM39	Total/NA	Water	SM 5310B	
MB 550-284107/5	Method Blank	Total/NA	Water	SM 5310B	
LCS 550-284107/6	Lab Control Sample	Total/NA	Water	SM 5310B	
LCSD 550-284107/7	Lab Control Sample Dup	Total/NA	Water	SM 5310B	
550-190412-2 MS	SWFTS-MW10A-EM39	Total/NA	Water	SM 5310B	
550-190412-2 MSD	SWFTS-MW10A-EM39	Total/NA	Water	SM 5310B	

Analysis Batch: 284166

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
550-190412-1	SWFTS-MW09B-EM39	Total/NA	Water	SM 5310B	
550-190412-3	SWFTS-MW11-EM39	Total/NA	Water	SM 5310B	
550-190412-4	SWFTS-MW11-EM39-FD	Total/NA	Water	SM 5310B	
550-190412-5	SWFTS-MW12-EM39	Total/NA	Water	SM 5310B	
550-190412-6	SWFTS-MW13-EM39	Total/NA	Water	SM 5310B	
550-190412-7	SWFTS-MW14-EM39	Total/NA	Water	SM 5310B	
550-190412-8	SWFTS-MW03-EM39	Total/NA	Water	SM 5310B	
550-190412-9	SWFTS-MW09A-EM39	Total/NA	Water	SM 5310B	
550-190412-10	SWFTS-MW01-EM39	Total/NA	Water	SM 5310B	
550-190412-11	SWFTS-EM39-FB1	Total/NA	Water	SM 5310B	
550-190412-12	SWFTS-EM39-EB1	Total/NA	Water	SM 5310B	
MB 550-284166/5	Method Blank	Total/NA	Water	SM 5310B	
LCS 550-284166/6	Lab Control Sample	Total/NA	Water	SM 5310B	

General Chemistry (Continued)

Analysis Batch: 284166 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
LCSD 550-284166/7	Lab Control Sample Dup	Total/NA	Water	SM 5310B	
550-190412-8 MS	SWFTS-MW03-EM39	Total/NA	Water	SM 5310B	
550-190412-8 MSD	SWFTS-MW03-EM39	Total/NA	Water	SM 5310B	

Lab Chronicle

Client: Tetra Tech, Inc. Job ID: 550-190412-1
Project/Site: Tetra Tech M11 SWF Treatability Study

Client Sample ID: SWFTS-MW09B-EM39 Lab Sample ID: 550-190412-1

Date Collected: 09/13/22 07:10 **Matrix: Water**
Date Received: 09/14/22 06:30

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	300.0		5	283923	AS1	EET PHX	09/14/22 13:58
Total/NA	Analysis	300.0		50	283923	AS1	EET PHX	09/14/22 21:20
Total/NA	Analysis	300.1B		100	284509	MEG	EET PHX	09/22/22 01:35
Total/NA	Analysis	314.0		500	283893	RDC	EET PHX	09/14/22 16:51
Total/NA	Analysis	SM 5310B		1	284166	MEG	EET PHX	09/16/22 16:54

Client Sample ID: SWFTS-MW10A-EM39 Lab Sample ID: 550-190412-2

Date Collected: 09/13/22 09:10 **Matrix: Water**
Date Received: 09/14/22 06:30

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	300.0		50	283926	AS1	EET PHX	09/14/22 13:40
Total/NA	Analysis	300.0		2	283927	AS1	EET PHX	09/14/22 13:12
Total/NA	Analysis	300.1B		100	284524	MEG	EET PHX	09/22/22 06:00
Total/NA	Analysis	314.0		1000	283893	RDC	EET PHX	09/14/22 15:19
Total/NA	Analysis	SM 5310B		1	284107	MEG	EET PHX	09/15/22 20:18

Client Sample ID: SWFTS-MW11-EM39 Lab Sample ID: 550-190412-3

Date Collected: 09/13/22 10:15 **Matrix: Water**
Date Received: 09/14/22 06:30

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	300.0		5	283923	AS1	EET PHX	09/14/22 14:17
Total/NA	Analysis	300.0		50	283923	AS1	EET PHX	09/14/22 21:38
Total/NA	Analysis	300.1B		100	284524	MEG	EET PHX	09/22/22 07:29
Total/NA	Analysis	314.0		500	283893	RDC	EET PHX	09/14/22 17:14
Total/NA	Analysis	SM 5310B		1	284166	MEG	EET PHX	09/16/22 17:05

Client Sample ID: SWFTS-MW11-EM39-FD Lab Sample ID: 550-190412-4

Date Collected: 09/13/22 10:15 **Matrix: Water**
Date Received: 09/14/22 06:30

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	300.0		5	283923	AS1	EET PHX	09/14/22 14:35
Total/NA	Analysis	300.0		50	283923	AS1	EET PHX	09/14/22 21:57
Total/NA	Analysis	300.1B		100	284524	MEG	EET PHX	09/22/22 07:58
Total/NA	Analysis	314.0		500	283893	RDC	EET PHX	09/14/22 17:37
Total/NA	Analysis	SM 5310B		1	284166	MEG	EET PHX	09/16/22 17:18

Lab Chronicle

Client: Tetra Tech, Inc. Job ID: 550-190412-1
Project/Site: Tetra Tech M11 SWF Treatability Study

Client Sample ID: SWFTS-MW12-EM39 Lab Sample ID: 550-190412-5

Date Collected: 09/13/22 11:10 **Matrix: Water**
Date Received: 09/14/22 06:30

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	300.0		1	283923	AS1	EET PHX	09/14/22 13:40
Total/NA	Analysis	300.0		50	283923	AS1	EET PHX	09/14/22 21:02
Total/NA	Analysis	300.1B		5	284524	MEG	EET PHX	09/22/22 08:28
Total/NA	Analysis	314.0		10	283893	RDC	EET PHX	09/14/22 18:00
Total/NA	Analysis	SM 5310B		1	284166	MEG	EET PHX	09/16/22 17:29

Client Sample ID: SWFTS-MW13-EM39 Lab Sample ID: 550-190412-6

Date Collected: 09/13/22 12:00 **Matrix: Water**
Date Received: 09/14/22 06:30

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	300.0		5	283923	AS1	EET PHX	09/14/22 17:02
Total/NA	Analysis	300.0		50	284056	AS1	EET PHX	09/16/22 05:40
Total/NA	Analysis	300.1B		200	284524	MEG	EET PHX	09/22/22 08:57
Total/NA	Analysis	314.0		200	283893	RDC	EET PHX	09/14/22 18:23
Total/NA	Analysis	SM 5310B		1	284166	MEG	EET PHX	09/16/22 17:40

Client Sample ID: SWFTS-MW14-EM39 Lab Sample ID: 550-190412-7

Date Collected: 09/13/22 13:20 **Matrix: Water**
Date Received: 09/14/22 06:30

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	300.0		1	283923	AS1	EET PHX	09/14/22 16:07
Total/NA	Analysis	300.0		50	283923	AS1	EET PHX	09/14/22 22:15
Total/NA	Analysis	300.1B		5	284524	MEG	EET PHX	09/22/22 09:26
Total/NA	Analysis	314.0		200	283893	RDC	EET PHX	09/14/22 18:46
Total/NA	Analysis	SM 5310B		2	284166	MEG	EET PHX	09/16/22 20:03

Client Sample ID: SWFTS-MW03-EM39 Lab Sample ID: 550-190412-8

Date Collected: 09/13/22 08:25 **Matrix: Water**
Date Received: 09/14/22 06:30

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	300.0		2	283923	AS1	EET PHX	09/14/22 12:26
Total/NA	Analysis	300.0		50	283924	AS1	EET PHX	09/15/22 00:24
Total/NA	Analysis	300.1B		50	284727	MEG	EET PHX	09/23/22 16:33
Total/NA	Analysis	314.0		200	283995	RDC	EET PHX	09/15/22 11:47
Total/NA	Analysis	SM 5310B		1	284166	MEG	EET PHX	09/16/22 16:09

Lab Chronicle

Client: Tetra Tech, Inc. Job ID: 550-190412-1
Project/Site: Tetra Tech M11 SWF Treatability Study

Client Sample ID: SWFTS-MW09A-EM39 Lab Sample ID: 550-190412-9

Date Collected: 09/13/22 10:00 **Matrix: Water**
Date Received: 09/14/22 06:30

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	300.0		2	283923	AS1	EET PHX	09/14/22 16:25
Total/NA	Analysis	300.0		50	284056	AS1	EET PHX	09/16/22 05:58
Total/NA	Analysis	300.1B		100	284524	MEG	EET PHX	09/22/22 09:56
Total/NA	Analysis	314.0		200	283893	RDC	EET PHX	09/14/22 19:54
Total/NA	Analysis	SM 5310B		1	284166	MEG	EET PHX	09/16/22 17:51

Client Sample ID: SWFTS-MW01-EM39 Lab Sample ID: 550-190412-10

Date Collected: 09/13/22 11:45 **Matrix: Water**
Date Received: 09/14/22 06:30

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	300.0		2	283923	AS1	EET PHX	09/14/22 16:44
Total/NA	Analysis	300.0		50	284056	AS1	EET PHX	09/16/22 06:17
Total/NA	Analysis	300.1B		50	284524	MEG	EET PHX	09/22/22 10:25
Total/NA	Analysis	314.0		200	283893	RDC	EET PHX	09/14/22 20:17
Total/NA	Analysis	SM 5310B		1	284166	MEG	EET PHX	09/16/22 18:02

Client Sample ID: SWFTS-EM39-FB1 Lab Sample ID: 550-190412-11

Date Collected: 09/13/22 12:15 **Matrix: Water**
Date Received: 09/14/22 06:30

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	300.0		1	283923	AS1	EET PHX	09/14/22 17:21
Total/NA	Analysis	300.1B		1	284524	MEG	EET PHX	09/22/22 13:22
Total/NA	Analysis	314.0		1	283893	RDC	EET PHX	09/14/22 20:40
Total/NA	Analysis	SM 5310B		1	284166	MEG	EET PHX	09/16/22 18:13

Client Sample ID: SWFTS-EM39-EB1 Lab Sample ID: 550-190412-12

Date Collected: 09/13/22 12:25 **Matrix: Water**
Date Received: 09/14/22 06:30

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	300.0		1	283923	AS1	EET PHX	09/14/22 14:53
Total/NA	Analysis	300.1B		1	284524	MEG	EET PHX	09/22/22 13:51
Total/NA	Analysis	314.0		1	283893	RDC	EET PHX	09/14/22 21:03
Total/NA	Analysis	SM 5310B		1	284166	MEG	EET PHX	09/16/22 18:23

Laboratory References:
EET PHX = Eurofins Phoenix, 4625 East Cotton Center Boulevard, Suite #189, Phoenix, AZ 85040, TEL (602)437-3340

Accreditation/Certification Summary

Client: Tetra Tech, Inc. Job ID: 550-190412-1
Project/Site: Tetra Tech M11 SWF Treatability Study

Laboratory: Eurofins Phoenix

All accreditations/certifications held by this laboratory are listed. Not all accreditations/certifications are applicable to this report.

Authority	Program	Identification Number	Expiration Date
Arizona	State	AZ0728	06-10-23
California	State	2941	03-09-23
Nevada	State	AZ1030	07-31-23
Oregon	NELAP	AZ100001	03-09-23
USDA	US Federal Programs	P330-19-00227	08-27-22 *

* Accreditation/Certification renewal pending - accreditation/certification considered valid.

Method Summary

Client: Tetra Tech, Inc.
Job ID: 550-190412-1
Project/Site: Tetra Tech M11 SWF Treatability Study

Method	Method Description	Protocol	Laboratory
300.0	Anions, Ion Chromatography	MCAWW	EET PHX
300.1B	Disinfection By-Products, (IC)	EPA	EET PHX
314.0	Perchlorate (IC)	EPA	EET PHX
SM 5310B	Organic Carbon, Total (TOC)	SM	EET PHX

Protocol References:

EPA = US Environmental Protection Agency

MCAWW = "Methods For Chemical Analysis Of Water And Wastes", EPA-600/4-79-020, March 1983 And Subsequent Revisions.

SM = "Standard Methods For The Examination Of Water And Wastewater"

Laboratory References:

EET PHX = Eurofins Phoenix, 4625 East Cotton Center Boulevard, Suite #189, Phoenix, AZ 85040, TEL (602)437-3340

190412

TestAmerica Las Vegas 218

9/26/2022

Tetra Tech
1093 Commerce Park Drive
Oak Ridge, TN37830
(865)483-9900

CHAIN-OF-CUSTODY

NERT-M11
Groundwater Sampling

Laboratory Name: Eurofins TestAmerica, Phoenix (602) 437-3340 | Address: 4625 East Cotton Ctr Blvd, Suite 189, Phoenix, AZ 85040 | Contact: Mary Charlson 602-659-7627 | Page ___ of ___

Project Name: Tetra Tech M11 SWF Treatability Study
Project No. M11-CWP-04
NERT - Seep Well Field Area Bioremediation Treatability Study

Sampler: Jesse Bunkers | Sampler Phone: 702-767-2053
Project Contact: **Maureen McMyler** | Site Telephone No.: (702) 966-8340
Project Manager/Supervisor: **Dana Grady**

Report to: Maureen McMyler, 1093 Commerce Park Dr. (865)220-4762
Bill to: Sunshine Pryor, 350 Indiana St., Golden, CO 80401 (303) 217-5700

Analysis and Method Requested

Remarks
Preservation Codes:
A- HCL
D-Nitric Acid
L-EDA
N-None
S-H2SO4
Other:

Item No.	Sample Number	Date	Time	G=Grab C=Comp	Matrix	Sample Description, Location	Number of Containers	Perchlorate E314.0	TOC SM5310B	Chlorate E300.1	Sulfate/Nitrate E300.0 SHORT HOLD NITRATE!	Notes
	Preservation Code:						-	N	A	L	N	
1	SWFTS-MW09B-EM39	9/13/22	0710	G	W		7	X	X	X	X	
2	SWFTS-MW10A-EM39	9/13/22	0910	G	W		7	X	X	X	X	
3	SWFTS-MW10A-EM39-MS/MSD	9/13/22	0910	G	W		7	X	X	X	X	
4	SWFTS-MW11-EM39	9/13/22	1015	G	W		7	X	X	X	X	
5	SWFTS-MW11-EM39-FD	9/13/22	1015	G	W		7	X	X	X	X	
6	SWFTS-MW12-EM39	9/13/22	1110	G	W		7	X	X	X	X	
7	SWFTS-MW13-EM39	9/13/22	1200	G	W		7	X	X	X	X	
8	SWFTS-MW14-EM39	9/13/22	1320	G	W		7	X	X	X	X	
9												
10												

550-190412 Chain of Custody

Transfers Relinquished By (Signature)	Date/Time	Transfers Accepted By (Signature)	Date/Time	Special Instructions:
	9/13/22 1430	TALS	9/13/22 1500	
TALS	9/13/22 1600			
	9-14-22 6:30	Laboratory: EETA	FedEx Airbill No.:	FedEx Airbill No.:
			Sampler's Signature: (REQUIRED)	Sampler's Signature:

TAT ___ Standard ___ Rush Due _____ | Received Good Condition ___ Y ___ N ___ Cold

U.V.IR #TH240 24.1/24.4
2.6°C-DB-ice

Tetra Tech
1093 Commerce Park Drive
Oak Ridge, TN37830
(865)483-9900

CHAIN-OF-CUSTODY

TestAmerica Las Vegas 210

NERT-M11
Groundwater Sampling

9/26/2022

Laboratory Name: Eurofins TestAmerica, Phoenix (602) 437-3340 | Address: 4625 East Cotton Ctr Blvd Suite 189 Phoenix, AZ 85040 | Contact: Mary Charlson 602-659-7627 | Page 1 of 2

Project Name: Tetra Tech M11 SWF Treatability Study
Sampler: G. Schuler | Sampler Phone: 480 620 5186

Project No. M11-CWP-04
NERT - Seep Well Field Area Bioremediation Treatability Study
Project Contact: **Maureen McMyler** | Site Telephone No.: (702) 966-8340

Report to: Maureen McMyler, 1093 Commerce Park Dr. (865)220-4762
Project Manager/Supervisor: **Dana Grady**
Bill to: Sunshine Pryor, 350 Indiana St., Golden, CO 80401 (303) 217-5700

Analysis and Method Requested

Remarks
Preservation Codes:
A- HCL
D-Nitric Acid
L-EDA
N-None
S-H2SO4
Other:

Item No	Sample Number	Date	Time	G=Grab C=Comp	Matrix	Sample Description, Location	Number of Containers	Perchlorate E314.0	TOC SM5310B	Chlorate E300.1	Sulfate/Nitrate E300.0 SHORT HOLD NITRATE	Notes
						Preservation Code:	-	N	A	L	N	
1	SWFTS-MW03-EM39	9/13/22	0825	G	WG	—	7	X	X	X	X	
2	SWFTS-MW03-EM39-MS/MSD		0825									
3	SWFTS-MW09A-EM39		1000									
4	SWFTS-MW01-E39		1145									
5	SWFTS-EM39-FB1		1215									
6	SWFTS EM39-EB1		1225									
7												
8												
9												
10												

Transfers Relinquished By (Signature)	Date/Time	Transfers Accepted By (Signature)	Date/Time	Special Instructions:
G. Schuler	9/13/22	TAM TALVS	9-13-22 1450	
TAM	9-13-22 1600			
			FedEx Airbill No.:	FedEx Airbill No.:
	9-14-22 6:30	Laboratory: Main St EETA-Phx	Sampler's Signature: (REQUIRED)	Sampler's Signature:

TAT ___ Standard ___ Rush Due _____ | Received Good Condition ____ Y ____ N ____ Cold

N.V. ER #4240 23.4/23.9

1.6°C -DB-ice

Login Sample Receipt Checklist

Client: Tetra Tech, Inc.

Job Number: 550-190412-1

Login Number: 190412
List Number: 1
Creator: Maycock, Lisa

List Source: Eurofins Phoenix

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	True	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	False	Check done at department level as required.

eurofins | Environment Testing America

ANALYTICAL REPORT

Eurofins Phoenix
4625 East Cotton Center Boulevard
Suite #189
Phoenix, AZ 85040
Tel: (602)437-3340

Laboratory Job ID: 550-190504-1
Client Project/Site: Tetra Tech M11 SWF Treatability Study

For:
Tetra Tech, Inc.
1093 Commerce Park Drive
Suite 100
Oak Ridge, Tennessee 37830

Attn: Dana Grady

Rachel F. Sester

Authorized for release by:
9/28/2022 4:34:41 PM

Rachel Sester, Project Manager I
(602)659-7615
Rachel.Sester@et.eurofinsus.com

LINKS

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www.eurofinsus.com/Env

This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.

Results relate only to the items tested and the sample(s) as received by the laboratory.

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Definitions/Glossary

Client: Tetra Tech, Inc. Job ID: 550-190504-1
Project/Site: Tetra Tech M11 SWF Treatability Study

Qualifiers

HPLC/IC

Qualifier	Qualifier Description
4	MS, MSD: The analyte present in the original sample is greater than 4 times the matrix spike concentration; therefore, control limits are not applicable.
cn	Refer to Case Narrative for further detail
D	Sample results are obtained from a dilution; the surrogate or matrix spike recoveries reported are calculated from diluted samples.
E	Result exceeded calibration range.
F1	MS and/or MSD recovery exceeds control limits.
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

General Chemistry

Qualifier	Qualifier Description
F1	MS and/or MSD recovery exceeds control limits.
F2	MS/MSD RPD exceeds control limits

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CFU	Colony Forming Unit
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MCL	EPA recommended "Maximum Contaminant Level"
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
MPN	Most Probable Number
MQL	Method Quantitation Limit
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
NEG	Negative / Absent
POS	Positive / Present
PQL	Practical Quantitation Limit
PRES	Presumptive
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)
TNTC	Too Numerous To Count

Job ID: 550-190504-1

Laboratory: Eurofins Phoenix

Narrative

Job Narrative
550-190504-1

Comments
No additional comments.

Receipt
The samples were received on 9/15/2022 6:30 AM. Unless otherwise noted below, the samples arrived in good condition, and where required, properly preserved and on ice. The temperatures of the 3 coolers at receipt time were 2.4º C, 3.1º C and 22.0º C.

Receipt Exceptions
The container label for the following samples did not match the information listed on the Chain-of-Custody (COC): SWFTS-MW15-EM39 (550-190504-1), SWFTS-MW16-EM39 (550-190504-2), SWFTS-MW17-EM39 (550-190504-3), SWFTS-MW18-EM39 (550-190504-4), SWFTS-MW19-EM39 (550-190504-5), SWFTS-MW19-EM39-FD (550-190504-6), SWFTS-EM39-FB2 (550-190504-7), SWFTS-EM39-EB2 (550-190504-8), SWFTS-MW20-EM39 (550-190504-9), SWFTS-MW21-EM39 (550-190504-10), SWFTS-PC-91-EM39 (550-190504-11), SWFTS-PC-92-EM39 (550-190504-12), SWFTS-MW06A-EM39 (550-190504-13), SWFTS-MW06A-EM39-FD (550-190504-14), SWFTS-MW06B-EM39 (550-190504-15), SWFTS-MW04-EM39 (550-190504-16), SWFTS-MW02-EM39 (550-190504-17), SWFTS-MW07A-EM39 (550-190504-18), SWFTS-MW07B-EM39 (550-190504-19) and SWFTS-MW22-EM39 (550-190504-20). The container labels list #12,13 & 14 as sampled on 9-13-2022, while the COC lists #12,13 & 14 as sampled on 9-14-2022. The client was contacted, and the lab was instructed to <EXPLANATION_REQUIRED>.

HPLC/IC
Method 300.1B: The following sample was diluted for Chlorate by method EPA 300.1B due to an abundance of non-target analytes present within the sample matrix: SWFTS-MW16-EM39 (550-190504-2). In the diluted sample this analyte was not detected or was beneath the lowest calibration limit. As such, an elevated reporting limit (RL) has been provided.

Method 300.1B: The following samples were diluted for Chlorate by method EPA 300.1B due to an abundance of non-target analytes present within the sample matrix: SWFTS-MW21-EM39 (550-190504-10) and SWFTS-MW06A-EM39-FD (550-190504-14). In the diluted samples this analyte was not detected or was beneath the lowest calibration limit. As such, an elevated reporting limit (RL) has been provided.

Method 300.1B: The following sample was diluted for Chlorate by method EPA 300.1B due to an abundance of non-target analytes present within the sample matrix: SWFTS-MW06A-EM39 (550-190504-13). In the diluted sample this analyte was not detected or was beneath the lowest calibration limit. As such, an elevated reporting limit (RL) has been provided.

Method 300.0: The following sample was diluted for Nitrate as N due to matrix interferences as well as high amounts of metals constituents: SWFTS-PC-91-EM39 (550-190504-11). The sample was initially tested for Chloride using a test strip and the strip turned a non-traditional color of olive green which indicated the presence of interferences within the matrix. In addition, a metals test was performed on the undiluted sample which produced a strong positive result. Therefore to reduce these interferences, a dilution was prepared prior to the instrument analysis. The sample was re-tested at increasing dilutions and run at the lowest dilution which presented with minimized interference. This analyte was not detected in the diluted sample. As such, an elevated reporting limit (RL) has been provided and the result has been qualified with a D flag.

Method 300.0: The results for the source sample and the matrix spike / matrix spike duplicate (MS/MSD) associated with analytical batch 550-284055 for Sulfate by method EPA 300.0 could not be reported due to the analyte exceeding the high end of the instrument calibration range. As such, reanalysis at a dilution was required and a result could not be reported for the associated source sample. The results for the batch laboratory control sample / laboratory sample control duplicate (LCS/LCSD) met method acceptance criteria and may be used to verify accuracy and precision. Therefore, the following sample result has been reported and qualified with cn flags.

SWFTS-MW16-EM39 (550-190504-2), SWFTS-MW17-EM39 (550-190504-3), SWFTS-MW18-EM39 (550-190504-4), SWFTS-MW19-EM39-FD (550-190504-6), SWFTS-EM39-FB2 (550-190504-7), SWFTS-EM39-EB2 (550-190504-8), SWFTS-MW20-EM39 (550-190504-9) and SWFTS-PC-91-EM39 (550-190504-11)

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

Job ID: 550-190504-1 (Continued)

Laboratory: Eurofins Phoenix (Continued)

General Chemistry

Method SM 5310B: The matrix spike duplicate (MSD) recovery for Total Organic Carbon (TOC) in analytical batch 550-284166 was outside control limits. Sample matrix interference was suspected because the associated laboratory control sample (LCS) recovery was within acceptance limits.

Method SM 5310B: The matrix spike / matrix spike duplicate (MS/MSD) recoveries and precision for Total Organic Carbon (TOC) inanalytical batch 550-284166 were outside control limits. Sample matrix interference and/or non-homogeneity were suspected because the associated laboratory control sample / laboratory control sample duplicate (LCS/LCSD) recoveries and precision were within acceptance limits.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

Sample Summary

Client: Tetra Tech, Inc.
Job ID: 550-190504-1
Project/Site: Tetra Tech M11 SWF Treatability Study

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
550-190504-1	SWFTS-MW15-EM39	Water	09/14/22 07:50	09/15/22 06:30
550-190504-2	SWFTS-MW16-EM39	Water	09/14/22 08:25	09/15/22 06:30
550-190504-3	SWFTS-MW17-EM39	Water	09/14/22 09:05	09/15/22 06:30
550-190504-4	SWFTS-MW18-EM39	Water	09/14/22 10:05	09/15/22 06:30
550-190504-5	SWFTS-MW19-EM39	Water	09/14/22 10:50	09/15/22 06:30
550-190504-6	SWFTS-MW19-EM39-FD	Water	09/14/22 10:50	09/15/22 06:30
550-190504-7	SWFTS-EM39-FB2	Water	09/14/22 10:40	09/15/22 06:30
550-190504-8	SWFTS-EM39-EB2	Water	09/14/22 11:05	09/15/22 06:30
550-190504-9	SWFTS-MW20-EM39	Water	09/14/22 11:40	09/15/22 06:30
550-190504-10	SWFTS-MW21-EM39	Water	09/14/22 12:30	09/15/22 06:30
550-190504-11	SWFTS-PC-91-EM39	Water	09/14/22 07:35	09/15/22 06:30
550-190504-12	SWFTS-PC-92-EM39	Water	09/14/22 08:30	09/15/22 06:30
550-190504-13	SWFTS-MW06A-EM39	Water	09/14/22 09:30	09/15/22 06:30
550-190504-14	SWFTS-MW06A-EM39-FD	Water	09/14/22 09:30	09/15/22 06:30
550-190504-15	SWFTS-MW06B-EM39	Water	09/14/22 10:20	09/15/22 06:30
550-190504-16	SWFTS-MW04-EM39	Water	09/14/22 11:15	09/15/22 06:30
550-190504-17	SWFTS-MW02-EM39	Water	09/14/22 12:10	09/15/22 06:30
550-190504-18	SWFTS-MW07A-EM39	Water	09/14/22 12:55	09/15/22 06:30
550-190504-19	SWFTS-MW07B-EM39	Water	09/14/22 13:45	09/15/22 06:30
550-190504-20	SWFTS-MW22-EM39	Water	09/14/22 13:15	09/15/22 06:30

Detection Summary

Client: Tetra Tech, Inc.
Job ID: 550-190504-1
Project/Site: Tetra Tech M11 SWF Treatability Study

Client Sample ID: SWFTS-MW15-EM39 — Lab Sample ID: 550-190504-1

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Nitrate as N	11		0.10	0.028	mg/L	2		300.0	Total/NA
Sulfate	1500		100	21	mg/L	50		300.0	Total/NA
Chlorate	16000		2000	490	ug/L	100		300.1B	Total/NA
Perchlorate	7400		500	160	ug/L	500		314.0	Total/NA
Total Organic Carbon	2.2		0.50	0.26	mg/L	1		SM 5310B	Total/NA

Client Sample ID: SWFTS-MW16-EM39 — Lab Sample ID: 550-190504-2

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Nitrate as N	0.016	J	0.050	0.014	mg/L	1		300.0	Total/NA
Sulfate	1700	cn	100	21	mg/L	50		300.0	Total/NA
Perchlorate	260		20	6.3	ug/L	20		314.0	Total/NA
Total Organic Carbon	2.2		0.50	0.26	mg/L	1		SM 5310B	Total/NA

Client Sample ID: SWFTS-MW17-EM39 — Lab Sample ID: 550-190504-3

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Nitrate as N	15		0.10	0.028	mg/L	2		300.0	Total/NA
Sulfate	1900	cn	100	21	mg/L	50		300.0	Total/NA
Chlorate	16000		2000	490	ug/L	100		300.1B	Total/NA
Perchlorate	2100		200	63	ug/L	200		314.0	Total/NA
Total Organic Carbon	1.0		0.50	0.26	mg/L	1		SM 5310B	Total/NA

Client Sample ID: SWFTS-MW18-EM39 — Lab Sample ID: 550-190504-4

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Nitrate as N	9.6		0.10	0.028	mg/L	2		300.0	Total/NA
Sulfate	1800	cn	100	21	mg/L	50		300.0	Total/NA
Chlorate	10000		1000	240	ug/L	50		300.1B	Total/NA
Perchlorate	3300		200	63	ug/L	200		314.0	Total/NA
Total Organic Carbon	2.3		1.0	0.52	mg/L	2		SM 5310B	Total/NA

Client Sample ID: SWFTS-MW19-EM39 — Lab Sample ID: 550-190504-5

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Nitrate as N	4.6		0.050	0.014	mg/L	1		300.0	Total/NA
Sulfate	1200		100	21	mg/L	50		300.0	Total/NA
Chlorate	9100		1000	240	ug/L	50		300.1B	Total/NA
Perchlorate	7300		200	63	ug/L	200		314.0	Total/NA
Total Organic Carbon	2.6		0.50	0.26	mg/L	1		SM 5310B	Total/NA

Client Sample ID: SWFTS-MW19-EM39-FD — Lab Sample ID: 550-190504-6

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Nitrate as N	4.6		0.050	0.014	mg/L	1		300.0	Total/NA
Sulfate	1200	cn	100	21	mg/L	50		300.0	Total/NA
Chlorate	10000		1000	240	ug/L	50		300.1B	Total/NA
Perchlorate	7500		200	63	ug/L	200		314.0	Total/NA
Total Organic Carbon	2.7		0.50	0.26	mg/L	1		SM 5310B	Total/NA

Client Sample ID: SWFTS-EM39-FB2 — Lab Sample ID: 550-190504-7

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Sulfate	0.61	J cn	2.0	0.43	mg/L	1		300.0	Total/NA

This Detection Summary does not include radiochemical test results.

Eurofins Phoenix

Detection Summary

Client: Tetra Tech, Inc.
Job ID: 550-190504-1
Project/Site: Tetra Tech M11 SWF Treatability Study

Client Sample ID: SWFTS-EM39-EB2 — Lab Sample ID: 550-190504-8

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Sulfate	0.46	J cn	2.0	0.43	mg/L	1		300.0	Total/NA
Perchlorate	1.2		1.0	0.31	ug/L	1		314.0	Total/NA

Client Sample ID: SWFTS-MW20-EM39 — Lab Sample ID: 550-190504-9

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Sulfate	2700	cn	100	21	mg/L	50		300.0	Total/NA
Chlorate	43		40	9.8	ug/L	2		300.1B	Total/NA
Perchlorate	10		1.0	0.31	ug/L	1		314.0	Total/NA
Total Organic Carbon	3.9		1.0	0.52	mg/L	2		SM 5310B	Total/NA

Client Sample ID: SWFTS-MW21-EM39 — Lab Sample ID: 550-190504-10

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Nitrate as N	2.3		0.050	0.014	mg/L	1		300.0	Total/NA
Sulfate	2300		100	21	mg/L	50		300.0	Total/NA
Chlorate	26	J	40	9.8	ug/L	2		300.1B	Total/NA
Perchlorate	920		100	31	ug/L	100		314.0	Total/NA
Total Organic Carbon	1.8		1.0	0.52	mg/L	2		SM 5310B	Total/NA

Client Sample ID: SWFTS-PC-91-EM39 — Lab Sample ID: 550-190504-11

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Sulfate	540	cn	40	8.5	mg/L	20		300.0	Total/NA
Perchlorate	10		1.0	0.31	ug/L	1		314.0	Total/NA
Total Organic Carbon	5.0		0.50	0.26	mg/L	1		SM 5310B	Total/NA

Client Sample ID: SWFTS-PC-92-EM39 — Lab Sample ID: 550-190504-12

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Nitrate as N	8.4		0.10	0.028	mg/L	2		300.0	Total/NA
Sulfate	1200		100	21	mg/L	50		300.0	Total/NA
Chlorate	25000		2000	490	ug/L	100		300.1B	Total/NA
Perchlorate	12000		500	160	ug/L	500		314.0	Total/NA
Total Organic Carbon	4.5		2.0	1.0	mg/L	4		SM 5310B	Total/NA

Client Sample ID: SWFTS-MW06A-EM39 — Lab Sample ID: 550-190504-13

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Nitrate as N	0.64		0.050	0.014	mg/L	1		300.0	Total/NA
Sulfate	580		100	21	mg/L	50		300.0	Total/NA
Chlorate	33	J	100	24	ug/L	5		300.1B	Total/NA
Perchlorate	700		100	31	ug/L	100		314.0	Total/NA
Total Organic Carbon	3.2		0.50	0.26	mg/L	1		SM 5310B	Total/NA

Client Sample ID: SWFTS-MW06A-EM39-FD — Lab Sample ID: 550-190504-14

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Nitrate as N	0.67		0.050	0.014	mg/L	1		300.0	Total/NA
Sulfate	570		100	21	mg/L	50		300.0	Total/NA
Chlorate	33	J	100	24	ug/L	5		300.1B	Total/NA
Perchlorate	730		100	31	ug/L	100		314.0	Total/NA
Total Organic Carbon	3.3		0.50	0.26	mg/L	1		SM 5310B	Total/NA

This Detection Summary does not include radiochemical test results.

Eurofins Phoenix

Detection Summary

Client: Tetra Tech, Inc.
Job ID: 550-190504-1
Project/Site: Tetra Tech M11 SWF Treatability Study

Client Sample ID: SWFTS-MW06B-EM39 — Lab Sample ID: 550-190504-15

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Nitrate as N	3.8		0.050	0.014	mg/L	1		300.0	Total/NA
Sulfate	610		100	21	mg/L	50		300.0	Total/NA
Chlorate	940		100	24	ug/L	5		300.1B	Total/NA
Perchlorate	1300		100	31	ug/L	100		314.0	Total/NA
Total Organic Carbon	3.4		0.50	0.26	mg/L	1		SM 5310B	Total/NA

Client Sample ID: SWFTS-MW04-EM39 — Lab Sample ID: 550-190504-16

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Nitrate as N	6.3		0.050	0.014	mg/L	1		300.0	Total/NA
Sulfate	960		100	21	mg/L	50		300.0	Total/NA
Chlorate	17000		1000	240	ug/L	50		300.1B	Total/NA
Perchlorate	8500		200	63	ug/L	200		314.0	Total/NA
Total Organic Carbon	2.6		0.50	0.26	mg/L	1		SM 5310B	Total/NA

Client Sample ID: SWFTS-MW02-EM39 — Lab Sample ID: 550-190504-17

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Nitrate as N	12		0.10	0.028	mg/L	2		300.0	Total/NA
Sulfate	1800		100	21	mg/L	50		300.0	Total/NA
Chlorate	14000		2000	490	ug/L	100		300.1B	Total/NA
Perchlorate	15000		500	160	ug/L	500		314.0	Total/NA
Total Organic Carbon	2.1		0.50	0.26	mg/L	1		SM 5310B	Total/NA

Client Sample ID: SWFTS-MW07A-EM39 — Lab Sample ID: 550-190504-18

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Nitrate as N	20		0.25	0.070	mg/L	5		300.0	Total/NA
Sulfate	1800		100	21	mg/L	50		300.0	Total/NA
Chlorate	36000		2000	490	ug/L	100		300.1B	Total/NA
Perchlorate	16000		500	160	ug/L	500		314.0	Total/NA
Total Organic Carbon	2.5		0.50	0.26	mg/L	1		SM 5310B	Total/NA

Client Sample ID: SWFTS-MW07B-EM39 — Lab Sample ID: 550-190504-19

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Nitrate as N	23		0.25	0.070	mg/L	5		300.0	Total/NA
Sulfate	1700		100	21	mg/L	50		300.0	Total/NA
Chlorate	21000		2000	490	ug/L	100		300.1B	Total/NA
Perchlorate	9100		500	160	ug/L	500		314.0	Total/NA
Total Organic Carbon	2.4		0.50	0.26	mg/L	1		SM 5310B	Total/NA

Client Sample ID: SWFTS-MW22-EM39 — Lab Sample ID: 550-190504-20

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Nitrate as N	5.0		0.050	0.014	mg/L	1		300.0	Total/NA
Sulfate	1300		100	21	mg/L	50		300.0	Total/NA
Chlorate	11000		2000	490	ug/L	100		300.1B	Total/NA
Perchlorate	6500		200	63	ug/L	200		314.0	Total/NA
Total Organic Carbon	2.3		0.50	0.26	mg/L	1		SM 5310B	Total/NA

This Detection Summary does not include radiochemical test results.

Eurofins Phoenix

Client Sample ID: SWFTS-MW15-EM39 — Lab Sample ID: 550-190504-1

Date Collected: 09/14/22 07:50 — **Matrix: Water**
Date Received: 09/15/22 06:30

Method: 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Nitrate as N	11		0.10	0.028	mg/L			09/15/22 12:29	2
Sulfate	1500		100	21	mg/L			09/16/22 00:27	50

Method: 300.1B - Disinfection By-Products, (IC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chlorate	16000		2000	490	ug/L			09/23/22 18:01	100

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Dichloroacetic acid(Surr)	*100*		*90 - 115*		*09/23/22 18:01*	*100*

Method: 314.0 - Perchlorate (IC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perchlorate	7400		500	160	ug/L			09/15/22 14:05	500

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon	2.2		0.50	0.26	mg/L			09/16/22 23:07	1

Client Sample ID: SWFTS-MW16-EM39 — Lab Sample ID: 550-190504-2

Date Collected: 09/14/22 08:25 — **Matrix: Water**
Date Received: 09/15/22 06:30

Method: 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Nitrate as N	0.016	J	0.050	0.014	mg/L			09/15/22 13:24	1
Sulfate	1700	cn	100	21	mg/L			09/15/22 21:04	50

Method: 300.1B - Disinfection By-Products, (IC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chlorate	ND		40	9.8	ug/L			09/22/22 15:49	2

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Dichloroacetic acid(Surr)	*103*		*90 - 115*		*09/22/22 15:49*	*2*

Method: 314.0 - Perchlorate (IC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perchlorate	260		20	6.3	ug/L			09/15/22 14:28	20

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon	2.2		0.50	0.26	mg/L			09/16/22 23:18	1

Client Sample ID: SWFTS-MW17-EM39 — Lab Sample ID: 550-190504-3

Date Collected: 09/14/22 09:05 — **Matrix: Water**
Date Received: 09/15/22 06:30

Method: 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Nitrate as N	15		0.10	0.028	mg/L			09/15/22 13:43	2
Sulfate	1900	cn	100	21	mg/L			09/15/22 21:23	50

Client Sample ID: SWFTS-MW17-EM39 — Lab Sample ID: 550-190504-3

Date Collected: 09/14/22 09:05 — **Matrix: Water**
Date Received: 09/15/22 06:30

Method: 300.1B - Disinfection By-Products, (IC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chlorate	16000		2000	490	ug/L			09/22/22 16:18	100

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Dichloroacetic acid(Surr)	*97*		*90 - 115*		*09/22/22 16:18*	*100*

Method: 314.0 - Perchlorate (IC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perchlorate	2100		200	63	ug/L			09/15/22 14:51	200

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon	1.0		0.50	0.26	mg/L			09/16/22 23:31	1

Client Sample ID: SWFTS-MW18-EM39 — Lab Sample ID: 550-190504-4

Date Collected: 09/14/22 10:05 — **Matrix: Water**
Date Received: 09/15/22 06:30

Method: 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Nitrate as N	9.6		0.10	0.028	mg/L			09/15/22 14:01	2
Sulfate	1800	cn	100	21	mg/L			09/15/22 21:41	50

Method: 300.1B - Disinfection By-Products, (IC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chlorate	10000		1000	240	ug/L			09/23/22 18:30	50

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Dichloroacetic acid(Surr)	*105*		*90 - 115*		*09/23/22 18:30*	*50*

Method: 314.0 - Perchlorate (IC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perchlorate	3300		200	63	ug/L			09/15/22 15:14	200

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon	2.3		1.0	0.52	mg/L			09/17/22 00:28	2

Client Sample ID: SWFTS-MW19-EM39 — Lab Sample ID: 550-190504-5

Date Collected: 09/14/22 10:50 — **Matrix: Water**
Date Received: 09/15/22 06:30

Method: 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Nitrate as N	4.6		0.050	0.014	mg/L			09/15/22 14:19	1
Sulfate	1200		100	21	mg/L			09/16/22 03:06	50

Method: 300.1B - Disinfection By-Products, (IC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chlorate	9100		1000	240	ug/L			09/27/22 15:13	50

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Dichloroacetic acid(Surr)	*97*		*90 - 115*		*09/27/22 15:13*	*50*

Client Sample ID: SWFTS-MW19-EM39 — Lab Sample ID: 550-190504-5

Date Collected: 09/14/22 10:50 — **Matrix: Water**
Date Received: 09/15/22 06:30

Method: 314.0 - Perchlorate (IC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perchlorate	**7300**		200	63	ug/L			09/16/22 13:07	200

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon	**2.6**		0.50	0.26	mg/L			09/16/22 23:45	1

Client Sample ID: SWFTS-MW19-EM39-FD — Lab Sample ID: 550-190504-6

Date Collected: 09/14/22 10:50 — **Matrix: Water**
Date Received: 09/15/22 06:30

Method: 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Nitrate as N	**4.6**		0.050	0.014	mg/L			09/15/22 14:38	1
Sulfate	**1200**	**cn**	100	21	mg/L			09/15/22 22:00	50

Method: 300.1B - Disinfection By-Products, (IC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chlorate	**10000**		1000	240	ug/L			09/27/22 16:41	50

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Dichloroacetic acid(Surr)	*102*		*90 - 115*		*09/27/22 16:41*	*50*

Method: 314.0 - Perchlorate (IC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perchlorate	**7500**		200	63	ug/L			09/16/22 13:30	200

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon	**2.7**		0.50	0.26	mg/L			09/16/22 23:56	1

Client Sample ID: SWFTS-EM39-FB2 — Lab Sample ID: 550-190504-7

Date Collected: 09/14/22 10:40 — **Matrix: Water**
Date Received: 09/15/22 06:30

Method: 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Nitrate as N	ND		0.050	0.014	mg/L			09/15/22 14:56	1
Sulfate	**0.61**	**J cn**	2.0	0.43	mg/L			09/15/22 14:56	1

Method: 300.1B - Disinfection By-Products, (IC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chlorate	ND		20	4.9	ug/L			09/23/22 19:59	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Dichloroacetic acid(Surr)	*96*		*90 - 115*		*09/23/22 19:59*	*1*

Method: 314.0 - Perchlorate (IC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perchlorate	ND		1.0	0.31	ug/L			09/15/22 17:08	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon	ND		0.50	0.26	mg/L			09/17/22 00:07	1

Client Sample ID: SWFTS-EM39-EB2 — Lab Sample ID: 550-190504-8

Date Collected: 09/14/22 11:05 — **Matrix: Water**
Date Received: 09/15/22 06:30

Method: 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Nitrate as N	ND		0.050	0.014	mg/L			09/15/22 18:37	1
Sulfate	**0.46**	**J cn**	2.0	0.43	mg/L			09/15/22 18:37	1

Method: 300.1B - Disinfection By-Products, (IC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chlorate	ND		20	4.9	ug/L			09/23/22 20:28	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Dichloroacetic acid(Surr)	*104*		*90 - 115*		*09/23/22 20:28*	*1*

Method: 314.0 - Perchlorate (IC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perchlorate	**1.2**		1.0	0.31	ug/L			09/15/22 17:31	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon	ND		0.50	0.26	mg/L			09/17/22 00:17	1

Client Sample ID: SWFTS-MW20-EM39 — Lab Sample ID: 550-190504-9

Date Collected: 09/14/22 11:40 — **Matrix: Water**
Date Received: 09/15/22 06:30

Method: 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Nitrate as N	ND		0.050	0.014	mg/L			09/15/22 16:10	1
Sulfate	**2700**	**cn**	100	21	mg/L			09/15/22 22:18	50

Method: 300.1B - Disinfection By-Products, (IC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chlorate	**43**		40	9.8	ug/L			09/23/22 20:58	2

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Dichloroacetic acid(Surr)	*104*		*90 - 115*		*09/23/22 20:58*	*2*

Method: 314.0 - Perchlorate (IC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perchlorate	**10**		1.0	0.31	ug/L			09/21/22 17:46	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon	**3.9**		1.0	0.52	mg/L			09/17/22 01:28	2

Client Sample ID: SWFTS-MW21-EM39 — Lab Sample ID: 550-190504-10

Date Collected: 09/14/22 12:30 — **Matrix: Water**
Date Received: 09/15/22 06:30

Method: 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Nitrate as N	**2.3**		0.050	0.014	mg/L			09/15/22 16:28	1
Sulfate	**2300**		100	21	mg/L			09/16/22 03:34	50

Client Sample ID: SWFTS-MW21-EM39 — Lab Sample ID: 550-190504-10

Date Collected: 09/14/22 12:30 — **Matrix: Water**
Date Received: 09/15/22 06:30

Method: 300.1B - Disinfection By-Products, (IC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chlorate	**26**	**J**	40	9.8	ug/L			09/23/22 22:26	2

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Dichloroacetic acid(Surr)	*104*		*90 - 115*		*09/23/22 22:26*	*2*

Method: 314.0 - Perchlorate (IC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perchlorate	**920**		100	31	ug/L			09/15/22 18:17	100

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon	**1.8**		1.0	0.52	mg/L			09/17/22 01:39	2

Client Sample ID: SWFTS-PC-91-EM39 — Lab Sample ID: 550-190504-11

Date Collected: 09/14/22 07:35 — **Matrix: Water**
Date Received: 09/15/22 06:30

Method: 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Nitrate as N	ND	D	1.0	0.28	mg/L			09/15/22 16:47	20
Sulfate	**540**	**cn**	40	8.5	mg/L			09/15/22 16:47	20

Method: 300.1B - Disinfection By-Products, (IC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chlorate	ND		20	4.9	ug/L			09/23/22 23:55	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Dichloroacetic acid(Surr)	*105*		*90 - 115*		*09/23/22 23:55*	*1*

Method: 314.0 - Perchlorate (IC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perchlorate	**10**		1.0	0.31	ug/L			09/21/22 18:09	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon	**5.0**		0.50	0.26	mg/L			09/17/22 01:53	1

Client Sample ID: SWFTS-PC-92-EM39 — Lab Sample ID: 550-190504-12

Date Collected: 09/14/22 08:30 — **Matrix: Water**
Date Received: 09/15/22 06:30

Method: 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Nitrate as N	**8.4**		0.10	0.028	mg/L			09/15/22 17:05	2
Sulfate	**1200**		100	21	mg/L			09/16/22 04:02	50

Method: 300.1B - Disinfection By-Products, (IC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chlorate	**25000**		2000	490	ug/L			09/24/22 00:24	100

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Dichloroacetic acid(Surr)	*97*		*90 - 115*		*09/24/22 00:24*	*100*

Client Sample ID: SWFTS-PC-92-EM39 — Lab Sample ID: 550-190504-12

Date Collected: 09/14/22 08:30 — **Matrix: Water**
Date Received: 09/15/22 06:30

Method: 314.0 - Perchlorate (IC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perchlorate	12000		500	160	ug/L			09/16/22 12:00	500

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon	4.5		2.0	1.0	mg/L			09/20/22 17:19	4

Client Sample ID: SWFTS-MW06A-EM39 — Lab Sample ID: 550-190504-13

Date Collected: 09/14/22 09:30 — **Matrix: Water**
Date Received: 09/15/22 06:30

Method: 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Nitrate as N	0.64		0.050	0.014	mg/L			09/15/22 17:24	1
Sulfate	580		100	21	mg/L			09/16/22 05:53	50

Method: 300.1B - Disinfection By-Products, (IC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chlorate	33	J	100	24	ug/L			09/27/22 17:10	5

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Dichloroacetic acid(Surr)	*104*		*90 - 115*		*09/27/22 17:10*	*5*

Method: 314.0 - Perchlorate (IC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perchlorate	700		100	31	ug/L			09/15/22 19:03	100

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon	3.2		0.50	0.26	mg/L			09/17/22 02:07	1

Client Sample ID: SWFTS-MW06A-EM39-FD — Lab Sample ID: 550-190504-14

Date Collected: 09/14/22 09:30 — **Matrix: Water**
Date Received: 09/15/22 06:30

Method: 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Nitrate as N	0.67		0.050	0.014	mg/L			09/15/22 17:42	1
Sulfate	570		100	21	mg/L			09/16/22 06:21	50

Method: 300.1B - Disinfection By-Products, (IC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chlorate	33	J	100	24	ug/L			09/24/22 01:23	5

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Dichloroacetic acid(Surr)	*102*		*90 - 115*		*09/24/22 01:23*	*5*

Method: 314.0 - Perchlorate (IC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perchlorate	730		100	31	ug/L			09/15/22 19:26	100

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon	3.3		0.50	0.26	mg/L			09/17/22 02:24	1

Client Sample ID: SWFTS-MW06B-EM39 — Lab Sample ID: 550-190504-15

Date Collected: 09/14/22 10:20 — **Matrix: Water**
Date Received: 09/15/22 06:30

Method: 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Nitrate as N	3.8		0.050	0.014	mg/L			09/15/22 18:00	1
Sulfate	610		100	21	mg/L			09/16/22 06:49	50

Method: 300.1B - Disinfection By-Products, (IC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chlorate	940		100	24	ug/L			09/24/22 01:53	5

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Dichloroacetic acid(Surr)	*100*		*90 - 115*		*09/24/22 01:53*	*5*

Method: 314.0 - Perchlorate (IC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perchlorate	1300		100	31	ug/L			09/15/22 19:49	100

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon	3.4		0.50	0.26	mg/L			09/22/22 16:30	1

Client Sample ID: SWFTS-MW04-EM39 — Lab Sample ID: 550-190504-16

Date Collected: 09/14/22 11:15 — **Matrix: Water**
Date Received: 09/15/22 06:30

Method: 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Nitrate as N	6.3		0.050	0.014	mg/L			09/15/22 18:19	1
Sulfate	960		100	21	mg/L			09/17/22 04:45	50

Method: 300.1B - Disinfection By-Products, (IC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chlorate	17000		1000	240	ug/L			09/24/22 02:22	50

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Dichloroacetic acid(Surr)	*103*		*90 - 115*		*09/24/22 02:22*	*50*

Method: 314.0 - Perchlorate (IC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perchlorate	8500		200	63	ug/L			09/16/22 13:52	200

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon	2.6		0.50	0.26	mg/L			09/17/22 02:38	1

Client Sample ID: SWFTS-MW02-EM39 — Lab Sample ID: 550-190504-17

Date Collected: 09/14/22 12:10 — **Matrix: Water**
Date Received: 09/15/22 06:30

Method: 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Nitrate as N	12		0.10	0.028	mg/L			09/15/22 20:09	2
Sulfate	1800		100	21	mg/L			09/16/22 21:42	50

Client Sample ID: SWFTS-MW02-EM39 — Lab Sample ID: 550-190504-17

Date Collected: 09/14/22 12:10 — **Matrix: Water**
Date Received: 09/15/22 06:30

Method: 300.1B - Disinfection By-Products, (IC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chlorate	14000		2000	490	ug/L			09/27/22 17:40	100

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Dichloroacetic acid(Surr)	*107*		*90 - 115*		*09/27/22 17:40*	*100*

Method: 314.0 - Perchlorate (IC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perchlorate	15000		500	160	ug/L			09/16/22 14:14	500

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon	2.1		0.50	0.26	mg/L			09/20/22 18:52	1

Client Sample ID: SWFTS-MW07A-EM39 — Lab Sample ID: 550-190504-18

Date Collected: 09/14/22 12:55 — **Matrix: Water**
Date Received: 09/15/22 06:30

Method: 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Nitrate as N	20		0.25	0.070	mg/L			09/15/22 20:28	5
Sulfate	1800		100	21	mg/L			09/16/22 22:00	50

Method: 300.1B - Disinfection By-Products, (IC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chlorate	36000		2000	490	ug/L			09/24/22 07:17	100

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Dichloroacetic acid(Surr)	*96*		*90 - 115*		*09/24/22 07:17*	*100*

Method: 314.0 - Perchlorate (IC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perchlorate	16000		500	160	ug/L			09/16/22 14:37	500

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon	2.5		0.50	0.26	mg/L			09/20/22 19:05	1

Client Sample ID: SWFTS-MW07B-EM39 — Lab Sample ID: 550-190504-19

Date Collected: 09/14/22 13:45 — **Matrix: Water**
Date Received: 09/15/22 06:30

Method: 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Nitrate as N	23		0.25	0.070	mg/L			09/15/22 20:46	5
Sulfate	1700		100	21	mg/L			09/17/22 05:04	50

Method: 300.1B - Disinfection By-Products, (IC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chlorate	21000		2000	490	ug/L			09/24/22 08:45	100

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Dichloroacetic acid(Surr)	*96*		*90 - 115*		*09/24/22 08:45*	*100*

Client Sample ID: SWFTS-MW07B-EM39 — Lab Sample ID: 550-190504-19

Date Collected: 09/14/22 13:45 — **Matrix: Water**
Date Received: 09/15/22 06:30

Method: 314.0 - Perchlorate (IC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perchlorate	9100		500	160	ug/L			09/16/22 14:59	500

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon	2.4		0.50	0.26	mg/L			09/20/22 19:17	1

Client Sample ID: SWFTS-MW22-EM39 — Lab Sample ID: 550-190504-20

Date Collected: 09/14/22 13:15 — **Matrix: Water**
Date Received: 09/15/22 06:30

Method: 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Nitrate as N	5.0		0.050	0.014	mg/L			09/15/22 19:51	1
Sulfate	1300		100	21	mg/L			09/17/22 05:22	50

Method: 300.1B - Disinfection By-Products, (IC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chlorate	11000		2000	490	ug/L			09/24/22 09:15	100

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Dichloroacetic acid(Surr)	*97*		*90 - 115*		*09/24/22 09:15*	*100*

Method: 314.0 - Perchlorate (IC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perchlorate	6500		200	63	ug/L			09/16/22 15:22	200

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon	2.3		0.50	0.26	mg/L			09/20/22 19:31	1

Surrogate Summary

Client: Tetra Tech, Inc.
Job ID: 550-190504-1
Project/Site: Tetra Tech M11 SWF Treatability Study

Method: 300.1B - Disinfection By-Products, (IC)

Matrix: Water
Prep Type: Total/NA

		Percent Surrogate Recovery (Acceptance Limits)						
Lab Sample ID	Client Sample ID	DCAA (90-115)						
550-190412-H-2 MS ^100	Matrix Spike	98						
550-190412-H-2 MSD ^100	Matrix Spike Duplicate	97						
550-190412-H-8 MS ^5	Matrix Spike	105						
550-190412-H-8 MSD ^5	Matrix Spike Duplicate	99						
550-190504-1	SWFTS-MW15-EM39	100						
550-190504-2	SWFTS-MW16-EM39	103						
550-190504-3	SWFTS-MW17-EM39	97						
550-190504-4	SWFTS-MW18-EM39	105						
550-190504-5	SWFTS-MW19-EM39	97						
550-190504-5 MS	SWFTS-MW19-EM39	104						
550-190504-5 MSD	SWFTS-MW19-EM39	102						
550-190504-6	SWFTS-MW19-EM39-FD	102						
550-190504-7	SWFTS-EM39-FB2	96						
550-190504-8	SWFTS-EM39-EB2	104						
550-190504-9	SWFTS-MW20-EM39	104						
550-190504-10	SWFTS-MW21-EM39	104						
550-190504-10 MS	SWFTS-MW21-EM39	104						
550-190504-10 MSD	SWFTS-MW21-EM39	109						
550-190504-11	SWFTS-PC-91-EM39	105						
550-190504-12	SWFTS-PC-92-EM39	97						
550-190504-13	SWFTS-MW06A-EM39	104						
550-190504-14	SWFTS-MW06A-EM39-FD	102						
550-190504-15	SWFTS-MW06B-EM39	100						
550-190504-16	SWFTS-MW04-EM39	103						
550-190504-17	SWFTS-MW02-EM39	107						
550-190504-18	SWFTS-MW07A-EM39	96						
550-190504-18 MS	SWFTS-MW07A-EM39	97						
550-190504-18 MSD	SWFTS-MW07A-EM39	97						
550-190504-19	SWFTS-MW07B-EM39	96						
550-190504-20	SWFTS-MW22-EM39	97						
LCS 550-284524/6	Lab Control Sample	96						
LCS 550-284727/6	Lab Control Sample	94						
LCS 550-284775/5	Lab Control Sample	97						
LCS 550-284966/6	Lab Control Sample	100						
LCSD 550-284524/7	Lab Control Sample Dup	97						
LCSD 550-284727/7	Lab Control Sample Dup	101						
LCSD 550-284775/6	Lab Control Sample Dup	98						
LCSD 550-284966/7	Lab Control Sample Dup	96						
MB 550-284524/5	Method Blank	96						
MB 550-284727/5	Method Blank	101						
MB 550-284775/4	Method Blank	98						
MB 550-284966/5	Method Blank	104						

Surrogate Legend

DCAA = Dichloroacetic acid(Surr)

Surrogate Summary

Client: Tetra Tech, Inc. Job ID: 550-190504-1
Project/Site: Tetra Tech M11 SWF Treatability Study

Method: 300.1B - Disinfection By-Products, (IC)

Matrix: Water **Prep Type: Total/NA**

		Percent Surrogate Recovery (Acceptance Limits)								
Lab Sample ID	Client Sample ID	DCAA (50-150)								
MRL 550-284524/1003	Lab Control Sample	98								
MRL 550-284727/1003	Lab Control Sample	98								
MRL 550-284775/1002	Lab Control Sample	98								
MRL 550-284966/1003	Lab Control Sample	104								

Surrogate Legend

DCAA = Dichloroacetic acid(Surr)

Method: 300.0 - Anions, Ion Chromatography

Lab Sample ID: MB 550-284055/2
Matrix: Water
Analysis Batch: 284055

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Nitrate as N	ND		0.050	0.014	mg/L			09/15/22 10:57	1
Sulfate	ND		2.0	0.43	mg/L			09/15/22 10:57	1

Lab Sample ID: LCS 550-284055/5
Matrix: Water
Analysis Batch: 284055

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Nitrate as N	4.00	4.21		mg/L		105	90 - 110
Sulfate	20.0	20.8		mg/L		104	90 - 110

Lab Sample ID: LCSD 550-284055/6
Matrix: Water
Analysis Batch: 284055

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Nitrate as N	4.00	4.21		mg/L		105	90 - 110	0	20
Sulfate	20.0	20.8		mg/L		104	90 - 110	0	20

Lab Sample ID: 550-190504-1 MS
Matrix: Water
Analysis Batch: 284055

Client Sample ID: SWFTS-MW15-EM39
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Nitrate as N	11		8.00	18.7		mg/L		102	80 - 120

Lab Sample ID: 550-190504-1 MSD
Matrix: Water
Analysis Batch: 284055

Client Sample ID: SWFTS-MW15-EM39
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Nitrate as N	11		8.00	18.8		mg/L		103	80 - 120	0	20

Lab Sample ID: MB 550-284056/1043
Matrix: Water
Analysis Batch: 284056

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Nitrate as N	ND		0.050	0.014	mg/L			09/15/22 23:32	1
Sulfate	ND		2.0	0.43	mg/L			09/15/22 23:32	1

Lab Sample ID: LCS 550-284056/44
Matrix: Water
Analysis Batch: 284056

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Nitrate as N	4.00	4.21		mg/L		105	90 - 110
Sulfate	20.0	20.9		mg/L		104	90 - 110

Method: 300.0 - Anions, Ion Chromatography (Continued)

Lab Sample ID: LCSD 550-284056/45
Matrix: Water
Analysis Batch: 284056

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Nitrate as N			4.00	4.20		mg/L		105	90 - 110	0	20
Sulfate			20.0	20.9		mg/L		104	90 - 110	0	20

Lab Sample ID: 550-190504-1 MS
Matrix: Water
Analysis Batch: 284056

Client Sample ID: SWFTS-MW15-EM39
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits		
Nitrate as N	10		200	217		mg/L		104	80 - 120		
Sulfate	1500		1000	2530		mg/L		104	80 - 120		

Lab Sample ID: 550-190504-1 MSD
Matrix: Water
Analysis Batch: 284056

Client Sample ID: SWFTS-MW15-EM39
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Nitrate as N	10		200	218		mg/L		104	80 - 120	0	20
Sulfate	1500		1000	2550		mg/L		106	80 - 120	1	20

Lab Sample ID: MB 550-284059/2
Matrix: Water
Analysis Batch: 284059

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Nitrate as N	ND		0.050	0.014	mg/L			09/15/22 10:49	1
Sulfate	ND		2.0	0.43	mg/L			09/15/22 10:49	1

Lab Sample ID: LCS 550-284059/5
Matrix: Water
Analysis Batch: 284059

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Nitrate as N			4.00	4.10		mg/L		102	90 - 110		
Sulfate			20.0	20.3		mg/L		102	90 - 110		

Lab Sample ID: LCSD 550-284059/6
Matrix: Water
Analysis Batch: 284059

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Nitrate as N			4.00	4.10		mg/L		103	90 - 110	0	20
Sulfate			20.0	20.3		mg/L		102	90 - 110	0	20

Lab Sample ID: 550-190513-A-1 MS
Matrix: Water
Analysis Batch: 284059

Client Sample ID: Matrix Spike
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits		
Nitrate as N	4.0		4.00	8.01		mg/L		101	80 - 120		
Sulfate	41		20.0	60.5		mg/L		98	80 - 120		

Method: 300.0 - Anions, Ion Chromatography

Lab Sample ID: 550-190513-A-1 MSD
Matrix: Water
Analysis Batch: 284059

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Nitrate as N	4.0		4.00	8.04		mg/L		102	80 - 120	0	20
Sulfate	41		20.0	60.6		mg/L		98	80 - 120	0	20

Lab Sample ID: MB 550-284160/2
Matrix: Water
Analysis Batch: 284160

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Nitrate as N	ND		0.050	0.014	mg/L			09/16/22 10:57	1
Sulfate	ND		2.0	0.43	mg/L			09/16/22 10:57	1

Lab Sample ID: LCS 550-284160/5
Matrix: Water
Analysis Batch: 284160

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Nitrate as N	4.00	4.24		mg/L		106	90 - 110
Sulfate	20.0	20.9		mg/L		104	90 - 110

Lab Sample ID: LCSD 550-284160/6
Matrix: Water
Analysis Batch: 284160

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Nitrate as N	4.00	4.22		mg/L		106	90 - 110	0	20
Sulfate	20.0	20.9		mg/L		104	90 - 110	0	20

Lab Sample ID: 550-190517-E-1 MS ^50
Matrix: Water
Analysis Batch: 284160

Client Sample ID: Matrix Spike
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Nitrate as N	1.5	J	200	208		mg/L		103	80 - 120
Sulfate	570		1000	1610		mg/L		104	80 - 120

Lab Sample ID: 550-190517-E-1 MSD ^50
Matrix: Water
Analysis Batch: 284160

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Nitrate as N	1.5	J	200	209		mg/L		104	80 - 120	0	20
Sulfate	570		1000	1610		mg/L		104	80 - 120	0	20

Lab Sample ID: MB 550-284161/1043
Matrix: Water
Analysis Batch: 284161

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Nitrate as N	ND		0.050	0.014	mg/L			09/17/22 00:09	1
Sulfate	ND		2.0	0.43	mg/L			09/17/22 00:09	1

Method: 300.0 - Anions, Ion Chromatography

Lab Sample ID: LCS 550-284161/44
Matrix: Water
Analysis Batch: 284161

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Nitrate as N			4.00	4.21		mg/L		105	90 - 110		
Sulfate			20.0	20.9		mg/L		105	90 - 110		

Lab Sample ID: LCSD 550-284161/45
Matrix: Water
Analysis Batch: 284161

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Nitrate as N			4.00	4.20		mg/L		105	90 - 110	0	20
Sulfate			20.0	20.9		mg/L		104	90 - 110	0	20

Lab Sample ID: 550-190606-F-7 MS ^50
Matrix: Water
Analysis Batch: 284161

Client Sample ID: Matrix Spike
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits		
Nitrate as N	12		200	223		mg/L		105	80 - 120		
Sulfate	1400		1000	2410		mg/L		105	80 - 120		

Lab Sample ID: 550-190606-F-7 MSD ^50
Matrix: Water
Analysis Batch: 284161

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Nitrate as N	12		200	220		mg/L		104	80 - 120	1	20
Sulfate	1400		1000	2400		mg/L		103	80 - 120	1	20

Method: 300.1B - Disinfection By-Products, (IC)

Lab Sample ID: MB 550-284524/5
Matrix: Water
Analysis Batch: 284524

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chlorate	ND		20	4.9	ug/L			09/22/22 04:32	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Dichloroacetic acid(Surr)	*96*		*90 - 115*		*09/22/22 04:32*	*1*

Lab Sample ID: LCS 550-284524/6
Matrix: Water
Analysis Batch: 284524

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Chlorate			100	100		ug/L		100	75 - 125		

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
Dichloroacetic acid(Surr)	*96*		*90 - 115*

Method: 300.1B - Disinfection By-Products, (IC) (Continued)

Lab Sample ID: LCSD 550-284524/7
Matrix: Water
Analysis Batch: 284524

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Chlorate			100	96.3		ug/L		96	75 - 125	4	25

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
Dichloroacetic acid(Surr)	*97*		*90 - 115*

Lab Sample ID: MRL 550-284524/1003
Matrix: Water
Analysis Batch: 284524

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte			Spike Added	MRL Result	MRL Qualifier	Unit	D	%Rec	%Rec Limits		
Chlorate			20.0	23.3		ug/L		116	50 - 150		

Surrogate	*MRL %Recovery*	*MRL Qualifier*	*Limits*
Dichloroacetic acid(Surr)	*98*		*50 - 150*

Lab Sample ID: 550-190412-H-2 MS ^100
Matrix: Water
Analysis Batch: 284524

Client Sample ID: Matrix Spike
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits		
Chlorate	30000		10000	40500	E	ug/L		108	75 - 125		

Surrogate	*MS %Recovery*	*MS Qualifier*	*Limits*
Dichloroacetic acid(Surr)	*98*		*90 - 115*

Lab Sample ID: 550-190412-H-2 MSD ^100
Matrix: Water
Analysis Batch: 284524

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Chlorate	30000		10000	38600		ug/L		89	75 - 125	5	25

Surrogate	*MSD %Recovery*	*MSD Qualifier*	*Limits*
Dichloroacetic acid(Surr)	*97*		*90 - 115*

Lab Sample ID: 550-190412-H-8 MS ^5
Matrix: Water
Analysis Batch: 284524

Client Sample ID: Matrix Spike
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits		
Chlorate	8600	E	500	10000	E 4	ug/L		292	75 - 125		

Surrogate	*MS %Recovery*	*MS Qualifier*	*Limits*
Dichloroacetic acid(Surr)	*105*		*90 - 115*

Method: 300.1B - Disinfection By-Products, (IC) (Continued)

Lab Sample ID: 550-190412-H-8 MSD ^5
Matrix: Water
Analysis Batch: 284524

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Chlorate	8600	E	500	10000	E 4	ug/L		294	75 - 125	0	25

Surrogate	*MSD %Recovery*	*MSD Qualifier*	*Limits*
Dichloroacetic acid(Surr)	*99*		*90 - 115*

Lab Sample ID: MB 550-284727/5
Matrix: Water
Analysis Batch: 284727

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chlorate	ND		20	4.9	ug/L			09/23/22 15:04	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Dichloroacetic acid(Surr)	*101*		*90 - 115*		*09/23/22 15:04*	*1*

Lab Sample ID: LCS 550-284727/6
Matrix: Water
Analysis Batch: 284727

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Chlorate			100	95.1		ug/L		95	75 - 125		

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
Dichloroacetic acid(Surr)	*94*		*90 - 115*

Lab Sample ID: LCSD 550-284727/7
Matrix: Water
Analysis Batch: 284727

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Chlorate			100	101		ug/L		101	75 - 125	6	25

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
Dichloroacetic acid(Surr)	*101*		*90 - 115*

Lab Sample ID: MRL 550-284727/1003
Matrix: Water
Analysis Batch: 284727

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte			Spike Added	MRL Result	MRL Qualifier	Unit	D	%Rec	%Rec Limits		
Chlorate			20.0	22.1		ug/L		110	50 - 150		

Surrogate	*MRL %Recovery*	*MRL Qualifier*	*Limits*
Dichloroacetic acid(Surr)	*98*		*50 - 150*

Method: 300.1B - Disinfection By-Products, (IC) (Continued)

Lab Sample ID: 550-190504-10 MS
Matrix: Water
Analysis Batch: 284727

Client Sample ID: SWFTS-MW21-EM39
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits		
Chlorate	26	J	200	225		ug/L		99	75 - 125		

Surrogate	*MS %Recovery*	*MS Qualifier*	*Limits*
Dichloroacetic acid(Surr)	*104*		*90 - 115*

Lab Sample ID: 550-190504-10 MSD
Matrix: Water
Analysis Batch: 284727

Client Sample ID: SWFTS-MW21-EM39
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Chlorate	26	J	200	227		ug/L		101	75 - 125	1	25

Surrogate	*MSD %Recovery*	*MSD Qualifier*	*Limits*
Dichloroacetic acid(Surr)	*109*		*90 - 115*

Lab Sample ID: MB 550-284775/4
Matrix: Water
Analysis Batch: 284775

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chlorate	ND		20	4.9	ug/L			09/24/22 05:49	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Dichloroacetic acid(Surr)	*98*		*90 - 115*		*09/24/22 05:49*	*1*

Lab Sample ID: LCS 550-284775/5
Matrix: Water
Analysis Batch: 284775

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Chlorate			100	98.0		ug/L		98	75 - 125		

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
Dichloroacetic acid(Surr)	*97*		*90 - 115*

Lab Sample ID: LCSD 550-284775/6
Matrix: Water
Analysis Batch: 284775

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Chlorate			100	102		ug/L		102	75 - 125	3	25

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
Dichloroacetic acid(Surr)	*98*		*90 - 115*

Method: 300.1B - Disinfection By-Products, (IC) (Continued)

Lab Sample ID: MRL 550-284775/1002
Matrix: Water
Analysis Batch: 284775

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte			Spike Added	MRL Result	MRL Qualifier	Unit	D	%Rec	%Rec Limits		
Chlorate			20.0	23.1		ug/L		115	50 - 150		

Surrogate	*MRL %Recovery*	*MRL Qualifier*	*Limits*
Dichloroacetic acid(Surr)	*98*		*50 - 150*

Lab Sample ID: 550-190504-18 MS
Matrix: Water
Analysis Batch: 284775

Client Sample ID: SWFTS-MW07A-EM39
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits		
Chlorate	36000		10000	46000	E	ug/L		96	75 - 125		

Surrogate	*MS %Recovery*	*MS Qualifier*	*Limits*
Dichloroacetic acid(Surr)	*97*		*90 - 115*

Lab Sample ID: 550-190504-18 MSD
Matrix: Water
Analysis Batch: 284775

Client Sample ID: SWFTS-MW07A-EM39
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Chlorate	36000		10000	46700	E	ug/L		103	75 - 125	1	25

Surrogate	*MSD %Recovery*	*MSD Qualifier*	*Limits*
Dichloroacetic acid(Surr)	*97*		*90 - 115*

Lab Sample ID: MB 550-284966/5
Matrix: Water
Analysis Batch: 284966

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chlorate	ND		20	4.9	ug/L			09/27/22 13:44	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Dichloroacetic acid(Surr)	*104*		*90 - 115*		*09/27/22 13:44*	*1*

Lab Sample ID: LCS 550-284966/6
Matrix: Water
Analysis Batch: 284966

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Chlorate			100	94.1		ug/L		94	75 - 125		

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
Dichloroacetic acid(Surr)	*100*		*90 - 115*

Method: 300.1B - Disinfection By-Products, (IC) (Continued)

Lab Sample ID: LCSD 550-284966/7
Matrix: Water
Analysis Batch: 284966

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Chlorate			100	96.7		ug/L		97	75 - 125	3	25

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
Dichloroacetic acid(Surr)	*96*		*90 - 115*

Lab Sample ID: MRL 550-284966/1003
Matrix: Water
Analysis Batch: 284966

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte			Spike Added	MRL Result	MRL Qualifier	Unit	D	%Rec	%Rec Limits		
Chlorate			20.0	22.6		ug/L		113	50 - 150		

Surrogate	*MRL %Recovery*	*MRL Qualifier*	*Limits*
Dichloroacetic acid(Surr)	*104*		*50 - 150*

Lab Sample ID: 550-190504-5 MS
Matrix: Water
Analysis Batch: 284966

Client Sample ID: SWFTS-MW19-EM39
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits		
Chlorate	9100		5000	13800		ug/L		95	75 - 125		

Surrogate	*MS %Recovery*	*MS Qualifier*	*Limits*
Dichloroacetic acid(Surr)	*104*		*90 - 115*

Lab Sample ID: 550-190504-5 MSD
Matrix: Water
Analysis Batch: 284966

Client Sample ID: SWFTS-MW19-EM39
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Chlorate	9100		5000	15000		ug/L		119	75 - 125	8	25

Surrogate	*MSD %Recovery*	*MSD Qualifier*	*Limits*
Dichloroacetic acid(Surr)	*102*		*90 - 115*

Method: 314.0 - Perchlorate (IC)

Lab Sample ID: MB 550-283995/1002
Matrix: Water
Analysis Batch: 283995

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perchlorate	ND		1.0	0.31	ug/L			09/15/22 10:16	1

Method: 314.0 - Perchlorate (IC) (Continued)

Lab Sample ID: LCS 550-283995/4
Matrix: Water
Analysis Batch: 283995

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Perchlorate			25.0	25.4		ug/L		102	85 - 115		

Lab Sample ID: LCSD 550-283995/5
Matrix: Water
Analysis Batch: 283995

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Perchlorate			25.0	25.9		ug/L		104	85 - 115	2	15

Lab Sample ID: MRL 550-283995/1003
Matrix: Water
Analysis Batch: 283995

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte			Spike Added	MRL Result	MRL Qualifier	Unit	D	%Rec	%Rec Limits		
Perchlorate			1.00	0.787	J	ug/L		79	75 - 125		

Lab Sample ID: 550-190412-C-8 MS ^200
Matrix: Water
Analysis Batch: 283995

Client Sample ID: Matrix Spike
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits		
Perchlorate	4300		5000	9160		ug/L		97	80 - 120		

Lab Sample ID: 550-190412-C-8 MSD ^200
Matrix: Water
Analysis Batch: 283995

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Perchlorate	4300		5000	9170		ug/L		97	80 - 120	0	15

Lab Sample ID: MB 550-284123/1002
Matrix: Water
Analysis Batch: 284123

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perchlorate	ND		1.0	0.31	ug/L			09/16/22 10:30	1

Lab Sample ID: LCS 550-284123/4
Matrix: Water
Analysis Batch: 284123

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Perchlorate			25.0	25.5		ug/L		102	85 - 115		

Lab Sample ID: LCSD 550-284123/5
Matrix: Water
Analysis Batch: 284123

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Perchlorate			25.0	25.2		ug/L		101	85 - 115	1	15

Method: 314.0 - Perchlorate (IC)

Lab Sample ID: MRL 550-284123/1003
Matrix: Water
Analysis Batch: 284123

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	MRL Result	MRL Qualifier	Unit	D	%Rec	%Rec Limits
Perchlorate	1.00	1.01		ug/L		101	75 - 125

Lab Sample ID: 550-190504-12 MS
Matrix: Water
Analysis Batch: 284123

Client Sample ID: SWFTS-PC-92-EM39
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Perchlorate	12000		12500	23600		ug/L		96	80 - 120

Lab Sample ID: 550-190504-12 MSD
Matrix: Water
Analysis Batch: 284123

Client Sample ID: SWFTS-PC-92-EM39
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Perchlorate	12000		12500	23900		ug/L		98	80 - 120	1	15

Lab Sample ID: MB 550-284472/12
Matrix: Water
Analysis Batch: 284472

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perchlorate	ND		1.0	0.31	ug/L			09/21/22 14:42	1

Lab Sample ID: LCS 550-284472/13
Matrix: Water
Analysis Batch: 284472

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Perchlorate	25.0	25.6		ug/L		102	85 - 115

Lab Sample ID: LCSD 550-284472/14
Matrix: Water
Analysis Batch: 284472

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Perchlorate	25.0	26.4		ug/L		105	85 - 115	3	15

Lab Sample ID: MRL 550-284472/1003
Matrix: Water
Analysis Batch: 284472

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	MRL Result	MRL Qualifier	Unit	D	%Rec	%Rec Limits
Perchlorate	1.00	0.922	J	ug/L		92	75 - 125

Lab Sample ID: 550-190734-A-1 MS
Matrix: Water
Analysis Batch: 284472

Client Sample ID: Matrix Spike
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Perchlorate	2.1	F1	25.0	30.5		ug/L		113	80 - 120

Method: 314.0 - Perchlorate (IC)

Lab Sample ID: 550-190734-A-1 MSD
Matrix: Water
Analysis Batch: 284472

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Perchlorate	2.1	F1	25.0	33.8	F1	ug/L		127	80 - 120	10	15

Method: SM 5310B - Organic Carbon, Total (TOC)

Lab Sample ID: MB 550-284166/34
Matrix: Water
Analysis Batch: 284166

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon	ND		0.50	0.26	mg/L			09/16/22 21:36	1

Lab Sample ID: LCS 550-284166/35
Matrix: Water
Analysis Batch: 284166

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Total Organic Carbon	20.0	18.4		mg/L		92	90 - 110

Lab Sample ID: LCSD 550-284166/36
Matrix: Water
Analysis Batch: 284166

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Total Organic Carbon	20.0	18.3		mg/L		92	90 - 110	0	20

Lab Sample ID: 550-190574-B-1 MS
Matrix: Water
Analysis Batch: 284166

Client Sample ID: Matrix Spike
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Total Organic Carbon	17	F2 F1	20.0	41.8	F1	mg/L		123	90 - 110

Lab Sample ID: 550-190574-C-1 MSD
Matrix: Water
Analysis Batch: 284166

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Total Organic Carbon	17	F2 F1	20.0	24.0	F2 F1	mg/L		34	90 - 110	54	20

Lab Sample ID: MB 550-284417/5
Matrix: Water
Analysis Batch: 284417

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon	ND		0.50	0.26	mg/L			09/20/22 15:05	1

Method: SM 5310B - Organic Carbon, Total (TOC) (Continued)

Lab Sample ID: LCS 550-284417/6
Matrix: Water
Analysis Batch: 284417

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Total Organic Carbon	20.0	19.3		mg/L		97	90 - 110

Lab Sample ID: LCSD 550-284417/7
Matrix: Water
Analysis Batch: 284417

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Total Organic Carbon	20.0	19.1		mg/L		95	90 - 110	1	20

Lab Sample ID: 550-190624-C-1 MS
Matrix: Water
Analysis Batch: 284417

Client Sample ID: Matrix Spike
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Total Organic Carbon	0.77		20.0	19.7		mg/L		95	90 - 110

Lab Sample ID: 550-190624-E-1 MSD
Matrix: Water
Analysis Batch: 284417

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Total Organic Carbon	0.77		20.0	19.4		mg/L		93	90 - 110	2	20

Lab Sample ID: MB 550-284672/5
Matrix: Water
Analysis Batch: 284672

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon	ND		0.50	0.26	mg/L			09/22/22 14:34	1

Lab Sample ID: LCS 550-284672/6
Matrix: Water
Analysis Batch: 284672

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Total Organic Carbon	20.0	19.8		mg/L		99	90 - 110

Lab Sample ID: LCSD 550-284672/7
Matrix: Water
Analysis Batch: 284672

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Total Organic Carbon	20.0	19.4		mg/L		97	90 - 110	2	20

Lab Sample ID: 550-190266-A-1 MSD
Matrix: Water
Analysis Batch: 284672

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Total Organic Carbon	3.4		20.0	21.8		mg/L		92	90 - 110	2	20

Client: Tetra Tech, Inc.
Job ID: 550-190504-1
Project/Site: Tetra Tech M11 SWF Treatability Study

Method: SM 5310B - Organic Carbon, Total (TOC)

Lab Sample ID: 550-190266-C-1 MS
Matrix: Water
Analysis Batch: 284672

Client Sample ID: Matrix Spike
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Total Organic Carbon	3.4		20.0	22.3		mg/L		94	90 - 110

HPLC/IC

Analysis Batch: 283995

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
550-190504-1	SWFTS-MW15-EM39	Total/NA	Water	314.0	
550-190504-2	SWFTS-MW16-EM39	Total/NA	Water	314.0	
550-190504-3	SWFTS-MW17-EM39	Total/NA	Water	314.0	
550-190504-4	SWFTS-MW18-EM39	Total/NA	Water	314.0	
550-190504-7	SWFTS-EM39-FB2	Total/NA	Water	314.0	
550-190504-8	SWFTS-EM39-EB2	Total/NA	Water	314.0	
550-190504-10	SWFTS-MW21-EM39	Total/NA	Water	314.0	
550-190504-13	SWFTS-MW06A-EM39	Total/NA	Water	314.0	
550-190504-14	SWFTS-MW06A-EM39-FD	Total/NA	Water	314.0	
550-190504-15	SWFTS-MW06B-EM39	Total/NA	Water	314.0	
MB 550-283995/1002	Method Blank	Total/NA	Water	314.0	
LCS 550-283995/4	Lab Control Sample	Total/NA	Water	314.0	
LCSD 550-283995/5	Lab Control Sample Dup	Total/NA	Water	314.0	
MRL 550-283995/1003	Lab Control Sample	Total/NA	Water	314.0	
550-190412-C-8 MS ^200	Matrix Spike	Total/NA	Water	314.0	
550-190412-C-8 MSD ^200	Matrix Spike Duplicate	Total/NA	Water	314.0	

Analysis Batch: 284055

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
550-190504-1	SWFTS-MW15-EM39	Total/NA	Water	300.0	
550-190504-2	SWFTS-MW16-EM39	Total/NA	Water	300.0	
550-190504-2	SWFTS-MW16-EM39	Total/NA	Water	300.0	
550-190504-3	SWFTS-MW17-EM39	Total/NA	Water	300.0	
550-190504-3	SWFTS-MW17-EM39	Total/NA	Water	300.0	
550-190504-4	SWFTS-MW18-EM39	Total/NA	Water	300.0	
550-190504-4	SWFTS-MW18-EM39	Total/NA	Water	300.0	
550-190504-5	SWFTS-MW19-EM39	Total/NA	Water	300.0	
550-190504-6	SWFTS-MW19-EM39-FD	Total/NA	Water	300.0	
550-190504-6	SWFTS-MW19-EM39-FD	Total/NA	Water	300.0	
550-190504-7	SWFTS-EM39-FB2	Total/NA	Water	300.0	
550-190504-8	SWFTS-EM39-EB2	Total/NA	Water	300.0	
550-190504-9	SWFTS-MW20-EM39	Total/NA	Water	300.0	
550-190504-9	SWFTS-MW20-EM39	Total/NA	Water	300.0	
550-190504-10	SWFTS-MW21-EM39	Total/NA	Water	300.0	
550-190504-11	SWFTS-PC-91-EM39	Total/NA	Water	300.0	
550-190504-12	SWFTS-PC-92-EM39	Total/NA	Water	300.0	
550-190504-13	SWFTS-MW06A-EM39	Total/NA	Water	300.0	
550-190504-14	SWFTS-MW06A-EM39-FD	Total/NA	Water	300.0	
550-190504-15	SWFTS-MW06B-EM39	Total/NA	Water	300.0	
550-190504-16	SWFTS-MW04-EM39	Total/NA	Water	300.0	
550-190504-17	SWFTS-MW02-EM39	Total/NA	Water	300.0	
550-190504-18	SWFTS-MW07A-EM39	Total/NA	Water	300.0	
550-190504-19	SWFTS-MW07B-EM39	Total/NA	Water	300.0	
550-190504-20	SWFTS-MW22-EM39	Total/NA	Water	300.0	
MB 550-284055/2	Method Blank	Total/NA	Water	300.0	
LCS 550-284055/5	Lab Control Sample	Total/NA	Water	300.0	
LCSD 550-284055/6	Lab Control Sample Dup	Total/NA	Water	300.0	
550-190504-1 MS	SWFTS-MW15-EM39	Total/NA	Water	300.0	
550-190504-1 MSD	SWFTS-MW15-EM39	Total/NA	Water	300.0	

HPLC/IC

Analysis Batch: 284056

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
550-190504-1	SWFTS-MW15-EM39	Total/NA	Water	300.0	
MB 550-284056/1043	Method Blank	Total/NA	Water	300.0	
LCS 550-284056/44	Lab Control Sample	Total/NA	Water	300.0	
LCSD 550-284056/45	Lab Control Sample Dup	Total/NA	Water	300.0	
550-190504-1 MS	SWFTS-MW15-EM39	Total/NA	Water	300.0	
550-190504-1 MSD	SWFTS-MW15-EM39	Total/NA	Water	300.0	

Analysis Batch: 284059

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
550-190504-5	SWFTS-MW19-EM39	Total/NA	Water	300.0	
550-190504-10	SWFTS-MW21-EM39	Total/NA	Water	300.0	
550-190504-12	SWFTS-PC-92-EM39	Total/NA	Water	300.0	
550-190504-13	SWFTS-MW06A-EM39	Total/NA	Water	300.0	
550-190504-14	SWFTS-MW06A-EM39-FD	Total/NA	Water	300.0	
550-190504-15	SWFTS-MW06B-EM39	Total/NA	Water	300.0	
MB 550-284059/2	Method Blank	Total/NA	Water	300.0	
LCS 550-284059/5	Lab Control Sample	Total/NA	Water	300.0	
LCSD 550-284059/6	Lab Control Sample Dup	Total/NA	Water	300.0	
550-190513-A-1 MS	Matrix Spike	Total/NA	Water	300.0	
550-190513-A-1 MSD	Matrix Spike Duplicate	Total/NA	Water	300.0	

Analysis Batch: 284123

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
550-190504-5	SWFTS-MW19-EM39	Total/NA	Water	314.0	
550-190504-6	SWFTS-MW19-EM39-FD	Total/NA	Water	314.0	
550-190504-12	SWFTS-PC-92-EM39	Total/NA	Water	314.0	
550-190504-16	SWFTS-MW04-EM39	Total/NA	Water	314.0	
550-190504-17	SWFTS-MW02-EM39	Total/NA	Water	314.0	
550-190504-18	SWFTS-MW07A-EM39	Total/NA	Water	314.0	
550-190504-19	SWFTS-MW07B-EM39	Total/NA	Water	314.0	
550-190504-20	SWFTS-MW22-EM39	Total/NA	Water	314.0	
MB 550-284123/1002	Method Blank	Total/NA	Water	314.0	
LCS 550-284123/4	Lab Control Sample	Total/NA	Water	314.0	
LCSD 550-284123/5	Lab Control Sample Dup	Total/NA	Water	314.0	
MRL 550-284123/1003	Lab Control Sample	Total/NA	Water	314.0	
550-190504-12 MS	SWFTS-PC-92-EM39	Total/NA	Water	314.0	
550-190504-12 MSD	SWFTS-PC-92-EM39	Total/NA	Water	314.0	

Analysis Batch: 284160

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
550-190504-17	SWFTS-MW02-EM39	Total/NA	Water	300.0	
550-190504-18	SWFTS-MW07A-EM39	Total/NA	Water	300.0	
MB 550-284160/2	Method Blank	Total/NA	Water	300.0	
LCS 550-284160/5	Lab Control Sample	Total/NA	Water	300.0	
LCSD 550-284160/6	Lab Control Sample Dup	Total/NA	Water	300.0	
550-190517-E-1 MS ^50	Matrix Spike	Total/NA	Water	300.0	
550-190517-E-1 MSD ^50	Matrix Spike Duplicate	Total/NA	Water	300.0	

Analysis Batch: 284161

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
550-190504-16	SWFTS-MW04-EM39	Total/NA	Water	300.0	

HPLC/IC (Continued)

Analysis Batch: 284161 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
550-190504-19	SWFTS-MW07B-EM39	Total/NA	Water	300.0	
550-190504-20	SWFTS-MW22-EM39	Total/NA	Water	300.0	
MB 550-284161/1043	Method Blank	Total/NA	Water	300.0	
LCS 550-284161/44	Lab Control Sample	Total/NA	Water	300.0	
LCSD 550-284161/45	Lab Control Sample Dup	Total/NA	Water	300.0	
550-190606-F-7 MS ^50	Matrix Spike	Total/NA	Water	300.0	
550-190606-F-7 MSD ^50	Matrix Spike Duplicate	Total/NA	Water	300.0	

Analysis Batch: 284472

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
550-190504-9	SWFTS-MW20-EM39	Total/NA	Water	314.0	
550-190504-11	SWFTS-PC-91-EM39	Total/NA	Water	314.0	
MB 550-284472/12	Method Blank	Total/NA	Water	314.0	
LCS 550-284472/13	Lab Control Sample	Total/NA	Water	314.0	
LCSD 550-284472/14	Lab Control Sample Dup	Total/NA	Water	314.0	
MRL 550-284472/1003	Lab Control Sample	Total/NA	Water	314.0	
550-190734-A-1 MS	Matrix Spike	Total/NA	Water	314.0	
550-190734-A-1 MSD	Matrix Spike Duplicate	Total/NA	Water	314.0	

Analysis Batch: 284524

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
550-190504-2	SWFTS-MW16-EM39	Total/NA	Water	300.1B	
550-190504-3	SWFTS-MW17-EM39	Total/NA	Water	300.1B	
MB 550-284524/5	Method Blank	Total/NA	Water	300.1B	
LCS 550-284524/6	Lab Control Sample	Total/NA	Water	300.1B	
LCSD 550-284524/7	Lab Control Sample Dup	Total/NA	Water	300.1B	
MRL 550-284524/1003	Lab Control Sample	Total/NA	Water	300.1B	
550-190412-H-2 MS ^100	Matrix Spike	Total/NA	Water	300.1B	
550-190412-H-2 MSD ^100	Matrix Spike Duplicate	Total/NA	Water	300.1B	
550-190412-H-8 MS ^5	Matrix Spike	Total/NA	Water	300.1B	
550-190412-H-8 MSD ^5	Matrix Spike Duplicate	Total/NA	Water	300.1B	

Analysis Batch: 284727

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
550-190504-1	SWFTS-MW15-EM39	Total/NA	Water	300.1B	
550-190504-4	SWFTS-MW18-EM39	Total/NA	Water	300.1B	
550-190504-7	SWFTS-EM39-FB2	Total/NA	Water	300.1B	
550-190504-8	SWFTS-EM39-EB2	Total/NA	Water	300.1B	
550-190504-9	SWFTS-MW20-EM39	Total/NA	Water	300.1B	
550-190504-10	SWFTS-MW21-EM39	Total/NA	Water	300.1B	
550-190504-11	SWFTS-PC-91-EM39	Total/NA	Water	300.1B	
550-190504-12	SWFTS-PC-92-EM39	Total/NA	Water	300.1B	
550-190504-14	SWFTS-MW06A-EM39-FD	Total/NA	Water	300.1B	
550-190504-15	SWFTS-MW06B-EM39	Total/NA	Water	300.1B	
550-190504-16	SWFTS-MW04-EM39	Total/NA	Water	300.1B	
MB 550-284727/5	Method Blank	Total/NA	Water	300.1B	
LCS 550-284727/6	Lab Control Sample	Total/NA	Water	300.1B	
LCSD 550-284727/7	Lab Control Sample Dup	Total/NA	Water	300.1B	
MRL 550-284727/1003	Lab Control Sample	Total/NA	Water	300.1B	
550-190504-10 MS	SWFTS-MW21-EM39	Total/NA	Water	300.1B	
550-190504-10 MSD	SWFTS-MW21-EM39	Total/NA	Water	300.1B	

HPLC/IC

Analysis Batch: 284775

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
550-190504-18	SWFTS-MW07A-EM39	Total/NA	Water	300.1B	
550-190504-19	SWFTS-MW07B-EM39	Total/NA	Water	300.1B	
550-190504-20	SWFTS-MW22-EM39	Total/NA	Water	300.1B	
MB 550-284775/4	Method Blank	Total/NA	Water	300.1B	
LCS 550-284775/5	Lab Control Sample	Total/NA	Water	300.1B	
LCSD 550-284775/6	Lab Control Sample Dup	Total/NA	Water	300.1B	
MRL 550-284775/1002	Lab Control Sample	Total/NA	Water	300.1B	
550-190504-18 MS	SWFTS-MW07A-EM39	Total/NA	Water	300.1B	
550-190504-18 MSD	SWFTS-MW07A-EM39	Total/NA	Water	300.1B	

Analysis Batch: 284966

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
550-190504-5	SWFTS-MW19-EM39	Total/NA	Water	300.1B	
550-190504-6	SWFTS-MW19-EM39-FD	Total/NA	Water	300.1B	
550-190504-13	SWFTS-MW06A-EM39	Total/NA	Water	300.1B	
550-190504-17	SWFTS-MW02-EM39	Total/NA	Water	300.1B	
MB 550-284966/5	Method Blank	Total/NA	Water	300.1B	
LCS 550-284966/6	Lab Control Sample	Total/NA	Water	300.1B	
LCSD 550-284966/7	Lab Control Sample Dup	Total/NA	Water	300.1B	
MRL 550-284966/1003	Lab Control Sample	Total/NA	Water	300.1B	
550-190504-5 MS	SWFTS-MW19-EM39	Total/NA	Water	300.1B	
550-190504-5 MSD	SWFTS-MW19-EM39	Total/NA	Water	300.1B	

General Chemistry

Analysis Batch: 284166

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
550-190504-1	SWFTS-MW15-EM39	Total/NA	Water	SM 5310B	
550-190504-2	SWFTS-MW16-EM39	Total/NA	Water	SM 5310B	
550-190504-3	SWFTS-MW17-EM39	Total/NA	Water	SM 5310B	
550-190504-4	SWFTS-MW18-EM39	Total/NA	Water	SM 5310B	
550-190504-5	SWFTS-MW19-EM39	Total/NA	Water	SM 5310B	
550-190504-6	SWFTS-MW19-EM39-FD	Total/NA	Water	SM 5310B	
550-190504-7	SWFTS-EM39-FB2	Total/NA	Water	SM 5310B	
550-190504-8	SWFTS-EM39-EB2	Total/NA	Water	SM 5310B	
550-190504-9	SWFTS-MW20-EM39	Total/NA	Water	SM 5310B	
550-190504-10	SWFTS-MW21-EM39	Total/NA	Water	SM 5310B	
550-190504-11	SWFTS-PC-91-EM39	Total/NA	Water	SM 5310B	
550-190504-13	SWFTS-MW06A-EM39	Total/NA	Water	SM 5310B	
550-190504-14	SWFTS-MW06A-EM39-FD	Total/NA	Water	SM 5310B	
550-190504-16	SWFTS-MW04-EM39	Total/NA	Water	SM 5310B	
MB 550-284166/34	Method Blank	Total/NA	Water	SM 5310B	
LCS 550-284166/35	Lab Control Sample	Total/NA	Water	SM 5310B	
LCSD 550-284166/36	Lab Control Sample Dup	Total/NA	Water	SM 5310B	
550-190574-B-1 MS	Matrix Spike	Total/NA	Water	SM 5310B	
550-190574-C-1 MSD	Matrix Spike Duplicate	Total/NA	Water	SM 5310B	

Analysis Batch: 284417

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
550-190504-12	SWFTS-PC-92-EM39	Total/NA	Water	SM 5310B	
550-190504-17	SWFTS-MW02-EM39	Total/NA	Water	SM 5310B	

General Chemistry (Continued)

Analysis Batch: 284417 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
550-190504-18	SWFTS-MW07A-EM39	Total/NA	Water	SM 5310B	
550-190504-19	SWFTS-MW07B-EM39	Total/NA	Water	SM 5310B	
550-190504-20	SWFTS-MW22-EM39	Total/NA	Water	SM 5310B	
MB 550-284417/5	Method Blank	Total/NA	Water	SM 5310B	
LCS 550-284417/6	Lab Control Sample	Total/NA	Water	SM 5310B	
LCSD 550-284417/7	Lab Control Sample Dup	Total/NA	Water	SM 5310B	
550-190624-C-1 MS	Matrix Spike	Total/NA	Water	SM 5310B	
550-190624-E-1 MSD	Matrix Spike Duplicate	Total/NA	Water	SM 5310B	

Analysis Batch: 284672

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
550-190504-15	SWFTS-MW06B-EM39	Total/NA	Water	SM 5310B	
MB 550-284672/5	Method Blank	Total/NA	Water	SM 5310B	
LCS 550-284672/6	Lab Control Sample	Total/NA	Water	SM 5310B	
LCSD 550-284672/7	Lab Control Sample Dup	Total/NA	Water	SM 5310B	
550-190266-A-1 MSD	Matrix Spike Duplicate	Total/NA	Water	SM 5310B	
550-190266-C-1 MS	Matrix Spike	Total/NA	Water	SM 5310B	

Lab Chronicle

Client: Tetra Tech, Inc. Job ID: 550-190504-1
Project/Site: Tetra Tech M11 SWF Treatability Study

Client Sample ID: SWFTS-MW15-EM39 Lab Sample ID: 550-190504-1

Date Collected: 09/14/22 07:50 **Matrix: Water**
Date Received: 09/15/22 06:30

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	300.0		2	284055	AS1	EET PHX	09/15/22 12:29
Total/NA	Analysis	300.0		50	284056	AS1	EET PHX	09/16/22 00:27
Total/NA	Analysis	300.1B		100	284727	MEG	EET PHX	09/23/22 18:01
Total/NA	Analysis	314.0		500	283995	RDC	EET PHX	09/15/22 14:05
Total/NA	Analysis	SM 5310B		1	284166	MEG	EET PHX	09/16/22 23:07

Client Sample ID: SWFTS-MW16-EM39 Lab Sample ID: 550-190504-2

Date Collected: 09/14/22 08:25 **Matrix: Water**
Date Received: 09/15/22 06:30

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	300.0		1	284055	AS1	EET PHX	09/15/22 13:24
Total/NA	Analysis	300.0		50	284055	AS1	EET PHX	09/15/22 21:04
Total/NA	Analysis	300.1B		2	284524	MEG	EET PHX	09/22/22 15:49
Total/NA	Analysis	314.0		20	283995	RDC	EET PHX	09/15/22 14:28
Total/NA	Analysis	SM 5310B		1	284166	MEG	EET PHX	09/16/22 23:18

Client Sample ID: SWFTS-MW17-EM39 Lab Sample ID: 550-190504-3

Date Collected: 09/14/22 09:05 **Matrix: Water**
Date Received: 09/15/22 06:30

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	300.0		2	284055	AS1	EET PHX	09/15/22 13:43
Total/NA	Analysis	300.0		50	284055	AS1	EET PHX	09/15/22 21:23
Total/NA	Analysis	300.1B		100	284524	MEG	EET PHX	09/22/22 16:18
Total/NA	Analysis	314.0		200	283995	RDC	EET PHX	09/15/22 14:51
Total/NA	Analysis	SM 5310B		1	284166	MEG	EET PHX	09/16/22 23:31

Client Sample ID: SWFTS-MW18-EM39 Lab Sample ID: 550-190504-4

Date Collected: 09/14/22 10:05 **Matrix: Water**
Date Received: 09/15/22 06:30

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	300.0		2	284055	AS1	EET PHX	09/15/22 14:01
Total/NA	Analysis	300.0		50	284055	AS1	EET PHX	09/15/22 21:41
Total/NA	Analysis	300.1B		50	284727	MEG	EET PHX	09/23/22 18:30
Total/NA	Analysis	314.0		200	283995	RDC	EET PHX	09/15/22 15:14
Total/NA	Analysis	SM 5310B		2	284166	MEG	EET PHX	09/17/22 00:28

Lab Chronicle

Client: Tetra Tech, Inc. Job ID: 550-190504-1
Project/Site: Tetra Tech M11 SWF Treatability Study

Client Sample ID: SWFTS-MW19-EM39 Lab Sample ID: 550-190504-5

Date Collected: 09/14/22 10:50 **Matrix: Water**
Date Received: 09/15/22 06:30

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	300.0		1	284055	AS1	EET PHX	09/15/22 14:19
Total/NA	Analysis	300.0		50	284059	AS1	EET PHX	09/16/22 03:06
Total/NA	Analysis	300.1B		50	284966	MEG	EET PHX	09/27/22 15:13
Total/NA	Analysis	314.0		200	284123	RDC	EET PHX	09/16/22 13:07
Total/NA	Analysis	SM 5310B		1	284166	MEG	EET PHX	09/16/22 23:45

Client Sample ID: SWFTS-MW19-EM39-FD Lab Sample ID: 550-190504-6

Date Collected: 09/14/22 10:50 **Matrix: Water**
Date Received: 09/15/22 06:30

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	300.0		1	284055	AS1	EET PHX	09/15/22 14:38
Total/NA	Analysis	300.0		50	284055	AS1	EET PHX	09/15/22 22:00
Total/NA	Analysis	300.1B		50	284966	MEG	EET PHX	09/27/22 16:41
Total/NA	Analysis	314.0		200	284123	RDC	EET PHX	09/16/22 13:30
Total/NA	Analysis	SM 5310B		1	284166	MEG	EET PHX	09/16/22 23:56

Client Sample ID: SWFTS-EM39-FB2 Lab Sample ID: 550-190504-7

Date Collected: 09/14/22 10:40 **Matrix: Water**
Date Received: 09/15/22 06:30

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	300.0		1	284055	AS1	EET PHX	09/15/22 14:56
Total/NA	Analysis	300.1B		1	284727	MEG	EET PHX	09/23/22 19:59
Total/NA	Analysis	314.0		1	283995	RDC	EET PHX	09/15/22 17:08
Total/NA	Analysis	SM 5310B		1	284166	MEG	EET PHX	09/17/22 00:07

Client Sample ID: SWFTS-EM39-EB2 Lab Sample ID: 550-190504-8

Date Collected: 09/14/22 11:05 **Matrix: Water**
Date Received: 09/15/22 06:30

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	300.0		1	284055	AS1	EET PHX	09/15/22 18:37
Total/NA	Analysis	300.1B		1	284727	MEG	EET PHX	09/23/22 20:28
Total/NA	Analysis	314.0		1	283995	RDC	EET PHX	09/15/22 17:31
Total/NA	Analysis	SM 5310B		1	284166	MEG	EET PHX	09/17/22 00:17

Client Sample ID: SWFTS-MW20-EM39 Lab Sample ID: 550-190504-9

Date Collected: 09/14/22 11:40 **Matrix: Water**
Date Received: 09/15/22 06:30

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	300.0		1	284055	AS1	EET PHX	09/15/22 16:10
Total/NA	Analysis	300.0		50	284055	AS1	EET PHX	09/15/22 22:18

Lab Chronicle

Client: Tetra Tech, Inc. Job ID: 550-190504-1
Project/Site: Tetra Tech M11 SWF Treatability Study

Client Sample ID: SWFTS-MW20-EM39 — Lab Sample ID: 550-190504-9

Date Collected: 09/14/22 11:40 **Matrix: Water**
Date Received: 09/15/22 06:30

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	300.1B		2	284727	MEG	EET PHX	09/23/22 20:58
Total/NA	Analysis	314.0		1	284472	RDC	EET PHX	09/21/22 17:46
Total/NA	Analysis	SM 5310B		2	284166	MEG	EET PHX	09/17/22 01:28

Client Sample ID: SWFTS-MW21-EM39 — Lab Sample ID: 550-190504-10

Date Collected: 09/14/22 12:30 **Matrix: Water**
Date Received: 09/15/22 06:30

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	300.0		1	284055	AS1	EET PHX	09/15/22 16:28
Total/NA	Analysis	300.0		50	284059	AS1	EET PHX	09/16/22 03:34
Total/NA	Analysis	300.1B		2	284727	MEG	EET PHX	09/23/22 22:26
Total/NA	Analysis	314.0		100	283995	RDC	EET PHX	09/15/22 18:17
Total/NA	Analysis	SM 5310B		2	284166	MEG	EET PHX	09/17/22 01:39

Client Sample ID: SWFTS-PC-91-EM39 — Lab Sample ID: 550-190504-11

Date Collected: 09/14/22 07:35 **Matrix: Water**
Date Received: 09/15/22 06:30

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	300.0		20	284055	AS1	EET PHX	09/15/22 16:47
Total/NA	Analysis	300.1B		1	284727	MEG	EET PHX	09/23/22 23:55
Total/NA	Analysis	314.0		1	284472	RDC	EET PHX	09/21/22 18:09
Total/NA	Analysis	SM 5310B		1	284166	MEG	EET PHX	09/17/22 01:53

Client Sample ID: SWFTS-PC-92-EM39 — Lab Sample ID: 550-190504-12

Date Collected: 09/14/22 08:30 **Matrix: Water**
Date Received: 09/15/22 06:30

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	300.0		2	284055	AS1	EET PHX	09/15/22 17:05
Total/NA	Analysis	300.0		50	284059	AS1	EET PHX	09/16/22 04:02
Total/NA	Analysis	300.1B		100	284727	MEG	EET PHX	09/24/22 00:24
Total/NA	Analysis	314.0		500	284123	RDC	EET PHX	09/16/22 12:00
Total/NA	Analysis	SM 5310B		4	284417	MEG	EET PHX	09/20/22 17:19

Client Sample ID: SWFTS-MW06A-EM39 — Lab Sample ID: 550-190504-13

Date Collected: 09/14/22 09:30 **Matrix: Water**
Date Received: 09/15/22 06:30

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	300.0		1	284055	AS1	EET PHX	09/15/22 17:24
Total/NA	Analysis	300.0		50	284059	AS1	EET PHX	09/16/22 05:53
Total/NA	Analysis	300.1B		5	284966	MEG	EET PHX	09/27/22 17:10

Lab Chronicle

Client: Tetra Tech, Inc.
Job ID: 550-190504-1
Project/Site: Tetra Tech M11 SWF Treatability Study

Client Sample ID: SWFTS-MW06A-EM39
Lab Sample ID: 550-190504-13
Date Collected: 09/14/22 09:30
Matrix: Water
Date Received: 09/15/22 06:30

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	314.0		100	283995	RDC	EET PHX	09/15/22 19:03
Total/NA	Analysis	SM 5310B		1	284166	MEG	EET PHX	09/17/22 02:07

Client Sample ID: SWFTS-MW06A-EM39-FD
Lab Sample ID: 550-190504-14
Date Collected: 09/14/22 09:30
Matrix: Water
Date Received: 09/15/22 06:30

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	300.0		1	284055	AS1	EET PHX	09/15/22 17:42
Total/NA	Analysis	300.0		50	284059	AS1	EET PHX	09/16/22 06:21
Total/NA	Analysis	300.1B		5	284727	MEG	EET PHX	09/24/22 01:23
Total/NA	Analysis	314.0		100	283995	RDC	EET PHX	09/15/22 19:26
Total/NA	Analysis	SM 5310B		1	284166	MEG	EET PHX	09/17/22 02:24

Client Sample ID: SWFTS-MW06B-EM39
Lab Sample ID: 550-190504-15
Date Collected: 09/14/22 10:20
Matrix: Water
Date Received: 09/15/22 06:30

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	300.0		1	284055	AS1	EET PHX	09/15/22 18:00
Total/NA	Analysis	300.0		50	284059	AS1	EET PHX	09/16/22 06:49
Total/NA	Analysis	300.1B		5	284727	MEG	EET PHX	09/24/22 01:53
Total/NA	Analysis	314.0		100	283995	RDC	EET PHX	09/15/22 19:49
Total/NA	Analysis	SM 5310B		1	284672	MEG	EET PHX	09/22/22 16:30

Client Sample ID: SWFTS-MW04-EM39
Lab Sample ID: 550-190504-16
Date Collected: 09/14/22 11:15
Matrix: Water
Date Received: 09/15/22 06:30

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	300.0		1	284055	AS1	EET PHX	09/15/22 18:19
Total/NA	Analysis	300.0		50	284161	AS1	EET PHX	09/17/22 04:45
Total/NA	Analysis	300.1B		50	284727	MEG	EET PHX	09/24/22 02:22
Total/NA	Analysis	314.0		200	284123	RDC	EET PHX	09/16/22 13:52
Total/NA	Analysis	SM 5310B		1	284166	MEG	EET PHX	09/17/22 02:38

Client Sample ID: SWFTS-MW02-EM39
Lab Sample ID: 550-190504-17
Date Collected: 09/14/22 12:10
Matrix: Water
Date Received: 09/15/22 06:30

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	300.0		2	284055	AS1	EET PHX	09/15/22 20:09
Total/NA	Analysis	300.0		50	284160	AS1	EET PHX	09/16/22 21:42
Total/NA	Analysis	300.1B		100	284966	MEG	EET PHX	09/27/22 17:40

Lab Chronicle

Client: Tetra Tech, Inc.
Job ID: 550-190504-1
Project/Site: Tetra Tech M11 SWF Treatability Study

Client Sample ID: SWFTS-MW02-EM39
Lab Sample ID: 550-190504-17
Date Collected: 09/14/22 12:10
Matrix: Water
Date Received: 09/15/22 06:30

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	314.0		500	284123	RDC	EET PHX	09/16/22 14:14
Total/NA	Analysis	SM 5310B		1	284417	MEG	EET PHX	09/20/22 18:52

Client Sample ID: SWFTS-MW07A-EM39
Lab Sample ID: 550-190504-18
Date Collected: 09/14/22 12:55
Matrix: Water
Date Received: 09/15/22 06:30

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	300.0		5	284055	AS1	EET PHX	09/15/22 20:28
Total/NA	Analysis	300.0		50	284160	AS1	EET PHX	09/16/22 22:00
Total/NA	Analysis	300.1B		100	284775	MEG	EET PHX	09/24/22 07:17
Total/NA	Analysis	314.0		500	284123	RDC	EET PHX	09/16/22 14:37
Total/NA	Analysis	SM 5310B		1	284417	MEG	EET PHX	09/20/22 19:05

Client Sample ID: SWFTS-MW07B-EM39
Lab Sample ID: 550-190504-19
Date Collected: 09/14/22 13:45
Matrix: Water
Date Received: 09/15/22 06:30

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	300.0		5	284055	AS1	EET PHX	09/15/22 20:46
Total/NA	Analysis	300.0		50	284161	AS1	EET PHX	09/17/22 05:04
Total/NA	Analysis	300.1B		100	284775	MEG	EET PHX	09/24/22 08:45
Total/NA	Analysis	314.0		500	284123	RDC	EET PHX	09/16/22 14:59
Total/NA	Analysis	SM 5310B		1	284417	MEG	EET PHX	09/20/22 19:17

Client Sample ID: SWFTS-MW22-EM39
Lab Sample ID: 550-190504-20
Date Collected: 09/14/22 13:15
Matrix: Water
Date Received: 09/15/22 06:30

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	300.0		1	284055	AS1	EET PHX	09/15/22 19:51
Total/NA	Analysis	300.0		50	284161	AS1	EET PHX	09/17/22 05:22
Total/NA	Analysis	300.1B		100	284775	MEG	EET PHX	09/24/22 09:15
Total/NA	Analysis	314.0		200	284123	RDC	EET PHX	09/16/22 15:22
Total/NA	Analysis	SM 5310B		1	284417	MEG	EET PHX	09/20/22 19:31

Laboratory References:

EET PHX = Eurofins Phoenix, 4625 East Cotton Center Boulevard, Suite #189, Phoenix, AZ 85040, TEL (602)437-3340

Accreditation/Certification Summary

Client: Tetra Tech, Inc. Job ID: 550-190504-1
Project/Site: Tetra Tech M11 SWF Treatability Study

Laboratory: Eurofins Phoenix

All accreditations/certifications held by this laboratory are listed. Not all accreditations/certifications are applicable to this report.

Authority	Program	Identification Number	Expiration Date
Arizona	State	AZ0728	06-10-23
California	State	2941	03-09-23
Nevada	State	AZ1030	07-31-23
Oregon	NELAP	AZ100001	03-09-23
USDA	US Federal Programs	P330-19-00227	08-27-22 *

* Accreditation/Certification renewal pending - accreditation/certification considered valid.

Method Summary

Client: Tetra Tech, Inc.
Job ID: 550-190504-1
Project/Site: Tetra Tech M11 SWF Treatability Study

Method	Method Description	Protocol	Laboratory
300.0	Anions, Ion Chromatography	MCAWW	EET PHX
300.1B	Disinfection By-Products, (IC)	EPA	EET PHX
314.0	Perchlorate (IC)	EPA	EET PHX
SM 5310B	Organic Carbon, Total (TOC)	SM	EET PHX

Protocol References:

EPA = US Environmental Protection Agency

MCAWW = "Methods For Chemical Analysis Of Water And Wastes", EPA-600/4-79-020, March 1983 And Subsequent Revisions.

SM = "Standard Methods For The Examination Of Water And Wastewater"

Laboratory References:

EET PHX = Eurofins Phoenix, 4625 East Cotton Center Boulevard, Suite #189, Phoenix, AZ 85040, TEL (602)437-3340

190504

TestAmerica
Las Vegas
219

9/28/2022

Tetra Tech
1093 Commerce Park Drive
Oak Ridge, TN37830
(865)483-9900

CHAIN-OF-CUSTODY

NERT-M11
Groundwater Sampling

Laboratory Name: Eurofins TestAmerica, Phoenix (602) 437-3340 | Address: 4625 East Cotton Ctr Blvd, Suite 189, Phoenix, AZ 85040 | Contact: Mary Charlson 602-659-7627 | Page 1 of 2

Project Name: Tetra Tech M11 SWF Treatability Study
Sampler: Jesse Bunkers
Sampler Phone: 7027672053

Project No. M11-CWP-04
NERT - Seep Well Field Area Bioremediation Treatability Study
Project Contact: Maureen McMyler
Site Telephone No.: (702) 966-8340

Report to: Maureen McMyler, 1093 Commerce Park Dr. (865)220-4762
Bill to: Sunshine Pryor, 350 Indiana St., Golden, CO 80401 (303) 217-5700
Project Manager/Supervisor: Dana Grady

Analysis and Method Requested

Remarks
Preservation Codes:
A- HCL
D-Nitric Acid
L-EDA
N-None
S-H2SO4
Other:

Item No.	Sample Number	Date	Time	G=Grab C=Comp	Matrix	Sample Description, Location	Number of Containers	Perchlorate E314.0	TOC SM5310B	Chlorate E300.1	Sulfate/Nitrate E300.0 SHORT HOLD NITRATE!	Notes
	Preservation Code:						-	N	A	L	N	
1	SWFTS-MW15-EM39	9/14/22	0750	G	W		7	X	X	X	X	
2	SWFTS-MW16-EM39	9/14/22	0825	G	W		7	X	X	X	X	
3	SWFTS-MW17-EM39	9/14/22	0905	G	W		7	X	X	X	X	
4	SWFTS-MW18-EM39	9/14/22	1005	G	W		7	X	X	X	X	
5	SWFTS-MW19-EM39	9/14/22	1050	G	W		7	X	X	X	X	
6	SWFTS-MW19-EM39-FD	9/14/22	1050	G	W		7	X	X	X	X	
7	SWFTS-EM39-FB2	9/14/22	1040	G	W		7	X	X	X	X	
8	SWFTS-EM39-EB2	9/14/22	1105	G	W		7	X	X	X	X	
9	SWFTS-MW20-EM39	9/14/22	1140	G	W		7	X	X	X	X	
10	SWFTS-MW21-EM39	9/14/22	1230	G	W		7	X	X	X	X	

550-190504 Chain of Custody

Transfers Relinquished By (Signature)	Date/Time	Transfers Accepted By (Signature)	Date/Time	Special Instructions:
	9/14/22 1430	TAM TALVS	9-14-22 1440	
TAM TALVS	9/14/22 1600			
			FedEx Airbill No.:	FedEx Airbill No.
	9-15-22 6:30	Laboratory: EETA-PHX	Sampler's Signature: (REQUIRED)	Sampler's Signature:

TAT ___Standard ___ Rush Due _____ | Received Good Condition ___ Y ___ N ___ Cold

L.V. FR* TH 240 21.7/22.0

3.1°C 2.4°C DB-ice

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190304

TestAmerica Las Vegas 218

NERT-M11
Groundwater Sampling

9/28/2022

Tetra Tech
1093 Commerce Park Drive
Oak Ridge, TN37830
(865)483-9900

CHAIN-OF-CUSTODY

Laboratory Name:Eurofins TestAmerica, Phoenix (602) 437-3340 | Address: 4625 East Cotton Ctr Blvd Suite 189 Phoenix, AZ 85040 | Contact: Mary Charlson 602-659-7627

Project Name: Tetra Tech M11 SWF Treatability Study
Sampler: G.Schuler
Sampler Phone: 480-620-5186

Project No. M11-CWP-04
NERT - Seep Well Field Area Bioremediation Treatability Study
Project Contact: **Maureen McMyler**
Site Telephone No.: (702) 966-8340

Report to: Maureen McMyler, 1093 Commerce Park Dr. (865)220-4762
Project Manager/Supervisor: **Dana Grady**
Bill to: Sunshine Pryor, 350 Indiana St., Golden, CO 80401 (303) 217-5700

Analysis and Method Requested

Remarks

Preservation Codes:
A- HCL
D-Nitric Acid
L-EDA
N-None
S-H2SO4
Other:

Item No	Sample Number	Date	Time	G=Grab C=Comp	Matrix	Sample Description, Location	Number of Containers	Perchlorate E314.0	TOC SM5310B	Chlorate E300.1	Sulfate/Nitrate E300.0 SHORT HOLD NITRATE!	Notes
						Preservation Code:	-	N	A	L	N	
11 1	SWFTS-PC-91-EM39	9/14/2022	0735	G	WG	-	7	x	x	x	x	
12 2	SWFTS-PC-92-EM39	9/14/2022	0830	G	WG	-	7	x	x	x	x	
13 3	SWFTS-MW06A-EM39	9/14/2022	0930	G	WG	-	7	x	x	x	x	
14 4	SWFTS-MW06B-EM39-FD	9/14/2022	0930	G	WG	-	7	x	x	x	x	
15 5	SWFTS-MW06B-EM39	9/14/2022	1020	G	WG	-	7	x	x	x	x	
16 6	SWFTS-MW04-EM39	9/14/2022	1115	G	WG	-	7	x	x	x	x	
17 7	SWFTS-MW02-EM39	9/14/2022	1210	G	WG	-	7	x	x	x	x	
18 8	SWFTS-MW07A-EM39	9/14/2022	1255	G	WG	-	7	x	x	x	x	
19 9	SWFTS-MW07B-EM39	9/14/2022	1345	G	WG	-	7	x	x	x	x	
20 10	SWFTS-MW22-EM39	9/14/2022	1315	G	WG	-	7	x	x	x	x	

Transfers Relinquished By (Signature)	Date/Time	Transfers Accepted By (Signature)	Date/Time	Special Instructions:
G.Schuler	9/14/22	TALVS	9-14-22 1440	
TALVS	9-14-22 1600			
	9-15-22 6:30	Laboratory: EETA-PHX	FedEx Airbill No.:	FedEx Airbill No:
			Sampler's Signature: (REQUIRED)	Sampler's Signature:

TAT ___Standard ___Rush Due _____ Received Good Condition ____Y ____N ____Cold

L.V. IR#TM2410TH 22.2/22.5 2.4°C 3.1°C DB-ice

Login Sample Receipt Checklist

Client: Tetra Tech, Inc.

Job Number: 550-190504-1

Login Number: 190504
List Number: 1
Creator: Maycock, Lisa

List Source: Eurofins Phoenix

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	True	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	False	Check done at department level as required.

eurofins | Environment Testing

ANALYTICAL REPORT

PREPARED FOR

Attn: Dana Grady
Tetra Tech, Inc.
1093 Commerce Park Drive
Suite 100
Oak Ridge, Tennessee 37830

Generated 12/1/2022 12:08:40 PM Revision 1

JOB DESCRIPTION

Tetra Tech M11 SWF Treatability Study

JOB NUMBER

550-190606-1

Eurofins Phoenix
4625 East Cotton Center Boulevard
Suite #189
Phoenix AZ 85040

See page two for job notes and contact information.

myEOL

Job Notes

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The data in the report relate to the field sample(s) as received by the laboratory and associated QC. All results have been reviewed and have been found to be compliant with laboratory and accreditation requirements, with the exception of the noted deviation(s). For questions, please contact the Project Manager.

The test results in this report relate only to the samples as received by the laboratory and will meet all requirements of the methodology, with any exceptions noted. This report shall not be reproduced except in full, without the express written approval of the laboratory. All questions should be directed to the Eurofins Environment Testing Southwest, LLC Project Manager.

Authorization

Generated
12/1/2022 12:08:40 PM
Revision 1

Authorized for release by
Rachel Sester, Project Manager I
Rachel.Sester@et.eurofinsus.com
(602)659-7615

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Definitions/Glossary

Client: Tetra Tech, Inc. Job ID: 550-190606-1
Project/Site: Tetra Tech M11 SWF Treatability Study

Qualifiers

HPLC/IC

Qualifier	Qualifier Description
4	MS, MSD: The analyte present in the original sample is greater than 4 times the matrix spike concentration; therefore, control limits are not applicable.
E	Result exceeded calibration range.
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

General Chemistry

Qualifier	Qualifier Description
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CFU	Colony Forming Unit
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MCL	EPA recommended "Maximum Contaminant Level"
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
MPN	Most Probable Number
MQL	Method Quantitation Limit
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
NEG	Negative / Absent
POS	Positive / Present
PQL	Practical Quantitation Limit
PRES	Presumptive
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)
TNTC	Too Numerous To Count

Case Narrative

Client: Tetra Tech, Inc.
Job ID: 550-190606-1
Project/Site: Tetra Tech M11 SWF Treatability Study

Job ID: 550-190606-1

Laboratory: Eurofins Phoenix

Narrative

Job Narrative
550-190606-1

Comments
No additional comments.

Receipt
The samples were received on 9/16/2022 6:30 AM. Unless otherwise noted below, the samples arrived in good condition, and where required, properly preserved and on ice. The temperatures of the 3 coolers at receipt time were 0.5º C, 0.9º C and 18.5º C.

HPLC/IC
No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

General Chemistry
No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

Sample Summary

Client: Tetra Tech, Inc.
Job ID: 550-190606-1
Project/Site: Tetra Tech M11 SWF Treatability Study

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
550-190606-1	SWFTS-MW23-EM39	Water	09/15/22 08:30	09/16/22 06:30
550-190606-2	SWFTS-MW24-EM39	Water	09/15/22 09:20	09/16/22 06:30
550-190606-3	SWFTS-MW25-EM39	Water	09/15/22 10:10	09/16/22 06:30
550-190606-4	PC--94-EM39	Water	09/15/22 11:25	09/16/22 06:30
550-190606-5	PC-88-EM39	Water	09/15/22 12:35	09/16/22 06:30
550-190606-6	PC-88-EM39-FD	Water	09/15/22 12:35	09/16/22 06:30
550-190606-7	PC-56-EM39	Water	09/15/22 13:50	09/16/22 06:30

Detection Summary

Client: Tetra Tech, Inc.
Job ID: 550-190606-1
Project/Site: Tetra Tech M11 SWF Treatability Study

Client Sample ID: SWFTS-MW23-EM39 — Lab Sample ID: 550-190606-1

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Nitrate as N	3.4		0.050	0.014	mg/L	1		300.0	Total/NA
Sulfate	670		100	21	mg/L	50		300.0	Total/NA
Chlorate	550		40	9.8	ug/L	2		300.1B	Total/NA
Perchlorate	1000		100	31	ug/L	100		314.0	Total/NA
Total Organic Carbon	3.0		0.50	0.26	mg/L	1		SM 5310B	Total/NA

Client Sample ID: SWFTS-MW24-EM39 — Lab Sample ID: 550-190606-2

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Nitrate as N	7.5		0.050	0.014	mg/L	1		300.0	Total/NA
Sulfate	1800		100	21	mg/L	50		300.0	Total/NA
Chlorate	11000		2000	490	ug/L	100		300.1B	Total/NA
Perchlorate	6200		200	63	ug/L	200		314.0	Total/NA
Total Organic Carbon	1.5		0.50	0.26	mg/L	1		SM 5310B	Total/NA

Client Sample ID: SWFTS-MW25-EM39 — Lab Sample ID: 550-190606-3

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Nitrate as N	16		0.10	0.028	mg/L	2		300.0	Total/NA
Sulfate	2000		100	21	mg/L	50		300.0	Total/NA
Chlorate	15000		2000	490	ug/L	100		300.1B	Total/NA
Perchlorate	9600		500	160	ug/L	500		314.0	Total/NA
Total Organic Carbon	3.3	J	5.0	2.6	mg/L	10		SM 5310B	Total/NA

Client Sample ID: PC--94-EM39 — Lab Sample ID: 550-190606-4

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Nitrate as N	10		0.10	0.028	mg/L	2		300.0	Total/NA
Sulfate	1700		100	21	mg/L	50		300.0	Total/NA
Chlorate	16000		2000	490	ug/L	100		300.1B	Total/NA
Perchlorate	7900		200	63	ug/L	200		314.0	Total/NA
Total Organic Carbon	1.7		0.50	0.26	mg/L	1		SM 5310B	Total/NA

Client Sample ID: PC-88-EM39 — Lab Sample ID: 550-190606-5

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Nitrate as N	11		0.10	0.028	mg/L	2		300.0	Total/NA
Sulfate	1200		100	21	mg/L	50		300.0	Total/NA
Chlorate	14000		1000	240	ug/L	50		300.1B	Total/NA
Perchlorate	22000		500	160	ug/L	500		314.0	Total/NA
Total Organic Carbon	2.5		0.50	0.26	mg/L	1		SM 5310B	Total/NA

Client Sample ID: PC-88-EM39-FD — Lab Sample ID: 550-190606-6

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Nitrate as N	11		0.10	0.028	mg/L	2		300.0	Total/NA
Sulfate	1200		100	21	mg/L	50		300.0	Total/NA
Chlorate	15000		1000	240	ug/L	50		300.1B	Total/NA
Perchlorate	22000		500	160	ug/L	500		314.0	Total/NA
Total Organic Carbon	2.5		0.50	0.26	mg/L	1		SM 5310B	Total/NA

This Detection Summary does not include radiochemical test results.

Detection Summary

Client: Tetra Tech, Inc.
Job ID: 550-190606-1
Project/Site: Tetra Tech M11 SWF Treatability Study

Client Sample ID: PC-56-EM39
Lab Sample ID: 550-190606-7

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Nitrate as N	13		0.10	0.028	mg/L	2		300.0	Total/NA
Sulfate	1400		100	21	mg/L	50		300.0	Total/NA
Chlorate	3900		200	49	ug/L	10		300.1B	Total/NA
Perchlorate	740		500	160	ug/L	500		314.0	Total/NA
Total Organic Carbon	2.7		0.50	0.26	mg/L	1		SM 5310B	Total/NA

This Detection Summary does not include radiochemical test results.

Client Sample ID: SWFTS-MW23-EM39 — Lab Sample ID: 550-190606-1

Date Collected: 09/15/22 08:30 — **Matrix: Water**
Date Received: 09/16/22 06:30

Method: MCAWW 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Nitrate as N	3.4		0.050	0.014	mg/L			09/16/22 14:20	1
Sulfate	670		100	21	mg/L			09/16/22 22:19	50

Method: EPA 300.1B - Disinfection By-Products, (IC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chlorate	550		40	9.8	ug/L			09/24/22 09:44	2

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Dichloroacetic acid(Surr)	*99*		*90 - 115*		*09/24/22 09:44*	*2*

Method: EPA 314.0 - Perchlorate (IC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perchlorate	1000		100	31	ug/L			09/16/22 16:29	100

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon (SM 5310B)	3.0		0.50	0.26	mg/L			09/20/22 21:04	1

Client Sample ID: SWFTS-MW24-EM39 — Lab Sample ID: 550-190606-2

Date Collected: 09/15/22 09:20 — **Matrix: Water**
Date Received: 09/16/22 06:30

Method: MCAWW 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Nitrate as N	7.5		0.050	0.014	mg/L			09/16/22 14:39	1
Sulfate	1800		100	21	mg/L			09/16/22 22:37	50

Method: EPA 300.1B - Disinfection By-Products, (IC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chlorate	11000		2000	490	ug/L			09/24/22 10:14	100

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Dichloroacetic acid(Surr)	*97*		*90 - 115*		*09/24/22 10:14*	*100*

Method: EPA 314.0 - Perchlorate (IC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perchlorate	6200		200	63	ug/L			09/20/22 12:16	200

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon (SM 5310B)	1.5		0.50	0.26	mg/L			09/20/22 22:18	1

Client Sample ID: SWFTS-MW25-EM39 — Lab Sample ID: 550-190606-3

Date Collected: 09/15/22 10:10 — **Matrix: Water**
Date Received: 09/16/22 06:30

Method: MCAWW 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Nitrate as N	16		0.10	0.028	mg/L			09/16/22 14:57	2
Sulfate	2000		100	21	mg/L			09/16/22 22:56	50

Client Sample ID: SWFTS-MW25-EM39 — Lab Sample ID: 550-190606-3

Date Collected: 09/15/22 10:10 — **Matrix: Water**
Date Received: 09/16/22 06:30

Method: EPA 300.1B - Disinfection By-Products, (IC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chlorate	15000		2000	490	ug/L			09/24/22 10:43	100

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Dichloroacetic acid(Surr)	*94*		*90 - 115*		*09/24/22 10:43*	*100*

Method: EPA 314.0 - Perchlorate (IC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perchlorate	9600		500	160	ug/L			09/16/22 17:14	500

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon (SM 5310B)	3.3	J	5.0	2.6	mg/L			09/24/22 15:49	10

Client Sample ID: PC--94-EM39 — Lab Sample ID: 550-190606-4

Date Collected: 09/15/22 11:25 — **Matrix: Water**
Date Received: 09/16/22 06:30

Method: MCAWW 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Nitrate as N	10		0.10	0.028	mg/L			09/16/22 15:15	2
Sulfate	1700		100	21	mg/L			09/17/22 03:33	50

Method: EPA 300.1B - Disinfection By-Products, (IC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chlorate	16000		2000	490	ug/L			09/24/22 11:13	100

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Dichloroacetic acid(Surr)	*90*		*90 - 115*		*09/24/22 11:13*	*100*

Method: EPA 314.0 - Perchlorate (IC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perchlorate	7900		200	63	ug/L			09/16/22 17:36	200

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon (SM 5310B)	1.7		0.50	0.26	mg/L			09/20/22 23:13	1

Client Sample ID: PC-88-EM39 — Lab Sample ID: 550-190606-5

Date Collected: 09/15/22 12:35 — **Matrix: Water**
Date Received: 09/16/22 06:30

Method: MCAWW 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Nitrate as N	11		0.10	0.028	mg/L			09/16/22 15:34	2
Sulfate	1200		100	21	mg/L			09/17/22 04:01	50

Method: EPA 300.1B - Disinfection By-Products, (IC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chlorate	14000		1000	240	ug/L			09/24/22 11:42	50

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Dichloroacetic acid(Surr)	*98*		*90 - 115*		*09/24/22 11:42*	*50*

Client Sample ID: PC-88-EM39 — Lab Sample ID: 550-190606-5

Date Collected: 09/15/22 12:35 — **Matrix: Water**
Date Received: 09/16/22 06:30

Method: EPA 314.0 - Perchlorate (IC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perchlorate	22000		500	160	ug/L			09/20/22 13:23	500

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon (SM 5310B)	2.5		0.50	0.26	mg/L			09/20/22 23:27	1

Client Sample ID: PC-88-EM39-FD — Lab Sample ID: 550-190606-6

Date Collected: 09/15/22 12:35 — **Matrix: Water**
Date Received: 09/16/22 06:30

Method: MCAWW 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Nitrate as N	11		0.10	0.028	mg/L			09/16/22 16:47	2
Sulfate	1200		100	21	mg/L			09/17/22 04:29	50

Method: EPA 300.1B - Disinfection By-Products, (IC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chlorate	15000		1000	240	ug/L			09/24/22 14:38	50

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Dichloroacetic acid(Surr)	*101*		*90 - 115*		*09/24/22 14:38*	*50*

Method: EPA 314.0 - Perchlorate (IC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perchlorate	22000		500	160	ug/L			09/20/22 13:45	500

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon (SM 5310B)	2.5		0.50	0.26	mg/L			09/20/22 23:40	1

Client Sample ID: PC-56-EM39 — Lab Sample ID: 550-190606-7

Date Collected: 09/15/22 13:50 — **Matrix: Water**
Date Received: 09/16/22 06:30

Method: MCAWW 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Nitrate as N	13		0.10	0.028	mg/L			09/16/22 17:06	2
Sulfate	1400		100	21	mg/L			09/17/22 01:04	50

Method: EPA 300.1B - Disinfection By-Products, (IC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chlorate	3900		200	49	ug/L			09/24/22 15:08	10

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Dichloroacetic acid(Surr)	*109*		*90 - 115*		*09/24/22 15:08*	*10*

Method: EPA 314.0 - Perchlorate (IC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perchlorate	740		500	160	ug/L			09/20/22 14:08	500

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon (SM 5310B)	2.7		0.50	0.26	mg/L			09/20/22 23:54	1

Surrogate Summary

Client: Tetra Tech, Inc.
Job ID: 550-190606-1
Project/Site: Tetra Tech M11 SWF Treatability Study

Method: 300.1B - Disinfection By-Products, (IC)

Matrix: Water
Prep Type: Total/NA

		Percent Surrogate Recovery (Acceptance Limits)						
Lab Sample ID	Client Sample ID	DCAA (90-115)						
550-190504-G-18 MS ^100	Matrix Spike	97						
550-190504-G-18 MSD ^100	Matrix Spike Duplicate	97						
550-190606-1	SWFTS-MW23-EM39	99						
550-190606-2	SWFTS-MW24-EM39	97						
550-190606-3	SWFTS-MW25-EM39	94						
550-190606-4	PC--94-EM39	90						
550-190606-5	PC-88-EM39	98						
550-190606-6	PC-88-EM39-FD	101						
550-190606-7	PC-56-EM39	109						
550-190919-A-1 MS ^5	Matrix Spike	101						
550-190919-A-1 MSD ^5	Matrix Spike Duplicate	105						
LCS 550-284775/5	Lab Control Sample	97						
LCSD 550-284775/6	Lab Control Sample Dup	98						
MB 550-284775/4	Method Blank	98						

Surrogate Legend

DCAA = Dichloroacetic acid(Surr)

Method: 300.1B - Disinfection By-Products, (IC)

Matrix: Water
Prep Type: Total/NA

		Percent Surrogate Recovery (Acceptance Limits)						
Lab Sample ID	Client Sample ID	DCAA (50-150)						
MRL 550-284775/1002	Lab Control Sample	98						

Surrogate Legend

DCAA = Dichloroacetic acid(Surr)

Method: 300.0 - Anions, Ion Chromatography

Lab Sample ID: MB 550-284160/2
Matrix: Water
Analysis Batch: 284160

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Nitrate as N	ND		0.050	0.014	mg/L			09/16/22 10:57	1
Sulfate	ND		2.0	0.43	mg/L			09/16/22 10:57	1

Lab Sample ID: LCS 550-284160/5
Matrix: Water
Analysis Batch: 284160

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Nitrate as N			4.00	4.24		mg/L		106	90 - 110		
Sulfate			20.0	20.9		mg/L		104	90 - 110		

Lab Sample ID: LCSD 550-284160/6
Matrix: Water
Analysis Batch: 284160

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Nitrate as N			4.00	4.22		mg/L		106	90 - 110	0	20
Sulfate			20.0	20.9		mg/L		104	90 - 110	0	20

Lab Sample ID: 550-190517-E-1 MS ^50
Matrix: Water
Analysis Batch: 284160

Client Sample ID: Matrix Spike
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits		
Nitrate as N	1.5	J	200	208		mg/L		103	80 - 120		
Sulfate	570		1000	1610		mg/L		104	80 - 120		

Lab Sample ID: 550-190517-E-1 MSD ^50
Matrix: Water
Analysis Batch: 284160

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Nitrate as N	1.5	J	200	209		mg/L		104	80 - 120	0	20
Sulfate	570		1000	1610		mg/L		104	80 - 120	0	20

Lab Sample ID: MB 550-284161/1043
Matrix: Water
Analysis Batch: 284161

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Nitrate as N	ND		0.050	0.014	mg/L			09/17/22 00:09	1
Sulfate	ND		2.0	0.43	mg/L			09/17/22 00:09	1

Lab Sample ID: LCS 550-284161/44
Matrix: Water
Analysis Batch: 284161

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Nitrate as N			4.00	4.21		mg/L		105	90 - 110		
Sulfate			20.0	20.9		mg/L		105	90 - 110		

Method: 300.0 - Anions, Ion Chromatography

Lab Sample ID: LCSD 550-284161/45
Matrix: Water
Analysis Batch: 284161

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Nitrate as N			4.00	4.20		mg/L		105	90 - 110	0	20
Sulfate			20.0	20.9		mg/L		104	90 - 110	0	20

Lab Sample ID: 550-190606-7 MS
Matrix: Water
Analysis Batch: 284161

Client Sample ID: PC-56-EM39
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Nitrate as N	12		200	223		mg/L		105	80 - 120
Sulfate	1400		1000	2410		mg/L		105	80 - 120

Lab Sample ID: 550-190606-7 MSD
Matrix: Water
Analysis Batch: 284161

Client Sample ID: PC-56-EM39
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Nitrate as N	12		200	220		mg/L		104	80 - 120	1	20
Sulfate	1400		1000	2400		mg/L		103	80 - 120	1	20

Lab Sample ID: MB 550-284162/2
Matrix: Water
Analysis Batch: 284162

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Nitrate as N	ND		0.050	0.014	mg/L			09/16/22 11:16	1
Sulfate	ND		2.0	0.43	mg/L			09/16/22 11:16	1

Lab Sample ID: LCS 550-284162/5
Matrix: Water
Analysis Batch: 284162

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Nitrate as N			4.00	4.06		mg/L		101	90 - 110
Sulfate			20.0	20.2		mg/L		101	90 - 110

Lab Sample ID: LCSD 550-284162/6
Matrix: Water
Analysis Batch: 284162

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Nitrate as N			4.00	4.06		mg/L		101	90 - 110	0	20
Sulfate			20.0	20.3		mg/L		102	90 - 110	1	20

Lab Sample ID: 550-190611-A-1 MS
Matrix: Water
Analysis Batch: 284162

Client Sample ID: Matrix Spike
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Nitrate as N	4.0		4.00	8.02		mg/L		100	80 - 120
Sulfate	340	E	20.0	345	E 4	mg/L		17	80 - 120

Method: 300.0 - Anions, Ion Chromatography

Lab Sample ID: 550-190611-A-1 MSD
Matrix: Water
Analysis Batch: 284162

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Nitrate as N	4.0		4.00	8.04		mg/L		100	80 - 120	0	20
Sulfate	340	E	20.0	345	E 4	mg/L		17	80 - 120	0	20

Method: 300.1B - Disinfection By-Products, (IC)

Lab Sample ID: MB 550-284775/4
Matrix: Water
Analysis Batch: 284775

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chlorate	ND		20	4.9	ug/L			09/24/22 05:49	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Dichloroacetic acid(Surr)	*98*		*90 - 115*		*09/24/22 05:49*	*1*

Lab Sample ID: LCS 550-284775/5
Matrix: Water
Analysis Batch: 284775

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Chlorate			100	98.0		ug/L		98	75 - 125		

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
Dichloroacetic acid(Surr)	*97*		*90 - 115*

Lab Sample ID: LCSD 550-284775/6
Matrix: Water
Analysis Batch: 284775

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Chlorate			100	102		ug/L		102	75 - 125	3	25

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
Dichloroacetic acid(Surr)	*98*		*90 - 115*

Lab Sample ID: MRL 550-284775/1002
Matrix: Water
Analysis Batch: 284775

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte			Spike Added	MRL Result	MRL Qualifier	Unit	D	%Rec	%Rec Limits		
Chlorate			20.0	23.1		ug/L		115	50 - 150		

Surrogate	*MRL %Recovery*	*MRL Qualifier*	*Limits*
Dichloroacetic acid(Surr)	*98*		*50 - 150*

Method: 300.1B - Disinfection By-Products, (IC) (Continued)

Lab Sample ID: 550-190504-G-18 MS ^100
Matrix: Water
Analysis Batch: 284775

Client Sample ID: Matrix Spike
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits		
Chlorate	36000		10000	46000	E	ug/L		96	75 - 125		

Surrogate	*MS %Recovery*	*MS Qualifier*	*Limits*
Dichloroacetic acid(Surr)	*97*		*90 - 115*

Lab Sample ID: 550-190504-G-18 MSD ^100
Matrix: Water
Analysis Batch: 284775

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Chlorate	36000		10000	46700	E	ug/L		103	75 - 125	1	25

Surrogate	*MSD %Recovery*	*MSD Qualifier*	*Limits*
Dichloroacetic acid(Surr)	*97*		*90 - 115*

Lab Sample ID: 550-190919-A-1 MS ^5
Matrix: Water
Analysis Batch: 284775

Client Sample ID: Matrix Spike
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits		
Chlorate	430		500	901		ug/L		95	75 - 125		

Surrogate	*MS %Recovery*	*MS Qualifier*	*Limits*
Dichloroacetic acid(Surr)	*101*		*90 - 115*

Lab Sample ID: 550-190919-A-1 MSD ^5
Matrix: Water
Analysis Batch: 284775

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Chlorate	430		500	927		ug/L		100	75 - 125	3	25

Surrogate	*MSD %Recovery*	*MSD Qualifier*	*Limits*
Dichloroacetic acid(Surr)	*105*		*90 - 115*

Method: 314.0 - Perchlorate (IC)

Lab Sample ID: MB 550-284123/1002
Matrix: Water
Analysis Batch: 284123

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perchlorate	ND		1.0	0.31	ug/L			09/16/22 10:30	1

Method: 314.0 - Perchlorate (IC) (Continued)

Lab Sample ID: LCS 550-284123/4
Matrix: Water
Analysis Batch: 284123

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Perchlorate	25.0	25.5		ug/L		102	85 - 115

Lab Sample ID: LCSD 550-284123/5
Matrix: Water
Analysis Batch: 284123

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Perchlorate	25.0	25.2		ug/L		101	85 - 115	1	15

Lab Sample ID: MRL 550-284123/1003
Matrix: Water
Analysis Batch: 284123

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	MRL Result	MRL Qualifier	Unit	D	%Rec	%Rec Limits
Perchlorate	1.00	1.01		ug/L		101	75 - 125

Lab Sample ID: 550-190504-E-12 MS ^500
Matrix: Water
Analysis Batch: 284123

Client Sample ID: Matrix Spike
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Perchlorate	12000		12500	23600		ug/L		96	80 - 120

Lab Sample ID: 550-190504-E-12 MSD ^500
Matrix: Water
Analysis Batch: 284123

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Perchlorate	12000		12500	23900		ug/L		98	80 - 120	1	15

Lab Sample ID: MB 550-284336/1002
Matrix: Water
Analysis Batch: 284336

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perchlorate	ND		1.0	0.31	ug/L			09/20/22 10:46	1

Lab Sample ID: LCS 550-284336/4
Matrix: Water
Analysis Batch: 284336

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Perchlorate	25.0	24.8		ug/L		99	85 - 115

Lab Sample ID: LCSD 550-284336/5
Matrix: Water
Analysis Batch: 284336

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Perchlorate	25.0	25.0		ug/L		100	85 - 115	1	15

Method: 314.0 - Perchlorate (IC)

Lab Sample ID: MRL 550-284336/1003
Matrix: Water
Analysis Batch: 284336

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte			Spike Added	MRL Result	MRL Qualifier	Unit	D	%Rec	%Rec Limits		
Perchlorate			1.00	0.823	J	ug/L		82	75 - 125		

Lab Sample ID: 550-190606-2 MS
Matrix: Water
Analysis Batch: 284336

Client Sample ID: SWFTS-MW24-EM39
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits		
Perchlorate	6200		5000	10900	E	ug/L		94	80 - 120		

Lab Sample ID: 550-190606-2 MSD
Matrix: Water
Analysis Batch: 284336

Client Sample ID: SWFTS-MW24-EM39
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Perchlorate	6200		5000	11100	E	ug/L		98	80 - 120	2	15

Method: SM 5310B - Organic Carbon, Total (TOC)

Lab Sample ID: MB 550-284417/34
Matrix: Water
Analysis Batch: 284417

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon	ND		0.50	0.26	mg/L			09/20/22 21:37	1

Lab Sample ID: MB 550-284417/5
Matrix: Water
Analysis Batch: 284417

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon	ND		0.50	0.26	mg/L			09/20/22 15:05	1

Lab Sample ID: LCS 550-284417/35
Matrix: Water
Analysis Batch: 284417

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Total Organic Carbon			20.0	19.0		mg/L		95	90 - 110		

Lab Sample ID: LCS 550-284417/6
Matrix: Water
Analysis Batch: 284417

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Total Organic Carbon			20.0	19.3		mg/L		97	90 - 110		

Method: SM 5310B - Organic Carbon, Total (TOC) (Continued)

Lab Sample ID: LCSD 550-284417/36
Matrix: Water
Analysis Batch: 284417

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Total Organic Carbon			20.0	18.8		mg/L		94	90 - 110	1	20

Lab Sample ID: LCSD 550-284417/7
Matrix: Water
Analysis Batch: 284417

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Total Organic Carbon			20.0	19.1		mg/L		95	90 - 110	1	20

Lab Sample ID: 550-190606-2 MS
Matrix: Water
Analysis Batch: 284417

Client Sample ID: SWFTS-MW24-EM39
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits		
Total Organic Carbon	1.5		20.0	20.3		mg/L		95	90 - 110		

Lab Sample ID: 550-190606-2 MSD
Matrix: Water
Analysis Batch: 284417

Client Sample ID: SWFTS-MW24-EM39
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Total Organic Carbon	1.5		20.0	19.8		mg/L		92	90 - 110	3	20

Lab Sample ID: 550-190624-C-1 MS
Matrix: Water
Analysis Batch: 284417

Client Sample ID: Matrix Spike
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits		
Total Organic Carbon	0.77		20.0	19.7		mg/L		95	90 - 110		

Lab Sample ID: 550-190624-E-1 MSD
Matrix: Water
Analysis Batch: 284417

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Total Organic Carbon	0.77		20.0	19.4		mg/L		93	90 - 110	2	20

Lab Sample ID: MB 550-284929/5
Matrix: Water
Analysis Batch: 284929

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon	ND		0.50	0.26	mg/L			09/24/22 14:32	1

Lab Sample ID: LCS 550-284929/6
Matrix: Water
Analysis Batch: 284929

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Total Organic Carbon			20.0	20.0		mg/L		100	90 - 110		

Method: SM 5310B - Organic Carbon, Total (TOC)

Lab Sample ID: LCSD 550-284929/7
Matrix: Water
Analysis Batch: 284929

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Total Organic Carbon			20.0	20.0		mg/L		100	90 - 110	0	20

Lab Sample ID: 550-190934-A-1 MS ^2
Matrix: Water
Analysis Batch: 284929

Client Sample ID: Matrix Spike
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits		
Total Organic Carbon	15		40.0	56.3		mg/L		104	90 - 110		

Lab Sample ID: 550-190934-B-1 MSD ^2
Matrix: Water
Analysis Batch: 284929

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Total Organic Carbon	15		40.0	52.2		mg/L		94	90 - 110	7	20

HPLC/IC

Analysis Batch: 284123

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
550-190606-1	SWFTS-MW23-EM39	Total/NA	Water	314.0	
550-190606-3	SWFTS-MW25-EM39	Total/NA	Water	314.0	
550-190606-4	PC--94-EM39	Total/NA	Water	314.0	
MB 550-284123/1002	Method Blank	Total/NA	Water	314.0	
LCS 550-284123/4	Lab Control Sample	Total/NA	Water	314.0	
LCSD 550-284123/5	Lab Control Sample Dup	Total/NA	Water	314.0	
MRL 550-284123/1003	Lab Control Sample	Total/NA	Water	314.0	
550-190504-E-12 MS ^500	Matrix Spike	Total/NA	Water	314.0	
550-190504-E-12 MSD ^500	Matrix Spike Duplicate	Total/NA	Water	314.0	

Analysis Batch: 284160

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
550-190606-1	SWFTS-MW23-EM39	Total/NA	Water	300.0	
550-190606-1	SWFTS-MW23-EM39	Total/NA	Water	300.0	
550-190606-2	SWFTS-MW24-EM39	Total/NA	Water	300.0	
550-190606-2	SWFTS-MW24-EM39	Total/NA	Water	300.0	
550-190606-3	SWFTS-MW25-EM39	Total/NA	Water	300.0	
550-190606-3	SWFTS-MW25-EM39	Total/NA	Water	300.0	
550-190606-4	PC--94-EM39	Total/NA	Water	300.0	
550-190606-5	PC-88-EM39	Total/NA	Water	300.0	
550-190606-6	PC-88-EM39-FD	Total/NA	Water	300.0	
550-190606-7	PC-56-EM39	Total/NA	Water	300.0	
MB 550-284160/2	Method Blank	Total/NA	Water	300.0	
LCS 550-284160/5	Lab Control Sample	Total/NA	Water	300.0	
LCSD 550-284160/6	Lab Control Sample Dup	Total/NA	Water	300.0	
550-190517-E-1 MS ^50	Matrix Spike	Total/NA	Water	300.0	
550-190517-E-1 MSD ^50	Matrix Spike Duplicate	Total/NA	Water	300.0	

Analysis Batch: 284161

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
550-190606-7	PC-56-EM39	Total/NA	Water	300.0	
MB 550-284161/1043	Method Blank	Total/NA	Water	300.0	
LCS 550-284161/44	Lab Control Sample	Total/NA	Water	300.0	
LCSD 550-284161/45	Lab Control Sample Dup	Total/NA	Water	300.0	
550-190606-7 MS	PC-56-EM39	Total/NA	Water	300.0	
550-190606-7 MSD	PC-56-EM39	Total/NA	Water	300.0	

Analysis Batch: 284162

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
550-190606-4	PC--94-EM39	Total/NA	Water	300.0	
550-190606-5	PC-88-EM39	Total/NA	Water	300.0	
550-190606-6	PC-88-EM39-FD	Total/NA	Water	300.0	
MB 550-284162/2	Method Blank	Total/NA	Water	300.0	
LCS 550-284162/5	Lab Control Sample	Total/NA	Water	300.0	
LCSD 550-284162/6	Lab Control Sample Dup	Total/NA	Water	300.0	
550-190611-A-1 MS	Matrix Spike	Total/NA	Water	300.0	
550-190611-A-1 MSD	Matrix Spike Duplicate	Total/NA	Water	300.0	

Analysis Batch: 284336

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
550-190606-2	SWFTS-MW24-EM39	Total/NA	Water	314.0	

HPLC/IC (Continued)

Analysis Batch: 284336 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
550-190606-5	PC-88-EM39	Total/NA	Water	314.0	
550-190606-6	PC-88-EM39-FD	Total/NA	Water	314.0	
550-190606-7	PC-56-EM39	Total/NA	Water	314.0	
MB 550-284336/1002	Method Blank	Total/NA	Water	314.0	
LCS 550-284336/4	Lab Control Sample	Total/NA	Water	314.0	
LCSD 550-284336/5	Lab Control Sample Dup	Total/NA	Water	314.0	
MRL 550-284336/1003	Lab Control Sample	Total/NA	Water	314.0	
550-190606-2 MS	SWFTS-MW24-EM39	Total/NA	Water	314.0	
550-190606-2 MSD	SWFTS-MW24-EM39	Total/NA	Water	314.0	

Analysis Batch: 284775

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
550-190606-1	SWFTS-MW23-EM39	Total/NA	Water	300.1B	
550-190606-2	SWFTS-MW24-EM39	Total/NA	Water	300.1B	
550-190606-3	SWFTS-MW25-EM39	Total/NA	Water	300.1B	
550-190606-4	PC--94-EM39	Total/NA	Water	300.1B	
550-190606-5	PC-88-EM39	Total/NA	Water	300.1B	
550-190606-6	PC-88-EM39-FD	Total/NA	Water	300.1B	
550-190606-7	PC-56-EM39	Total/NA	Water	300.1B	
MB 550-284775/4	Method Blank	Total/NA	Water	300.1B	
LCS 550-284775/5	Lab Control Sample	Total/NA	Water	300.1B	
LCSD 550-284775/6	Lab Control Sample Dup	Total/NA	Water	300.1B	
MRL 550-284775/1002	Lab Control Sample	Total/NA	Water	300.1B	
550-190504-G-18 MS ^100	Matrix Spike	Total/NA	Water	300.1B	
550-190504-G-18 MSD ^100	Matrix Spike Duplicate	Total/NA	Water	300.1B	
550-190919-A-1 MS ^5	Matrix Spike	Total/NA	Water	300.1B	
550-190919-A-1 MSD ^5	Matrix Spike Duplicate	Total/NA	Water	300.1B	

General Chemistry

Analysis Batch: 284417

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
550-190606-1	SWFTS-MW23-EM39	Total/NA	Water	SM 5310B	
550-190606-2	SWFTS-MW24-EM39	Total/NA	Water	SM 5310B	
550-190606-4	PC--94-EM39	Total/NA	Water	SM 5310B	
550-190606-5	PC-88-EM39	Total/NA	Water	SM 5310B	
550-190606-6	PC-88-EM39-FD	Total/NA	Water	SM 5310B	
550-190606-7	PC-56-EM39	Total/NA	Water	SM 5310B	
MB 550-284417/34	Method Blank	Total/NA	Water	SM 5310B	
MB 550-284417/5	Method Blank	Total/NA	Water	SM 5310B	
LCS 550-284417/35	Lab Control Sample	Total/NA	Water	SM 5310B	
LCS 550-284417/6	Lab Control Sample	Total/NA	Water	SM 5310B	
LCSD 550-284417/36	Lab Control Sample Dup	Total/NA	Water	SM 5310B	
LCSD 550-284417/7	Lab Control Sample Dup	Total/NA	Water	SM 5310B	
550-190606-2 MS	SWFTS-MW24-EM39	Total/NA	Water	SM 5310B	
550-190606-2 MSD	SWFTS-MW24-EM39	Total/NA	Water	SM 5310B	
550-190624-C-1 MS	Matrix Spike	Total/NA	Water	SM 5310B	
550-190624-E-1 MSD	Matrix Spike Duplicate	Total/NA	Water	SM 5310B	

QC Association Summary

Client: Tetra Tech, Inc.
Job ID: 550-190606-1
Project/Site: Tetra Tech M11 SWF Treatability Study

General Chemistry

Analysis Batch: 284929

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
550-190606-3	SWFTS-MW25-EM39	Total/NA	Water	SM 5310B	
MB 550-284929/5	Method Blank	Total/NA	Water	SM 5310B	
LCS 550-284929/6	Lab Control Sample	Total/NA	Water	SM 5310B	
LCSD 550-284929/7	Lab Control Sample Dup	Total/NA	Water	SM 5310B	
550-190934-A-1 MS ^2	Matrix Spike	Total/NA	Water	SM 5310B	
550-190934-B-1 MSD ^2	Matrix Spike Duplicate	Total/NA	Water	SM 5310B	

Lab Chronicle

Client: Tetra Tech, Inc.
Job ID: 550-190606-1
Project/Site: Tetra Tech M11 SWF Treatability Study

Client Sample ID: SWFTS-MW23-EM39
Lab Sample ID: 550-190606-1
Date Collected: 09/15/22 08:30
Matrix: Water
Date Received: 09/16/22 06:30

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	300.0		1	284160	AS1	EET PHX	09/16/22 14:20
Total/NA	Analysis	300.0		50	284160	AS1	EET PHX	09/16/22 22:19
Total/NA	Analysis	300.1B		2	284775	MEG	EET PHX	09/24/22 09:44
Total/NA	Analysis	314.0		100	284123	RDC	EET PHX	09/16/22 16:29
Total/NA	Analysis	SM 5310B		1	284417	MEG	EET PHX	09/20/22 21:04

Client Sample ID: SWFTS-MW24-EM39
Lab Sample ID: 550-190606-2
Date Collected: 09/15/22 09:20
Matrix: Water
Date Received: 09/16/22 06:30

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	300.0		1	284160	AS1	EET PHX	09/16/22 14:39
Total/NA	Analysis	300.0		50	284160	AS1	EET PHX	09/16/22 22:37
Total/NA	Analysis	300.1B		100	284775	MEG	EET PHX	09/24/22 10:14
Total/NA	Analysis	314.0		200	284336	RDC	EET PHX	09/20/22 12:16
Total/NA	Analysis	SM 5310B		1	284417	MEG	EET PHX	09/20/22 22:18

Client Sample ID: SWFTS-MW25-EM39
Lab Sample ID: 550-190606-3
Date Collected: 09/15/22 10:10
Matrix: Water
Date Received: 09/16/22 06:30

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	300.0		2	284160	AS1	EET PHX	09/16/22 14:57
Total/NA	Analysis	300.0		50	284160	AS1	EET PHX	09/16/22 22:56
Total/NA	Analysis	300.1B		100	284775	MEG	EET PHX	09/24/22 10:43
Total/NA	Analysis	314.0		500	284123	RDC	EET PHX	09/16/22 17:14
Total/NA	Analysis	SM 5310B		10	284929	MEG	EET PHX	09/24/22 15:49

Client Sample ID: PC--94-EM39
Lab Sample ID: 550-190606-4
Date Collected: 09/15/22 11:25
Matrix: Water
Date Received: 09/16/22 06:30

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	300.0		2	284160	AS1	EET PHX	09/16/22 15:15
Total/NA	Analysis	300.0		50	284162	AS1	EET PHX	09/17/22 03:33
Total/NA	Analysis	300.1B		100	284775	MEG	EET PHX	09/24/22 11:13
Total/NA	Analysis	314.0		200	284123	RDC	EET PHX	09/16/22 17:36
Total/NA	Analysis	SM 5310B		1	284417	MEG	EET PHX	09/20/22 23:13

Lab Chronicle

Client: Tetra Tech, Inc. Job ID: 550-190606-1
Project/Site: Tetra Tech M11 SWF Treatability Study

Client Sample ID: PC-88-EM39 Lab Sample ID: 550-190606-5

Date Collected: 09/15/22 12:35 **Matrix: Water**
Date Received: 09/16/22 06:30

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	300.0		2	284160	AS1	EET PHX	09/16/22 15:34
Total/NA	Analysis	300.0		50	284162	AS1	EET PHX	09/17/22 04:01
Total/NA	Analysis	300.1B		50	284775	MEG	EET PHX	09/24/22 11:42
Total/NA	Analysis	314.0		500	284336	RDC	EET PHX	09/20/22 13:23
Total/NA	Analysis	SM 5310B		1	284417	MEG	EET PHX	09/20/22 23:27

Client Sample ID: PC-88-EM39-FD Lab Sample ID: 550-190606-6

Date Collected: 09/15/22 12:35 **Matrix: Water**
Date Received: 09/16/22 06:30

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	300.0		2	284160	AS1	EET PHX	09/16/22 16:47
Total/NA	Analysis	300.0		50	284162	AS1	EET PHX	09/17/22 04:29
Total/NA	Analysis	300.1B		50	284775	MEG	EET PHX	09/24/22 14:38
Total/NA	Analysis	314.0		500	284336	RDC	EET PHX	09/20/22 13:45
Total/NA	Analysis	SM 5310B		1	284417	MEG	EET PHX	09/20/22 23:40

Client Sample ID: PC-56-EM39 Lab Sample ID: 550-190606-7

Date Collected: 09/15/22 13:50 **Matrix: Water**
Date Received: 09/16/22 06:30

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	300.0		2	284160	AS1	EET PHX	09/16/22 17:06
Total/NA	Analysis	300.0		50	284161	AS1	EET PHX	09/17/22 01:04
Total/NA	Analysis	300.1B		10	284775	MEG	EET PHX	09/24/22 15:08
Total/NA	Analysis	314.0		500	284336	RDC	EET PHX	09/20/22 14:08
Total/NA	Analysis	SM 5310B		1	284417	MEG	EET PHX	09/20/22 23:54

Laboratory References:

EET PHX = Eurofins Phoenix, 4625 East Cotton Center Boulevard, Suite #189, Phoenix, AZ 85040, TEL (602)437-3340

Accreditation/Certification Summary

Client: Tetra Tech, Inc. Job ID: 550-190606-1
Project/Site: Tetra Tech M11 SWF Treatability Study

Laboratory: Eurofins Phoenix

All accreditations/certifications held by this laboratory are listed. Not all accreditations/certifications are applicable to this report.

Authority	Program	Identification Number	Expiration Date
Arizona	State	AZ0728	06-10-23
California	State	2941	03-09-23
Nevada	State	AZ1030	07-31-23
Oregon	NELAP	AZ100001	03-09-23
USDA	US Federal Programs	P330-19-00227	08-27-22 *

* Accreditation/Certification renewal pending - accreditation/certification considered valid.

Method Summary

Client: Tetra Tech, Inc.
Job ID: 550-190606-1
Project/Site: Tetra Tech M11 SWF Treatability Study

Method	Method Description	Protocol	Laboratory
300.0	Anions, Ion Chromatography	MCAWW	EET PHX
300.1B	Disinfection By-Products, (IC)	EPA	EET PHX
314.0	Perchlorate (IC)	EPA	EET PHX
SM 5310B	Organic Carbon, Total (TOC)	SM	EET PHX

Protocol References:

EPA = US Environmental Protection Agency

MCAWW = "Methods For Chemical Analysis Of Water And Wastes", EPA-600/4-79-020, March 1983 And Subsequent Revisions.

SM = "Standard Methods For The Examination Of Water And Wastewater"

Laboratory References:

EET PHX = Eurofins Phoenix, 4625 East Cotton Center Boulevard, Suite #189, Phoenix, AZ 85040, TEL (602)437-3340

1 2 3 4 5 6 7 8 9 10 11 12 13 14 15

1906606

TestAmerica Las Vegas 219

Tetra Tech
1093 Commerce Park Drive
Oak Ridge, TN37830
(865)483-9900

CHAIN-OF-CUSTODY

NERT-M11
Groundwater Sampling

12/1/2022 (Rev. 1)

Laboratory Name: Eurofins TestAmerica, Phoenix (602) 437-3340 | Address: 4625 East Cotton Ctr Blvd, Suite 189, Phoenix, AZ 85040 | Contact: Mary Charlson 602-659-7627 | Page ___ of ___

Project Name: Tetra Tech M11 SWF Treatability Study | Sampler: J. Bunkers | Sampler Phone: 7027672053

Project No. M11-CWP-04 | Project Contact: **Maureen McMyler** | Site Telephone No.: (702) 966-8340

NERT - Seep Well Field Area Bioremediation Treatability Study

Report to: Maureen McMyler, 1093 Commerce Park Dr. (865)220-4762 | Project Manager/Supervisor: **Dana Grady**

Bill to: Sunshine Pryor, 350 Indiana St., Golden, CO 80401 (303) 217-5700

Analysis and Method Requested

Remarks

Preservation Codes:
A- HCL
D-Nitric Acid
L-EDA
N-None
S-H2SO4

Other:

Item No.	Sample Number	Date	Time	G=Grab C=Comp	Matrix	Sample Description, Location	Number of Containers	Perchlorate E314.0	TOC SM5310B	Chlorate E300.1	Sulfate/Nitrate E300.0 SHORT HOLD NITRATE!	Notes
	Preservation Code:						-	N	A	L	N	
1	SWFTS-MW23-EM39	9/15/22	0830	G	W		7	X	X	X	X	
2	SWFTS-MW24EM39	9/15/22	0920	G	W		7	X	X	X	X	
3	SWFTS-MW25-EM39	9/15/22	1010	G	W		7	X	X	X	X	
4												
5												
6												
7												
8												
9												
10												

550-190606 Chain of Custody

Transfers Relinquished By (Signature)	Date/Time	Transfers Accepted By (Signature)	Date/Time	Special Instructions:
	9/15/22	TAM TALVS	9/15/22 1415	
TAM TALVS	9-15-22 1600			
			FedEx Airbill No.:	FedEx Airbill No.:
	9-16-22 0:30	Laboratory: Marc St EETA-PHX	Sampler's Signature: (REQUIRED)	Sampler's Signature:

TAT: ___Standard ___ Rush Due _____ | Received Good Condition _____ Y _____N _____ Cold

L.N. IR#240 18.2 / 18.5

0.5°C 0.9°C DB-ice

190606

TestAmerica
Las Vegas
219

Tetra Tech
1093 Commerce Park Drive
Oak Ridge, TN37830
(865)483-9900

CHAIN-OF-CUSTODY

NERT-M11
Groundwater Sampling

12/1/2022 (Rev. 1)

Laboratory Name: Eurofins TestAmerica, Phoenix (602) 437-3340 | Address: 4625 East Cotton Ctr Blvd, Suite 189, Phoenix, AZ 85040 | Contact: Mary Charlson 602-659-7627 | Page ___ of _2_

Project Name: Tetra Tech M11 SWF Treatability Study | Sampler: G.Schuler | Sampler Phone: 480-620-5186

Project No. M11-CWP-04
NERT - Seep Well Field Area Bioremediation Treatability Study | Project Contact: **Maureen McMyler** | Site Telephone No.: (702) 966-8340

Report to: Maureen McMyler, 1093 Commerce Park Dr. (865)220-4762
Bill to: Sunshine Pryor, 350 Indiana St., Golden, CO 80401 (303) 217-5700
Project Manager/Supervisor: **Dana Grady**

Analysis and Method Requested

Remarks
Preservation Codes:
A- HCL
D-Nitric Acid
L-EDA
N-None
S-H2SO4
Other:

Item No.	Sample Number	Date	Time	G=Grab C=Comp	Matrix	Sample Description, Location	Number of Containers	Perchlorate E314.0	TOC SM5310B	Chlorate E300.1	Sulfate/Nitrate E300.0 SHORT HOLD NITRATE!	Notes
						Preservation Code:	-	N	A	L	N	
4- 1	PC-94-EM39	9/15/2022	1125	G	WG	-	7	X	X	X	X	
5- 2	PC-88-EM39	9/15/2022	1235	G	WG	-	7	X	X	X	X	
6- 3	PC-88-EM39-FD	9/15/2022	1235	G	WG	-	7	X	X	X	X	
7- 4	PC-56-EM39	9/15/2022	1350	G	WG	-	7	X	X	X	X	
5												
6												
7												
8												
9												
10												

Transfers Relinquished By (Signature)	Date/Time	Transfers Accepted By (Signature)	Date/Time
G.Schuler	9/15/22	TAM TALVS	9/15/22 1445
TAM TALVS	9/15/22 1600		
			FedEx Airbill No.:
	9-16-22 6:30	Laboratory: Marc St EETA-Phx	Sampler's Signature: (REQUIRED)

Special Instructions:
FedEx Airbill No.:
Sampler's Signature:

TAT ___ Standard ___ Rush Due _____ Received Good Condition ___ Y ___ N ___ Cold

L.V. IR#TH240 20.1/20.4

0.5°C 0.9°C DB-ice

190606

TestAmerica
Las Vegas
219

Tetra Tech
1093 Commerce Park Drive
Oak Ridge, TN37830
(865)483-9900

CHAIN-OF-CUSTODY

NERT-M11
Groundwater Sampling

12/1/2022 (Rev. 1)

Laboratory Name: Eurofins TestAmerica, Phoenix (602) 437-3340 | Address: 4625 East Cotton Ctr Blvd, Suite 189, Phoenix, AZ 85040 | Contact: Mary Charlson 602-659-7627 | Page ___ of ___

Project Name: Tetra Tech M11 SWF Treatability Study | Sampler: J. Bunkers | Sampler Phone: 7027672053

Project No. M11-CWP-04
NERT - Seep Well Field Area Bioremediation Treatability Study | Project Contact: **Maureen McMyler** | Site Telephone No.: (702) 966-8340

Report to: Maureen McMyler, 1093 Commerce Park Dr. (865)220-4762 | Project Manager/Supervisor: **Dana Grady**

Bill to: Sunshine Pryor, 350 Indiana St., Golden, CO 80401 (303) 217-5700

Analysis and Method Requested

Remarks
Preservation Codes:
A- HCL
D-Nitric Acid
L-EDA
N-None
S-H2SO4
Other:

Item No.	Sample Number	Date	Time	G=Grab C=Comp	Matrix	Sample Description, Location	Number of Containers	Perchlorate E314.0	TOC SM5310B	Chlorate E300.1	Sulfate/Nitrate E300.0 SHORT HOLD NITRATE!	Notes
						Preservation Code:	-	N	A	L	N	
1	SWFTS-MW23-EM39	9/15/22	0830	G	W		7	X	X	X	X	
2	SWFTS-MW24-EM39	9/15/22	0920	G	W		7	X	X	X	X	
3	SWFTS-MW25-EM39	9/15/22	1010	G	W		7	X	X	X	X	
4												
5												
6												
7												
8												
9												
10												

550-190606 Chain of Custody

Transfers Relinquished By (Signature)	Date/Time	Transfers Accepted By (Signature)	Date/Time
[signature]	9/15/22	JAM TALVS	9/15/22 1415
JAM TALVS	9-15-22 1600		
			FedEx Airbill No.:
	9-16-22 0:30	Laboratory: Marc St EETA-Phx	Sampler's Signature: (REQUIRED)

Special Instructions:

FedEx Airbill No.:

Sampler's Signature: [signature]

TAT: ___Standard ___ Rush Due _____ Received Good Condition ___ Y ___ N ___ Cold

L.V. IR#240 18.2 / 18.5

0.5°C 0.9°C DB-ice

190606

TestAmerica Las Vegas 210

Tetra Tech

1093 Commerce Park Drive
Oak Ridge, TN37830
(865)483-9900

CHAIN-OF-CUSTODY

NERT-M11
Groundwater Sampling

12/1/2022 (Rev. 1)

Laboratory Name: Eurofins TestAmerica, Phoenix (602) 437-3340 | Address: 4625 East Cotton Ctr Blvd Suite 189 Phoenix, AZ 85040 | Contact: Mary Charlson 602-659-7627 | Page ___ of _2_

Project Name: Tetra Tech M11 SWF Treatability Study
Project No. M11-CWP-04
NERT - Seep Well Field Area Bioremediation Treatability Study

Sampler: G.Schuler | Sampler Phone: 480-620-5186
Project Contact: **Maureen McMyler** | Site Telephone No.: (702) 966-8340
Project Manager/Supervisor: **Dana Grady**

Report to: Maureen McMyler, 1093 Commerce Park Dr. (865)220-4762
Bill to: Sunshine Pryor, 350 Indiana St., Golden, CO 80401 (303) 217-5700

Analysis and Method Requested

Remarks

Preservation Codes:
A- HCL
D-Nitric Acid
L-EDA
N-None
S-H2SO4

Other:

Item No	Sample Number	Date	Time	G=Grab C=Comp	Matrix	Sample Description, Location	Number of Containers	Perchlorate E314.0	TOC SM5310B	Chlorate E300.1	Sulfate/Nitrate E300.0 SHORT HOLD NITRATE!	Notes
						Preservation Code:	-	N	A	L	N	
4 1	PC-94-EM39	9/15/2022	1125	G	WG	-	7	X	X	X	X	
5 2	PC-88-EM39	9/15/2022	1235	G	WG	-	7	X	X	X	X	
6 3	PC-88-EM39-FD	9/15/2022	1235	G	WG	-	7	X	X	X	X	
7 4	PC-56-EM39	9/15/2022	1350	G	WG	-	7	X	X	X	X	
5												
6												
7												
8												
9												
10												

Transfers Relinquished By (Signature)	Date/Time	Transfers Accepted By (Signature)	Date/Time
G.Schuler	9/15/22	TAM TALVS	9/15/22 1445
TAM TALVS	9/16/22 1600		
	9-16-22 6:30	Laboratory: MacStat EETA-Phx	

FedEx Airbill No.:
Sampler's Signature: (REQUIRED)

Special Instructions:

FedEx Airbill No.:
Sampler's Signature:

TAT ___Standard ___ Rush Due _____ | Received Good Condition ____ Y ____N ____ Cold

W.V. IR#TH540 20.1/20.4

0.5°C 0.9°C DB-ice

Login Sample Receipt Checklist

Client: Tetra Tech, Inc.

Job Number: 550-190606-1

Login Number: 190606
List Number: 1
Creator: Maycock, Lisa

List Source: Eurofins Phoenix

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	True	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	False	Check done at department level as required.

eurofins | Environment Testing

ANALYTICAL REPORT

PREPARED FOR

Attn: Dana Grady
Tetra Tech, Inc.
1093 Commerce Park Drive
Suite 100
Oak Ridge, Tennessee 37830

Generated 12/28/2022 4:06:14 PM

JOB DESCRIPTION

Tetra Tech M11 SWF Treatability Study

JOB NUMBER

550-194841-1

Eurofins Phoenix
4625 East Cotton Center Boulevard
Suite #189
Phoenix AZ 85040

See page two for job notes and contact information.

my EOL

Job Notes

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The data in the report relate to the field sample(s) as received by the laboratory and associated QC. All results have been reviewed and have been found to be compliant with laboratory and accreditation requirements, with the exception of the noted deviation(s). For questions, please contact the Project Manager.

The test results in this report relate only to the samples as received by the laboratory and will meet all requirements of the methodology, with any exceptions noted. This report shall not be reproduced except in full, without the express written approval of the laboratory. All questions should be directed to the Eurofins Environment Testing Southwest, LLC Project Manager.

Authorization

Generated
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Authorized for release by
Rachel Sester, Project Manager I
Rachel.Sester@et.eurofinsus.com
(602)659-7615

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Definitions/Glossary

Client: Tetra Tech, Inc. Job ID: 550-194841-1
Project/Site: Tetra Tech M11 SWF Treatability Study

Qualifiers

HPLC/IC

Qualifier	Qualifier Description
4	MS, MSD: The analyte present in the original sample is greater than 4 times the matrix spike concentration; therefore, control limits are not applicable.
D	Sample results are obtained from a dilution; the surrogate or matrix spike recoveries reported are calculated from diluted samples.
E	Result exceeded calibration range.

Metals

Qualifier	Qualifier Description
^2	Calibration Blank (ICB and/or CCB) is outside acceptance limits.
B	Compound was found in the blank and sample.
cn	Refer to Case Narrative for further detail
F1	MS and/or MSD recovery exceeds control limits.
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CFU	Colony Forming Unit
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MCL	EPA recommended "Maximum Contaminant Level"
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
MPN	Most Probable Number
MQL	Method Quantitation Limit
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
NEG	Negative / Absent
POS	Positive / Present
PQL	Practical Quantitation Limit
PRES	Presumptive
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)
TNTC	Too Numerous To Count

Job ID: 550-194841-1

Laboratory: Eurofins Phoenix

Narrative

Job Narrative
550-194841-1

Comments
No additional comments.

Receipt
The samples were received on 12/13/2022 6:30 AM. Unless otherwise noted below, the samples arrived in good condition, and where required, properly preserved and on ice. The temperature of the cooler at receipt time was 3.2º C.

HPLC/IC
No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

GC VOA
No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

Metals
Method 6010B: The continuing calibration blank (CCB) for analytical batch 550-290761 contained Sodium above the reporting limit (RL). All reported samples associated with this CCB were either ND for this analyte or contained this analyte at a concentration greater than 10X the value found in the CCB; therefore, re-analysis of samples was not performed.

Method 6010B: The spiking solution used during the extraction process for the laboratory control sample/ laboratory control sample duplicate (LCS/LCSD) and matrix spike/matrix spike duplicate (MS/MSD) associated with preparation batch 550-290687 did not contain Phosphorus; therefore, percent recoveries are unavailable. The affected samples could not be re-prepared and / or re-analyzed with a spike containing these analytes. The instrument QC was within acceptance criteria and may be used to evaluate these analytes for this method. The results have been reported with cn qualifiers. Affected samples: PC-88-EM40 (550-194841-2), PC-88-EM40-FD (550-194841-4), PC-58-EM40 (550-194841-6), PC-91-EM40 (550-194841-8), (LCS 550-290687/2-A), (LCSD 550-290687/3-A), (550-194837-E-2-A MS), (550-194837-E-2-B MSD) and (550-194837-E-2-C PDS).

Method 6020B: The method blank for preparation batch 550-290699 and analytical batch 550-291044 contained Antimony above the method detection limit. This target analyte concentration was less than the reporting limit (RL); therefore, re-extraction and/or re-analysis of samples was not performed.The associated samples are: PC-88-EM40 (550-194841-2), PC-88-EM40-FD (550-194841-4), PC-58-EM40 (550-194841-6), PC-91-EM40 (550-194841-8) and (550-194841-J-1-E T)

Method 6020B: PDS was accidentally spiked with ICP-OES spike during prep. LCS/LCSD recovered within range showing precision and accuracy. PDS results reported with cn qualifier.
(550-194841-J-1-D PDS T)

Method 6020B: PDS was accidentally spiked with ICP-OES spike during prep. LCS/LCSD recovered within range showing precision and accuracy.
PC-88-EM40 (550-194841-2), PC-88-EM40-FD (550-194841-4), PC-58-EM40 (550-194841-6), PC-91-EM40 (550-194841-8) and (550-194841-J-1-D PDS T)

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

Field Service / Mobile Lab
No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

General Chemistry
Method 314.0: The followings sample was analyzed at a dilution for Perchlorate due to the Matrix Conductivity Threshold (MCT) of the instrument: PC-91-EM40 (550-194841-7). The reporting limit has been adjusted accordingly.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

Sample Summary

Client: Tetra Tech, Inc.
Job ID: 550-194841-1
Project/Site: Tetra Tech M11 SWF Treatability Study

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
550-194841-1	PC-88-EM40	Water	12/12/22 11:41	12/13/22 06:30
550-194841-2	PC-88-EM40	Water	12/12/22 11:41	12/13/22 06:30
550-194841-3	PC-88-EM40-FD	Water	12/12/22 11:41	12/13/22 06:30
550-194841-4	PC-88-EM40-FD	Water	12/12/22 11:41	12/13/22 06:30
550-194841-5	PC-58-EM40	Water	12/12/22 13:01	12/13/22 06:30
550-194841-6	PC-58-EM40	Water	12/12/22 13:01	12/13/22 06:30
550-194841-7	PC-91-EM40	Water	12/12/22 14:01	12/13/22 06:30
550-194841-8	PC-91-EM40	Water	12/12/22 14:01	12/13/22 06:30

Detection Summary

Client: Tetra Tech, Inc.
Job ID: 550-194841-1
Project/Site: Tetra Tech M11 SWF Treatability Study

Client Sample ID: PC-88-EM40 — Lab Sample ID: 550-194841-1

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Nitrate as N	6.5		0.050	0.014	mg/L	1		300.0	Total/NA
Sulfate	940		100	21	mg/L	50		300.0	Total/NA
Chlorate	6600		400	98	ug/L	20		300.1B	Total/NA
Perchlorate	14000		500	160	ug/L	500		314.0	Total/NA
Manganese	0.61		0.020	0.0083	mg/L	1		6010B	Total/NA
Total Organic Carbon	2.4		0.50	0.26	mg/L	1		SM 5310B	Total/NA

Client Sample ID: PC-88-EM40 — Lab Sample ID: 550-194841-2

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Aluminum	0.74		0.20	0.080	mg/L	1		6010B	Dissolved
Barium	0.026		0.0050	0.00057	mg/L	1		6010B	Dissolved
Boron	1.2	B	0.050	0.0024	mg/L	1		6010B	Dissolved
Calcium	210		0.40	0.015	mg/L	1		6010B	Dissolved
Cobalt	0.0069		0.0050	0.00054	mg/L	1		6010B	Dissolved
Copper	0.0043	J	0.0050	0.0012	mg/L	1		6010B	Dissolved
Iron	0.40		0.40	0.019	mg/L	1		6010B	Dissolved
Magnesium	100		0.40	0.054	mg/L	1		6010B	Dissolved
Manganese	0.95		0.020	0.0083	mg/L	1		6010B	Dissolved
Molybdenum	0.012		0.010	0.00052	mg/L	1		6010B	Dissolved
Nickel	0.0067		0.0050	0.0028	mg/L	1		6010B	Dissolved
Phosphorus	0.045	J cn	0.40	0.011	mg/L	1		6010B	Dissolved
Potassium	15	B	1.0	0.081	mg/L	1		6010B	Dissolved
Silicon	38		0.10	0.016	mg/L	1		6010B	Dissolved
Sodium	540	B ^2	0.40	0.039	mg/L	1		6010B	Dissolved
Strontium	4.9		0.010	0.00032	mg/L	1		6010B	Dissolved
Titanium	0.028		0.0050	0.00028	mg/L	1		6010B	Dissolved
Tungsten	0.0022	J	0.10	0.0021	mg/L	1		6010B	Dissolved
Vanadium	0.069		0.0050	0.00069	mg/L	1		6010B	Dissolved
Antimony	0.39	J B	1.0	0.043	ug/L	1		6020B	Dissolved
Arsenic	110		1.0	0.25	ug/L	1		6020B	Dissolved
Selenium	7.2	B	0.50	0.074	ug/L	1		6020B	Dissolved
Thallium	0.19		0.10	0.013	ug/L	1		6020B	Dissolved

Client Sample ID: PC-88-EM40-FD — Lab Sample ID: 550-194841-3

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Nitrate as N	6.5		0.050	0.014	mg/L	1		300.0	Total/NA
Sulfate	940		100	21	mg/L	50		300.0	Total/NA
Chlorate	6600		400	98	ug/L	20		300.1B	Total/NA
Perchlorate	15000		500	160	ug/L	500		314.0	Total/NA
Manganese	0.61		0.020	0.0083	mg/L	1		6010B	Total/NA
Total Organic Carbon	2.4		0.50	0.26	mg/L	1		SM 5310B	Total/NA

Client Sample ID: PC-88-EM40-FD — Lab Sample ID: 550-194841-4

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Aluminum	0.55		0.20	0.080	mg/L	1		6010B	Dissolved
Barium	0.025		0.0050	0.00057	mg/L	1		6010B	Dissolved
Boron	1.3	B	0.050	0.0024	mg/L	1		6010B	Dissolved
Calcium	210		0.40	0.015	mg/L	1		6010B	Dissolved
Cobalt	0.0068		0.0050	0.00054	mg/L	1		6010B	Dissolved

This Detection Summary does not include radiochemical test results.

Eurofins Phoenix

Client Sample ID: PC-88-EM40-FD (Continued) Lab Sample ID: 550-194841-4

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Copper	0.0033	J	0.0050	0.0012	mg/L	1		6010B	Dissolved
Iron	0.31	J	0.40	0.019	mg/L	1		6010B	Dissolved
Magnesium	100		0.40	0.054	mg/L	1		6010B	Dissolved
Manganese	0.95		0.020	0.0083	mg/L	1		6010B	Dissolved
Molybdenum	0.012		0.010	0.00052	mg/L	1		6010B	Dissolved
Nickel	0.0067		0.0050	0.0028	mg/L	1		6010B	Dissolved
Phosphorus	0.045	J cn	0.40	0.011	mg/L	1		6010B	Dissolved
Potassium	15	B	1.0	0.081	mg/L	1		6010B	Dissolved
Silicon	38		0.10	0.016	mg/L	1		6010B	Dissolved
Sodium	550	B ^2	0.40	0.039	mg/L	1		6010B	Dissolved
Strontium	4.9		0.010	0.00032	mg/L	1		6010B	Dissolved
Titanium	0.020		0.0050	0.00028	mg/L	1		6010B	Dissolved
Tungsten	0.0024	J	0.10	0.0021	mg/L	1		6010B	Dissolved
Vanadium	0.070		0.0050	0.00069	mg/L	1		6010B	Dissolved
Antimony	0.29	J B	1.0	0.043	ug/L	1		6020B	Dissolved
Arsenic	100		1.0	0.25	ug/L	1		6020B	Dissolved
Selenium	7.1	B	0.50	0.074	ug/L	1		6020B	Dissolved
Thallium	0.19		0.10	0.013	ug/L	1		6020B	Dissolved

Client Sample ID: PC-58-EM40 Lab Sample ID: 550-194841-5

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Nitrate as N	11		0.050	0.014	mg/L	1		300.0	Total/NA
Sulfate	1200		100	21	mg/L	50		300.0	Total/NA
Chlorate	6100		2000	490	ug/L	100		300.1B	Total/NA
Perchlorate	790		20	6.3	ug/L	20		314.0	Total/NA
Total Organic Carbon	2.7		0.50	0.26	mg/L	1		SM 5310B	Total/NA

Client Sample ID: PC-58-EM40 Lab Sample ID: 550-194841-6

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Aluminum	0.85		0.20	0.080	mg/L	1		6010B	Dissolved
Barium	0.034		0.0050	0.00057	mg/L	1		6010B	Dissolved
Boron	1.5	B	0.050	0.0024	mg/L	1		6010B	Dissolved
Calcium	170		0.40	0.015	mg/L	1		6010B	Dissolved
Chromium	0.0097		0.0050	0.0011	mg/L	1		6010B	Dissolved
Copper	0.0020	J	0.0050	0.0012	mg/L	1		6010B	Dissolved
Iron	0.49		0.40	0.019	mg/L	1		6010B	Dissolved
Magnesium	130		0.40	0.054	mg/L	1		6010B	Dissolved
Manganese	0.014	J	0.020	0.0083	mg/L	1		6010B	Dissolved
Molybdenum	0.10		0.010	0.00052	mg/L	1		6010B	Dissolved
Phosphorus	0.016	J cn	0.40	0.011	mg/L	1		6010B	Dissolved
Potassium	38	B	1.0	0.081	mg/L	1		6010B	Dissolved
Silicon	44		0.10	0.016	mg/L	1		6010B	Dissolved
Sodium	490	B ^2	0.40	0.039	mg/L	1		6010B	Dissolved
Strontium	5.2		0.010	0.00032	mg/L	1		6010B	Dissolved
Titanium	0.032		0.0050	0.00028	mg/L	1		6010B	Dissolved
Vanadium	0.070		0.0050	0.00069	mg/L	1		6010B	Dissolved
Antimony	0.28	J B	1.0	0.043	ug/L	1		6020B	Dissolved
Arsenic	130		1.0	0.25	ug/L	1		6020B	Dissolved
Selenium	84	B	0.50	0.074	ug/L	1		6020B	Dissolved
Thallium	0.038	J	0.10	0.013	ug/L	1		6020B	Dissolved

This Detection Summary does not include radiochemical test results.

Detection Summary

Client: Tetra Tech, Inc.
Job ID: 550-194841-1
Project/Site: Tetra Tech M11 SWF Treatability Study

Client Sample ID: PC-91-EM40
Lab Sample ID: 550-194841-7

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Methane	6400		5.0	0.63	ug/L	1		RSK-175	Total/NA
Sulfate	540		100	21	mg/L	50		300.0	Total/NA
Manganese	1.0		0.020	0.0083	mg/L	1		6010B	Total/NA
Total Organic Carbon	4.9		0.50	0.26	mg/L	1		SM 5310B	Total/NA

Client Sample ID: PC-91-EM40
Lab Sample ID: 550-194841-8

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Aluminum	0.40		0.20	0.080	mg/L	1		6010B	Dissolved
Barium	0.20		0.0050	0.00057	mg/L	1		6010B	Dissolved
Boron	1.5	B	0.050	0.0024	mg/L	1		6010B	Dissolved
Calcium	190		0.40	0.015	mg/L	1		6010B	Dissolved
Iron	0.93		0.40	0.019	mg/L	1		6010B	Dissolved
Magnesium	110		0.40	0.054	mg/L	1		6010B	Dissolved
Manganese	1.1		0.020	0.0083	mg/L	1		6010B	Dissolved
Nickel	0.0067		0.0050	0.0028	mg/L	1		6010B	Dissolved
Phosphorus	0.077	J cn	0.40	0.011	mg/L	1		6010B	Dissolved
Potassium	23	B	1.0	0.081	mg/L	1		6010B	Dissolved
Silicon	55		0.10	0.016	mg/L	1		6010B	Dissolved
Sodium	600	B ^2	0.40	0.039	mg/L	1		6010B	Dissolved
Strontium	4.8		0.010	0.00032	mg/L	1		6010B	Dissolved
Titanium	0.015		0.0050	0.00028	mg/L	1		6010B	Dissolved
Tungsten	0.0056	J	0.10	0.0021	mg/L	1		6010B	Dissolved
Vanadium	0.0039	J	0.0050	0.00069	mg/L	1		6010B	Dissolved
Antimony	0.17	J B	1.0	0.043	ug/L	1		6020B	Dissolved
Arsenic	8.9		1.0	0.25	ug/L	1		6020B	Dissolved
Selenium	0.38	J B	0.50	0.074	ug/L	1		6020B	Dissolved

This Detection Summary does not include radiochemical test results.

Client Sample ID: PC-88-EM40 — Lab Sample ID: 550-194841-1

Date Collected: 12/12/22 11:41 — **Matrix: Water**
Date Received: 12/13/22 06:30

Method: RSK-175 - Dissolved Gases (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Methane	ND		5.0	0.63	ug/L			12/16/22 22:57	1

Method: MCAWW 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Nitrate as N	**6.5**		0.050	0.014	mg/L			12/13/22 14:29	1
Sulfate	**940**		100	21	mg/L			12/13/22 21:20	50

Method: EPA 300.1B - Disinfection By-Products, (IC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chlorate	**6600**		400	98	ug/L			12/18/22 12:50	20

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Dichloroacetic acid(Surr)	*110*		*90 - 115*		*12/18/22 12:50*	*20*

Method: EPA 314.0 - Perchlorate (IC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perchlorate	**14000**		500	160	ug/L			12/13/22 17:13	500

Method: SW846 6010B - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Manganese	**0.61**		0.020	0.0083	mg/L		12/13/22 13:58	12/14/22 09:59	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon (SM 5310B)	**2.4**		0.50	0.26	mg/L			12/14/22 15:16	1

Client Sample ID: PC-88-EM40 — Lab Sample ID: 550-194841-2

Date Collected: 12/12/22 11:41 — **Matrix: Water**
Date Received: 12/13/22 06:30

Method: SW846 6010B - Metals (ICP) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	**0.74**		0.20	0.080	mg/L		12/13/22 13:58	12/14/22 10:02	1
Barium	**0.026**		0.0050	0.00057	mg/L		12/13/22 13:58	12/14/22 10:02	1
Beryllium	ND		0.0010	0.00019	mg/L		12/13/22 13:58	12/14/22 10:02	1
Boron	**1.2**	**B**	0.050	0.0024	mg/L		12/13/22 13:58	12/14/22 10:02	1
Cadmium	ND		0.0010	0.00072	mg/L		12/13/22 13:58	12/14/22 10:02	1
Calcium	**210**		0.40	0.015	mg/L		12/13/22 13:58	12/14/22 10:02	1
Chromium	ND		0.0050	0.0011	mg/L		12/13/22 13:58	12/14/22 10:02	1
Cobalt	**0.0069**		0.0050	0.00054	mg/L		12/13/22 13:58	12/14/22 10:02	1
Copper	**0.0043**	**J**	0.0050	0.0012	mg/L		12/13/22 13:58	12/14/22 10:02	1
Iron	**0.40**		0.40	0.019	mg/L		12/13/22 13:58	12/14/22 10:02	1
Lead	ND		0.010	0.0025	mg/L		12/13/22 13:58	12/14/22 10:02	1
Magnesium	**100**		0.40	0.054	mg/L		12/13/22 13:58	12/14/22 10:02	1
Manganese	**0.95**		0.020	0.0083	mg/L		12/13/22 13:58	12/14/22 10:02	1
Molybdenum	**0.012**		0.010	0.00052	mg/L		12/13/22 13:58	12/14/22 10:02	1
Nickel	**0.0067**		0.0050	0.0028	mg/L		12/13/22 13:58	12/14/22 10:02	1
Phosphorus	**0.045**	**J cn**	0.40	0.011	mg/L		12/13/22 13:58	12/14/22 10:02	1
Potassium	**15**	**B**	1.0	0.081	mg/L		12/13/22 13:58	12/14/22 10:02	1
Silicon	**38**		0.10	0.016	mg/L		12/13/22 13:58	12/14/22 10:02	1
Silver	ND		0.0080	0.00049	mg/L		12/13/22 13:58	12/14/22 10:02	1

Client Sample ID: PC-88-EM40
Lab Sample ID: 550-194841-2
Date Collected: 12/12/22 11:41
Matrix: Water
Date Received: 12/13/22 06:30

Method: SW846 6010B - Metals (ICP) - Dissolved (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sodium	540	B ^2	0.40	0.039	mg/L		12/13/22 13:58	12/14/22 10:02	1
Strontium	4.9		0.010	0.00032	mg/L		12/13/22 13:58	12/14/22 10:02	1
Tin	ND		0.010	0.0034	mg/L		12/13/22 13:58	12/14/22 10:02	1
Titanium	0.028		0.0050	0.00028	mg/L		12/13/22 13:58	12/14/22 10:02	1
Tungsten	0.0022	J	0.10	0.0021	mg/L		12/13/22 13:58	12/14/22 10:02	1
Vanadium	0.069		0.0050	0.00069	mg/L		12/13/22 13:58	12/14/22 10:02	1
Zinc	ND		0.040	0.0023	mg/L		12/13/22 13:58	12/14/22 10:02	1

Method: SW846 6020B - Metals (ICP/MS) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	0.39	J B	1.0	0.043	ug/L		12/13/22 15:43	12/15/22 16:39	1
Arsenic	110		1.0	0.25	ug/L		12/13/22 15:43	12/27/22 12:17	1
Selenium	7.2	B	0.50	0.074	ug/L		12/13/22 15:43	12/27/22 12:17	1
Thallium	0.19		0.10	0.013	ug/L		12/13/22 15:43	12/15/22 16:39	1

Client Sample ID: PC-88-EM40-FD
Lab Sample ID: 550-194841-3
Date Collected: 12/12/22 11:41
Matrix: Water
Date Received: 12/13/22 06:30

Method: RSK-175 - Dissolved Gases (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Methane	ND		5.0	0.63	ug/L			12/16/22 23:24	1

Method: MCAWW 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Nitrate as N	6.5		0.050	0.014	mg/L			12/13/22 14:47	1
Sulfate	940		100	21	mg/L			12/13/22 21:48	50

Method: EPA 300.1B - Disinfection By-Products, (IC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chlorate	6600		400	98	ug/L			12/18/22 13:19	20

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Dichloroacetic acid(Surr)	*108*		*90 - 115*		*12/18/22 13:19*	*20*

Method: EPA 314.0 - Perchlorate (IC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perchlorate	15000		500	160	ug/L			12/13/22 17:36	500

Method: SW846 6010B - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Manganese	0.61		0.020	0.0083	mg/L		12/13/22 13:58	12/14/22 10:05	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon (SM 5310B)	2.4		0.50	0.26	mg/L			12/14/22 15:31	1

Client Sample ID: PC-88-EM40-FD
Lab Sample ID: 550-194841-4
Date Collected: 12/12/22 11:41 **Matrix: Water**
Date Received: 12/13/22 06:30

Method: SW846 6010B - Metals (ICP) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	0.55		0.20	0.080	mg/L		12/13/22 13:58	12/14/22 10:13	1
Barium	0.025		0.0050	0.00057	mg/L		12/13/22 13:58	12/14/22 10:13	1
Beryllium	ND		0.0010	0.00019	mg/L		12/13/22 13:58	12/14/22 10:13	1
Boron	1.3	B	0.050	0.0024	mg/L		12/13/22 13:58	12/14/22 10:13	1
Cadmium	ND		0.0010	0.00072	mg/L		12/13/22 13:58	12/14/22 10:13	1
Calcium	210		0.40	0.015	mg/L		12/13/22 13:58	12/14/22 10:13	1
Chromium	ND		0.0050	0.0011	mg/L		12/13/22 13:58	12/14/22 10:13	1
Cobalt	0.0068		0.0050	0.00054	mg/L		12/13/22 13:58	12/14/22 10:13	1
Copper	0.0033	J	0.0050	0.0012	mg/L		12/13/22 13:58	12/14/22 10:13	1
Iron	0.31	J	0.40	0.019	mg/L		12/13/22 13:58	12/14/22 10:13	1
Lead	ND		0.010	0.0025	mg/L		12/13/22 13:58	12/14/22 10:13	1
Magnesium	100		0.40	0.054	mg/L		12/13/22 13:58	12/14/22 10:13	1
Manganese	0.95		0.020	0.0083	mg/L		12/13/22 13:58	12/14/22 10:13	1
Molybdenum	0.012		0.010	0.00052	mg/L		12/13/22 13:58	12/14/22 10:13	1
Nickel	0.0067		0.0050	0.0028	mg/L		12/13/22 13:58	12/14/22 10:13	1
Phosphorus	0.045	J cn	0.40	0.011	mg/L		12/13/22 13:58	12/14/22 10:13	1
Potassium	15	B	1.0	0.081	mg/L		12/13/22 13:58	12/14/22 10:13	1
Silicon	38		0.10	0.016	mg/L		12/13/22 13:58	12/14/22 10:13	1
Silver	ND		0.0080	0.00049	mg/L		12/13/22 13:58	12/14/22 10:13	1
Sodium	550	B ^2	0.40	0.039	mg/L		12/13/22 13:58	12/14/22 10:13	1
Strontium	4.9		0.010	0.00032	mg/L		12/13/22 13:58	12/14/22 10:13	1
Tin	ND		0.010	0.0034	mg/L		12/13/22 13:58	12/14/22 10:13	1
Titanium	0.020		0.0050	0.00028	mg/L		12/13/22 13:58	12/14/22 10:13	1
Tungsten	0.0024	J	0.10	0.0021	mg/L		12/13/22 13:58	12/14/22 10:13	1
Vanadium	0.070		0.0050	0.00069	mg/L		12/13/22 13:58	12/14/22 10:13	1
Zinc	ND		0.040	0.0023	mg/L		12/13/22 13:58	12/14/22 10:13	1

Method: SW846 6020B - Metals (ICP/MS) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	0.29	J B	1.0	0.043	ug/L		12/13/22 15:43	12/15/22 16:43	1
Arsenic	100		1.0	0.25	ug/L		12/13/22 15:43	12/27/22 12:19	1
Selenium	7.1	B	0.50	0.074	ug/L		12/13/22 15:43	12/27/22 12:19	1
Thallium	0.19		0.10	0.013	ug/L		12/13/22 15:43	12/15/22 16:43	1

Client Sample ID: PC-58-EM40
Lab Sample ID: 550-194841-5
Date Collected: 12/12/22 13:01 **Matrix: Water**
Date Received: 12/13/22 06:30

Method: RSK-175 - Dissolved Gases (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Methane	ND		5.0	0.63	ug/L			12/16/22 23:38	1

Method: MCAWW 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Nitrate as N	11		0.050	0.014	mg/L			12/13/22 15:06	1
Sulfate	1200		100	21	mg/L			12/13/22 22:16	50

Method: EPA 300.1B - Disinfection By-Products, (IC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chlorate	6100		2000	490	ug/L			12/18/22 13:48	100

Client Sample ID: PC-58-EM40
Lab Sample ID: 550-194841-5
Date Collected: 12/12/22 13:01
Matrix: Water
Date Received: 12/13/22 06:30

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Dichloroacetic acid(Surr)	*112*		*90 - 115*		*12/18/22 13:48*	*100*

Method: EPA 314.0 - Perchlorate (IC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perchlorate	**790**		20	6.3	ug/L			12/13/22 17:59	20

Method: SW846 6010B - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Manganese	ND		0.020	0.0083	mg/L		12/13/22 13:58	12/14/22 10:16	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon (SM 5310B)	**2.7**		0.50	0.26	mg/L			12/14/22 15:47	1

Client Sample ID: PC-58-EM40
Lab Sample ID: 550-194841-6
Date Collected: 12/12/22 13:01
Matrix: Water
Date Received: 12/13/22 06:30

Method: SW846 6010B - Metals (ICP) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	**0.85**		0.20	0.080	mg/L		12/13/22 13:58	12/14/22 10:19	1
Barium	**0.034**		0.0050	0.00057	mg/L		12/13/22 13:58	12/14/22 10:19	1
Beryllium	ND		0.0010	0.00019	mg/L		12/13/22 13:58	12/14/22 10:19	1
Boron	**1.5**	**B**	0.050	0.0024	mg/L		12/13/22 13:58	12/14/22 10:19	1
Cadmium	ND		0.0010	0.00072	mg/L		12/13/22 13:58	12/14/22 10:19	1
Calcium	**170**		0.40	0.015	mg/L		12/13/22 13:58	12/14/22 10:19	1
Chromium	**0.0097**		0.0050	0.0011	mg/L		12/13/22 13:58	12/14/22 10:19	1
Cobalt	ND		0.0050	0.00054	mg/L		12/13/22 13:58	12/14/22 10:19	1
Copper	**0.0020**	**J**	0.0050	0.0012	mg/L		12/13/22 13:58	12/14/22 10:19	1
Iron	**0.49**		0.40	0.019	mg/L		12/13/22 13:58	12/14/22 10:19	1
Lead	ND		0.010	0.0025	mg/L		12/13/22 13:58	12/14/22 10:19	1
Magnesium	**130**		0.40	0.054	mg/L		12/13/22 13:58	12/14/22 10:19	1
Manganese	**0.014**	**J**	0.020	0.0083	mg/L		12/13/22 13:58	12/14/22 10:19	1
Molybdenum	**0.10**		0.010	0.00052	mg/L		12/13/22 13:58	12/14/22 10:19	1
Nickel	ND		0.0050	0.0028	mg/L		12/13/22 13:58	12/14/22 10:19	1
Phosphorus	**0.016**	**J cn**	0.40	0.011	mg/L		12/13/22 13:58	12/14/22 10:19	1
Potassium	**38**	**B**	1.0	0.081	mg/L		12/13/22 13:58	12/14/22 10:19	1
Silicon	**44**		0.10	0.016	mg/L		12/13/22 13:58	12/14/22 10:19	1
Silver	ND		0.0080	0.00049	mg/L		12/13/22 13:58	12/14/22 10:19	1
Sodium	**490**	**B ^2**	0.40	0.039	mg/L		12/13/22 13:58	12/14/22 10:19	1
Strontium	**5.2**		0.010	0.00032	mg/L		12/13/22 13:58	12/14/22 10:19	1
Tin	ND		0.010	0.0034	mg/L		12/13/22 13:58	12/14/22 10:19	1
Titanium	**0.032**		0.0050	0.00028	mg/L		12/13/22 13:58	12/14/22 10:19	1
Tungsten	ND		0.10	0.0021	mg/L		12/13/22 13:58	12/14/22 10:19	1
Vanadium	**0.070**		0.0050	0.00069	mg/L		12/13/22 13:58	12/14/22 10:19	1
Zinc	ND		0.040	0.0023	mg/L		12/13/22 13:58	12/14/22 10:19	1

Method: SW846 6020B - Metals (ICP/MS) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	**0.28**	**J B**	1.0	0.043	ug/L		12/13/22 15:43	12/15/22 16:47	1
Arsenic	**130**		1.0	0.25	ug/L		12/13/22 15:43	12/27/22 12:21	1

Client Sample ID: PC-58-EM40 — Lab Sample ID: 550-194841-6

Date Collected: 12/12/22 13:01 — **Matrix: Water**
Date Received: 12/13/22 06:30

Method: SW846 6020B - Metals (ICP/MS) - Dissolved (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Selenium	**84**	**B**	0.50	0.074	ug/L		12/13/22 15:43	12/27/22 12:21	1
Thallium	**0.038**	**J**	0.10	0.013	ug/L		12/13/22 15:43	12/15/22 16:47	1

Client Sample ID: PC-91-EM40 — Lab Sample ID: 550-194841-7

Date Collected: 12/12/22 14:01 — **Matrix: Water**
Date Received: 12/13/22 06:30

Method: RSK-175 - Dissolved Gases (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Methane	**6400**		5.0	0.63	ug/L			12/16/22 23:51	1

Method: MCAWW 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Nitrate as N	ND		0.050	0.014	mg/L			12/13/22 17:01	1
Sulfate	**540**		100	21	mg/L			12/13/22 22:44	50

Method: EPA 300.1B - Disinfection By-Products, (IC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chlorate	ND		20	4.9	ug/L			12/18/22 14:18	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Dichloroacetic acid(Surr)	*114*		*90 - 115*		*12/18/22 14:18*	*1*

Method: EPA 314.0 - Perchlorate (IC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perchlorate	ND	D	2.0	0.63	ug/L			12/13/22 18:22	2

Method: SW846 6010B - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Manganese	**1.0**		0.020	0.0083	mg/L		12/13/22 13:58	12/14/22 10:22	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon (SM 5310B)	**4.9**		0.50	0.26	mg/L			12/14/22 16:03	1

Client Sample ID: PC-91-EM40 — Lab Sample ID: 550-194841-8

Date Collected: 12/12/22 14:01 — **Matrix: Water**
Date Received: 12/13/22 06:30

Method: SW846 6010B - Metals (ICP) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	**0.40**		0.20	0.080	mg/L		12/13/22 13:58	12/14/22 10:25	1
Barium	**0.20**		0.0050	0.00057	mg/L		12/13/22 13:58	12/14/22 10:25	1
Beryllium	ND		0.0010	0.00019	mg/L		12/13/22 13:58	12/14/22 10:25	1
Boron	**1.5**	**B**	0.050	0.0024	mg/L		12/13/22 13:58	12/14/22 10:25	1
Cadmium	ND		0.0010	0.00072	mg/L		12/13/22 13:58	12/14/22 10:25	1
Calcium	**190**		0.40	0.015	mg/L		12/13/22 13:58	12/14/22 10:25	1
Chromium	ND		0.0050	0.0011	mg/L		12/13/22 13:58	12/14/22 10:25	1
Cobalt	ND		0.0050	0.00054	mg/L		12/13/22 13:58	12/14/22 10:25	1
Copper	ND		0.0050	0.0012	mg/L		12/13/22 13:58	12/14/22 10:25	1
Iron	**0.93**		0.40	0.019	mg/L		12/13/22 13:58	12/14/22 10:25	1
Lead	ND		0.010	0.0025	mg/L		12/13/22 13:58	12/14/22 10:25	1

Client: Tetra Tech, Inc.
Job ID: 550-194841-1
Project/Site: Tetra Tech M11 SWF Treatability Study

Client Sample ID: PC-91-EM40
Lab Sample ID: 550-194841-8
Date Collected: 12/12/22 14:01
Matrix: Water
Date Received: 12/13/22 06:30

Method: SW846 6010B - Metals (ICP) - Dissolved (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Magnesium	110		0.40	0.054	mg/L		12/13/22 13:58	12/14/22 10:25	1
Manganese	1.1		0.020	0.0083	mg/L		12/13/22 13:58	12/14/22 10:25	1
Molybdenum	ND		0.010	0.00052	mg/L		12/13/22 13:58	12/14/22 10:25	1
Nickel	0.0067		0.0050	0.0028	mg/L		12/13/22 13:58	12/14/22 10:25	1
Phosphorus	0.077	J cn	0.40	0.011	mg/L		12/13/22 13:58	12/14/22 10:25	1
Potassium	23	B	1.0	0.081	mg/L		12/13/22 13:58	12/14/22 10:25	1
Silicon	55		0.10	0.016	mg/L		12/13/22 13:58	12/14/22 10:25	1
Silver	ND		0.0080	0.00049	mg/L		12/13/22 13:58	12/14/22 10:25	1
Sodium	600	B ^2	0.40	0.039	mg/L		12/13/22 13:58	12/14/22 10:25	1
Strontium	4.8		0.010	0.00032	mg/L		12/13/22 13:58	12/14/22 10:25	1
Tin	ND		0.010	0.0034	mg/L		12/13/22 13:58	12/14/22 10:25	1
Titanium	0.015		0.0050	0.00028	mg/L		12/13/22 13:58	12/14/22 10:25	1
Tungsten	0.0056	J	0.10	0.0021	mg/L		12/13/22 13:58	12/14/22 10:25	1
Vanadium	0.0039	J	0.0050	0.00069	mg/L		12/13/22 13:58	12/14/22 10:25	1
Zinc	ND		0.040	0.0023	mg/L		12/13/22 13:58	12/14/22 10:25	1

Method: SW846 6020B - Metals (ICP/MS) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	0.17	J B	1.0	0.043	ug/L		12/13/22 15:43	12/15/22 16:52	1
Arsenic	8.9		1.0	0.25	ug/L		12/13/22 15:43	12/27/22 12:23	1
Selenium	0.38	J B	0.50	0.074	ug/L		12/13/22 15:43	12/27/22 12:23	1
Thallium	ND		0.10	0.013	ug/L		12/13/22 15:43	12/15/22 16:52	1

Surrogate Summary

Client: Tetra Tech, Inc.
Job ID: 550-194841-1
Project/Site: Tetra Tech M11 SWF Treatability Study

Method: 300.1B - Disinfection By-Products, (IC)

Matrix: Water **Prep Type: Total/NA**

		Percent Surrogate Recovery (Acceptance Limits)
Lab Sample ID	Client Sample ID	DCAA (90-115)
550-194755-D-7 MS	Matrix Spike	108
550-194755-D-7 MSD	Matrix Spike Duplicate	109
550-194841-1	PC-88-EM40	110
550-194841-3	PC-88-EM40-FD	108
550-194841-5	PC-58-EM40	112
550-194841-7	PC-91-EM40	114
LCS 550-291121/5	Lab Control Sample	107
LCSD 550-291121/6	Lab Control Sample Dup	109
MB 550-291121/4	Method Blank	106

Surrogate Legend

DCAA = Dichloroacetic acid(Surr)

Method: 300.1B - Disinfection By-Products, (IC)

Matrix: Water **Prep Type: Total/NA**

		Percent Surrogate Recovery (Acceptance Limits)
Lab Sample ID	Client Sample ID	DCAA (50-150)
MRL 550-291121/1002	Lab Control Sample	106

Surrogate Legend

DCAA = Dichloroacetic acid(Surr)

Method: RSK-175 - Dissolved Gases (GC)

Lab Sample ID: MB 280-597020/6
Matrix: Water
Analysis Batch: 597020

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Methane	ND		5.0	0.63	ug/L			12/16/22 17:51	1

Lab Sample ID: LCS 280-597020/4
Matrix: Water
Analysis Batch: 597020

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Methane			65.7	65.9		ug/L		100	75 - 125		

Lab Sample ID: LCSD 280-597020/5
Matrix: Water
Analysis Batch: 597020

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Methane			65.7	65.0		ug/L		99	75 - 125	1	20

Lab Sample ID: 550-194841-1 DU
Matrix: Water
Analysis Batch: 597020

Client Sample ID: PC-88-EM40
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier		DU Result	DU Qualifier	Unit	D			RPD	RPD Limit
Methane	ND			ND		ug/L				NC	20

Method: 300.0 - Anions, Ion Chromatography

Lab Sample ID: MB 550-290719/2
Matrix: Water
Analysis Batch: 290719

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Nitrate as N	ND		0.050	0.014	mg/L			12/13/22 10:48	1

Lab Sample ID: LCS 550-290719/5
Matrix: Water
Analysis Batch: 290719

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Nitrate as N			4.00	4.13		mg/L		103	90 - 110		

Lab Sample ID: LCSD 550-290719/7
Matrix: Water
Analysis Batch: 290719

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Nitrate as N			4.00	4.12		mg/L		103	90 - 110	0	20

Method: 300.0 - Anions, Ion Chromatography (Continued)

Lab Sample ID: 550-194837-C-3 MS
Matrix: Water
Analysis Batch: 290719

Client Sample ID: Matrix Spike
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Nitrate as N	0.038	J	4.00	4.16		mg/L		103	80 - 120

Lab Sample ID: 550-194837-C-3 MSD
Matrix: Water
Analysis Batch: 290719

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Nitrate as N	0.038	J	4.00	4.23		mg/L		105	80 - 120	2	20

Lab Sample ID: MB 550-290721/2
Matrix: Water
Analysis Batch: 290721

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Nitrate as N	ND		0.050	0.014	mg/L			12/13/22 10:39	1
Sulfate	ND		2.0	0.43	mg/L			12/13/22 10:39	1

Lab Sample ID: LCS 550-290721/5
Matrix: Water
Analysis Batch: 290721

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Nitrate as N	4.00	4.07		mg/L		102	90 - 110
Sulfate	20.0	20.8		mg/L		104	90 - 110

Lab Sample ID: LCSD 550-290721/6
Matrix: Water
Analysis Batch: 290721

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Nitrate as N	4.00	4.06		mg/L		101	90 - 110	0	20
Sulfate	20.0	20.9		mg/L		104	90 - 110	0	20

Lab Sample ID: 550-194852-A-1 MS
Matrix: Water
Analysis Batch: 290721

Client Sample ID: Matrix Spike
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Nitrate as N	4.8		4.00	8.82		mg/L		100	80 - 120
Sulfate	250	E	20.0	261	E 4	mg/L		46	80 - 120

Lab Sample ID: 550-194852-A-1 MSD
Matrix: Water
Analysis Batch: 290721

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Nitrate as N	4.8		4.00	8.90		mg/L		102	80 - 120	1	20
Sulfate	250	E	20.0	261	E 4	mg/L		48	80 - 120	0	20

Method: 300.1B - Disinfection By-Products, (IC)

Lab Sample ID: MB 550-291121/4
Matrix: Water
Analysis Batch: 291121

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chlorate	ND		20	4.9	ug/L			12/18/22 03:30	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Dichloroacetic acid(Surr)	*106*		*90 - 115*		*12/18/22 03:30*	*1*

Lab Sample ID: LCS 550-291121/5
Matrix: Water
Analysis Batch: 291121

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Chlorate			100	108		ug/L		108	75 - 125		

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
Dichloroacetic acid(Surr)	*107*		*90 - 115*

Lab Sample ID: LCSD 550-291121/6
Matrix: Water
Analysis Batch: 291121

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Chlorate			100	107		ug/L		107	75 - 125	1	25

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
Dichloroacetic acid(Surr)	*109*		*90 - 115*

Lab Sample ID: MRL 550-291121/1002
Matrix: Water
Analysis Batch: 291121

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte			Spike Added	MRL Result	MRL Qualifier	Unit	D	%Rec	%Rec Limits		
Chlorate			20.0	24.2		ug/L		121	50 - 150		

Surrogate	*MRL %Recovery*	*MRL Qualifier*	*Limits*
Dichloroacetic acid(Surr)	*106*		*50 - 150*

Lab Sample ID: 550-194755-D-7 MS
Matrix: Water
Analysis Batch: 291121

Client Sample ID: Matrix Spike
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits		
Chlorate	1600000		1000000	2680000		ug/L		109	75 - 125		

Surrogate	*MS %Recovery*	*MS Qualifier*	*Limits*
Dichloroacetic acid(Surr)	*108*		*90 - 115*

Method: 300.1B - Disinfection By-Products, (IC) (Continued)

Lab Sample ID: 550-194755-D-7 MSD
Matrix: Water
Analysis Batch: 291121

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Chlorate	1600000		1000000	2720000		ug/L		113	75 - 125	2	25

Surrogate	*MSD %Recovery*	*MSD Qualifier*	*Limits*
Dichloroacetic acid(Surr)	*109*		*90 - 115*

Method: 314.0 - Perchlorate (IC)

Lab Sample ID: MB 550-290688/1002
Matrix: Water
Analysis Batch: 290688

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perchlorate	ND		1.0	0.31	ug/L			12/13/22 11:07	1

Lab Sample ID: LCS 550-290688/4
Matrix: Water
Analysis Batch: 290688

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Perchlorate	25.0	25.2		ug/L		101	85 - 115

Lab Sample ID: LCSD 550-290688/5
Matrix: Water
Analysis Batch: 290688

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Perchlorate	25.0	24.9		ug/L		99	85 - 115	1	15

Lab Sample ID: MRL 550-290688/1003
Matrix: Water
Analysis Batch: 290688

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	MRL Result	MRL Qualifier	Unit	D	%Rec	%Rec Limits
Perchlorate	1.00	1.03		ug/L		103	75 - 125

Lab Sample ID: 550-194755-A-5 MS
Matrix: Water
Analysis Batch: 290688

Client Sample ID: Matrix Spike
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Perchlorate	160000		500000	639000		ug/L		95	80 - 120

Lab Sample ID: 550-194755-A-5 MSD
Matrix: Water
Analysis Batch: 290688

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Perchlorate	160000		500000	650000		ug/L		98	80 - 120	2	15

Method: 6010B - Metals (ICP)

Lab Sample ID: MB 550-290687/1-A
Matrix: Water
Analysis Batch: 290761

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 290687

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	ND		0.20	0.080	mg/L		12/13/22 13:58	12/14/22 09:36	1
Barium	ND		0.0050	0.00057	mg/L		12/13/22 13:58	12/14/22 09:36	1
Beryllium	ND		0.0010	0.00019	mg/L		12/13/22 13:58	12/14/22 09:36	1
Boron	0.00295	J	0.050	0.0024	mg/L		12/13/22 13:58	12/14/22 09:36	1
Cadmium	ND		0.0010	0.00072	mg/L		12/13/22 13:58	12/14/22 09:36	1
Calcium	ND		0.40	0.015	mg/L		12/13/22 13:58	12/14/22 09:36	1
Chromium	ND		0.0050	0.0011	mg/L		12/13/22 13:58	12/14/22 09:36	1
Cobalt	ND		0.0050	0.00054	mg/L		12/13/22 13:58	12/14/22 09:36	1
Copper	ND		0.0050	0.0012	mg/L		12/13/22 13:58	12/14/22 09:36	1
Iron	ND		0.40	0.019	mg/L		12/13/22 13:58	12/14/22 09:36	1
Lead	ND		0.010	0.0025	mg/L		12/13/22 13:58	12/14/22 09:36	1
Magnesium	ND		0.40	0.054	mg/L		12/13/22 13:58	12/14/22 09:36	1
Manganese	ND		0.020	0.0083	mg/L		12/13/22 13:58	12/14/22 09:36	1
Molybdenum	ND		0.010	0.00052	mg/L		12/13/22 13:58	12/14/22 09:36	1
Nickel	ND		0.0050	0.0028	mg/L		12/13/22 13:58	12/14/22 09:36	1
Phosphorus	ND		0.40	0.011	mg/L		12/13/22 13:58	12/14/22 09:36	1
Potassium	0.127	J	1.0	0.081	mg/L		12/13/22 13:58	12/14/22 09:36	1
Silicon	ND		0.10	0.016	mg/L		12/13/22 13:58	12/14/22 09:36	1
Silver	ND		0.0080	0.00049	mg/L		12/13/22 13:58	12/14/22 09:36	1
Sodium	0.0770	J	0.40	0.039	mg/L		12/13/22 13:58	12/14/22 09:36	1
Strontium	ND		0.010	0.00032	mg/L		12/13/22 13:58	12/14/22 09:36	1
Tin	ND		0.010	0.0034	mg/L		12/13/22 13:58	12/14/22 09:36	1
Titanium	ND		0.0050	0.00028	mg/L		12/13/22 13:58	12/14/22 09:36	1
Tungsten	ND		0.10	0.0021	mg/L		12/13/22 13:58	12/14/22 09:36	1
Vanadium	ND		0.0050	0.00069	mg/L		12/13/22 13:58	12/14/22 09:36	1
Zinc	ND		0.040	0.0023	mg/L		12/13/22 13:58	12/14/22 09:36	1

Lab Sample ID: LCS 550-290687/2-A
Matrix: Water
Analysis Batch: 290761

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 290687

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Aluminum	20.0	19.7		mg/L		98	88 - 110
Barium	1.00	0.980		mg/L		98	90 - 110
Beryllium	1.00	0.941		mg/L		94	90 - 111
Boron	1.00	1.00		mg/L		100	88 - 110
Cadmium	1.00	0.942		mg/L		94	90 - 110
Calcium	21.0	20.5		mg/L		97	88 - 112
Chromium	1.00	0.950		mg/L		95	90 - 110
Cobalt	1.00	0.955		mg/L		96	90 - 112
Copper	1.00	0.955		mg/L		95	87 - 110
Iron	1.00	0.914		mg/L		91	85 - 112
Lead	1.00	0.986		mg/L		99	90 - 113
Magnesium	21.0	20.8		mg/L		99	89 - 110
Manganese	1.00	0.961		mg/L		96	90 - 110
Molybdenum	1.00	0.951		mg/L		95	89 - 110
Nickel	1.00	0.950		mg/L		95	88 - 114
Potassium	20.0	19.8		mg/L		99	87 - 114
Silicon	5.00	5.02		mg/L		100	88 - 110

Method: 6010B - Metals (ICP) (Continued)

Lab Sample ID: LCS 550-290687/2-A
Matrix: Water
Analysis Batch: 290761

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 290687

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Silver			0.0750	0.0701		mg/L		93	84 - 111		
Sodium			20.0	19.9		mg/L		100	84 - 110		
Strontium			1.00	0.927		mg/L		93	88 - 110		
Tin			1.00	0.931		mg/L		93	90 - 112		
Titanium			1.00	0.955		mg/L		95	90 - 110		
Tungsten			1.00	0.937		mg/L		94	80 - 120		
Vanadium			1.00	0.943		mg/L		94	90 - 110		
Zinc			1.00	1.01		mg/L		101	90 - 114		

Lab Sample ID: LCSD 550-290687/3-A
Matrix: Water
Analysis Batch: 290761

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 290687

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Aluminum			20.0	19.6		mg/L		98	88 - 110	0	20
Barium			1.00	0.979		mg/L		98	90 - 110	0	20
Beryllium			1.00	0.971		mg/L		97	90 - 111	3	20
Boron			1.00	1.00		mg/L		100	88 - 110	0	20
Cadmium			1.00	0.980		mg/L		98	90 - 110	4	20
Calcium			21.0	20.5		mg/L		97	88 - 112	0	20
Chromium			1.00	0.983		mg/L		98	90 - 110	3	20
Cobalt			1.00	0.999		mg/L		100	90 - 112	4	20
Copper			1.00	0.985		mg/L		98	87 - 110	3	20
Iron			1.00	0.943		mg/L		94	85 - 112	3	20
Lead			1.00	1.02		mg/L		102	90 - 113	3	20
Magnesium			21.0	20.8		mg/L		99	89 - 110	0	20
Manganese			1.00	0.994		mg/L		99	90 - 110	3	20
Molybdenum			1.00	0.984		mg/L		98	89 - 110	3	20
Nickel			1.00	0.993		mg/L		99	88 - 114	4	20
Potassium			20.0	19.9		mg/L		100	87 - 114	0	20
Silicon			5.00	5.14		mg/L		103	88 - 110	2	20
Silver			0.0750	0.0698		mg/L		93	84 - 111	0	20
Sodium			20.0	19.9		mg/L		100	84 - 110	0	20
Strontium			1.00	0.952		mg/L		95	88 - 110	3	20
Tin			1.00	0.964		mg/L		96	90 - 112	4	20
Titanium			1.00	0.987		mg/L		99	90 - 110	3	20
Tungsten			1.00	0.974		mg/L		97	80 - 120	4	20
Vanadium			1.00	0.973		mg/L		97	90 - 110	3	20
Zinc			1.00	1.04		mg/L		104	90 - 114	3	20

Lab Sample ID: 550-194837-E-2-A MS
Matrix: Water
Analysis Batch: 290761

Client Sample ID: Matrix Spike
Prep Type: Total/NA
Prep Batch: 290687

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits		
Aluminum	1.5		20.0	23.4		mg/L		110	75 - 125		
Barium	0.0056		1.00	1.00		mg/L		99	75 - 125		
Beryllium	0.00025	J	1.00	0.979		mg/L		98	75 - 125		
Boron	0.0047	J B	1.00	1.02		mg/L		101	75 - 125		

Method: 6010B - Metals (ICP) (Continued)

Lab Sample ID: 550-194837-E-2-A MS
Matrix: Water
Analysis Batch: 290761

Client Sample ID: Matrix Spike
Prep Type: Total/NA
Prep Batch: 290687

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Cadmium	ND		1.00	0.974		mg/L		97	75 - 125
Calcium	0.30		21.0	21.2		mg/L		100	75 - 125
Chromium	0.0064		1.00	0.996		mg/L		99	75 - 125
Cobalt	0.00072	J	1.00	0.995		mg/L		99	75 - 125
Copper	0.0020	J	1.00	0.991		mg/L		99	75 - 125
Iron	0.21		1.00	1.39		mg/L		118	75 - 125
Lead	ND		1.00	1.02		mg/L		102	75 - 125
Magnesium	0.15	J	21.0	21.2		mg/L		100	75 - 125
Manganese	0.19		1.00	1.36		mg/L		117	75 - 125
Molybdenum	0.0017	J	1.00	0.985		mg/L		98	75 - 125
Nickel	0.0024	J	1.00	0.998		mg/L		100	75 - 125
Potassium	0.88	B	20.0	21.8		mg/L		104	75 - 125
Silicon	2.3	F1	5.00	10.5	F1	mg/L		164	75 - 125
Silver	ND		0.0750	0.0693		mg/L		92	75 - 125
Sodium	5.6	F1 B ^2	20.0	30.9	F1	mg/L		127	75 - 125
Strontium	0.0029	J	1.00	0.970		mg/L		97	75 - 125
Tin	ND		1.00	0.963		mg/L		96	75 - 125
Titanium	0.077		1.00	1.12		mg/L		104	75 - 125
Tungsten	0.0025	J	1.00	0.974		mg/L		97	75 - 125
Vanadium	0.0027		1.00	0.981		mg/L		98	75 - 125
Zinc	0.0036	J	1.00	1.05		mg/L		104	75 - 125

Lab Sample ID: 550-194837-E-2-B MSD
Matrix: Water
Analysis Batch: 290761

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total/NA
Prep Batch: 290687

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Aluminum	1.5		20.0	23.1		mg/L		108	75 - 125	1	20
Barium	0.0056		1.00	0.990		mg/L		98	75 - 125	1	20
Beryllium	0.00025	J	1.00	0.971		mg/L		97	75 - 125	1	20
Boron	0.0047	J B	1.00	1.01		mg/L		100	75 - 125	1	20
Cadmium	ND		1.00	0.983		mg/L		98	75 - 125	1	20
Calcium	0.30		21.0	21.0		mg/L		99	75 - 125	1	20
Chromium	0.0064		1.00	0.991		mg/L		98	75 - 125	0	20
Cobalt	0.00072	J	1.00	1.00		mg/L		100	75 - 125	1	20
Copper	0.0020	J	1.00	0.984		mg/L		98	75 - 125	1	20
Iron	0.21		1.00	1.35		mg/L		114	75 - 125	3	20
Lead	ND		1.00	1.01		mg/L		101	75 - 125	1	20
Magnesium	0.15	J	21.0	21.0		mg/L		99	75 - 125	1	20
Manganese	0.19		1.00	1.35		mg/L		116	75 - 125	1	20
Molybdenum	0.0017	J	1.00	0.985		mg/L		98	75 - 125	0	20
Nickel	0.0024	J	1.00	1.01		mg/L		100	75 - 125	1	20
Potassium	0.88	B	20.0	21.5		mg/L		103	75 - 125	1	20
Silicon	2.3	F1	5.00	10.3	F1	mg/L		160	75 - 125	2	20
Silver	ND		0.0750	0.0693		mg/L		92	75 - 125	0	20
Sodium	5.6	F1 B ^2	20.0	30.5		mg/L		125	75 - 125	2	20
Strontium	0.0029	J	1.00	0.963		mg/L		96	75 - 125	1	20
Tin	ND		1.00	0.959		mg/L		96	75 - 125	0	20
Titanium	0.077		1.00	1.13		mg/L		105	75 - 125	1	20

Method: 6010B - Metals (ICP) (Continued)

Lab Sample ID: 550-194837-E-2-B MSD **Client Sample ID: Matrix Spike Duplicate**
Matrix: Water **Prep Type: Total/NA**
Analysis Batch: 290761 **Prep Batch: 290687**

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Tungsten	0.0025	J	1.00	0.973		mg/L		97	75 - 125	0	20
Vanadium	0.0027		1.00	0.973		mg/L		97	75 - 125	1	20
Zinc	0.0036	J	1.00	1.04		mg/L		104	75 - 125	1	20

Method: 6020B - Metals (ICP/MS)

Lab Sample ID: MB 550-290699/1-A **Client Sample ID: Method Blank**
Matrix: Water **Prep Type: Total/NA**
Analysis Batch: 291044 **Prep Batch: 290699**

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	0.138	J	1.0	0.043	ug/L		12/13/22 15:43	12/15/22 16:24	1
Thallium	ND		0.10	0.013	ug/L		12/13/22 15:43	12/15/22 16:24	1

Lab Sample ID: MB 550-290699/1-A **Client Sample ID: Method Blank**
Matrix: Water **Prep Type: Total/NA**
Analysis Batch: 291499 **Prep Batch: 290699**

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	ND		1.0	0.25	ug/L		12/13/22 15:43	12/27/22 12:03	1
Selenium	0.405	J	0.50	0.074	ug/L		12/13/22 15:43	12/27/22 12:03	1

Lab Sample ID: LCS 550-290699/2-A **Client Sample ID: Lab Control Sample**
Matrix: Water **Prep Type: Total/NA**
Analysis Batch: 291044 **Prep Batch: 290699**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Antimony	100	101		ug/L		101	80 - 120
Thallium	100	101		ug/L		101	80 - 120

Lab Sample ID: LCS 550-290699/2-A **Client Sample ID: Lab Control Sample**
Matrix: Water **Prep Type: Total/NA**
Analysis Batch: 291499 **Prep Batch: 290699**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Arsenic	100	120		ug/L		120	80 - 120
Selenium	100	120		ug/L		120	80 - 120

Lab Sample ID: LCSD 550-290699/3-A **Client Sample ID: Lab Control Sample Dup**
Matrix: Water **Prep Type: Total/NA**
Analysis Batch: 291044 **Prep Batch: 290699**

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Antimony	100	102		ug/L		102	80 - 120	1	20
Thallium	100	96.5		ug/L		97	80 - 120	5	20

Method: 6020B - Metals (ICP/MS) (Continued)

Lab Sample ID: LCSD 550-290699/3-A
Client Sample ID: Lab Control Sample Dup
Matrix: Water
Prep Type: Total/NA
Analysis Batch: 291499
Prep Batch: 290699

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Arsenic			100	110		ug/L		110	80 - 120	9	20
Selenium			100	110		ug/L		110	80 - 120	9	20

Lab Sample ID: 550-194841-J-1-B MS T
Client Sample ID: Matrix Spike
Matrix: Water
Prep Type: Total/NA
Analysis Batch: 291044
Prep Batch: 290699

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Antimony	0.48	J B	100	106		ug/L		106	75 - 125
Thallium	0.15		100	96.3		ug/L		96	75 - 125

Lab Sample ID: 550-194841-J-1-B MS T
Client Sample ID: Matrix Spike
Matrix: Water
Prep Type: Total/NA
Analysis Batch: 291499
Prep Batch: 290699

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Arsenic	53	F1	100	223	F1	ug/L		170	75 - 125
Selenium	3.6	B	100	127		ug/L		124	75 - 125

Lab Sample ID: 550-194841-J-1-C MSD T
Client Sample ID: Matrix Spike Duplicate
Matrix: Water
Prep Type: Total/NA
Analysis Batch: 291044
Prep Batch: 290699

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Antimony	0.48	J B	100	105		ug/L		105	75 - 125	1	20
Thallium	0.15		100	94.9		ug/L		95	75 - 125	1	20

Lab Sample ID: 550-194841-J-1-C MSD T
Client Sample ID: Matrix Spike Duplicate
Matrix: Water
Prep Type: Total/NA
Analysis Batch: 291499
Prep Batch: 290699

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Arsenic	53	F1	100	219	F1	ug/L		167	75 - 125	2	20
Selenium	3.6	B	100	125		ug/L		122	75 - 125	2	20

Method: SM 5310B - Organic Carbon, Total (TOC)

Lab Sample ID: MB 550-290804/5
Client Sample ID: Method Blank
Matrix: Water
Prep Type: Total/NA
Analysis Batch: 290804

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon	ND		0.50	0.26	mg/L			12/14/22 11:25	1

Lab Sample ID: LCS 550-290804/6
Client Sample ID: Lab Control Sample
Matrix: Water
Prep Type: Total/NA
Analysis Batch: 290804

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Total Organic Carbon			20.0	19.0		mg/L		95	90 - 110

Method: SM 5310B - Organic Carbon, Total (TOC) (Continued)

Lab Sample ID: LCSD 550-290804/7
Matrix: Water
Analysis Batch: 290804

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Total Organic Carbon			20.0	18.9		mg/L		95	90 - 110	1	20

Lab Sample ID: 550-194780-B-1 MS ^10
Matrix: Water
Analysis Batch: 290804

Client Sample ID: Matrix Spike
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits		
Total Organic Carbon	13		200	206		mg/L		96	90 - 110		

Lab Sample ID: 550-194780-B-1 MSD ^10
Matrix: Water
Analysis Batch: 290804

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Total Organic Carbon	13		200	203		mg/L		95	90 - 110	1	20

GC VOA

Analysis Batch: 597020

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
550-194841-1	PC-88-EM40	Total/NA	Water	RSK-175	
550-194841-3	PC-88-EM40-FD	Total/NA	Water	RSK-175	
550-194841-5	PC-58-EM40	Total/NA	Water	RSK-175	
550-194841-7	PC-91-EM40	Total/NA	Water	RSK-175	
MB 280-597020/6	Method Blank	Total/NA	Water	RSK-175	
LCS 280-597020/4	Lab Control Sample	Total/NA	Water	RSK-175	
LCSD 280-597020/5	Lab Control Sample Dup	Total/NA	Water	RSK-175	
550-194841-1 DU	PC-88-EM40	Total/NA	Water	RSK-175	

HPLC/IC

Analysis Batch: 290688

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
550-194841-1	PC-88-EM40	Total/NA	Water	314.0	
550-194841-3	PC-88-EM40-FD	Total/NA	Water	314.0	
550-194841-5	PC-58-EM40	Total/NA	Water	314.0	
550-194841-7	PC-91-EM40	Total/NA	Water	314.0	
MB 550-290688/1002	Method Blank	Total/NA	Water	314.0	
LCS 550-290688/4	Lab Control Sample	Total/NA	Water	314.0	
LCSD 550-290688/5	Lab Control Sample Dup	Total/NA	Water	314.0	
MRL 550-290688/1003	Lab Control Sample	Total/NA	Water	314.0	
550-194755-A-5 MS	Matrix Spike	Total/NA	Water	314.0	
550-194755-A-5 MSD	Matrix Spike Duplicate	Total/NA	Water	314.0	

Analysis Batch: 290719

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
550-194841-1	PC-88-EM40	Total/NA	Water	300.0	
550-194841-3	PC-88-EM40-FD	Total/NA	Water	300.0	
550-194841-5	PC-58-EM40	Total/NA	Water	300.0	
550-194841-7	PC-91-EM40	Total/NA	Water	300.0	
MB 550-290719/2	Method Blank	Total/NA	Water	300.0	
LCS 550-290719/5	Lab Control Sample	Total/NA	Water	300.0	
LCSD 550-290719/7	Lab Control Sample Dup	Total/NA	Water	300.0	
550-194837-C-3 MS	Matrix Spike	Total/NA	Water	300.0	
550-194837-C-3 MSD	Matrix Spike Duplicate	Total/NA	Water	300.0	

Analysis Batch: 290721

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
550-194841-1	PC-88-EM40	Total/NA	Water	300.0	
550-194841-3	PC-88-EM40-FD	Total/NA	Water	300.0	
550-194841-5	PC-58-EM40	Total/NA	Water	300.0	
550-194841-7	PC-91-EM40	Total/NA	Water	300.0	
MB 550-290721/2	Method Blank	Total/NA	Water	300.0	
LCS 550-290721/5	Lab Control Sample	Total/NA	Water	300.0	
LCSD 550-290721/6	Lab Control Sample Dup	Total/NA	Water	300.0	
550-194852-A-1 MS	Matrix Spike	Total/NA	Water	300.0	
550-194852-A-1 MSD	Matrix Spike Duplicate	Total/NA	Water	300.0	

Analysis Batch: 291121

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
550-194841-1	PC-88-EM40	Total/NA	Water	300.1B	

HPLC/IC (Continued)

Analysis Batch: 291121 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
550-194841-3	PC-88-EM40-FD	Total/NA	Water	300.1B	
550-194841-5	PC-58-EM40	Total/NA	Water	300.1B	
550-194841-7	PC-91-EM40	Total/NA	Water	300.1B	
MB 550-291121/4	Method Blank	Total/NA	Water	300.1B	
LCS 550-291121/5	Lab Control Sample	Total/NA	Water	300.1B	
LCSD 550-291121/6	Lab Control Sample Dup	Total/NA	Water	300.1B	
MRL 550-291121/1002	Lab Control Sample	Total/NA	Water	300.1B	
550-194755-D-7 MS	Matrix Spike	Total/NA	Water	300.1B	
550-194755-D-7 MSD	Matrix Spike Duplicate	Total/NA	Water	300.1B	

Metals

Prep Batch: 290687

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
550-194841-1	PC-88-EM40	Total/NA	Water	3005A	
550-194841-2	PC-88-EM40	Dissolved	Water	3005A	
550-194841-3	PC-88-EM40-FD	Total/NA	Water	3005A	
550-194841-4	PC-88-EM40-FD	Dissolved	Water	3005A	
550-194841-5	PC-58-EM40	Total/NA	Water	3005A	
550-194841-6	PC-58-EM40	Dissolved	Water	3005A	
550-194841-7	PC-91-EM40	Total/NA	Water	3005A	
550-194841-8	PC-91-EM40	Dissolved	Water	3005A	
MB 550-290687/1-A	Method Blank	Total/NA	Water	3005A	
LCS 550-290687/2-A	Lab Control Sample	Total/NA	Water	3005A	
LCSD 550-290687/3-A	Lab Control Sample Dup	Total/NA	Water	3005A	
550-194837-E-2-A MS	Matrix Spike	Total/NA	Water	3005A	
550-194837-E-2-B MSD	Matrix Spike Duplicate	Total/NA	Water	3005A	

Prep Batch: 290699

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
550-194841-2	PC-88-EM40	Dissolved	Water	3005A	
550-194841-4	PC-88-EM40-FD	Dissolved	Water	3005A	
550-194841-6	PC-58-EM40	Dissolved	Water	3005A	
550-194841-8	PC-91-EM40	Dissolved	Water	3005A	
MB 550-290699/1-A	Method Blank	Total/NA	Water	3005A	
LCS 550-290699/2-A	Lab Control Sample	Total/NA	Water	3005A	
LCSD 550-290699/3-A	Lab Control Sample Dup	Total/NA	Water	3005A	
550-194841-J-1-B MS T	Matrix Spike	Total/NA	Water	3005A	
550-194841-J-1-C MSD T	Matrix Spike Duplicate	Total/NA	Water	3005A	

Analysis Batch: 290761

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
550-194841-1	PC-88-EM40	Total/NA	Water	6010B	290687
550-194841-2	PC-88-EM40	Dissolved	Water	6010B	290687
550-194841-3	PC-88-EM40-FD	Total/NA	Water	6010B	290687
550-194841-4	PC-88-EM40-FD	Dissolved	Water	6010B	290687
550-194841-5	PC-58-EM40	Total/NA	Water	6010B	290687
550-194841-6	PC-58-EM40	Dissolved	Water	6010B	290687
550-194841-7	PC-91-EM40	Total/NA	Water	6010B	290687
550-194841-8	PC-91-EM40	Dissolved	Water	6010B	290687
MB 550-290687/1-A	Method Blank	Total/NA	Water	6010B	290687

Metals (Continued)

Analysis Batch: 290761 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
LCS 550-290687/2-A	Lab Control Sample	Total/NA	Water	6010B	290687
LCSD 550-290687/3-A	Lab Control Sample Dup	Total/NA	Water	6010B	290687
550-194837-E-2-A MS	Matrix Spike	Total/NA	Water	6010B	290687
550-194837-E-2-B MSD	Matrix Spike Duplicate	Total/NA	Water	6010B	290687

Analysis Batch: 291044

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
550-194841-2	PC-88-EM40	Dissolved	Water	6020B	290699
550-194841-4	PC-88-EM40-FD	Dissolved	Water	6020B	290699
550-194841-6	PC-58-EM40	Dissolved	Water	6020B	290699
550-194841-8	PC-91-EM40	Dissolved	Water	6020B	290699
MB 550-290699/1-A	Method Blank	Total/NA	Water	6020B	290699
LCS 550-290699/2-A	Lab Control Sample	Total/NA	Water	6020B	290699
LCSD 550-290699/3-A	Lab Control Sample Dup	Total/NA	Water	6020B	290699
550-194841-J-1-B MS T	Matrix Spike	Total/NA	Water	6020B	290699
550-194841-J-1-C MSD T	Matrix Spike Duplicate	Total/NA	Water	6020B	290699

Analysis Batch: 291499

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
550-194841-2	PC-88-EM40	Dissolved	Water	6020B	290699
550-194841-4	PC-88-EM40-FD	Dissolved	Water	6020B	290699
550-194841-6	PC-58-EM40	Dissolved	Water	6020B	290699
550-194841-8	PC-91-EM40	Dissolved	Water	6020B	290699
MB 550-290699/1-A	Method Blank	Total/NA	Water	6020B	290699
LCS 550-290699/2-A	Lab Control Sample	Total/NA	Water	6020B	290699
LCSD 550-290699/3-A	Lab Control Sample Dup	Total/NA	Water	6020B	290699
550-194841-J-1-B MS T	Matrix Spike	Total/NA	Water	6020B	290699
550-194841-J-1-C MSD T	Matrix Spike Duplicate	Total/NA	Water	6020B	290699

General Chemistry

Analysis Batch: 290804

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
550-194841-1	PC-88-EM40	Total/NA	Water	SM 5310B	
550-194841-3	PC-88-EM40-FD	Total/NA	Water	SM 5310B	
550-194841-5	PC-58-EM40	Total/NA	Water	SM 5310B	
550-194841-7	PC-91-EM40	Total/NA	Water	SM 5310B	
MB 550-290804/5	Method Blank	Total/NA	Water	SM 5310B	
LCS 550-290804/6	Lab Control Sample	Total/NA	Water	SM 5310B	
LCSD 550-290804/7	Lab Control Sample Dup	Total/NA	Water	SM 5310B	
550-194780-B-1 MS ^10	Matrix Spike	Total/NA	Water	SM 5310B	
550-194780-B-1 MSD ^10	Matrix Spike Duplicate	Total/NA	Water	SM 5310B	

Lab Chronicle

Client: Tetra Tech, Inc.
Job ID: 550-194841-1
Project/Site: Tetra Tech M11 SWF Treatability Study

Client Sample ID: PC-88-EM40
Lab Sample ID: 550-194841-1
Date Collected: 12/12/22 11:41
Matrix: Water
Date Received: 12/13/22 06:30

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	RSK-175		1	597020	JPH	EET DEN	12/16/22 22:57
Total/NA	Analysis	300.0		1	290719	AS1	EET PHX	12/13/22 14:29
Total/NA	Analysis	300.0		50	290721	AS1	EET PHX	12/13/22 21:20
Total/NA	Analysis	300.1B		20	291121	MEG	EET PHX	12/18/22 12:50
Total/NA	Analysis	314.0		500	290688	RDC	EET PHX	12/13/22 17:13
Total/NA	Prep	3005A			290687	ABA	EET PHX	12/13/22 13:58
Total/NA	Analysis	6010B		1	290761	CHS	EET PHX	12/14/22 09:59
Total/NA	Analysis	SM 5310B		1	290804	RDC	EET PHX	12/14/22 15:16

Client Sample ID: PC-88-EM40
Lab Sample ID: 550-194841-2
Date Collected: 12/12/22 11:41
Matrix: Water
Date Received: 12/13/22 06:30

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Dissolved	Prep	3005A			290687	ABA	EET PHX	12/13/22 13:58
Dissolved	Analysis	6010B		1	290761	CHS	EET PHX	12/14/22 10:02
Dissolved	Prep	3005A			290699	ABA	EET PHX	12/13/22 15:43
Dissolved	Analysis	6020B		1	291044	ARE	EET PHX	12/15/22 16:39
Dissolved	Prep	3005A			290699	ABA	EET PHX	12/13/22 15:43
Dissolved	Analysis	6020B		1	291499	ARE	EET PHX	12/27/22 12:17

Client Sample ID: PC-88-EM40-FD
Lab Sample ID: 550-194841-3
Date Collected: 12/12/22 11:41
Matrix: Water
Date Received: 12/13/22 06:30

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	RSK-175		1	597020	JPH	EET DEN	12/16/22 23:24
Total/NA	Analysis	300.0		1	290719	AS1	EET PHX	12/13/22 14:47
Total/NA	Analysis	300.0		50	290721	AS1	EET PHX	12/13/22 21:48
Total/NA	Analysis	300.1B		20	291121	MEG	EET PHX	12/18/22 13:19
Total/NA	Analysis	314.0		500	290688	RDC	EET PHX	12/13/22 17:36
Total/NA	Prep	3005A			290687	ABA	EET PHX	12/13/22 13:58
Total/NA	Analysis	6010B		1	290761	CHS	EET PHX	12/14/22 10:05
Total/NA	Analysis	SM 5310B		1	290804	RDC	EET PHX	12/14/22 15:31

Client Sample ID: PC-88-EM40-FD
Lab Sample ID: 550-194841-4
Date Collected: 12/12/22 11:41
Matrix: Water
Date Received: 12/13/22 06:30

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Dissolved	Prep	3005A			290687	ABA	EET PHX	12/13/22 13:58
Dissolved	Analysis	6010B		1	290761	CHS	EET PHX	12/14/22 10:13
Dissolved	Prep	3005A			290699	ABA	EET PHX	12/13/22 15:43
Dissolved	Analysis	6020B		1	291044	ARE	EET PHX	12/15/22 16:43

Lab Chronicle

Client: Tetra Tech, Inc. Job ID: 550-194841-1
Project/Site: Tetra Tech M11 SWF Treatability Study

Client Sample ID: PC-88-EM40-FD — Lab Sample ID: 550-194841-4

Date Collected: 12/12/22 11:41 — **Matrix: Water**
Date Received: 12/13/22 06:30

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Dissolved	Prep	3005A			290699	ABA	EET PHX	12/13/22 15:43
Dissolved	Analysis	6020B		1	291499	ARE	EET PHX	12/27/22 12:19

Client Sample ID: PC-58-EM40 — Lab Sample ID: 550-194841-5

Date Collected: 12/12/22 13:01 — **Matrix: Water**
Date Received: 12/13/22 06:30

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	RSK-175		1	597020	JPH	EET DEN	12/16/22 23:38
Total/NA	Analysis	300.0		1	290719	AS1	EET PHX	12/13/22 15:06
Total/NA	Analysis	300.0		50	290721	AS1	EET PHX	12/13/22 22:16
Total/NA	Analysis	300.1B		100	291121	MEG	EET PHX	12/18/22 13:48
Total/NA	Analysis	314.0		20	290688	RDC	EET PHX	12/13/22 17:59
Total/NA	Prep	3005A			290687	ABA	EET PHX	12/13/22 13:58
Total/NA	Analysis	6010B		1	290761	CHS	EET PHX	12/14/22 10:16
Total/NA	Analysis	SM 5310B		1	290804	RDC	EET PHX	12/14/22 15:47

Client Sample ID: PC-58-EM40 — Lab Sample ID: 550-194841-6

Date Collected: 12/12/22 13:01 — **Matrix: Water**
Date Received: 12/13/22 06:30

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Dissolved	Prep	3005A			290687	ABA	EET PHX	12/13/22 13:58
Dissolved	Analysis	6010B		1	290761	CHS	EET PHX	12/14/22 10:19
Dissolved	Prep	3005A			290699	ABA	EET PHX	12/13/22 15:43
Dissolved	Analysis	6020B		1	291044	ARE	EET PHX	12/15/22 16:47
Dissolved	Prep	3005A			290699	ABA	EET PHX	12/13/22 15:43
Dissolved	Analysis	6020B		1	291499	ARE	EET PHX	12/27/22 12:21

Client Sample ID: PC-91-EM40 — Lab Sample ID: 550-194841-7

Date Collected: 12/12/22 14:01 — **Matrix: Water**
Date Received: 12/13/22 06:30

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	RSK-175		1	597020	JPH	EET DEN	12/16/22 23:51
Total/NA	Analysis	300.0		1	290719	AS1	EET PHX	12/13/22 17:01
Total/NA	Analysis	300.0		50	290721	AS1	EET PHX	12/13/22 22:44
Total/NA	Analysis	300.1B		1	291121	MEG	EET PHX	12/18/22 14:18
Total/NA	Analysis	314.0		2	290688	RDC	EET PHX	12/13/22 18:22
Total/NA	Prep	3005A			290687	ABA	EET PHX	12/13/22 13:58
Total/NA	Analysis	6010B		1	290761	CHS	EET PHX	12/14/22 10:22
Total/NA	Analysis	SM 5310B		1	290804	RDC	EET PHX	12/14/22 16:03

Lab Chronicle

Client: Tetra Tech, Inc.
Job ID: 550-194841-1
Project/Site: Tetra Tech M11 SWF Treatability Study

Client Sample ID: PC-91-EM40
Lab Sample ID: 550-194841-8

Date Collected: 12/12/22 14:01
Matrix: Water

Date Received: 12/13/22 06:30

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Dissolved	Prep	3005A			290687	ABA	EET PHX	12/13/22 13:58
Dissolved	Analysis	6010B		1	290761	CHS	EET PHX	12/14/22 10:25
Dissolved	Prep	3005A			290699	ABA	EET PHX	12/13/22 15:43
Dissolved	Analysis	6020B		1	291044	ARE	EET PHX	12/15/22 16:52
Dissolved	Prep	3005A			290699	ABA	EET PHX	12/13/22 15:43
Dissolved	Analysis	6020B		1	291499	ARE	EET PHX	12/27/22 12:23

Laboratory References:

EET DEN = Eurofins Denver, 4955 Yarrow Street, Arvada, CO 80002, TEL (303)736-0100

EET PHX = Eurofins Phoenix, 4625 East Cotton Center Boulevard, Suite #189, Phoenix, AZ 85040, TEL (602)437-3340

Accreditation/Certification Summary

Client: Tetra Tech, Inc.
Job ID: 550-194841-1
Project/Site: Tetra Tech M11 SWF Treatability Study

Laboratory: Eurofins Phoenix

All accreditations/certifications held by this laboratory are listed. Not all accreditations/certifications are applicable to this report.

Authority	Program	Identification Number	Expiration Date
Arizona	State	AZ0728	06-10-23
California	State	2941	03-09-23
Nevada	State	AZ1030	07-31-23
Oregon	NELAP	AZ100001	03-09-23
USDA	US Federal Programs	P330-19-00227	08-27-22 *

Laboratory: Eurofins Denver

All accreditations/certifications held by this laboratory are listed. Not all accreditations/certifications are applicable to this report.

Authority	Program	Identification Number	Expiration Date
A2LA	Dept. of Defense ELAP	2907.01	10-31-23
A2LA	ISO/IEC 17025	2907.01	10-31-23
Alabama	State Program	40730	09-30-12 *
Alaska (UST)	State	18-001	02-08-23
Arizona	State	AZ0713	12-20-22
Arkansas DEQ	State	19-047-0	05-31-23
California	State	2513	01-08-23
Connecticut	State	PH-0686	09-30-22 *
Florida	NELAP	E87667-57	06-30-23
Georgia	State	4025-011	01-08-23
Illinois	NELAP	2000172019-1	04-30-23
Iowa	State	IA#370	12-01-24
Kansas	NELAP	E-10166	04-30-23
Kentucky (WW)	State	KY98047	12-31-22
Louisiana	NELAP	30785	06-30-14 *
Louisiana	NELAP	30785	06-30-23
Louisiana (All)	NELAP	30785	06-30-23
Minnesota	NELAP	1788752	12-31-22
Nevada	State	CO000262020-1	07-31-23
New Hampshire	NELAP	205319	04-28-23
New Jersey	NELAP	190002	06-30-23
New York	NELAP	59923	04-01-23
North Carolina (WW/SW)	State	358	12-31-22
North Dakota	State	R-034	01-08-23
Oklahoma	NELAP	8614	08-31-23
Oregon	NELAP	4025-011	01-09-23
Pennsylvania	NELAP	013	07-31-23
South Carolina	State	72002001	01-08-23
Texas	NELAP	TX104704183-08-TX	09-30-09 *
Texas	NELAP	T104704183-21-19	09-30-23
US Fish & Wildlife	US Federal Programs	058448	07-31-23
USDA	US Federal Programs	P330-20-00065	03-06-23
Utah	NELAP	QUAN5	06-30-13 *
Utah	NELAP	CO000262019-11	07-31-23
Virginia	NELAP	10490	06-14-23
Washington	State	C583-19	08-03-23
Wisconsin	State	999615430	08-31-23

* Accreditation/Certification renewal pending - accreditation/certification considered valid.

Method Summary

Client: Tetra Tech, Inc.
Job ID: 550-194841-1
Project/Site: Tetra Tech M11 SWF Treatability Study

Method	Method Description	Protocol	Laboratory
RSK-175	Dissolved Gases (GC)	RSK	EET DEN
300.0	Anions, Ion Chromatography	MCAWW	EET PHX
300.1B	Disinfection By-Products, (IC)	EPA	EET PHX
314.0	Perchlorate (IC)	EPA	EET PHX
6010B	Metals (ICP)	SW846	EET PHX
6020B	Metals (ICP/MS)	SW846	EET PHX
SM 5310B	Organic Carbon, Total (TOC)	SM	EET PHX
3005A	Preparation, Total Metals	SW846	EET PHX

Protocol References:

EPA = US Environmental Protection Agency

MCAWW = "Methods For Chemical Analysis Of Water And Wastes", EPA-600/4-79-020, March 1983 And Subsequent Revisions.

RSK = Sample Prep And Calculations For Dissolved Gas Analysis In Water Samples Using A GC Headspace Equilibration Technique, RSKSOP-175, Rev. 0, 8/11/94, USEPA Research Lab

SM = "Standard Methods For The Examination Of Water And Wastewater"

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

Laboratory References:

EET DEN = Eurofins Denver, 4955 Yarrow Street, Arvada, CO 80002, TEL (303)736-0100

EET PHX = Eurofins Phoenix, 4625 East Cotton Center Boulevard, Suite #189, Phoenix, AZ 85040, TEL (602)437-3340

TestAmerica Las Vegas 219

194841

12/28/2022

Tetra Tech

1093 Commerce Park Drive
Oak Ridge, TN37830
(865)483-9900

CHAIN-OF-CUSTODY

NERT-M11
Groundwater Sampling

Laboratory Name: Eurofins TestAmerica, Phoenix (602) 437-3340 | Address: 4625 East Cotton Ctr Blvd, Suite 189, Phoenix, AZ 85040 | Contact: Mary Charlson 602-659-7627 | Page 1 of 1

Project Name: Tetra Tech M11 SWF Treatability Study	Sampler: Dylan Begley	Sampler Phone: 623-271-0886
Project No. M11-CWP-04	Project Contact: **Maureen McMyler**	Site Telephone No: (702) 966-8340
NERT - Seep Well Field Area Bioremediation Treatability Study		
Report to: Maureen McMyler, 1093 Commerce Park Dr. (865)220-4762	Project Manager/Supervisor: **Dana Grady**	
Bill to: Sunshine Pryor, 350 Indiana St., Golden, CO 80401 (303) 217-5700		

Analysis and Method Requested

Item No	Sample Number	Date	Time	G=Grab C=Comp	Matrix	Sample Description, Location	Number of Containers	Perchlorate E314.0	TOC SM5310B	Chlorate E300.1	Sulfate/Nitrate E300.0 SHORT HOLD NITRATE!	Total Mn	Dissolved metals	Methane
						Preservation Code:	-	N	A	L	N	D	D	A
1	PC-88-EM40	12/12/22	1141	G	W	-	12	✓	✓	✓	✓	✓	✓	✓
2	PC-88-EM40-FD		1141			-								
3	PC-58-EM40		1301			-								
4	PC-91-EM40		1401			-								
5														
6														
7														
8														
9														
10														

Preservation Codes:
A- HCL
D-Nitric Acid
L-EDA
N-None
S-H2SO4
Other:

Remarks

Notes

550-194841 Chain of Custody

Transfers Relinquished By (Signature)	Date/Time	Transfers Accepted By (Signature)	Date/Time	Special Instructions:
Dylan Begley	12/12/22 1500	DAM TALVS	12/13/22 1500	
DAM	12/12/22 1600			
			FedEx Airbill No.:	FedEx Airbill No.
		Laboratory: Mary Gt 12-13-22 6:30	**Sampler's Signature: (REQUIRED)**	Sampler's Signature: Dylan Begley

TAT: ___Standard ___Rush Due _____ | Received Good Condition ____ Y ____N ____ Cold

TT240 18.1/18.4

3.2°c - DB-ice

EETA PHX

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Login Sample Receipt Checklist

Client: Tetra Tech, Inc.

Job Number: 550-194841-1

Login Number: 194841
List Number: 1
Creator: Gravlin, Andrea

List Source: Eurofins Phoenix

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	True	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	False	Check done at department level as required.

Login Sample Receipt Checklist

Client: Tetra Tech, Inc.

Job Number: 550-194841-1

Login Number: 194841
List Number: 2
Creator: Rystrom, Joshua R

List Source: Eurofins Denver
List Creation: 12/14/22 05:01 PM

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	True	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	N/A	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

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ANALYTICAL REPORT

PREPARED FOR

Attn: Dana Grady
Tetra Tech, Inc.
1093 Commerce Park Drive
Suite 100
Oak Ridge, Tennessee 37830

Generated 12/30/2022 1:21:56 PM

JOB DESCRIPTION

Tetra Tech M11 SWF Treatability Study

JOB NUMBER

550-194919-1

Eurofins Phoenix
4625 East Cotton Center Boulevard
Suite #189
Phoenix AZ 85040

See page two for job notes and contact information.

myEOL

Job Notes

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The data in the report relate to the field sample(s) as received by the laboratory and associated QC. All results have been reviewed and have been found to be compliant with laboratory and accreditation requirements, with the exception of the noted deviation(s). For questions, please contact the Project Manager.

The test results in this report relate only to the samples as received by the laboratory and will meet all requirements of the methodology, with any exceptions noted. This report shall not be reproduced except in full, without the express written approval of the laboratory. All questions should be directed to the Eurofins Environment Testing Southwest, LLC Project Manager.

Authorization

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Authorized for release by
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Qualifiers

GC VOA

Qualifier	Qualifier Description
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

HPLC/IC

Qualifier	Qualifier Description
4	MS, MSD: The analyte present in the original sample is greater than 4 times the matrix spike concentration; therefore, control limits are not applicable.
D	Sample results are obtained from a dilution; the surrogate or matrix spike recoveries reported are calculated from diluted samples.
E	Result exceeded calibration range.
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

Metals

Qualifier	Qualifier Description
4	MS, MSD: The analyte present in the original sample is greater than 4 times the matrix spike concentration; therefore, control limits are not applicable.
B	Compound was found in the blank and sample.
cn	Refer to Case Narrative for further detail
F1	MS and/or MSD recovery exceeds control limits.
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CFU	Colony Forming Unit
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MCL	EPA recommended "Maximum Contaminant Level"
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
MPN	Most Probable Number
MQL	Method Quantitation Limit
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
NEG	Negative / Absent
POS	Positive / Present
PQL	Practical Quantitation Limit
PRES	Presumptive
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)
TNTC	Too Numerous To Count

Job ID: 550-194919-1

Laboratory: Eurofins Phoenix

Narrative

Job Narrative
550-194919-1

Receipt
The samples were received on 12/14/2022 10:00 AM. Unless otherwise noted below, the samples arrived in good condition, and, where required, properly preserved and on ice. The temperatures of the 2 coolers at receipt time were 2.1°C and 20.4°C

GC VOA
Method RSK_175: The method requirement for no headspace was not met. The following volatile sample was analyzed with headspace in the sample container(s): SWFTS-MW20-EM40 (550-194919-7).

No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

HPLC/IC
Method 314.0: The followings sample was analyzed at a dilution due to the Matrix Conductivity Threshold (MCT) of the instrument: SWFTS-MW20-EM40 (550-194919-7). The reporting limits have been adjusted accordingly.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

Metals
Method 6010B: The spiking solution used during the extraction process for the laboratory control sample/ laboratory control sample duplicate (LCS/LCSD), matrix spike/matrix spike duplicate (MS/MSD) and post digestion spike (PDS) associated with preparation batch 550-290825 did not contain Phosphorus; therefore, percent recoveries are unavailable. The affected samples could not be re-prepared and / or re-analyzed with a spike containing these analytes. The instrument QC was within acceptance criteria and may be used to evaluate these analytes for this method. The results have been reported with cn qualifiers. Affected samples: SWFTS-MW25-EM40 (550-194919-2), SWFTS-MW24-EM40 (550-194919-4), SWFTS-MW23-EM40 (550-194919-6), SWFTS-MW20-EM40 (550-194919-8), (LCS 550-290825/2-A), (LCSD 550-290825/3-A), (550-194920-B-16-D), (550-194920-B-16-A MS), (550-194920-B-16-B MSD) and (550-194920-B-16-C PDS).

Method 6010B: The following sample was diluted to bring the concentration of target analytes within the calibration range: SWFTS-MW20-EM40 (550-194919-8). Elevated reporting limits (RLs) are provided.

Method 6010B: The spiking solution used during the extraction process for the laboratory control sample/ laboratory control sample duplicate (LCS/LCSD), matrix spike/matrix spike duplicate (MS/MSD) and post digestion spike (PDS) associated with preparation batch 550-290825 did not contain Phosphorus; therefore, percent recoveries are unavailable. The affected samples could not be re-prepared and / or re-analyzed with a spike containing these analytes. The instrument QC was within acceptance criteria and may be used to evaluate these analytes for this method. The results have been reported with cn qualifiers. Affected samples: SWFTS-MW25-EM40 (550-194919-2), SWFTS-MW24-EM40 (550-194919-4), SWFTS-MW23-EM40 (550-194919-6), SWFTS-MW20-EM40 (550-194919-8), (LCS 550-290825/2-A), (LCSD 550-290825/3-A), (550-194920-B-16-D), (550-194920-B-16-A MS), (550-194920-B-16-B MSD) and (550-194920-B-16-C PDS).

Method 6010B: The following sample was diluted to bring the concentration of target analytes within the calibration range: SWFTS-MW20-EM40 (550-194919-8). Elevated reporting limits (RLs) are provided.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

General Chemistry
No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

Sample Summary

Client: Tetra Tech, Inc.
Job ID: 550-194919-1
Project/Site: Tetra Tech M11 SWF Treatability Study

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
550-194919-1	SWFTS-MW25-EM40	Water	12/13/22 10:00	12/14/22 10:00
550-194919-2	SWFTS-MW25-EM40	Water	12/13/22 10:00	12/14/22 10:00
550-194919-3	SWFTS-MW24-EM40	Water	12/13/22 11:45	12/14/22 10:00
550-194919-4	SWFTS-MW24-EM40	Water	12/13/22 11:45	12/14/22 10:00
550-194919-5	SWFTS-MW23-EM40	Water	12/13/22 12:30	12/14/22 10:00
550-194919-6	SWFTS-MW23-EM40	Water	12/13/22 12:30	12/14/22 10:00
550-194919-7	SWFTS-MW20-EM40	Water	12/13/22 13:55	12/14/22 10:00
550-194919-8	SWFTS-MW20-EM40	Water	12/13/22 13:55	12/14/22 10:00

Detection Summary

Client: Tetra Tech, Inc.
Job ID: 550-194919-1
Project/Site: Tetra Tech M11 SWF Treatability Study

Client Sample ID: SWFTS-MW25-EM40 — Lab Sample ID: 550-194919-1

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Nitrate as N	15		0.050	0.014	mg/L	1		300.0	Total/NA
Sulfate	1700		100	21	mg/L	50		300.0	Total/NA
Chlorate	17000		2000	490	ug/L	100		300.1B	Total/NA
Perchlorate	8800		500	160	ug/L	500		314.0	Total/NA
Manganese	2.0		0.020	0.0083	mg/L	1		6010B	Total/NA
Total Organic Carbon	2.0		2.0	1.0	mg/L	4		SM 5310B	Total/NA

Client Sample ID: SWFTS-MW25-EM40 — Lab Sample ID: 550-194919-2

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Aluminum	0.33		0.20	0.080	mg/L	1		6010B	Dissolved
Barium	0.034		0.0050	0.00057	mg/L	1		6010B	Dissolved
Boron	2.2	B	0.050	0.0024	mg/L	1		6010B	Dissolved
Calcium	340		0.40	0.015	mg/L	1		6010B	Dissolved
Cobalt	0.0021	J	0.0050	0.00054	mg/L	1		6010B	Dissolved
Iron	0.036	J B	0.40	0.019	mg/L	1		6010B	Dissolved
Magnesium	160		0.40	0.054	mg/L	1		6010B	Dissolved
Manganese	2.0		0.020	0.0083	mg/L	1		6010B	Dissolved
Molybdenum	0.071		0.010	0.00052	mg/L	1		6010B	Dissolved
Nickel	0.0043	J	0.0050	0.0028	mg/L	1		6010B	Dissolved
Potassium	38		1.0	0.081	mg/L	1		6010B	Dissolved
Silicon	36		0.10	0.016	mg/L	1		6010B	Dissolved
Sodium	720		0.40	0.039	mg/L	1		6010B	Dissolved
Strontium	9.0		0.010	0.00032	mg/L	1		6010B	Dissolved
Tungsten	0.0080	J	0.10	0.0021	mg/L	1		6010B	Dissolved
Vanadium	0.030		0.0050	0.00069	mg/L	1		6010B	Dissolved
Antimony	0.024	J B	0.10	0.0043	ug/L	1		6020B	Dissolved
Arsenic	5.8		0.10	0.025	ug/L	1		6020B	Dissolved
Selenium	6.4		0.050	0.0074	ug/L	1		6020B	Dissolved
Thallium	0.058		0.010	0.0013	ug/L	1		6020B	Dissolved

Client Sample ID: SWFTS-MW24-EM40 — Lab Sample ID: 550-194919-3

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Nitrate as N	10		0.050	0.014	mg/L	1		300.0	Total/NA
Sulfate	1800		100	21	mg/L	50		300.0	Total/NA
Chlorate	16000		2000	490	ug/L	100		300.1B	Total/NA
Perchlorate	5000		200	63	ug/L	200		314.0	Total/NA
Manganese	0.90		0.020	0.0083	mg/L	1		6010B	Total/NA
Total Organic Carbon	1.5		0.50	0.26	mg/L	1		SM 5310B	Total/NA

Client Sample ID: SWFTS-MW24-EM40 — Lab Sample ID: 550-194919-4

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Aluminum	0.33		0.20	0.080	mg/L	1		6010B	Dissolved
Barium	0.020		0.0050	0.00057	mg/L	1		6010B	Dissolved
Boron	2.4	B	0.050	0.0024	mg/L	1		6010B	Dissolved
Calcium	370		0.40	0.015	mg/L	1		6010B	Dissolved
Iron	0.031	J B	0.40	0.019	mg/L	1		6010B	Dissolved
Magnesium	190		0.40	0.054	mg/L	1		6010B	Dissolved
Manganese	0.96		0.020	0.0083	mg/L	1		6010B	Dissolved
Molybdenum	0.15		0.010	0.00052	mg/L	1		6010B	Dissolved

This Detection Summary does not include radiochemical test results.

Eurofins Phoenix

Client Sample ID: SWFTS-MW24-EM40 (Continued) — Lab Sample ID: 550-194919-4

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Nickel	0.0054		0.0050	0.0028	mg/L	1		6010B	Dissolved
Potassium	54		1.0	0.081	mg/L	1		6010B	Dissolved
Silicon	35		0.10	0.016	mg/L	1		6010B	Dissolved
Sodium	680		0.40	0.039	mg/L	1		6010B	Dissolved
Strontium	9.8		0.010	0.00032	mg/L	1		6010B	Dissolved
Tungsten	0.0043	J	0.10	0.0021	mg/L	1		6010B	Dissolved
Vanadium	0.028		0.0050	0.00069	mg/L	1		6010B	Dissolved
Antimony	0.011	J B	0.10	0.0043	ug/L	1		6020B	Dissolved
Arsenic	5.0		0.10	0.025	ug/L	1		6020B	Dissolved
Selenium	3.9		0.050	0.0074	ug/L	1		6020B	Dissolved
Thallium	0.029		0.010	0.0013	ug/L	1		6020B	Dissolved

Client Sample ID: SWFTS-MW23-EM40 — Lab Sample ID: 550-194919-5

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Nitrate as N	0.81		0.050	0.014	mg/L	1		300.0	Total/NA
Sulfate	670		100	21	mg/L	50		300.0	Total/NA
Chlorate	160		20	4.9	ug/L	1		300.1B	Total/NA
Perchlorate	1100		100	31	ug/L	100		314.0	Total/NA
Manganese	0.16		0.020	0.0083	mg/L	1		6010B	Total/NA
Total Organic Carbon	2.6		0.50	0.26	mg/L	1		SM 5310B	Total/NA

Client Sample ID: SWFTS-MW23-EM40 — Lab Sample ID: 550-194919-6

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Aluminum	0.15	J	0.20	0.080	mg/L	1		6010B	Dissolved
Barium	0.014		0.0050	0.00057	mg/L	1		6010B	Dissolved
Boron	0.73	B	0.050	0.0024	mg/L	1		6010B	Dissolved
Calcium	170		0.40	0.015	mg/L	1		6010B	Dissolved
Cobalt	0.0038	J	0.0050	0.00054	mg/L	1		6010B	Dissolved
Copper	0.0024	J	0.0050	0.0012	mg/L	1		6010B	Dissolved
Iron	0.019	J B	0.40	0.019	mg/L	1		6010B	Dissolved
Magnesium	63		0.40	0.054	mg/L	1		6010B	Dissolved
Manganese	0.15		0.020	0.0083	mg/L	1		6010B	Dissolved
Molybdenum	0.010		0.010	0.00052	mg/L	1		6010B	Dissolved
Nickel	0.011		0.0050	0.0028	mg/L	1		6010B	Dissolved
Potassium	19		1.0	0.081	mg/L	1		6010B	Dissolved
Silicon	39		0.10	0.016	mg/L	1		6010B	Dissolved
Sodium	400		0.40	0.039	mg/L	1		6010B	Dissolved
Strontium	4.3		0.010	0.00032	mg/L	1		6010B	Dissolved
Tungsten	0.0037	J	0.10	0.0021	mg/L	1		6010B	Dissolved
Vanadium	0.052		0.0050	0.00069	mg/L	1		6010B	Dissolved
Antimony	0.015	J B	0.10	0.0043	ug/L	1		6020B	Dissolved
Arsenic	9.3		0.10	0.025	ug/L	1		6020B	Dissolved
Selenium	0.13		0.050	0.0074	ug/L	1		6020B	Dissolved
Thallium	0.0053	J	0.010	0.0013	ug/L	1		6020B	Dissolved

Client Sample ID: SWFTS-MW20-EM40 — Lab Sample ID: 550-194919-7

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Methane	680		5.0	0.63	ug/L	1		RSK-175	Total/NA
Nitrate as N	0.031	J	0.050	0.014	mg/L	1		300.0	Total/NA

This Detection Summary does not include radiochemical test results.

Client Sample ID: SWFTS-MW20-EM40 (Continued) Lab Sample ID: 550-194919-7

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Sulfate	2400		100	21	mg/L	50		300.0	Total/NA
Chlorate	64		20	4.9	ug/L	1		300.1B	Total/NA
Perchlorate	3.0	J D	4.0	1.3	ug/L	4		314.0	Total/NA
Manganese	5.2		0.020	0.0083	mg/L	1		6010B	Total/NA
Total Organic Carbon	4.8		2.0	1.0	mg/L	4		SM 5310B	Total/NA

Client Sample ID: SWFTS-MW20-EM40 Lab Sample ID: 550-194919-8

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Aluminum	0.44		0.20	0.080	mg/L	1		6010B	Dissolved
Barium	0.021		0.0050	0.00057	mg/L	1		6010B	Dissolved
Boron	4.3	B	0.050	0.0024	mg/L	1		6010B	Dissolved
Cadmium	0.00079	J	0.0010	0.00072	mg/L	1		6010B	Dissolved
Calcium	480		0.40	0.015	mg/L	1		6010B	Dissolved
Cobalt	0.0085		0.0050	0.00054	mg/L	1		6010B	Dissolved
Iron	0.32	J B	0.40	0.019	mg/L	1		6010B	Dissolved
Magnesium	310		0.40	0.054	mg/L	1		6010B	Dissolved
Manganese	5.4		0.020	0.0083	mg/L	1		6010B	Dissolved
Molybdenum	0.29		0.010	0.00052	mg/L	1		6010B	Dissolved
Nickel	0.013		0.0050	0.0028	mg/L	1		6010B	Dissolved
Potassium	38		1.0	0.081	mg/L	1		6010B	Dissolved
Silicon	50		0.10	0.016	mg/L	1		6010B	Dissolved
Sodium	1000		0.80	0.078	mg/L	2		6010B	Dissolved
Strontium	13		0.010	0.00032	mg/L	1		6010B	Dissolved
Tungsten	0.010	J	0.10	0.0021	mg/L	1		6010B	Dissolved
Vanadium	0.014		0.0050	0.00069	mg/L	1		6010B	Dissolved
Antimony	0.052	J B	0.10	0.0043	ug/L	1		6020B	Dissolved
Arsenic	17		0.10	0.025	ug/L	1		6020B	Dissolved
Selenium	0.72		0.050	0.0074	ug/L	1		6020B	Dissolved
Thallium	0.042		0.010	0.0013	ug/L	1		6020B	Dissolved

This Detection Summary does not include radiochemical test results.

Client Sample ID: SWFTS-MW25-EM40 — Lab Sample ID: 550-194919-1

Date Collected: 12/13/22 10:00 — **Matrix: Water**
Date Received: 12/14/22 10:00

Method: RSK-175 - Dissolved Gases (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Methane	ND		5.0	0.63	ug/L			12/20/22 10:32	1

Method: MCAWW 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Nitrate as N	**15**		0.050	0.014	mg/L			12/14/22 14:28	1
Sulfate	**1700**		100	21	mg/L			12/14/22 19:22	50

Method: EPA 300.1B - Disinfection By-Products, (IC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chlorate	**17000**		2000	490	ug/L			12/18/22 14:47	100

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Dichloroacetic acid(Surr)	*110*		*90 - 115*		*12/18/22 14:47*	*100*

Method: EPA 314.0 - Perchlorate (IC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perchlorate	**8800**		500	160	ug/L			12/14/22 13:25	500

Method: SW846 6010B - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Manganese	**2.0**		0.020	0.0083	mg/L		12/15/22 06:43	12/16/22 13:47	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon (SM 5310B)	**2.0**		2.0	1.0	mg/L			12/16/22 17:24	4

Client Sample ID: SWFTS-MW25-EM40 — Lab Sample ID: 550-194919-2

Date Collected: 12/13/22 10:00 — **Matrix: Water**
Date Received: 12/14/22 10:00

Method: SW846 6010B - Metals (ICP) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	**0.33**		0.20	0.080	mg/L		12/15/22 06:30	12/16/22 12:45	1
Barium	**0.034**		0.0050	0.00057	mg/L		12/15/22 06:30	12/16/22 12:45	1
Beryllium	ND		0.0010	0.00019	mg/L		12/15/22 06:30	12/16/22 12:45	1
Boron	**2.2**	**B**	0.050	0.0024	mg/L		12/15/22 06:30	12/16/22 12:45	1
Cadmium	ND		0.0010	0.00072	mg/L		12/15/22 06:30	12/16/22 12:45	1
Calcium	**340**		0.40	0.015	mg/L		12/15/22 06:30	12/16/22 12:45	1
Chromium	ND		0.0050	0.0011	mg/L		12/15/22 06:30	12/16/22 12:45	1
Cobalt	**0.0021**	**J**	0.0050	0.00054	mg/L		12/15/22 06:30	12/16/22 12:45	1
Copper	ND		0.0050	0.0012	mg/L		12/15/22 06:30	12/16/22 12:45	1
Iron	**0.036**	**J B**	0.40	0.019	mg/L		12/15/22 06:30	12/16/22 12:45	1
Lead	ND		0.010	0.0025	mg/L		12/15/22 06:30	12/16/22 12:45	1
Magnesium	**160**		0.40	0.054	mg/L		12/15/22 06:30	12/16/22 12:45	1
Manganese	**2.0**		0.020	0.0083	mg/L		12/15/22 06:30	12/16/22 12:45	1
Molybdenum	**0.071**		0.010	0.00052	mg/L		12/15/22 06:30	12/16/22 12:45	1
Nickel	**0.0043**	**J**	0.0050	0.0028	mg/L		12/15/22 06:30	12/16/22 12:45	1
Phosphorus	ND	cn	0.40	0.011	mg/L		12/15/22 06:30	12/16/22 12:45	1
Potassium	**38**		1.0	0.081	mg/L		12/15/22 06:30	12/16/22 12:45	1
Silicon	**36**		0.10	0.016	mg/L		12/15/22 06:30	12/16/22 12:45	1
Silver	ND		0.0080	0.00049	mg/L		12/15/22 06:30	12/16/22 12:45	1

Client Sample ID: SWFTS-MW25-EM40 — Lab Sample ID: 550-194919-2

Date Collected: 12/13/22 10:00 — **Matrix: Water**
Date Received: 12/14/22 10:00

Method: SW846 6010B - Metals (ICP) - Dissolved (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sodium	720		0.40	0.039	mg/L		12/15/22 06:30	12/16/22 12:45	1
Strontium	9.0		0.010	0.00032	mg/L		12/15/22 06:30	12/16/22 12:45	1
Tin	ND		0.010	0.0034	mg/L		12/15/22 06:30	12/16/22 12:45	1
Titanium	ND		0.0050	0.00028	mg/L		12/15/22 06:30	12/16/22 12:45	1
Tungsten	0.0080	J	0.10	0.0021	mg/L		12/15/22 06:30	12/16/22 12:45	1
Vanadium	0.030		0.0050	0.00069	mg/L		12/15/22 06:30	12/16/22 12:45	1
Zinc	ND		0.040	0.0023	mg/L		12/15/22 06:30	12/16/22 12:45	1

Method: SW846 6020B - Metals (ICP/MS) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	0.024	J B	0.10	0.0043	ug/L		12/15/22 04:20	12/22/22 15:28	1
Arsenic	5.8		0.10	0.025	ug/L		12/15/22 04:20	12/27/22 13:03	1
Selenium	6.4		0.050	0.0074	ug/L		12/15/22 04:20	12/27/22 13:03	1
Thallium	0.058		0.010	0.0013	ug/L		12/15/22 04:20	12/22/22 15:28	1

Client Sample ID: SWFTS-MW24-EM40 — Lab Sample ID: 550-194919-3

Date Collected: 12/13/22 11:45 — **Matrix: Water**
Date Received: 12/14/22 10:00

Method: RSK-175 - Dissolved Gases (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Methane	ND		5.0	0.63	ug/L			12/20/22 10:45	1

Method: MCAWW 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Nitrate as N	10		0.050	0.014	mg/L			12/14/22 14:46	1
Sulfate	1800		100	21	mg/L			12/14/22 19:50	50

Method: EPA 300.1B - Disinfection By-Products, (IC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chlorate	16000		2000	490	ug/L			12/18/22 15:17	100

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Dichloroacetic acid(Surr)	*105*		*90 - 115*		*12/18/22 15:17*	*100*

Method: EPA 314.0 - Perchlorate (IC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perchlorate	5000		200	63	ug/L			12/14/22 13:48	200

Method: SW846 6010B - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Manganese	0.90		0.020	0.0083	mg/L		12/15/22 06:43	12/16/22 13:50	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon (SM 5310B)	1.5		0.50	0.26	mg/L			12/16/22 17:38	1

Client Sample ID: SWFTS-MW24-EM40 — Lab Sample ID: 550-194919-4

Date Collected: 12/13/22 11:45 — **Matrix: Water**
Date Received: 12/14/22 10:00

Method: SW846 6010B - Metals (ICP) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	0.33		0.20	0.080	mg/L		12/15/22 06:30	12/16/22 12:48	1
Barium	0.020		0.0050	0.00057	mg/L		12/15/22 06:30	12/16/22 12:48	1
Beryllium	ND		0.0010	0.00019	mg/L		12/15/22 06:30	12/16/22 12:48	1
Boron	2.4	B	0.050	0.0024	mg/L		12/15/22 06:30	12/16/22 12:48	1
Cadmium	ND		0.0010	0.00072	mg/L		12/15/22 06:30	12/16/22 12:48	1
Calcium	370		0.40	0.015	mg/L		12/15/22 06:30	12/16/22 12:48	1
Chromium	ND		0.0050	0.0011	mg/L		12/15/22 06:30	12/16/22 12:48	1
Cobalt	ND		0.0050	0.00054	mg/L		12/15/22 06:30	12/16/22 12:48	1
Copper	ND		0.0050	0.0012	mg/L		12/15/22 06:30	12/16/22 12:48	1
Iron	0.031	J B	0.40	0.019	mg/L		12/15/22 06:30	12/16/22 12:48	1
Lead	ND		0.010	0.0025	mg/L		12/15/22 06:30	12/16/22 12:48	1
Magnesium	190		0.40	0.054	mg/L		12/15/22 06:30	12/16/22 12:48	1
Manganese	0.96		0.020	0.0083	mg/L		12/15/22 06:30	12/16/22 12:48	1
Molybdenum	0.15		0.010	0.00052	mg/L		12/15/22 06:30	12/16/22 12:48	1
Nickel	0.0054		0.0050	0.0028	mg/L		12/15/22 06:30	12/16/22 12:48	1
Phosphorus	ND	cn	0.40	0.011	mg/L		12/15/22 06:30	12/16/22 12:48	1
Potassium	54		1.0	0.081	mg/L		12/15/22 06:30	12/16/22 12:48	1
Silicon	35		0.10	0.016	mg/L		12/15/22 06:30	12/16/22 12:48	1
Silver	ND		0.0080	0.00049	mg/L		12/15/22 06:30	12/16/22 12:48	1
Sodium	680		0.40	0.039	mg/L		12/15/22 06:30	12/16/22 12:48	1
Strontium	9.8		0.010	0.00032	mg/L		12/15/22 06:30	12/16/22 12:48	1
Tin	ND		0.010	0.0034	mg/L		12/15/22 06:30	12/16/22 12:48	1
Titanium	ND		0.0050	0.00028	mg/L		12/15/22 06:30	12/16/22 12:48	1
Tungsten	0.0043	J	0.10	0.0021	mg/L		12/15/22 06:30	12/16/22 12:48	1
Vanadium	0.028		0.0050	0.00069	mg/L		12/15/22 06:30	12/16/22 12:48	1
Zinc	ND		0.040	0.0023	mg/L		12/15/22 06:30	12/16/22 12:48	1

Method: SW846 6020B - Metals (ICP/MS) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	0.011	J B	0.10	0.0043	ug/L		12/15/22 04:20	12/22/22 15:30	1
Arsenic	5.0		0.10	0.025	ug/L		12/15/22 04:20	12/27/22 13:05	1
Selenium	3.9		0.050	0.0074	ug/L		12/15/22 04:20	12/27/22 13:05	1
Thallium	0.029		0.010	0.0013	ug/L		12/15/22 04:20	12/22/22 15:30	1

Client Sample ID: SWFTS-MW23-EM40 — Lab Sample ID: 550-194919-5

Date Collected: 12/13/22 12:30 — **Matrix: Water**
Date Received: 12/14/22 10:00

Method: RSK-175 - Dissolved Gases (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Methane	ND		5.0	0.63	ug/L			12/20/22 10:59	1

Method: MCAWW 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Nitrate as N	0.81		0.050	0.014	mg/L			12/14/22 16:18	1
Sulfate	670		100	21	mg/L			12/14/22 20:17	50

Method: EPA 300.1B - Disinfection By-Products, (IC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chlorate	160		20	4.9	ug/L			12/20/22 19:10	1

Client Sample ID: SWFTS-MW23-EM40 — Lab Sample ID: 550-194919-5

Date Collected: 12/13/22 12:30 — **Matrix: Water**
Date Received: 12/14/22 10:00

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Dichloroacetic acid(Surr)	*111*		*90 - 115*		*12/20/22 19:10*	*1*

Method: EPA 314.0 - Perchlorate (IC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perchlorate	**1100**		100	31	ug/L			12/14/22 14:11	100

Method: SW846 6010B - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Manganese	**0.16**		0.020	0.0083	mg/L		12/15/22 06:43	12/16/22 13:53	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon (SM 5310B)	**2.6**		0.50	0.26	mg/L			12/16/22 18:20	1

Client Sample ID: SWFTS-MW23-EM40 — Lab Sample ID: 550-194919-6

Date Collected: 12/13/22 12:30 — **Matrix: Water**
Date Received: 12/14/22 10:00

Method: SW846 6010B - Metals (ICP) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	**0.15**	**J**	0.20	0.080	mg/L		12/15/22 06:30	12/16/22 12:50	1
Barium	**0.014**		0.0050	0.00057	mg/L		12/15/22 06:30	12/16/22 12:50	1
Beryllium	ND		0.0010	0.00019	mg/L		12/15/22 06:30	12/16/22 12:50	1
Boron	**0.73**	**B**	0.050	0.0024	mg/L		12/15/22 06:30	12/16/22 12:50	1
Cadmium	ND		0.0010	0.00072	mg/L		12/15/22 06:30	12/16/22 12:50	1
Calcium	**170**		0.40	0.015	mg/L		12/15/22 06:30	12/16/22 12:50	1
Chromium	ND		0.0050	0.0011	mg/L		12/15/22 06:30	12/16/22 12:50	1
Cobalt	**0.0038**	**J**	0.0050	0.00054	mg/L		12/15/22 06:30	12/16/22 12:50	1
Copper	**0.0024**	**J**	0.0050	0.0012	mg/L		12/15/22 06:30	12/16/22 12:50	1
Iron	**0.019**	**J B**	0.40	0.019	mg/L		12/15/22 06:30	12/16/22 12:50	1
Lead	ND		0.010	0.0025	mg/L		12/15/22 06:30	12/16/22 12:50	1
Magnesium	**63**		0.40	0.054	mg/L		12/15/22 06:30	12/16/22 12:50	1
Manganese	**0.15**		0.020	0.0083	mg/L		12/15/22 06:30	12/16/22 12:50	1
Molybdenum	**0.010**		0.010	0.00052	mg/L		12/15/22 06:30	12/16/22 12:50	1
Nickel	**0.011**		0.0050	0.0028	mg/L		12/15/22 06:30	12/16/22 12:50	1
Phosphorus	ND	cn	0.40	0.011	mg/L		12/15/22 06:30	12/16/22 12:50	1
Potassium	**19**		1.0	0.081	mg/L		12/15/22 06:30	12/16/22 12:50	1
Silicon	**39**		0.10	0.016	mg/L		12/15/22 06:30	12/16/22 12:50	1
Silver	ND		0.0080	0.00049	mg/L		12/15/22 06:30	12/16/22 12:50	1
Sodium	**400**		0.40	0.039	mg/L		12/15/22 06:30	12/16/22 12:50	1
Strontium	**4.3**		0.010	0.00032	mg/L		12/15/22 06:30	12/16/22 12:50	1
Tin	ND		0.010	0.0034	mg/L		12/15/22 06:30	12/16/22 12:50	1
Titanium	ND		0.0050	0.00028	mg/L		12/15/22 06:30	12/16/22 12:50	1
Tungsten	**0.0037**	**J**	0.10	0.0021	mg/L		12/15/22 06:30	12/16/22 12:50	1
Vanadium	**0.052**		0.0050	0.00069	mg/L		12/15/22 06:30	12/16/22 12:50	1
Zinc	ND		0.040	0.0023	mg/L		12/15/22 06:30	12/16/22 12:50	1

Method: SW846 6020B - Metals (ICP/MS) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	**0.015**	**J B**	0.10	0.0043	ug/L		12/15/22 04:20	12/22/22 15:33	1
Arsenic	**9.3**		0.10	0.025	ug/L		12/15/22 04:20	12/27/22 13:07	1

Client Sample ID: SWFTS-MW23-EM40 — Lab Sample ID: 550-194919-6

Date Collected: 12/13/22 12:30 — **Matrix: Water**
Date Received: 12/14/22 10:00

Method: SW846 6020B - Metals (ICP/MS) - Dissolved (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Selenium	0.13		0.050	0.0074	ug/L		12/15/22 04:20	12/27/22 13:07	1
Thallium	0.0053	J	0.010	0.0013	ug/L		12/15/22 04:20	12/22/22 15:33	1

Client Sample ID: SWFTS-MW20-EM40 — Lab Sample ID: 550-194919-7

Date Collected: 12/13/22 13:55 — **Matrix: Water**
Date Received: 12/14/22 10:00

Method: RSK-175 - Dissolved Gases (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Methane	680		5.0	0.63	ug/L			12/20/22 11:26	1

Method: MCAWW 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Nitrate as N	0.031	J	0.050	0.014	mg/L			12/14/22 16:37	1
Sulfate	2400		100	21	mg/L			12/14/22 20:45	50

Method: EPA 300.1B - Disinfection By-Products, (IC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chlorate	64		20	4.9	ug/L			12/20/22 19:39	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Dichloroacetic acid(Surr)	*111*		*90 - 115*		*12/20/22 19:39*	*1*

Method: EPA 314.0 - Perchlorate (IC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perchlorate	3.0	J D	4.0	1.3	ug/L			12/15/22 13:19	4

Method: SW846 6010B - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Manganese	5.2		0.020	0.0083	mg/L		12/15/22 06:43	12/16/22 13:56	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon (SM 5310B)	4.8		2.0	1.0	mg/L			12/22/22 14:26	4

Client Sample ID: SWFTS-MW20-EM40 — Lab Sample ID: 550-194919-8

Date Collected: 12/13/22 13:55 — **Matrix: Water**
Date Received: 12/14/22 10:00

Method: SW846 6010B - Metals (ICP) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	0.44		0.20	0.080	mg/L		12/15/22 06:30	12/16/22 12:53	1
Barium	0.021		0.0050	0.00057	mg/L		12/15/22 06:30	12/16/22 12:53	1
Beryllium	ND		0.0010	0.00019	mg/L		12/15/22 06:30	12/16/22 12:53	1
Boron	4.3	B	0.050	0.0024	mg/L		12/15/22 06:30	12/16/22 12:53	1
Cadmium	0.00079	J	0.0010	0.00072	mg/L		12/15/22 06:30	12/16/22 12:53	1
Calcium	480		0.40	0.015	mg/L		12/15/22 06:30	12/16/22 12:53	1
Chromium	ND		0.0050	0.0011	mg/L		12/15/22 06:30	12/16/22 12:53	1
Cobalt	0.0085		0.0050	0.00054	mg/L		12/15/22 06:30	12/16/22 12:53	1
Copper	ND		0.0050	0.0012	mg/L		12/15/22 06:30	12/16/22 12:53	1
Iron	0.32	J B	0.40	0.019	mg/L		12/15/22 06:30	12/16/22 12:53	1
Lead	ND		0.010	0.0025	mg/L		12/15/22 06:30	12/16/22 12:53	1

Client: Tetra Tech, Inc.
Job ID: 550-194919-1
Project/Site: Tetra Tech M11 SWF Treatability Study

Client Sample ID: SWFTS-MW20-EM40
Lab Sample ID: 550-194919-8
Date Collected: 12/13/22 13:55
Matrix: Water
Date Received: 12/14/22 10:00

Method: SW846 6010B - Metals (ICP) - Dissolved (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Magnesium	310		0.40	0.054	mg/L		12/15/22 06:30	12/16/22 12:53	1
Manganese	5.4		0.020	0.0083	mg/L		12/15/22 06:30	12/16/22 12:53	1
Molybdenum	0.29		0.010	0.00052	mg/L		12/15/22 06:30	12/16/22 12:53	1
Nickel	0.013		0.0050	0.0028	mg/L		12/15/22 06:30	12/16/22 12:53	1
Phosphorus	ND	cn	0.40	0.011	mg/L		12/15/22 06:30	12/16/22 12:53	1
Potassium	38		1.0	0.081	mg/L		12/15/22 06:30	12/16/22 12:53	1
Silicon	50		0.10	0.016	mg/L		12/15/22 06:30	12/16/22 12:53	1
Silver	ND		0.0080	0.00049	mg/L		12/15/22 06:30	12/16/22 12:53	1
Sodium	1000		0.80	0.078	mg/L		12/15/22 06:30	12/19/22 15:48	2
Strontium	13		0.010	0.00032	mg/L		12/15/22 06:30	12/16/22 12:53	1
Tin	ND		0.010	0.0034	mg/L		12/15/22 06:30	12/16/22 12:53	1
Titanium	ND		0.0050	0.00028	mg/L		12/15/22 06:30	12/16/22 12:53	1
Tungsten	0.010	J	0.10	0.0021	mg/L		12/15/22 06:30	12/16/22 12:53	1
Vanadium	0.014		0.0050	0.00069	mg/L		12/15/22 06:30	12/16/22 12:53	1
Zinc	ND		0.040	0.0023	mg/L		12/15/22 06:30	12/16/22 12:53	1

Method: SW846 6020B - Metals (ICP/MS) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	0.052	J B	0.10	0.0043	ug/L		12/15/22 04:20	12/22/22 15:35	1
Arsenic	17		0.10	0.025	ug/L		12/15/22 04:20	12/27/22 13:09	1
Selenium	0.72		0.050	0.0074	ug/L		12/15/22 04:20	12/27/22 13:09	1
Thallium	0.042		0.010	0.0013	ug/L		12/15/22 04:20	12/22/22 15:35	1

Surrogate Summary

Client: Tetra Tech, Inc.
Job ID: 550-194919-1
Project/Site: Tetra Tech M11 SWF Treatability Study

Method: 300.1B - Disinfection By-Products, (IC)

Matrix: Water **Prep Type: Total/NA**

		Percent Surrogate Recovery (Acceptance Limits)
Lab Sample ID	Client Sample ID	DCAA (90-115)
550-194755-D-7 MS	Matrix Spike	108
550-194755-D-7 MSD	Matrix Spike Duplicate	109
550-194919-1	SWFTS-MW25-EM40	110
550-194919-3	SWFTS-MW24-EM40	105
550-194919-5	SWFTS-MW23-EM40	111
550-194919-7	SWFTS-MW20-EM40	111
550-194920-K-15 MS	Matrix Spike	111
550-194920-K-15 MSD	Matrix Spike Duplicate	108
LCS 550-291121/5	Lab Control Sample	107
LCS 550-291159/6	Lab Control Sample	91
LCSD 550-291121/6	Lab Control Sample Dup	109
LCSD 550-291159/7	Lab Control Sample Dup	112
MB 550-291121/4	Method Blank	106
MB 550-291159/5	Method Blank	90

Surrogate Legend

DCAA = Dichloroacetic acid(Surr)

Method: 300.1B - Disinfection By-Products, (IC)

Matrix: Water **Prep Type: Total/NA**

		Percent Surrogate Recovery (Acceptance Limits)
Lab Sample ID	Client Sample ID	DCAA (50-150)
MRL 550-291121/1002	Lab Control Sample	106
MRL 550-291159/1003	Lab Control Sample	112

Surrogate Legend

DCAA = Dichloroacetic acid(Surr)

Method: RSK-175 - Dissolved Gases (GC)

Lab Sample ID: MB 280-597213/40
Matrix: Water
Analysis Batch: 597213

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Methane	ND		5.0	0.63	ug/L			12/20/22 01:57	1

Lab Sample ID: LCS 280-597213/38
Matrix: Water
Analysis Batch: 597213

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Methane			65.7	65.2		ug/L		99	75 - 125		

Lab Sample ID: LCSD 280-597213/39
Matrix: Water
Analysis Batch: 597213

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Methane			65.7	64.7		ug/L		99	75 - 125	1	20

Lab Sample ID: 280-170479-I-5 DU
Matrix: Water
Analysis Batch: 597213

Client Sample ID: Duplicate
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier		DU Result	DU Qualifier	Unit	D			RPD	RPD Limit
Methane	1.3	J		1.11	J	ug/L				16	20

Method: 300.0 - Anions, Ion Chromatography

Lab Sample ID: MB 550-290813/2
Matrix: Water
Analysis Batch: 290813

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Nitrate as N	ND		0.050	0.014	mg/L			12/14/22 10:47	1
Sulfate	ND		2.0	0.43	mg/L			12/14/22 10:47	1

Lab Sample ID: LCS 550-290813/5
Matrix: Water
Analysis Batch: 290813

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Nitrate as N			4.00	4.20		mg/L		105	90 - 110		
Sulfate			20.0	21.3		mg/L		106	90 - 110		

Lab Sample ID: LCSD 550-290813/7
Matrix: Water
Analysis Batch: 290813

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Nitrate as N			4.00	4.20		mg/L		105	90 - 110	0	20
Sulfate			20.0	21.6		mg/L		108	90 - 110	2	20

Method: 300.0 - Anions, Ion Chromatography (Continued)

Lab Sample ID: 550-194920-G-15 MS
Matrix: Water
Analysis Batch: 290813

Client Sample ID: Matrix Spike
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Nitrate as N	9.0		8.00	17.7		mg/L		108	80 - 120

Lab Sample ID: 550-194920-G-15 MS
Matrix: Water
Analysis Batch: 290813

Client Sample ID: Matrix Spike
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Sulfate	2100		1000	3150		mg/L		105	80 - 120

Lab Sample ID: 550-194920-G-15 MSD
Matrix: Water
Analysis Batch: 290813

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Nitrate as N	9.0		8.00	17.7		mg/L		108	80 - 120	NC	20

Lab Sample ID: 550-194920-G-15 MSD
Matrix: Water
Analysis Batch: 290813

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Sulfate	2100		1000	3140		mg/L		104	80 - 120	0	20

Lab Sample ID: MB 550-290815/2
Matrix: Water
Analysis Batch: 290815

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Nitrate as N	ND		0.050	0.014	mg/L			12/14/22 10:37	1
Sulfate	ND		2.0	0.43	mg/L			12/14/22 10:37	1

Lab Sample ID: LCS 550-290815/5
Matrix: Water
Analysis Batch: 290815

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Nitrate as N	4.00	4.11		mg/L		103	90 - 110
Sulfate	20.0	20.9		mg/L		105	90 - 110

Lab Sample ID: LCSD 550-290815/6
Matrix: Water
Analysis Batch: 290815

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Nitrate as N	4.00	4.10		mg/L		103	90 - 110	0	20
Sulfate	20.0	21.6		mg/L		108	90 - 110	3	20

Method: 300.0 - Anions, Ion Chromatography (Continued)

Lab Sample ID: 550-194927-A-1 MS
Matrix: Water
Analysis Batch: 290815

Client Sample ID: Matrix Spike
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits		
Nitrate as N	11		4.00	14.7		mg/L		90	80 - 120		
Sulfate	200	E	20.0	215	E 4	mg/L		60	80 - 120		

Lab Sample ID: 550-194927-A-1 MSD
Matrix: Water
Analysis Batch: 290815

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Nitrate as N	11		4.00	14.8		mg/L		92	80 - 120	1	20
Sulfate	200	E	20.0	215	E 4	mg/L		61	80 - 120	0	20

Method: 300.1B - Disinfection By-Products, (IC)

Lab Sample ID: MB 550-291121/4
Matrix: Water
Analysis Batch: 291121

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chlorate	ND		20	4.9	ug/L			12/18/22 03:30	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Dichloroacetic acid(Surr)	*106*		*90 - 115*		*12/18/22 03:30*	*1*

Lab Sample ID: LCS 550-291121/5
Matrix: Water
Analysis Batch: 291121

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Chlorate			100	108		ug/L		108	75 - 125		

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
Dichloroacetic acid(Surr)	*107*		*90 - 115*

Lab Sample ID: LCSD 550-291121/6
Matrix: Water
Analysis Batch: 291121

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Chlorate			100	107		ug/L		107	75 - 125	1	25

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
Dichloroacetic acid(Surr)	*109*		*90 - 115*

Method: 300.1B - Disinfection By-Products, (IC) (Continued)

Lab Sample ID: MRL 550-291121/1002
Matrix: Water
Analysis Batch: 291121

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte			Spike Added	MRL Result	MRL Qualifier	Unit	D	%Rec	%Rec Limits		
Chlorate			20.0	24.2		ug/L		121	50 - 150		

Surrogate	*MRL %Recovery*	*MRL Qualifier*	*Limits*
Dichloroacetic acid(Surr)	*106*		*50 - 150*

Lab Sample ID: 550-194755-D-7 MS
Matrix: Water
Analysis Batch: 291121

Client Sample ID: Matrix Spike
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits		
Chlorate	1600000		1000000	2680000		ug/L		109	75 - 125		

Surrogate	*MS %Recovery*	*MS Qualifier*	*Limits*
Dichloroacetic acid(Surr)	*108*		*90 - 115*

Lab Sample ID: 550-194755-D-7 MSD
Matrix: Water
Analysis Batch: 291121

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Chlorate	1600000		1000000	2720000		ug/L		113	75 - 125	2	25

Surrogate	*MSD %Recovery*	*MSD Qualifier*	*Limits*
Dichloroacetic acid(Surr)	*109*		*90 - 115*

Lab Sample ID: MB 550-291159/5
Matrix: Water
Analysis Batch: 291159

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chlorate	ND		20	4.9	ug/L			12/20/22 15:44	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Dichloroacetic acid(Surr)	*90*		*90 - 115*		*12/20/22 15:44*	*1*

Lab Sample ID: LCS 550-291159/6
Matrix: Water
Analysis Batch: 291159

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Chlorate			100	110		ug/L		110	75 - 125		

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
Dichloroacetic acid(Surr)	*91*		*90 - 115*

Method: 300.1B - Disinfection By-Products, (IC) (Continued)

Lab Sample ID: LCSD 550-291159/7
Matrix: Water
Analysis Batch: 291159

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Chlorate			100	107		ug/L		107	75 - 125	3	25

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
Dichloroacetic acid(Surr)	*112*		*90 - 115*

Lab Sample ID: MRL 550-291159/1003
Matrix: Water
Analysis Batch: 291159

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte			Spike Added	MRL Result	MRL Qualifier	Unit	D	%Rec	%Rec Limits		
Chlorate			20.0	23.6		ug/L		118	50 - 150		

Surrogate	*MRL %Recovery*	*MRL Qualifier*	*Limits*
Dichloroacetic acid(Surr)	*112*		*50 - 150*

Lab Sample ID: 550-194920-K-15 MS
Matrix: Water
Analysis Batch: 291159

Client Sample ID: Matrix Spike
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits		
Chlorate	7900		5000	13100		ug/L		104	75 - 125		

Surrogate	*MS %Recovery*	*MS Qualifier*	*Limits*
Dichloroacetic acid(Surr)	*111*		*90 - 115*

Lab Sample ID: 550-194920-K-15 MSD
Matrix: Water
Analysis Batch: 291159

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Chlorate	7900		5000	12500		ug/L		92	75 - 125	5	25

Surrogate	*MSD %Recovery*	*MSD Qualifier*	*Limits*
Dichloroacetic acid(Surr)	*108*		*90 - 115*

Method: 314.0 - Perchlorate (IC)

Lab Sample ID: MB 550-290772/1002
Matrix: Water
Analysis Batch: 290772

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perchlorate	ND		1.0	0.31	ug/L			12/14/22 09:37	1

Method: 314.0 - Perchlorate (IC) (Continued)

Lab Sample ID: LCS 550-290772/4
Matrix: Water
Analysis Batch: 290772

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Perchlorate	25.0	25.1		ug/L		100	85 - 115

Lab Sample ID: LCSD 550-290772/5
Matrix: Water
Analysis Batch: 290772

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Perchlorate	25.0	25.1		ug/L		100	85 - 115	0	15

Lab Sample ID: MRL 550-290772/1003
Matrix: Water
Analysis Batch: 290772

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	MRL Result	MRL Qualifier	Unit	D	%Rec	%Rec Limits
Perchlorate	1.00	0.959	J	ug/L		96	75 - 125

Lab Sample ID: 550-194889-A-1 MS
Matrix: Water
Analysis Batch: 290772

Client Sample ID: Matrix Spike
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Perchlorate	2.1		25.0	27.7		ug/L		102	80 - 120

Lab Sample ID: 550-194889-A-1 MSD
Matrix: Water
Analysis Batch: 290772

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Perchlorate	2.1		25.0	27.4		ug/L		101	80 - 120	1	15

Lab Sample ID: MB 550-290875/1002
Matrix: Water
Analysis Batch: 290875

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perchlorate	ND		1.0	0.31	ug/L			12/15/22 10:43	1

Lab Sample ID: LCS 550-290875/4
Matrix: Water
Analysis Batch: 290875

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Perchlorate	25.0	22.6		ug/L		90	85 - 115

Lab Sample ID: LCSD 550-290875/5
Matrix: Water
Analysis Batch: 290875

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Perchlorate	25.0	22.6		ug/L		90	85 - 115	0	15

Method: 314.0 - Perchlorate (IC)

Lab Sample ID: MRL 550-290875/1003
Matrix: Water
Analysis Batch: 290875

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte			Spike Added	MRL Result	MRL Qualifier	Unit	D	%Rec	%Rec Limits		
Perchlorate			1.00	1.11		ug/L		111	75 - 125		

Lab Sample ID: 550-194920-E-15 MS
Matrix: Water
Analysis Batch: 290875

Client Sample ID: Matrix Spike
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits		
Perchlorate	3000		5000	7470		ug/L		90	80 - 120		

Lab Sample ID: 550-194920-E-15 MSD
Matrix: Water
Analysis Batch: 290875

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Perchlorate	3000		5000	7600		ug/L		93	80 - 120	2	15

Method: 6010B - Metals (ICP)

Lab Sample ID: MB 550-290825/1-A
Matrix: Water
Analysis Batch: 291020

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 290825

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	ND		0.20	0.080	mg/L		12/15/22 06:30	12/16/22 11:59	1
Barium	ND		0.0050	0.00057	mg/L		12/15/22 06:30	12/16/22 11:59	1
Beryllium	ND		0.0010	0.00019	mg/L		12/15/22 06:30	12/16/22 11:59	1
Boron	0.00502	J	0.050	0.0024	mg/L		12/15/22 06:30	12/16/22 11:59	1
Cadmium	ND		0.0010	0.00072	mg/L		12/15/22 06:30	12/16/22 11:59	1
Calcium	ND		0.40	0.015	mg/L		12/15/22 06:30	12/16/22 11:59	1
Chromium	ND		0.0050	0.0011	mg/L		12/15/22 06:30	12/16/22 11:59	1
Cobalt	ND		0.0050	0.00054	mg/L		12/15/22 06:30	12/16/22 11:59	1
Copper	ND		0.0050	0.0012	mg/L		12/15/22 06:30	12/16/22 11:59	1
Iron	0.0757	J	0.40	0.019	mg/L		12/15/22 06:30	12/16/22 11:59	1
Lead	ND		0.010	0.0025	mg/L		12/15/22 06:30	12/16/22 11:59	1
Magnesium	ND		0.40	0.054	mg/L		12/15/22 06:30	12/16/22 11:59	1
Manganese	ND		0.020	0.0083	mg/L		12/15/22 06:30	12/16/22 11:59	1
Molybdenum	ND		0.010	0.00052	mg/L		12/15/22 06:30	12/16/22 11:59	1
Nickel	ND		0.0050	0.0028	mg/L		12/15/22 06:30	12/16/22 11:59	1
Phosphorus	ND		0.40	0.011	mg/L		12/15/22 06:30	12/16/22 11:59	1
Potassium	ND		1.0	0.081	mg/L		12/15/22 06:30	12/16/22 11:59	1
Silicon	ND		0.10	0.016	mg/L		12/15/22 06:30	12/16/22 11:59	1
Silver	0.000560	J	0.0080	0.00049	mg/L		12/15/22 06:30	12/16/22 11:59	1
Sodium	ND		0.40	0.039	mg/L		12/15/22 06:30	12/16/22 11:59	1
Strontium	ND		0.010	0.00032	mg/L		12/15/22 06:30	12/16/22 11:59	1
Tin	ND		0.010	0.0034	mg/L		12/15/22 06:30	12/16/22 11:59	1
Titanium	ND		0.0050	0.00028	mg/L		12/15/22 06:30	12/16/22 11:59	1
Tungsten	ND		0.10	0.0021	mg/L		12/15/22 06:30	12/16/22 11:59	1
Vanadium	ND		0.0050	0.00069	mg/L		12/15/22 06:30	12/16/22 11:59	1
Zinc	ND		0.040	0.0023	mg/L		12/15/22 06:30	12/16/22 11:59	1

Method: 6010B - Metals (ICP) (Continued)

Lab Sample ID: LCS 550-290825/2-A
Matrix: Water
Analysis Batch: 291020

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 290825

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Aluminum	20.0	19.9		mg/L		99	88 - 110
Barium	1.00	1.02		mg/L		102	90 - 110
Beryllium	1.00	1.01		mg/L		101	90 - 111
Boron	1.00	1.04		mg/L		104	88 - 110
Cadmium	1.00	0.980		mg/L		98	90 - 110
Calcium	21.0	21.2		mg/L		101	88 - 112
Chromium	1.00	0.963		mg/L		96	90 - 110
Cobalt	1.00	0.970		mg/L		97	90 - 112
Copper	1.00	0.994		mg/L		99	87 - 110
Iron	1.00	0.983		mg/L		98	85 - 112
Lead	1.00	0.982		mg/L		98	90 - 113
Magnesium	21.0	21.0		mg/L		100	89 - 110
Manganese	1.00	0.954		mg/L		95	90 - 110
Molybdenum	1.00	0.981		mg/L		98	89 - 110
Nickel	1.00	0.966		mg/L		97	88 - 114
Potassium	20.0	19.4		mg/L		97	87 - 114
Silicon	5.00	4.62		mg/L		92	88 - 110
Silver	0.0750	0.0708		mg/L		94	84 - 111
Sodium	20.0	19.8		mg/L		99	84 - 110
Strontium	1.00	0.986		mg/L		99	88 - 110
Tin	1.00	0.972		mg/L		97	90 - 112
Titanium	1.00	0.985		mg/L		99	90 - 110
Tungsten	1.00	0.958		mg/L		96	80 - 120
Vanadium	1.00	0.980		mg/L		98	90 - 110
Zinc	1.00	0.996		mg/L		100	90 - 114

Lab Sample ID: LCSD 550-290825/3-A
Matrix: Water
Analysis Batch: 291020

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 290825

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Aluminum	20.0	20.0		mg/L		100	88 - 110	1	20
Barium	1.00	1.02		mg/L		102	90 - 110	0	20
Beryllium	1.00	1.02		mg/L		102	90 - 111	1	20
Boron	1.00	1.05		mg/L		105	88 - 110	1	20
Cadmium	1.00	0.992		mg/L		99	90 - 110	1	20
Calcium	21.0	21.3		mg/L		102	88 - 112	1	20
Chromium	1.00	0.971		mg/L		97	90 - 110	1	20
Cobalt	1.00	0.988		mg/L		99	90 - 112	2	20
Copper	1.00	1.00		mg/L		100	87 - 110	1	20
Iron	1.00	0.977		mg/L		98	85 - 112	1	20
Lead	1.00	0.991		mg/L		99	90 - 113	1	20
Magnesium	21.0	21.1		mg/L		101	89 - 110	1	20
Manganese	1.00	0.963		mg/L		96	90 - 110	1	20
Molybdenum	1.00	0.991		mg/L		99	89 - 110	1	20
Nickel	1.00	0.979		mg/L		98	88 - 114	1	20
Potassium	20.0	19.5		mg/L		98	87 - 114	0	20
Silicon	5.00	4.64		mg/L		93	88 - 110	0	20
Silver	0.0750	0.0717		mg/L		96	84 - 111	1	20

Method: 6010B - Metals (ICP) (Continued)

Lab Sample ID: LCSD 550-290825/3-A
Matrix: Water
Analysis Batch: 291020

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 290825

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Sodium			20.0	20.0		mg/L		100	84 - 110	1	20
Strontium			1.00	0.993		mg/L		99	88 - 110	1	20
Tin			1.00	0.975		mg/L		98	90 - 112	0	20
Titanium			1.00	0.996		mg/L		100	90 - 110	1	20
Tungsten			1.00	0.976		mg/L		98	80 - 120	2	20
Vanadium			1.00	0.989		mg/L		99	90 - 110	1	20
Zinc			1.00	1.00		mg/L		100	90 - 114	1	20

Lab Sample ID: MB 550-290826/1-A
Matrix: Water
Analysis Batch: 291039

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 290826

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Manganese	ND		0.020	0.0083	mg/L		12/15/22 06:43	12/16/22 13:02	1

Lab Sample ID: LCS 550-290826/2-A
Matrix: Water
Analysis Batch: 291039

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 290826

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Manganese			1.00	0.991		mg/L		99	90 - 110		

Lab Sample ID: LCSD 550-290826/3-A
Matrix: Water
Analysis Batch: 291039

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 290826

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Manganese			1.00	0.970		mg/L		97	90 - 110	2	20

Lab Sample ID: 550-194920-J-15-A MS
Matrix: Water
Analysis Batch: 291039

Client Sample ID: Matrix Spike
Prep Type: Total/NA
Prep Batch: 290826

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits		
Manganese	2.1		1.00	2.94		mg/L		87	75 - 125		

Lab Sample ID: 550-194920-J-15-B MSD
Matrix: Water
Analysis Batch: 291039

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total/NA
Prep Batch: 290826

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Manganese	2.1		1.00	2.89		mg/L		83	75 - 125	2	20

Lab Sample ID: 550-194920-B-16-A MS
Matrix: Water
Analysis Batch: 291020

Client Sample ID: Matrix Spike
Prep Type: Dissolved
Prep Batch: 290825

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits		
Aluminum	0.37		20.0	22.0		mg/L		108	75 - 125		
Barium	0.023		1.00	1.12		mg/L		109	75 - 125		

Method: 6010B - Metals (ICP) (Continued)

Lab Sample ID: 550-194920-B-16-A MS
Matrix: Water
Analysis Batch: 291020

Client Sample ID: Matrix Spike
Prep Type: Dissolved
Prep Batch: 290825

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Beryllium	ND		1.00	1.07		mg/L		107	75 - 125
Boron	2.5	B	1.00	3.46		mg/L		92	75 - 125
Cadmium	ND		1.00	1.02		mg/L		102	75 - 125
Calcium	410		21.0	413	4	mg/L		-5	75 - 125
Chromium	ND		1.00	0.939		mg/L		94	75 - 125
Cobalt	ND		1.00	0.957		mg/L		96	75 - 125
Copper	ND		1.00	1.03		mg/L		103	75 - 125
Iron	0.037	J B	1.00	1.06		mg/L		102	75 - 125
Lead	ND		1.00	0.784		mg/L		78	75 - 125
Magnesium	220		21.0	227	4	mg/L		54	75 - 125
Manganese	1.8		1.00	2.57		mg/L		82	75 - 125
Molybdenum	0.24		1.00	1.22		mg/L		97	75 - 125
Nickel	0.0054		1.00	0.953		mg/L		95	75 - 125
Potassium	60		20.0	78.1		mg/L		92	75 - 125
Silicon	34		5.00	37.0	4	mg/L		59	75 - 125
Silver	ND		0.0750	0.0747		mg/L		100	75 - 125
Sodium	670		20.0	655	4	mg/L		-64	75 - 125
Strontium	10		1.00	10.7	4	mg/L		53	75 - 125
Tin	ND		1.00	0.959		mg/L		96	75 - 125
Titanium	0.0012	J	1.00	0.996		mg/L		99	75 - 125
Tungsten	0.012	J	1.00	0.987		mg/L		98	75 - 125
Vanadium	0.029		1.00	1.02		mg/L		99	75 - 125
Zinc	ND		1.00	0.940		mg/L		94	75 - 125

Lab Sample ID: 550-194920-B-16-B MSD
Matrix: Water
Analysis Batch: 291020

Client Sample ID: Matrix Spike Duplicate
Prep Type: Dissolved
Prep Batch: 290825

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Aluminum	0.37		20.0	21.9		mg/L		108	75 - 125	0	20
Barium	0.023		1.00	1.12		mg/L		109	75 - 125	0	20
Beryllium	ND		1.00	1.07		mg/L		107	75 - 125	0	20
Boron	2.5	B	1.00	3.45		mg/L		92	75 - 125	0	20
Cadmium	ND		1.00	1.02		mg/L		102	75 - 125	0	20
Calcium	410		21.0	409	4	mg/L		-28	75 - 125	1	20
Chromium	ND		1.00	0.941		mg/L		94	75 - 125	0	20
Cobalt	ND		1.00	0.956		mg/L		96	75 - 125	0	20
Copper	ND		1.00	1.05		mg/L		105	75 - 125	2	20
Iron	0.037	J B	1.00	1.05		mg/L		101	75 - 125	1	20
Lead	ND		1.00	0.784		mg/L		78	75 - 125	0	20
Magnesium	220		21.0	224	4	mg/L		40	75 - 125	1	20
Manganese	1.8		1.00	2.57		mg/L		81	75 - 125	0	20
Molybdenum	0.24		1.00	1.22		mg/L		98	75 - 125	0	20
Nickel	0.0054		1.00	0.954		mg/L		95	75 - 125	0	20
Potassium	60		20.0	77.5		mg/L		89	75 - 125	1	20
Silicon	34		5.00	36.8	4	mg/L		54	75 - 125	1	20
Silver	ND		0.0750	0.0744		mg/L		99	75 - 125	0	20
Sodium	670		20.0	648	4	mg/L		-103	75 - 125	1	20
Strontium	10		1.00	10.5	4	mg/L		25	75 - 125	3	20

Method: 6010B - Metals (ICP) (Continued)

Lab Sample ID: 550-194920-B-16-B MSD
Matrix: Water
Analysis Batch: 291020

Client Sample ID: Matrix Spike Duplicate
Prep Type: Dissolved
Prep Batch: 290825

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Tin	ND		1.00	0.958		mg/L		96	75 - 125	0	20
Titanium	0.0012	J	1.00	1.01		mg/L		101	75 - 125	1	20
Tungsten	0.012	J	1.00	0.988		mg/L		98	75 - 125	0	20
Vanadium	0.029		1.00	1.03		mg/L		100	75 - 125	1	20
Zinc	ND		1.00	0.942		mg/L		94	75 - 125	0	20

Method: 6020B - Metals (ICP/MS)

Lab Sample ID: MB 550-290824/1-A
Matrix: Water
Analysis Batch: 291383

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 290824

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	0.0440	J	1.0	0.043	ug/L		12/15/22 04:20	12/22/22 14:55	1
Thallium	ND		0.10	0.013	ug/L		12/15/22 04:20	12/22/22 14:55	1

Lab Sample ID: MB 550-290824/1-A
Matrix: Water
Analysis Batch: 291500

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 290824

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	ND		1.0	0.25	ug/L		12/15/22 04:20	12/27/22 12:30	1
Selenium	ND		0.50	0.074	ug/L		12/15/22 04:20	12/27/22 12:30	1

Lab Sample ID: LCS 550-290824/2-A
Matrix: Water
Analysis Batch: 291383

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 290824

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Antimony	100	99.8		ug/L		100	80 - 120
Thallium	100	104		ug/L		104	80 - 120

Lab Sample ID: LCS 550-290824/2-A
Matrix: Water
Analysis Batch: 291500

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 290824

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Arsenic	100	99.2		ug/L		99	80 - 120
Selenium	100	98.2		ug/L		98	80 - 120

Lab Sample ID: LCSD 550-290824/3-A
Matrix: Water
Analysis Batch: 291383

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 290824

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Antimony	100	99.9		ug/L		100	80 - 120	0	20
Thallium	100	107		ug/L		107	80 - 120	3	20

Method: 6020B - Metals (ICP/MS) (Continued)

Lab Sample ID: LCSD 550-290824/3-A
Matrix: Water
Analysis Batch: 291500

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 290824

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Arsenic			100	101		ug/L		101	80 - 120	1	20
Selenium			100	99.9		ug/L		100	80 - 120	2	20

Lab Sample ID: 550-194920-A-16-A MS
Matrix: Water
Analysis Batch: 291383

Client Sample ID: Matrix Spike
Prep Type: Dissolved
Prep Batch: 290824

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits		
Antimony	0.023	J B	100	111		ug/L		111	75 - 125		
Thallium	0.080		100	105		ug/L		105	75 - 125		

Lab Sample ID: 550-194920-A-16-A MS
Matrix: Water
Analysis Batch: 291500

Client Sample ID: Matrix Spike
Prep Type: Dissolved
Prep Batch: 290824

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits		
Arsenic	4.8	F1	100	152	F1	ug/L		147	75 - 125		
Selenium	4.6	F1	100	158	F1	ug/L		153	75 - 125		

Lab Sample ID: 550-194920-A-16-B MSD
Matrix: Water
Analysis Batch: 291383

Client Sample ID: Matrix Spike Duplicate
Prep Type: Dissolved
Prep Batch: 290824

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Antimony	0.023	J B	100	106		ug/L		106	75 - 125	4	20
Thallium	0.080		100	99.1		ug/L		99	75 - 125	5	20

Lab Sample ID: 550-194920-A-16-B MSD
Matrix: Water
Analysis Batch: 291500

Client Sample ID: Matrix Spike Duplicate
Prep Type: Dissolved
Prep Batch: 290824

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Arsenic	4.8	F1	100	153	F1	ug/L		148	75 - 125	1	20
Selenium	4.6	F1	100	159	F1	ug/L		155	75 - 125	1	20

Method: SM 5310B - Organic Carbon, Total (TOC)

Lab Sample ID: MB 550-290973/5
Matrix: Water
Analysis Batch: 290973

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon	ND		0.50	0.26	mg/L			12/16/22 14:30	1

Lab Sample ID: LCS 550-290973/6
Matrix: Water
Analysis Batch: 290973

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Total Organic Carbon			20.0	19.2		mg/L		96	90 - 110		

Method: SM 5310B - Organic Carbon, Total (TOC) (Continued)

Lab Sample ID: LCSD 550-290973/7
Matrix: Water
Analysis Batch: 290973

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Total Organic Carbon			20.0	18.8		mg/L		94	90 - 110	2	20

Lab Sample ID: 550-194993-A-1 MS ^10
Matrix: Water
Analysis Batch: 290973

Client Sample ID: Matrix Spike
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits		
Total Organic Carbon	14		200	205		mg/L		96	90 - 110		

Lab Sample ID: 550-194993-A-1 MSD ^10
Matrix: Water
Analysis Batch: 290973

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Total Organic Carbon	14		200	200		mg/L		93	90 - 110	2	20

Lab Sample ID: MB 550-291458/5
Matrix: Water
Analysis Batch: 291458

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon	ND		0.50	0.26	mg/L			12/22/22 11:39	1

Lab Sample ID: LCS 550-291458/6
Matrix: Water
Analysis Batch: 291458

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Total Organic Carbon			20.0	20.4		mg/L		102	90 - 110		

Lab Sample ID: LCSD 550-291458/7
Matrix: Water
Analysis Batch: 291458

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Total Organic Carbon			20.0	20.8		mg/L		104	90 - 110	2	20

Lab Sample ID: 550-195210-C-1 MSD
Matrix: Water
Analysis Batch: 291458

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Total Organic Carbon	5.1		20.0	23.6		mg/L		92	90 - 110	0	20

Lab Sample ID: 550-195210-D-1 MS
Matrix: Water
Analysis Batch: 291458

Client Sample ID: Matrix Spike
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits		
Total Organic Carbon	5.1		20.0	23.7		mg/L		93	90 - 110		

QC Association Summary

Client: Tetra Tech, Inc.
Job ID: 550-194919-1
Project/Site: Tetra Tech M11 SWF Treatability Study

GC VOA

Analysis Batch: 597213

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
550-194919-1	SWFTS-MW25-EM40	Total/NA	Water	RSK-175	
550-194919-3	SWFTS-MW24-EM40	Total/NA	Water	RSK-175	
550-194919-5	SWFTS-MW23-EM40	Total/NA	Water	RSK-175	
550-194919-7	SWFTS-MW20-EM40	Total/NA	Water	RSK-175	
MB 280-597213/40	Method Blank	Total/NA	Water	RSK-175	
LCS 280-597213/38	Lab Control Sample	Total/NA	Water	RSK-175	
LCSD 280-597213/39	Lab Control Sample Dup	Total/NA	Water	RSK-175	
280-170479-I-5 DU	Duplicate	Total/NA	Water	RSK-175	

HPLC/IC

Analysis Batch: 290772

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
550-194919-1	SWFTS-MW25-EM40	Total/NA	Water	314.0	
550-194919-3	SWFTS-MW24-EM40	Total/NA	Water	314.0	
550-194919-5	SWFTS-MW23-EM40	Total/NA	Water	314.0	
MB 550-290772/1002	Method Blank	Total/NA	Water	314.0	
LCS 550-290772/4	Lab Control Sample	Total/NA	Water	314.0	
LCSD 550-290772/5	Lab Control Sample Dup	Total/NA	Water	314.0	
MRL 550-290772/1003	Lab Control Sample	Total/NA	Water	314.0	
550-194889-A-1 MS	Matrix Spike	Total/NA	Water	314.0	
550-194889-A-1 MSD	Matrix Spike Duplicate	Total/NA	Water	314.0	

Analysis Batch: 290813

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
550-194919-1	SWFTS-MW25-EM40	Total/NA	Water	300.0	
550-194919-3	SWFTS-MW24-EM40	Total/NA	Water	300.0	
550-194919-5	SWFTS-MW23-EM40	Total/NA	Water	300.0	
550-194919-7	SWFTS-MW20-EM40	Total/NA	Water	300.0	
MB 550-290813/2	Method Blank	Total/NA	Water	300.0	
LCS 550-290813/5	Lab Control Sample	Total/NA	Water	300.0	
LCSD 550-290813/7	Lab Control Sample Dup	Total/NA	Water	300.0	
550-194920-G-15 MS	Matrix Spike	Total/NA	Water	300.0	
550-194920-G-15 MS	Matrix Spike	Total/NA	Water	300.0	
550-194920-G-15 MSD	Matrix Spike Duplicate	Total/NA	Water	300.0	
550-194920-G-15 MSD	Matrix Spike Duplicate	Total/NA	Water	300.0	

Analysis Batch: 290815

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
550-194919-1	SWFTS-MW25-EM40	Total/NA	Water	300.0	
550-194919-3	SWFTS-MW24-EM40	Total/NA	Water	300.0	
550-194919-5	SWFTS-MW23-EM40	Total/NA	Water	300.0	
550-194919-7	SWFTS-MW20-EM40	Total/NA	Water	300.0	
MB 550-290815/2	Method Blank	Total/NA	Water	300.0	
LCS 550-290815/5	Lab Control Sample	Total/NA	Water	300.0	
LCSD 550-290815/6	Lab Control Sample Dup	Total/NA	Water	300.0	
550-194927-A-1 MS	Matrix Spike	Total/NA	Water	300.0	
550-194927-A-1 MSD	Matrix Spike Duplicate	Total/NA	Water	300.0	

HPLC/IC

Analysis Batch: 290875

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
550-194919-7	SWFTS-MW20-EM40	Total/NA	Water	314.0	
MB 550-290875/1002	Method Blank	Total/NA	Water	314.0	
LCS 550-290875/4	Lab Control Sample	Total/NA	Water	314.0	
LCSD 550-290875/5	Lab Control Sample Dup	Total/NA	Water	314.0	
MRL 550-290875/1003	Lab Control Sample	Total/NA	Water	314.0	
550-194920-E-15 MS	Matrix Spike	Total/NA	Water	314.0	
550-194920-E-15 MSD	Matrix Spike Duplicate	Total/NA	Water	314.0	

Analysis Batch: 291121

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
550-194919-1	SWFTS-MW25-EM40	Total/NA	Water	300.1B	
550-194919-3	SWFTS-MW24-EM40	Total/NA	Water	300.1B	
MB 550-291121/4	Method Blank	Total/NA	Water	300.1B	
LCS 550-291121/5	Lab Control Sample	Total/NA	Water	300.1B	
LCSD 550-291121/6	Lab Control Sample Dup	Total/NA	Water	300.1B	
MRL 550-291121/1002	Lab Control Sample	Total/NA	Water	300.1B	
550-194755-D-7 MS	Matrix Spike	Total/NA	Water	300.1B	
550-194755-D-7 MSD	Matrix Spike Duplicate	Total/NA	Water	300.1B	

Analysis Batch: 291159

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
550-194919-5	SWFTS-MW23-EM40	Total/NA	Water	300.1B	
550-194919-7	SWFTS-MW20-EM40	Total/NA	Water	300.1B	
MB 550-291159/5	Method Blank	Total/NA	Water	300.1B	
LCS 550-291159/6	Lab Control Sample	Total/NA	Water	300.1B	
LCSD 550-291159/7	Lab Control Sample Dup	Total/NA	Water	300.1B	
MRL 550-291159/1003	Lab Control Sample	Total/NA	Water	300.1B	
550-194920-K-15 MS	Matrix Spike	Total/NA	Water	300.1B	
550-194920-K-15 MSD	Matrix Spike Duplicate	Total/NA	Water	300.1B	

Metals

Prep Batch: 290824

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
550-194919-2	SWFTS-MW25-EM40	Dissolved	Water	3005A	
550-194919-4	SWFTS-MW24-EM40	Dissolved	Water	3005A	
550-194919-6	SWFTS-MW23-EM40	Dissolved	Water	3005A	
550-194919-8	SWFTS-MW20-EM40	Dissolved	Water	3005A	
MB 550-290824/1-A	Method Blank	Total/NA	Water	3005A	
LCS 550-290824/2-A	Lab Control Sample	Total/NA	Water	3005A	
LCSD 550-290824/3-A	Lab Control Sample Dup	Total/NA	Water	3005A	
550-194920-A-16-A MS	Matrix Spike	Dissolved	Water	3005A	
550-194920-A-16-B MSD	Matrix Spike Duplicate	Dissolved	Water	3005A	

Prep Batch: 290825

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
550-194919-2	SWFTS-MW25-EM40	Dissolved	Water	3005A	
550-194919-4	SWFTS-MW24-EM40	Dissolved	Water	3005A	
550-194919-6	SWFTS-MW23-EM40	Dissolved	Water	3005A	
550-194919-8	SWFTS-MW20-EM40	Dissolved	Water	3005A	
MB 550-290825/1-A	Method Blank	Total/NA	Water	3005A	

Metals (Continued)

Prep Batch: 290825 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
LCS 550-290825/2-A	Lab Control Sample	Total/NA	Water	3005A	
LCSD 550-290825/3-A	Lab Control Sample Dup	Total/NA	Water	3005A	
550-194920-B-16-A MS	Matrix Spike	Dissolved	Water	3005A	
550-194920-B-16-B MSD	Matrix Spike Duplicate	Dissolved	Water	3005A	

Prep Batch: 290826

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
550-194919-1	SWFTS-MW25-EM40	Total/NA	Water	3005A	
550-194919-3	SWFTS-MW24-EM40	Total/NA	Water	3005A	
550-194919-5	SWFTS-MW23-EM40	Total/NA	Water	3005A	
550-194919-7	SWFTS-MW20-EM40	Total/NA	Water	3005A	
MB 550-290826/1-A	Method Blank	Total/NA	Water	3005A	
LCS 550-290826/2-A	Lab Control Sample	Total/NA	Water	3005A	
LCSD 550-290826/3-A	Lab Control Sample Dup	Total/NA	Water	3005A	
550-194920-J-15-A MS	Matrix Spike	Total/NA	Water	3005A	
550-194920-J-15-B MSD	Matrix Spike Duplicate	Total/NA	Water	3005A	

Analysis Batch: 291020

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
550-194919-2	SWFTS-MW25-EM40	Dissolved	Water	6010B	290825
550-194919-4	SWFTS-MW24-EM40	Dissolved	Water	6010B	290825
550-194919-6	SWFTS-MW23-EM40	Dissolved	Water	6010B	290825
550-194919-8	SWFTS-MW20-EM40	Dissolved	Water	6010B	290825
MB 550-290825/1-A	Method Blank	Total/NA	Water	6010B	290825
LCS 550-290825/2-A	Lab Control Sample	Total/NA	Water	6010B	290825
LCSD 550-290825/3-A	Lab Control Sample Dup	Total/NA	Water	6010B	290825
550-194920-B-16-A MS	Matrix Spike	Dissolved	Water	6010B	290825
550-194920-B-16-B MSD	Matrix Spike Duplicate	Dissolved	Water	6010B	290825

Analysis Batch: 291039

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
550-194919-1	SWFTS-MW25-EM40	Total/NA	Water	6010B	290826
550-194919-3	SWFTS-MW24-EM40	Total/NA	Water	6010B	290826
550-194919-5	SWFTS-MW23-EM40	Total/NA	Water	6010B	290826
550-194919-7	SWFTS-MW20-EM40	Total/NA	Water	6010B	290826
MB 550-290826/1-A	Method Blank	Total/NA	Water	6010B	290826
LCS 550-290826/2-A	Lab Control Sample	Total/NA	Water	6010B	290826
LCSD 550-290826/3-A	Lab Control Sample Dup	Total/NA	Water	6010B	290826
550-194920-J-15-A MS	Matrix Spike	Total/NA	Water	6010B	290826
550-194920-J-15-B MSD	Matrix Spike Duplicate	Total/NA	Water	6010B	290826

Analysis Batch: 291107

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
550-194919-8	SWFTS-MW20-EM40	Dissolved	Water	6010B	290825

Analysis Batch: 291383

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
550-194919-2	SWFTS-MW25-EM40	Dissolved	Water	6020B	290824
550-194919-4	SWFTS-MW24-EM40	Dissolved	Water	6020B	290824
550-194919-6	SWFTS-MW23-EM40	Dissolved	Water	6020B	290824
550-194919-8	SWFTS-MW20-EM40	Dissolved	Water	6020B	290824

Metals (Continued)

Analysis Batch: 291383 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
MB 550-290824/1-A	Method Blank	Total/NA	Water	6020B	290824
LCS 550-290824/2-A	Lab Control Sample	Total/NA	Water	6020B	290824
LCSD 550-290824/3-A	Lab Control Sample Dup	Total/NA	Water	6020B	290824
550-194920-A-16-A MS	Matrix Spike	Dissolved	Water	6020B	290824
550-194920-A-16-B MSD	Matrix Spike Duplicate	Dissolved	Water	6020B	290824

Analysis Batch: 291500

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
550-194919-2	SWFTS-MW25-EM40	Dissolved	Water	6020B	290824
550-194919-4	SWFTS-MW24-EM40	Dissolved	Water	6020B	290824
550-194919-6	SWFTS-MW23-EM40	Dissolved	Water	6020B	290824
550-194919-8	SWFTS-MW20-EM40	Dissolved	Water	6020B	290824
MB 550-290824/1-A	Method Blank	Total/NA	Water	6020B	290824
LCS 550-290824/2-A	Lab Control Sample	Total/NA	Water	6020B	290824
LCSD 550-290824/3-A	Lab Control Sample Dup	Total/NA	Water	6020B	290824
550-194920-A-16-A MS	Matrix Spike	Dissolved	Water	6020B	290824
550-194920-A-16-B MSD	Matrix Spike Duplicate	Dissolved	Water	6020B	290824

General Chemistry

Analysis Batch: 290973

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
550-194919-1	SWFTS-MW25-EM40	Total/NA	Water	SM 5310B	
550-194919-3	SWFTS-MW24-EM40	Total/NA	Water	SM 5310B	
550-194919-5	SWFTS-MW23-EM40	Total/NA	Water	SM 5310B	
MB 550-290973/5	Method Blank	Total/NA	Water	SM 5310B	
LCS 550-290973/6	Lab Control Sample	Total/NA	Water	SM 5310B	
LCSD 550-290973/7	Lab Control Sample Dup	Total/NA	Water	SM 5310B	
550-194993-A-1 MS ^10	Matrix Spike	Total/NA	Water	SM 5310B	
550-194993-A-1 MSD ^10	Matrix Spike Duplicate	Total/NA	Water	SM 5310B	

Analysis Batch: 291458

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
550-194919-7	SWFTS-MW20-EM40	Total/NA	Water	SM 5310B	
MB 550-291458/5	Method Blank	Total/NA	Water	SM 5310B	
LCS 550-291458/6	Lab Control Sample	Total/NA	Water	SM 5310B	
LCSD 550-291458/7	Lab Control Sample Dup	Total/NA	Water	SM 5310B	
550-195210-C-1 MSD	Matrix Spike Duplicate	Total/NA	Water	SM 5310B	
550-195210-D-1 MS	Matrix Spike	Total/NA	Water	SM 5310B	

Lab Chronicle

Client: Tetra Tech, Inc. Job ID: 550-194919-1
Project/Site: Tetra Tech M11 SWF Treatability Study

Client Sample ID: SWFTS-MW25-EM40 Lab Sample ID: 550-194919-1

Date Collected: 12/13/22 10:00 **Matrix: Water**
Date Received: 12/14/22 10:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	RSK-175		1	597213	JPH	EET DEN	12/20/22 10:32
Total/NA	Analysis	300.0		1	290813	AS1	EET PHX	12/14/22 14:28
Total/NA	Analysis	300.0		50	290815	AS1	EET PHX	12/14/22 19:22
Total/NA	Analysis	300.1B		100	291121	MEG	EET PHX	12/18/22 14:47
Total/NA	Analysis	314.0		500	290772	RDC	EET PHX	12/14/22 13:25
Total/NA	Prep	3005A			290826	SGO	EET PHX	12/15/22 06:43
Total/NA	Analysis	6010B		1	291039	CHS	EET PHX	12/16/22 13:47
Total/NA	Analysis	SM 5310B		4	290973	RDC	EET PHX	12/16/22 17:24

Client Sample ID: SWFTS-MW25-EM40 Lab Sample ID: 550-194919-2

Date Collected: 12/13/22 10:00 **Matrix: Water**
Date Received: 12/14/22 10:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Dissolved	Prep	3005A			290825	SGO	EET PHX	12/15/22 06:30
Dissolved	Analysis	6010B		1	291020	CHS	EET PHX	12/16/22 12:45
Dissolved	Prep	3005A			290824	SGO	EET PHX	12/15/22 04:20
Dissolved	Analysis	6020B		1	291383	ARE	EET PHX	12/22/22 15:28
Dissolved	Prep	3005A			290824	SGO	EET PHX	12/15/22 04:20
Dissolved	Analysis	6020B		1	291500	ARE	EET PHX	12/27/22 13:03

Client Sample ID: SWFTS-MW24-EM40 Lab Sample ID: 550-194919-3

Date Collected: 12/13/22 11:45 **Matrix: Water**
Date Received: 12/14/22 10:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	RSK-175		1	597213	JPH	EET DEN	12/20/22 10:45
Total/NA	Analysis	300.0		1	290813	AS1	EET PHX	12/14/22 14:46
Total/NA	Analysis	300.0		50	290815	AS1	EET PHX	12/14/22 19:50
Total/NA	Analysis	300.1B		100	291121	MEG	EET PHX	12/18/22 15:17
Total/NA	Analysis	314.0		200	290772	RDC	EET PHX	12/14/22 13:48
Total/NA	Prep	3005A			290826	SGO	EET PHX	12/15/22 06:43
Total/NA	Analysis	6010B		1	291039	CHS	EET PHX	12/16/22 13:50
Total/NA	Analysis	SM 5310B		1	290973	RDC	EET PHX	12/16/22 17:38

Client Sample ID: SWFTS-MW24-EM40 Lab Sample ID: 550-194919-4

Date Collected: 12/13/22 11:45 **Matrix: Water**
Date Received: 12/14/22 10:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Dissolved	Prep	3005A			290825	SGO	EET PHX	12/15/22 06:30
Dissolved	Analysis	6010B		1	291020	CHS	EET PHX	12/16/22 12:48
Dissolved	Prep	3005A			290824	SGO	EET PHX	12/15/22 04:20
Dissolved	Analysis	6020B		1	291383	ARE	EET PHX	12/22/22 15:30

Lab Chronicle

Client: Tetra Tech, Inc. Job ID: 550-194919-1
Project/Site: Tetra Tech M11 SWF Treatability Study

Client Sample ID: SWFTS-MW24-EM40 Lab Sample ID: 550-194919-4

Date Collected: 12/13/22 11:45 **Matrix: Water**
Date Received: 12/14/22 10:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Dissolved	Prep	3005A			290824	SGO	EET PHX	12/15/22 04:20
Dissolved	Analysis	6020B		1	291500	ARE	EET PHX	12/27/22 13:05

Client Sample ID: SWFTS-MW23-EM40 Lab Sample ID: 550-194919-5

Date Collected: 12/13/22 12:30 **Matrix: Water**
Date Received: 12/14/22 10:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	RSK-175		1	597213	JPH	EET DEN	12/20/22 10:59
Total/NA	Analysis	300.0		1	290813	AS1	EET PHX	12/14/22 16:18
Total/NA	Analysis	300.0		50	290815	AS1	EET PHX	12/14/22 20:17
Total/NA	Analysis	300.1B		1	291159	MEG	EET PHX	12/20/22 19:10
Total/NA	Analysis	314.0		100	290772	RDC	EET PHX	12/14/22 14:11
Total/NA	Prep	3005A			290826	SGO	EET PHX	12/15/22 06:43
Total/NA	Analysis	6010B		1	291039	CHS	EET PHX	12/16/22 13:53
Total/NA	Analysis	SM 5310B		1	290973	RDC	EET PHX	12/16/22 18:20

Client Sample ID: SWFTS-MW23-EM40 Lab Sample ID: 550-194919-6

Date Collected: 12/13/22 12:30 **Matrix: Water**
Date Received: 12/14/22 10:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Dissolved	Prep	3005A			290825	SGO	EET PHX	12/15/22 06:30
Dissolved	Analysis	6010B		1	291020	CHS	EET PHX	12/16/22 12:50
Dissolved	Prep	3005A			290824	SGO	EET PHX	12/15/22 04:20
Dissolved	Analysis	6020B		1	291383	ARE	EET PHX	12/22/22 15:33
Dissolved	Prep	3005A			290824	SGO	EET PHX	12/15/22 04:20
Dissolved	Analysis	6020B		1	291500	ARE	EET PHX	12/27/22 13:07

Client Sample ID: SWFTS-MW20-EM40 Lab Sample ID: 550-194919-7

Date Collected: 12/13/22 13:55 **Matrix: Water**
Date Received: 12/14/22 10:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	RSK-175		1	597213	JPH	EET DEN	12/20/22 11:26
Total/NA	Analysis	300.0		1	290813	AS1	EET PHX	12/14/22 16:37
Total/NA	Analysis	300.0		50	290815	AS1	EET PHX	12/14/22 20:45
Total/NA	Analysis	300.1B		1	291159	MEG	EET PHX	12/20/22 19:39
Total/NA	Analysis	314.0		4	290875	RDC	EET PHX	12/15/22 13:19
Total/NA	Prep	3005A			290826	SGO	EET PHX	12/15/22 06:43
Total/NA	Analysis	6010B		1	291039	CHS	EET PHX	12/16/22 13:56
Total/NA	Analysis	SM 5310B		4	291458	RDC	EET PHX	12/22/22 14:26

Lab Chronicle

Client: Tetra Tech, Inc.
Job ID: 550-194919-1
Project/Site: Tetra Tech M11 SWF Treatability Study

Client Sample ID: SWFTS-MW20-EM40
Lab Sample ID: 550-194919-8

Date Collected: 12/13/22 13:55
Matrix: Water
Date Received: 12/14/22 10:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Dissolved	Prep	3005A			290825	SGO	EET PHX	12/15/22 06:30
Dissolved	Analysis	6010B		1	291020	CHS	EET PHX	12/16/22 12:53
Dissolved	Prep	3005A			290825	SGO	EET PHX	12/15/22 06:30
Dissolved	Analysis	6010B		2	291107	CHS	EET PHX	12/19/22 15:48
Dissolved	Prep	3005A			290824	SGO	EET PHX	12/15/22 04:20
Dissolved	Analysis	6020B		1	291383	ARE	EET PHX	12/22/22 15:35
Dissolved	Prep	3005A			290824	SGO	EET PHX	12/15/22 04:20
Dissolved	Analysis	6020B		1	291500	ARE	EET PHX	12/27/22 13:09

Laboratory References:

EET DEN = Eurofins Denver, 4955 Yarrow Street, Arvada, CO 80002, TEL (303)736-0100

EET PHX = Eurofins Phoenix, 4625 East Cotton Center Boulevard, Suite #189, Phoenix, AZ 85040, TEL (602)437-3340

Accreditation/Certification Summary

Client: Tetra Tech, Inc.
Job ID: 550-194919-1
Project/Site: Tetra Tech M11 SWF Treatability Study

Laboratory: Eurofins Phoenix

All accreditations/certifications held by this laboratory are listed. Not all accreditations/certifications are applicable to this report.

Authority	Program	Identification Number	Expiration Date
Arizona	State	AZ0728	06-10-23
California	State	2941	03-09-23
Nevada	State	AZ1030	07-31-23
Oregon	NELAP	AZ100001	03-09-23
USDA	US Federal Programs	P330-19-00227	08-27-22 *

Laboratory: Eurofins Denver

All accreditations/certifications held by this laboratory are listed. Not all accreditations/certifications are applicable to this report.

Authority	Program	Identification Number	Expiration Date
A2LA	Dept. of Defense ELAP	2907.01	10-31-23
A2LA	ISO/IEC 17025	2907.01	10-31-23
Alabama	State Program	40730	09-30-12 *
Alaska (UST)	State	18-001	02-08-23
Arizona	State	AZ0713	12-20-22
Arkansas DEQ	State	19-047-0	05-31-23
California	State	2513	01-08-23
Connecticut	State	PH-0686	09-30-22 *
Florida	NELAP	E87667-57	06-30-23
Georgia	State	4025-011	01-08-23
Illinois	NELAP	2000172019-1	04-30-23
Iowa	State	IA#370	12-01-24
Kansas	NELAP	E-10166	04-30-23
Kentucky (WW)	State	KY98047	12-31-22
Louisiana	NELAP	30785	06-30-14 *
Louisiana	NELAP	30785	06-30-23
Louisiana (All)	NELAP	30785	06-30-23
Minnesota	NELAP	1788752	12-31-22
Nevada	State	CO000262020-1	07-31-23
New Hampshire	NELAP	205319	04-28-23
New Jersey	NELAP	190002	06-30-23
New York	NELAP	59923	04-01-23
North Carolina (WW/SW)	State	358	12-31-22
North Dakota	State	R-034	01-08-23
Oklahoma	NELAP	8614	08-31-23
Oregon	NELAP	4025-011	01-09-23
Pennsylvania	NELAP	013	07-31-23
South Carolina	State	72002001	01-08-23
Texas	NELAP	TX104704183-08-TX	09-30-09 *
Texas	NELAP	T104704183-21-19	09-30-23
US Fish & Wildlife	US Federal Programs	058448	07-31-23
USDA	US Federal Programs	P330-20-00065	03-06-23
Utah	NELAP	QUAN5	06-30-13 *
Utah	NELAP	CO000262019-11	07-31-23
Virginia	NELAP	10490	06-14-23
Washington	State	C583-19	08-03-23
Wisconsin	State	999615430	08-31-23

* Accreditation/Certification renewal pending - accreditation/certification considered valid.

Method Summary

Client: Tetra Tech, Inc.
Job ID: 550-194919-1
Project/Site: Tetra Tech M11 SWF Treatability Study

Method	Method Description	Protocol	Laboratory
RSK-175	Dissolved Gases (GC)	RSK	EET DEN
300.0	Anions, Ion Chromatography	MCAWW	EET PHX
300.1B	Disinfection By-Products, (IC)	EPA	EET PHX
314.0	Perchlorate (IC)	EPA	EET PHX
6010B	Metals (ICP)	SW846	EET PHX
6020B	Metals (ICP/MS)	SW846	EET PHX
SM 5310B	Organic Carbon, Total (TOC)	SM	EET PHX
3005A	Preparation, Total Metals	SW846	EET PHX

Protocol References:

EPA = US Environmental Protection Agency

MCAWW = "Methods For Chemical Analysis Of Water And Wastes", EPA-600/4-79-020, March 1983 And Subsequent Revisions.

RSK = Sample Prep And Calculations For Dissolved Gas Analysis In Water Samples Using A GC Headspace Equilibration Technique, RSKSOP-175, Rev. 0, 8/11/94, USEPA Research Lab

SM = "Standard Methods For The Examination Of Water And Wastewater"

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

Laboratory References:

EET DEN = Eurofins Denver, 4955 Yarrow Street, Arvada, CO 80002, TEL (303)736-0100

EET PHX = Eurofins Phoenix, 4625 East Cotton Center Boulevard, Suite #189, Phoenix, AZ 85040, TEL (602)437-3340

Tetra Tech
1093 Commerce Park Drive
Oak Ridge, TN37830
(865)483-9900

194919

CHAIN-OF-CUSTODY

TestAmerica
Las Vegas
219

NERT-M11
Groundwater Sampling

Laboratory Name: Eurofins TestAmerica, Phoenix (602) 437-3340 | Address: 4625 East Cotton Ctr Blvd, Suite 189, Phoenix, AZ 85040 | Contact: Mary Charlson 602-659-7627 | Page ___ of ___

Project Name: Tetra Tech M11 SWF Treatability Study	Sampler: J. Bunkers	Sampler Phone: 7027672053
Project No. M11-CWP-18-WA5	Project Contact: **Maureen McMyler**	Site Telephone No.: (702) 966-8340
NERT - Seep Well Field Area Bioremediation Treatability Study		
Report to: Maureen McMyler, 1093 Commerce Park Dr. (865)220-4762	Project Manager/Supervisor: **Dana Grady**	
Bill to: Sunshine Pryor, 350 Indiana St., Golden, CO 80401 (303) 217-5700		

Item No.	Sample Number	Date	Time	G=Grab C=Comp	Matrix	Sample Description, Location	Number of Containers	Perchlorate E314.0	TOC SM5310B	Chlorate E300.1	Sulfate/Nitrate E300.0 SHORT HOLD NITRATE!	Dissolved Metals (field filtered)	Total Mn by 6010B	Methane by RSK175 (no headspace)	Analysis and Method Requested	Notes
						Preservation Code:	-	N	A	L	N	D	D	A		
1	SWFTS-MW25-EM40	12/13/22	1000	G	W		12	X	X	X	X	X	X	X	-01 +02	
2	SWFTS-MW24-EM40	12/13/22	1145	G	W		12	X	X	X	X	X	X	X	~~-02~~ -03 +04	
3	SWFTS-MW23-EM40	12/13/22	1230	G	W		12	X	X	X	X	X	X	X	~~-03~~ +05 +06	
4	SWFTS-MW20-EM40	12/13/22	1355	G	W		12	X	X	X	X	X	X	X	~~-04~~ 07 +08	
5															AC	
6															12/14/22	
7																
8																
9																
10																

550-194919 Chain of Custody

Transfers Relinquished By (Signature)	Date/Time	Transfers Accepted By (Signature)	Date/Time	Special Instructions:
	12/13/22 1500	VTAM TALVS	12-13-22 1500	
VTAM TALVS	12-13-22 1600			
			FedEx Airbill No.:	FedEx Airbill No.:
	12/14/22 1000	Laboratory: EETA PHX	Sampler's Signature: (REQUIRED)	Sampler's Signature:

TAT: ___ Standard ___ Rush Due: _____ | Received Good Condition ____ Y ____ N ____ Cold

TH 240 20.1/30.4

FED EX 2.12 lbs CS

Eurofins Phoenix
4625 East Cotton Center Boulevard Suite #189
Phoenix AZ 85040
Phone. 602-437-3340

Chain of Custody Record

eurofins

Client Information (Sub Contract Lab)	Sampler:	Lab PM: Sester, Rachel E	Carrier Tracking No(s):	COC No: 550-35629.1
Client Contact: Shipping/Receiving	Phone:	E-Mail: Rachel.Sester@et.eurofinsus.com	State of Origin: Nevada	Page: Page 1 of 1
Company: TestAmerica Laboratories, Inc.		Accreditations Required (See note): State Program - Nevada		Job #: 550-194919-1
Address: 4955 Yarrow Street, ,	Due Date Requested: 12/29/2022			
City: Arvada	TAT Requested (days):			
State, Zip: CO, 80002				
Phone: 303-736-0100(Tel) 303-431-7171(Fax)	PO #:			
Email:	WO #:			
Project Name: Tetra Tech M11 SWF Treatability Study	Project #: 55015433			
Site:	SSOW#:			

Analysis Requested

Preservation Codes:

A - HCL, B - NaOH, C - Zn Acetate, D - Nitric Acid, E - NaHSO4, F - MeOH, G - Amchlor, H - Ascorbic Acid, I - Ice, J - DI Water, K - EDTA, L - EDA, M - Hexane, N - None, O - AsNaO2, P - Na2O4S, Q - Na2SO3, R - Na2S2O3, S - H2SO4, T - TSP Dodecahydrate, U - Acetone, V - MCAA, W - pH 4-5, Y - Trizma, Z - other (specify)

Other:

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	RSK_175/ (MOD) Local Method	Total Number of containers	Special Instructions/Note:
			Preservation Code:						
SWFTS-MW25-EM40 (550-194919-1)	12/13/22	10:00 Pacific		Water			X	3	
SWFTS-MW24-EM40 (550-194919-3)	12/13/22	11:45 Pacific		Water			X	3	
SWFTS-MW23-EM40 (550-194919-5)	12/13/22	12:30 Pacific		Water			X	3	
SWFTS-MW20-EM40 (550-194919-7)	12/13/22	13:55 Pacific		Water			X	3	

Note: Since laboratory accreditations are subject to change, Eurofins Environment Testing Southwest, LLC places the ownership of method, analyte & accreditation compliance upon our subcontract laboratories. This sample shipment is forwarded under chain-of-custody. If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed, the samples must be shipped back to the Eurofins Environment Testing Southwest, LLC laboratory or other instructions will be provided. Any changes to accreditation status should be brought to Eurofins Environment Testing Southwest, LLC attention immediately. If all requested accreditations are current to date, return the signed Chain of Custody attesting to said compliance to Eurofins Environment Testing Southwest, LLC.

Possible Hazard Identification: Unconfirmed	Sample Disposal (A fee may be assessed if samples are retained longer than 1 month): ☐ Return To Client ☐ Disposal By Lab ☐ Archive For _____ Months
Deliverable Requested: I, II, III, IV, Other (specify) Primary Deliverable Rank: 2	Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:

	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
1	[illegible] 12-14-22	14:30	EESW	Fedex		
2				[illegible]	12-15-22 0915	ETADEN
3						

Custody Seals Intact: ∆ Yes ∆ No	Custody Seal No.:	Cooler Temperature(s) °C and Other Remarks: 0.8 CF 0.0 IR 12

Ver: 06/08/2021

Login Sample Receipt Checklist

Client: Tetra Tech, Inc.

Job Number: 550-194919-1

Login Number: 194919
List Number: 1
Creator: Gravlin, Andrea

List Source: Eurofins Phoenix

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	True	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	False	Check done at department level as required.

Login Sample Receipt Checklist

Client: Tetra Tech, Inc.

Job Number: 550-194919-1

Login Number: 194919
List Number: 2
Creator: Lee, Jerry

List Source: Eurofins Denver
List Creation: 12/15/22 04:22 PM

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	True	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	N/A	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	N/A	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

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ANALYTICAL REPORT

PREPARED FOR

Attn: Dana Grady
Tetra Tech, Inc.
1093 Commerce Park Drive
Suite 100
Oak Ridge, Tennessee 37830

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JOB DESCRIPTION

Tetra Tech M11 SWF Treatability Study

JOB NUMBER

550-194920-1

Eurofins Phoenix
4625 East Cotton Center Boulevard
Suite #189
Phoenix AZ 85040

See page two for job notes and contact information.

my EOL

Job Notes

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The data in the report relate to the field sample(s) as received by the laboratory and associated QC. All results have been reviewed and have been found to be compliant with laboratory and accreditation requirements, with the exception of the noted deviation(s). For questions, please contact the Project Manager.

The test results in this report relate only to the samples as received by the laboratory and will meet all requirements of the methodology, with any exceptions noted. This report shall not be reproduced except in full, without the express written approval of the laboratory. All questions should be directed to the Eurofins Environment Testing Southwest, LLC Project Manager.

Authorization

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Authorized for release by
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Definitions/Glossary

Client: Tetra Tech, Inc. Job ID: 550-194920-1
Project/Site: Tetra Tech M11 SWF Treatability Study

Qualifiers

HPLC/IC

Qualifier	Qualifier Description
4	MS, MSD: The analyte present in the original sample is greater than 4 times the matrix spike concentration; therefore, control limits are not applicable.
E	Result exceeded calibration range.
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

Metals

Qualifier	Qualifier Description
4	MS, MSD: The analyte present in the original sample is greater than 4 times the matrix spike concentration; therefore, control limits are not applicable.
B	Compound was found in the blank and sample.
cn	Refer to Case Narrative for further detail
F1	MS and/or MSD recovery exceeds control limits.
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CFU	Colony Forming Unit
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MCL	EPA recommended "Maximum Contaminant Level"
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
MPN	Most Probable Number
MQL	Method Quantitation Limit
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
NEG	Negative / Absent
POS	Positive / Present
PQL	Practical Quantitation Limit
PRES	Presumptive
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)
TNTC	Too Numerous To Count

Case Narrative

Client: Tetra Tech, Inc. Job ID: 550-194920-1
Project/Site: Tetra Tech M11 SWF Treatability Study

Job ID: 550-194920-1

Laboratory: Eurofins Phoenix

Narrative

Job Narrative
550-194920-1

Comments
No additional comments.

Receipt
The samples were received on 12/14/2022 10:00 AM. Unless otherwise noted below, the samples arrived in good condition, and where required, properly preserved and on ice. The temperatures of the 3 coolers at receipt time were 2.4º C, 2.4º C and 16.6º C.

Receipt Exceptions
The container label for the following samples did not match the information listed on the Chain-of-Custody (COC): SWFTS-EM40-EB1 (550-194920-11) and SWFTS-EM40-EB1 (550-194920-12). The container labels list FieldQC-01-EM40-EB1, while the COC lists SWFTS-EM40-EB1. The sample was logged in with sample ID SWFTS-EM40-EB1.

HPLC/IC
No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

GC VOA
No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

Metals
Method 6010B: The spiking solution used during the extraction process for the laboratory control sample/ laboratory control sample duplicate (LCS/LCSD), matrix spike/matrix spike duplicate (MS/MSD) and post digestion spike (PDS) associated with preparation batch 550-290825 did not contain Phosphorus; therefore, percent recoveries are unavailable. The affected samples could not be re-prepared and / or re-analyzed with a spike containing these analytes. The instrument QC was within acceptance criteria and may be used to evaluate these analytes for this method. The results have been reported with cn qualifiers. Affected samples: PC-92-EM40 (550-194920-2), SWFTS-MW-01-EM40 (550-194920-4), SWFTS-EM40-FB1 (550-194920-6), PC-94-EM40 (550-194920-8), SWFTS-MW-09A-EM40 (550-194920-10), SWFTS-EM40-EB1 (550-194920-12), SWFTS-MW-09B-EM40 (550-194920-14), SWFTS-MW-03-EM40 (550-194920-16), SWFTS-MW-03-EM40 (550-194920-16[MS]), SWFTS-MW-03-EM40 (550-194920-16[MSD]), (LCS 550-290825/2-A), (LCSD 550-290825/3-A) and (550-194920-B-16-C PDS).

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

Field Service / Mobile Lab
No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

General Chemistry
No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

Sample Summary

Client: Tetra Tech, Inc.
Job ID: 550-194920-1
Project/Site: Tetra Tech M11 SWF Treatability Study

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
550-194920-1	PC-92-EM40	Water	12/13/22 08:13	12/14/22 10:00
550-194920-2	PC-92-EM40	Water	12/13/22 08:13	12/14/22 10:00
550-194920-3	SWFTS-MW-01-EM40	Water	12/13/22 09:08	12/14/22 10:00
550-194920-4	SWFTS-MW-01-EM40	Water	12/13/22 09:08	12/14/22 10:00
550-194920-5	SWFTS-EM40-FB1	Water	12/13/22 09:08	12/14/22 10:00
550-194920-6	SWFTS-EM40-FB1	Water	12/13/22 09:08	12/14/22 10:00
550-194920-7	PC-94-EM40	Water	12/13/22 10:12	12/14/22 10:00
550-194920-8	PC-94-EM40	Water	12/13/22 10:12	12/14/22 10:00
550-194920-9	SWFTS-MW-09A-EM40	Water	12/13/22 11:14	12/14/22 10:00
550-194920-10	SWFTS-MW-09A-EM40	Water	12/13/22 11:14	12/14/22 10:00
550-194920-11	SWFTS-EM40-EB1	Water	12/13/22 11:14	12/14/22 10:00
550-194920-12	SWFTS-EM40-EB1	Water	12/13/22 11:14	12/14/22 10:00
550-194920-13	SWFTS-MW-09B-EM40	Water	12/13/22 12:38	12/14/22 10:00
550-194920-14	SWFTS-MW-09B-EM40	Water	12/13/22 12:38	12/14/22 10:00
550-194920-15	SWFTS-MW-03-EM40	Water	12/13/22 13:37	12/14/22 10:00
550-194920-16	SWFTS-MW-03-EM40	Water	12/13/22 13:37	12/14/22 10:00

Detection Summary

Client: Tetra Tech, Inc.
Job ID: 550-194920-1
Project/Site: Tetra Tech M11 SWF Treatability Study

Client Sample ID: PC-92-EM40 — Lab Sample ID: 550-194920-1

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Nitrate as N	4.0		0.050	0.014	mg/L	1		300.0	Total/NA
Sulfate	870		100	21	mg/L	50		300.0	Total/NA
Chlorate	11000		2000	490	ug/L	100		300.1B	Total/NA
Perchlorate	5900		200	63	ug/L	200		314.0	Total/NA
Manganese	0.86		0.020	0.0083	mg/L	1		6010B	Total/NA
Total Organic Carbon	2.5		0.50	0.26	mg/L	1		SM 5310B	Total/NA

Client Sample ID: PC-92-EM40 — Lab Sample ID: 550-194920-2

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Aluminum	0.20		0.20	0.080	mg/L	1		6010B	Dissolved
Barium	0.018		0.0050	0.00057	mg/L	1		6010B	Dissolved
Beryllium	0.00028	J	0.0010	0.00019	mg/L	1		6010B	Dissolved
Boron	1.2	B	0.050	0.0024	mg/L	1		6010B	Dissolved
Calcium	180		0.40	0.015	mg/L	1		6010B	Dissolved
Cobalt	0.0025	J	0.0050	0.00054	mg/L	1		6010B	Dissolved
Copper	0.0020	J	0.0050	0.0012	mg/L	1		6010B	Dissolved
Magnesium	76		0.40	0.054	mg/L	1		6010B	Dissolved
Manganese	0.81		0.020	0.0083	mg/L	1		6010B	Dissolved
Molybdenum	0.030		0.010	0.00052	mg/L	1		6010B	Dissolved
Nickel	0.013		0.0050	0.0028	mg/L	1		6010B	Dissolved
Potassium	21		1.0	0.081	mg/L	1		6010B	Dissolved
Silicon	35		0.10	0.016	mg/L	1		6010B	Dissolved
Sodium	550		0.40	0.039	mg/L	1		6010B	Dissolved
Strontium	4.9		0.010	0.00032	mg/L	1		6010B	Dissolved
Titanium	0.00034	J	0.0050	0.00028	mg/L	1		6010B	Dissolved
Tungsten	0.0094	J	0.10	0.0021	mg/L	1		6010B	Dissolved
Vanadium	0.048		0.0050	0.00069	mg/L	1		6010B	Dissolved
Antimony	0.023	J B	0.10	0.0043	ug/L	1		6020B	Dissolved
Arsenic	8.5		0.10	0.025	ug/L	1		6020B	Dissolved
Selenium	0.90		0.050	0.0074	ug/L	1		6020B	Dissolved
Thallium	0.061		0.010	0.0013	ug/L	1		6020B	Dissolved

Client Sample ID: SWFTS-MW-01-EM40 — Lab Sample ID: 550-194920-3

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Methane	25		5.0	0.63	ug/L	1		RSK-175	Total/NA
Nitrate as N	6.2		0.050	0.014	mg/L	1		300.0	Total/NA
Sulfate	1400		100	21	mg/L	50		300.0	Total/NA
Chlorate	6700		1000	240	ug/L	50		300.1B	Total/NA
Perchlorate	4900		200	63	ug/L	200		314.0	Total/NA
Manganese	2.0		0.020	0.0083	mg/L	1		6010B	Total/NA
Total Organic Carbon	1.8		0.50	0.26	mg/L	1		SM 5310B	Total/NA

Client Sample ID: SWFTS-MW-01-EM40 — Lab Sample ID: 550-194920-4

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Aluminum	0.28		0.20	0.080	mg/L	1		6010B	Dissolved
Barium	0.029		0.0050	0.00057	mg/L	1		6010B	Dissolved
Boron	2.2	B	0.050	0.0024	mg/L	1		6010B	Dissolved
Calcium	280		0.40	0.015	mg/L	1		6010B	Dissolved
Cobalt	0.0014	J	0.0050	0.00054	mg/L	1		6010B	Dissolved

This Detection Summary does not include radiochemical test results.

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Client Sample ID: SWFTS-MW-01-EM40 (Continued) Lab Sample ID: 550-194920-4

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Iron	0.023	J B	0.40	0.019	mg/L	1		6010B	Dissolved
Magnesium	140		0.40	0.054	mg/L	1		6010B	Dissolved
Manganese	2.0		0.020	0.0083	mg/L	1		6010B	Dissolved
Molybdenum	0.079		0.010	0.00052	mg/L	1		6010B	Dissolved
Potassium	47		1.0	0.081	mg/L	1		6010B	Dissolved
Silicon	34		0.10	0.016	mg/L	1		6010B	Dissolved
Sodium	660		0.40	0.039	mg/L	1		6010B	Dissolved
Strontium	7.8		0.010	0.00032	mg/L	1		6010B	Dissolved
Tungsten	0.0042	J	0.10	0.0021	mg/L	1		6010B	Dissolved
Vanadium	0.018		0.0050	0.00069	mg/L	1		6010B	Dissolved
Antimony	0.018	J B	0.10	0.0043	ug/L	1		6020B	Dissolved
Arsenic	4.3		0.10	0.025	ug/L	1		6020B	Dissolved
Selenium	1.8		0.050	0.0074	ug/L	1		6020B	Dissolved
Thallium	0.015		0.010	0.0013	ug/L	1		6020B	Dissolved

Client Sample ID: SWFTS-EM40-FB1 Lab Sample ID: 550-194920-5

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Sulfate	6.9		2.0	0.43	mg/L	1		300.0	Total/NA

Client Sample ID: SWFTS-EM40-FB1 Lab Sample ID: 550-194920-6

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Boron	0.0049	J B	0.050	0.0024	mg/L	1		6010B	Dissolved
Calcium	0.12	J	0.40	0.015	mg/L	1		6010B	Dissolved
Magnesium	0.056	J	0.40	0.054	mg/L	1		6010B	Dissolved
Potassium	0.21	J	1.0	0.081	mg/L	1		6010B	Dissolved
Silicon	0.078	J	0.10	0.016	mg/L	1		6010B	Dissolved
Sodium	0.53		0.40	0.039	mg/L	1		6010B	Dissolved
Strontium	0.0028	J	0.010	0.00032	mg/L	1		6010B	Dissolved

Client Sample ID: PC-94-EM40 Lab Sample ID: 550-194920-7

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Nitrate as N	11		0.10	0.028	mg/L	2		300.0	Total/NA
Sulfate	1700		100	21	mg/L	50		300.0	Total/NA
Chlorate	21000		2000	490	ug/L	100		300.1B	Total/NA
Perchlorate	5500		200	63	ug/L	200		314.0	Total/NA
Manganese	3.2		0.020	0.0083	mg/L	1		6010B	Total/NA
Total Organic Carbon	1.6		0.50	0.26	mg/L	1		SM 5310B	Total/NA

Client Sample ID: PC-94-EM40 Lab Sample ID: 550-194920-8

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Aluminum	0.31		0.20	0.080	mg/L	1		6010B	Dissolved
Barium	0.027		0.0050	0.00057	mg/L	1		6010B	Dissolved
Boron	2.2	B	0.050	0.0024	mg/L	1		6010B	Dissolved
Calcium	330		0.40	0.015	mg/L	1		6010B	Dissolved
Cobalt	0.0043	J	0.0050	0.00054	mg/L	1		6010B	Dissolved
Iron	0.032	J B	0.40	0.019	mg/L	1		6010B	Dissolved
Magnesium	170		0.40	0.054	mg/L	1		6010B	Dissolved
Manganese	2.8		0.020	0.0083	mg/L	1		6010B	Dissolved
Molybdenum	0.12		0.010	0.00052	mg/L	1		6010B	Dissolved

This Detection Summary does not include radiochemical test results.

Client Sample ID: PC-94-EM40 (Continued) — Lab Sample ID: 550-194920-8

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Nickel	0.0036	J	0.0050	0.0028	mg/L	1		6010B	Dissolved
Potassium	54		1.0	0.081	mg/L	1		6010B	Dissolved
Silicon	32		0.10	0.016	mg/L	1		6010B	Dissolved
Sodium	620		0.40	0.039	mg/L	1		6010B	Dissolved
Strontium	8.9		0.010	0.00032	mg/L	1		6010B	Dissolved
Tungsten	0.0055	J	0.10	0.0021	mg/L	1		6010B	Dissolved
Vanadium	0.028		0.0050	0.00069	mg/L	1		6010B	Dissolved
Antimony	0.017	J B	0.10	0.0043	ug/L	1		6020B	Dissolved
Arsenic	4.3		0.10	0.025	ug/L	1		6020B	Dissolved
Selenium	3.8		0.050	0.0074	ug/L	1		6020B	Dissolved
Thallium	0.026		0.010	0.0013	ug/L	1		6020B	Dissolved

Client Sample ID: SWFTS-MW-09A-EM40 — Lab Sample ID: 550-194920-9

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Nitrate as N	11		0.10	0.028	mg/L	2		300.0	Total/NA
Sulfate	1600		100	21	mg/L	50		300.0	Total/NA
Chlorate	22000		2000	490	ug/L	100		300.1B	Total/NA
Perchlorate	5700		200	63	ug/L	200		314.0	Total/NA
Manganese	3.1		0.020	0.0083	mg/L	1		6010B	Total/NA
Total Organic Carbon	1.6		0.50	0.26	mg/L	1		SM 5310B	Total/NA

Client Sample ID: SWFTS-MW-09A-EM40 — Lab Sample ID: 550-194920-10

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Aluminum	0.30		0.20	0.080	mg/L	1		6010B	Dissolved
Barium	0.030		0.0050	0.00057	mg/L	1		6010B	Dissolved
Boron	2.2	B	0.050	0.0024	mg/L	1		6010B	Dissolved
Calcium	320		0.40	0.015	mg/L	1		6010B	Dissolved
Cobalt	0.0022	J	0.0050	0.00054	mg/L	1		6010B	Dissolved
Iron	0.027	J B	0.40	0.019	mg/L	1		6010B	Dissolved
Magnesium	160		0.40	0.054	mg/L	1		6010B	Dissolved
Manganese	3.0		0.020	0.0083	mg/L	1		6010B	Dissolved
Molybdenum	0.10		0.010	0.00052	mg/L	1		6010B	Dissolved
Nickel	0.0053		0.0050	0.0028	mg/L	1		6010B	Dissolved
Potassium	56		1.0	0.081	mg/L	1		6010B	Dissolved
Silicon	32		0.10	0.016	mg/L	1		6010B	Dissolved
Sodium	630		0.40	0.039	mg/L	1		6010B	Dissolved
Strontium	8.7		0.010	0.00032	mg/L	1		6010B	Dissolved
Tungsten	0.0047	J	0.10	0.0021	mg/L	1		6010B	Dissolved
Vanadium	0.024		0.0050	0.00069	mg/L	1		6010B	Dissolved
Antimony	0.015	J B	0.10	0.0043	ug/L	1		6020B	Dissolved
Arsenic	4.1		0.10	0.025	ug/L	1		6020B	Dissolved
Selenium	3.7		0.050	0.0074	ug/L	1		6020B	Dissolved
Thallium	0.039		0.010	0.0013	ug/L	1		6020B	Dissolved

Client Sample ID: SWFTS-EM40-EB1 — Lab Sample ID: 550-194920-11

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Sulfate	6.5		2.0	0.43	mg/L	1		300.0	Total/NA

This Detection Summary does not include radiochemical test results.

Detection Summary

Client: Tetra Tech, Inc.
Job ID: 550-194920-1
Project/Site: Tetra Tech M11 SWF Treatability Study

Client Sample ID: SWFTS-EM40-EB1 — Lab Sample ID: 550-194920-12

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Boron	0.0051	J B	0.050	0.0024	mg/L	1		6010B	Dissolved
Calcium	0.040	J	0.40	0.015	mg/L	1		6010B	Dissolved
Potassium	0.14	J	1.0	0.081	mg/L	1		6010B	Dissolved
Silicon	0.067	J	0.10	0.016	mg/L	1		6010B	Dissolved
Silver	0.00055	J B	0.0080	0.00049	mg/L	1		6010B	Dissolved
Sodium	0.19	J	0.40	0.039	mg/L	1		6010B	Dissolved
Strontium	0.00072	J	0.010	0.00032	mg/L	1		6010B	Dissolved
Arsenic	0.027	J	0.10	0.025	ug/L	1		6020B	Dissolved

Client Sample ID: SWFTS-MW-09B-EM40 — Lab Sample ID: 550-194920-13

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Nitrate as N	15		0.10	0.028	mg/L	2		300.0	Total/NA
Sulfate	1600		100	21	mg/L	50		300.0	Total/NA
Chlorate	28000		2000	490	ug/L	100		300.1B	Total/NA
Perchlorate	7200		500	160	ug/L	500		314.0	Total/NA
Manganese	1.1		0.020	0.0083	mg/L	1		6010B	Total/NA
Total Organic Carbon	1.5		0.50	0.26	mg/L	1		SM 5310B	Total/NA

Client Sample ID: SWFTS-MW-09B-EM40 — Lab Sample ID: 550-194920-14

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Aluminum	0.29		0.20	0.080	mg/L	1		6010B	Dissolved
Barium	0.025		0.0050	0.00057	mg/L	1		6010B	Dissolved
Boron	2.2	B	0.050	0.0024	mg/L	1		6010B	Dissolved
Calcium	310		0.40	0.015	mg/L	1		6010B	Dissolved
Chromium	0.0048	J	0.0050	0.0011	mg/L	1		6010B	Dissolved
Cobalt	0.0013	J	0.0050	0.00054	mg/L	1		6010B	Dissolved
Iron	0.027	J B	0.40	0.019	mg/L	1		6010B	Dissolved
Magnesium	150		0.40	0.054	mg/L	1		6010B	Dissolved
Manganese	1.1		0.020	0.0083	mg/L	1		6010B	Dissolved
Molybdenum	0.069		0.010	0.00052	mg/L	1		6010B	Dissolved
Nickel	0.0049	J	0.0050	0.0028	mg/L	1		6010B	Dissolved
Potassium	48		1.0	0.081	mg/L	1		6010B	Dissolved
Silicon	35		0.10	0.016	mg/L	1		6010B	Dissolved
Sodium	620		0.40	0.039	mg/L	1		6010B	Dissolved
Strontium	8.4		0.010	0.00032	mg/L	1		6010B	Dissolved
Tungsten	0.0050	J	0.10	0.0021	mg/L	1		6010B	Dissolved
Vanadium	0.038		0.0050	0.00069	mg/L	1		6010B	Dissolved
Antimony	0.020	J B	0.10	0.0043	ug/L	1		6020B	Dissolved
Arsenic	6.8		0.10	0.025	ug/L	1		6020B	Dissolved
Selenium	4.9		0.050	0.0074	ug/L	1		6020B	Dissolved
Thallium	0.032		0.010	0.0013	ug/L	1		6020B	Dissolved

Client Sample ID: SWFTS-MW-03-EM40 — Lab Sample ID: 550-194920-15

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Nitrate as N	9.2		0.10	0.028	mg/L	2		300.0	Total/NA
Sulfate	2100		100	21	mg/L	50		300.0	Total/NA
Chlorate	7900		1000	240	ug/L	50		300.1B	Total/NA
Perchlorate	3000		200	63	ug/L	200		314.0	Total/NA
Manganese	2.1		0.020	0.0083	mg/L	1		6010B	Total/NA

This Detection Summary does not include radiochemical test results.

Eurofins Phoenix

Client Sample ID: SWFTS-MW-03-EM40 (Continued) — Lab Sample ID: 550-194920-15

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Total Organic Carbon	1.4		0.50	0.26	mg/L	1		SM 5310B	Total/NA

Client Sample ID: SWFTS-MW-03-EM40 — Lab Sample ID: 550-194920-16

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Aluminum	0.37		0.20	0.080	mg/L	1		6010B	Dissolved
Barium	0.023		0.0050	0.00057	mg/L	1		6010B	Dissolved
Boron	2.5	B	0.050	0.0024	mg/L	1		6010B	Dissolved
Calcium	410		0.40	0.015	mg/L	1		6010B	Dissolved
Iron	0.037	J B	0.40	0.019	mg/L	1		6010B	Dissolved
Magnesium	220		0.40	0.054	mg/L	1		6010B	Dissolved
Manganese	1.8		0.020	0.0083	mg/L	1		6010B	Dissolved
Molybdenum	0.24		0.010	0.00052	mg/L	1		6010B	Dissolved
Nickel	0.0054		0.0050	0.0028	mg/L	1		6010B	Dissolved
Potassium	60		1.0	0.081	mg/L	1		6010B	Dissolved
Silicon	34		0.10	0.016	mg/L	1		6010B	Dissolved
Sodium	670		0.40	0.039	mg/L	1		6010B	Dissolved
Strontium	10		0.010	0.00032	mg/L	1		6010B	Dissolved
Titanium	0.0012	J	0.0050	0.00028	mg/L	1		6010B	Dissolved
Tungsten	0.012	J	0.10	0.0021	mg/L	1		6010B	Dissolved
Vanadium	0.029		0.0050	0.00069	mg/L	1		6010B	Dissolved
Antimony	0.023	J B	0.10	0.0043	ug/L	1		6020B	Dissolved
Arsenic	4.8	F1	0.10	0.025	ug/L	1		6020B	Dissolved
Selenium	4.6	F1	0.050	0.0074	ug/L	1		6020B	Dissolved
Thallium	0.080		0.010	0.0013	ug/L	1		6020B	Dissolved

This Detection Summary does not include radiochemical test results.

Client Sample ID: PC-92-EM40 — Lab Sample ID: 550-194920-1

Date Collected: 12/13/22 08:13 — **Matrix: Water**
Date Received: 12/14/22 10:00

Method: RSK-175 - Dissolved Gases (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Methane	ND		5.0	0.63	ug/L			12/17/22 01:52	1

Method: MCAWW 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Nitrate as N	**4.0**		0.050	0.014	mg/L			12/14/22 16:55	1
Sulfate	**870**		100	21	mg/L			12/14/22 21:13	50

Method: EPA 300.1B - Disinfection By-Products, (IC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chlorate	**11000**		2000	490	ug/L			12/20/22 20:09	100

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Dichloroacetic acid(Surr)	*106*		*90 - 115*		*12/20/22 20:09*	*100*

Method: EPA 314.0 - Perchlorate (IC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perchlorate	**5900**		200	63	ug/L			12/14/22 15:43	200

Method: SW846 6010B - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Manganese	**0.86**		0.020	0.0083	mg/L		12/15/22 06:43	12/16/22 13:22	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon (SM 5310B)	**2.5**		0.50	0.26	mg/L			12/16/22 18:47	1

Client Sample ID: PC-92-EM40 — Lab Sample ID: 550-194920-2

Date Collected: 12/13/22 08:13 — **Matrix: Water**
Date Received: 12/14/22 10:00

Method: SW846 6010B - Metals (ICP) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	**0.20**		0.20	0.080	mg/L		12/15/22 06:30	12/16/22 12:19	1
Barium	**0.018**		0.0050	0.00057	mg/L		12/15/22 06:30	12/16/22 12:19	1
Beryllium	**0.00028**	**J**	0.0010	0.00019	mg/L		12/15/22 06:30	12/16/22 12:19	1
Boron	**1.2**	**B**	0.050	0.0024	mg/L		12/15/22 06:30	12/16/22 12:19	1
Cadmium	ND		0.0010	0.00072	mg/L		12/15/22 06:30	12/16/22 12:19	1
Calcium	**180**		0.40	0.015	mg/L		12/15/22 06:30	12/16/22 12:19	1
Chromium	ND		0.0050	0.0011	mg/L		12/15/22 06:30	12/16/22 12:19	1
Cobalt	**0.0025**	**J**	0.0050	0.00054	mg/L		12/15/22 06:30	12/16/22 12:19	1
Copper	**0.0020**	**J**	0.0050	0.0012	mg/L		12/15/22 06:30	12/16/22 12:19	1
Iron	ND		0.40	0.019	mg/L		12/15/22 06:30	12/16/22 12:19	1
Lead	ND		0.010	0.0025	mg/L		12/15/22 06:30	12/16/22 12:19	1
Magnesium	**76**		0.40	0.054	mg/L		12/15/22 06:30	12/16/22 12:19	1
Manganese	**0.81**		0.020	0.0083	mg/L		12/15/22 06:30	12/16/22 12:19	1
Molybdenum	**0.030**		0.010	0.00052	mg/L		12/15/22 06:30	12/16/22 12:19	1
Nickel	**0.013**		0.0050	0.0028	mg/L		12/15/22 06:30	12/16/22 12:19	1
Phosphorus	ND	cn	0.40	0.011	mg/L		12/15/22 06:30	12/16/22 12:19	1
Potassium	**21**		1.0	0.081	mg/L		12/15/22 06:30	12/16/22 12:19	1
Silicon	**35**		0.10	0.016	mg/L		12/15/22 06:30	12/16/22 12:19	1
Silver	ND		0.0080	0.00049	mg/L		12/15/22 06:30	12/16/22 12:19	1

Client Sample ID: PC-92-EM40 — Lab Sample ID: 550-194920-2

Date Collected: 12/13/22 08:13 — **Matrix: Water**
Date Received: 12/14/22 10:00

Method: SW846 6010B - Metals (ICP) - Dissolved (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sodium	550		0.40	0.039	mg/L		12/15/22 06:30	12/16/22 12:19	1
Strontium	4.9		0.010	0.00032	mg/L		12/15/22 06:30	12/16/22 12:19	1
Tin	ND		0.010	0.0034	mg/L		12/15/22 06:30	12/16/22 12:19	1
Titanium	0.00034	J	0.0050	0.00028	mg/L		12/15/22 06:30	12/16/22 12:19	1
Tungsten	0.0094	J	0.10	0.0021	mg/L		12/15/22 06:30	12/16/22 12:19	1
Vanadium	0.048		0.0050	0.00069	mg/L		12/15/22 06:30	12/16/22 12:19	1
Zinc	ND		0.040	0.0023	mg/L		12/15/22 06:30	12/16/22 12:19	1

Method: SW846 6020B - Metals (ICP/MS) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	0.023	J B	0.10	0.0043	ug/L		12/15/22 04:20	12/22/22 15:10	1
Arsenic	8.5		0.10	0.025	ug/L		12/15/22 04:20	12/27/22 12:44	1
Selenium	0.90		0.050	0.0074	ug/L		12/15/22 04:20	12/27/22 12:44	1
Thallium	0.061		0.010	0.0013	ug/L		12/15/22 04:20	12/22/22 15:10	1

Client Sample ID: SWFTS-MW-01-EM40 — Lab Sample ID: 550-194920-3

Date Collected: 12/13/22 09:08 — **Matrix: Water**
Date Received: 12/14/22 10:00

Method: RSK-175 - Dissolved Gases (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Methane	25		5.0	0.63	ug/L			12/17/22 02:06	1

Method: MCAWW 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Nitrate as N	6.2		0.050	0.014	mg/L			12/14/22 17:13	1
Sulfate	1400		100	21	mg/L			12/14/22 21:41	50

Method: EPA 300.1B - Disinfection By-Products, (IC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chlorate	6700		1000	240	ug/L			12/20/22 20:38	50

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Dichloroacetic acid(Surr)	*108*		*90 - 115*		*12/20/22 20:38*	*50*

Method: EPA 314.0 - Perchlorate (IC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perchlorate	4900		200	63	ug/L			12/14/22 16:05	200

Method: SW846 6010B - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Manganese	2.0		0.020	0.0083	mg/L		12/15/22 06:43	12/16/22 13:24	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon (SM 5310B)	1.8		0.50	0.26	mg/L			12/16/22 18:59	1

Client Sample ID: SWFTS-MW-01-EM40 Lab Sample ID: 550-194920-4

Date Collected: 12/13/22 09:08 **Matrix: Water**
Date Received: 12/14/22 10:00

Method: SW846 6010B - Metals (ICP) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	**0.28**		0.20	0.080	mg/L		12/15/22 06:30	12/16/22 12:22	1
Barium	**0.029**		0.0050	0.00057	mg/L		12/15/22 06:30	12/16/22 12:22	1
Beryllium	ND		0.0010	0.00019	mg/L		12/15/22 06:30	12/16/22 12:22	1
Boron	**2.2**	**B**	0.050	0.0024	mg/L		12/15/22 06:30	12/16/22 12:22	1
Cadmium	ND		0.0010	0.00072	mg/L		12/15/22 06:30	12/16/22 12:22	1
Calcium	**280**		0.40	0.015	mg/L		12/15/22 06:30	12/16/22 12:22	1
Chromium	ND		0.0050	0.0011	mg/L		12/15/22 06:30	12/16/22 12:22	1
Cobalt	**0.0014**	**J**	0.0050	0.00054	mg/L		12/15/22 06:30	12/16/22 12:22	1
Copper	ND		0.0050	0.0012	mg/L		12/15/22 06:30	12/16/22 12:22	1
Iron	**0.023**	**J B**	0.40	0.019	mg/L		12/15/22 06:30	12/16/22 12:22	1
Lead	ND		0.010	0.0025	mg/L		12/15/22 06:30	12/16/22 12:22	1
Magnesium	**140**		0.40	0.054	mg/L		12/15/22 06:30	12/16/22 12:22	1
Manganese	**2.0**		0.020	0.0083	mg/L		12/15/22 06:30	12/16/22 12:22	1
Molybdenum	**0.079**		0.010	0.00052	mg/L		12/15/22 06:30	12/16/22 12:22	1
Nickel	ND		0.0050	0.0028	mg/L		12/15/22 06:30	12/16/22 12:22	1
Phosphorus	ND	cn	0.40	0.011	mg/L		12/15/22 06:30	12/16/22 12:22	1
Potassium	**47**		1.0	0.081	mg/L		12/15/22 06:30	12/16/22 12:22	1
Silicon	**34**		0.10	0.016	mg/L		12/15/22 06:30	12/16/22 12:22	1
Silver	ND		0.0080	0.00049	mg/L		12/15/22 06:30	12/16/22 12:22	1
Sodium	**660**		0.40	0.039	mg/L		12/15/22 06:30	12/16/22 12:22	1
Strontium	**7.8**		0.010	0.00032	mg/L		12/15/22 06:30	12/16/22 12:22	1
Tin	ND		0.010	0.0034	mg/L		12/15/22 06:30	12/16/22 12:22	1
Titanium	ND		0.0050	0.00028	mg/L		12/15/22 06:30	12/16/22 12:22	1
Tungsten	**0.0042**	**J**	0.10	0.0021	mg/L		12/15/22 06:30	12/16/22 12:22	1
Vanadium	**0.018**		0.0050	0.00069	mg/L		12/15/22 06:30	12/16/22 12:22	1
Zinc	ND		0.040	0.0023	mg/L		12/15/22 06:30	12/16/22 12:22	1

Method: SW846 6020B - Metals (ICP/MS) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	**0.018**	**J B**	0.10	0.0043	ug/L		12/15/22 04:20	12/22/22 15:12	1
Arsenic	**4.3**		0.10	0.025	ug/L		12/15/22 04:20	12/27/22 12:46	1
Selenium	**1.8**		0.050	0.0074	ug/L		12/15/22 04:20	12/27/22 12:46	1
Thallium	**0.015**		0.010	0.0013	ug/L		12/15/22 04:20	12/22/22 15:12	1

Client Sample ID: SWFTS-EM40-FB1 Lab Sample ID: 550-194920-5

Date Collected: 12/13/22 09:08 **Matrix: Water**
Date Received: 12/14/22 10:00

Method: RSK-175 - Dissolved Gases (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Methane	ND		5.0	0.63	ug/L			12/17/22 02:19	1

Method: MCAWW 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Nitrate as N	ND		0.050	0.014	mg/L			12/14/22 15:05	1
Sulfate	**6.9**		2.0	0.43	mg/L			12/14/22 15:05	1

Method: EPA 300.1B - Disinfection By-Products, (IC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chlorate	ND		20	4.9	ug/L			12/20/22 21:08	1

Client Sample ID: SWFTS-EM40-FB1 — Lab Sample ID: 550-194920-5

Date Collected: 12/13/22 09:08
Date Received: 12/14/22 10:00
Matrix: Water

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Dichloroacetic acid(Surr)	*110*		*90 - 115*		*12/20/22 21:08*	*1*

Method: EPA 314.0 - Perchlorate (IC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perchlorate	ND		1.0	0.31	ug/L			12/14/22 16:28	1

Method: SW846 6010B - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Manganese	ND		0.020	0.0083	mg/L		12/15/22 06:43	12/16/22 13:27	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon (SM 5310B)	ND		0.50	0.26	mg/L			12/16/22 19:10	1

Client Sample ID: SWFTS-EM40-FB1 — Lab Sample ID: 550-194920-6

Date Collected: 12/13/22 09:08
Date Received: 12/14/22 10:00
Matrix: Water

Method: SW846 6010B - Metals (ICP) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	ND		0.20	0.080	mg/L		12/15/22 06:30	12/16/22 12:25	1
Barium	ND		0.0050	0.00057	mg/L		12/15/22 06:30	12/16/22 12:25	1
Beryllium	ND		0.0010	0.00019	mg/L		12/15/22 06:30	12/16/22 12:25	1
Boron	**0.0049**	**J B**	0.050	0.0024	mg/L		12/15/22 06:30	12/16/22 12:25	1
Cadmium	ND		0.0010	0.00072	mg/L		12/15/22 06:30	12/16/22 12:25	1
Calcium	**0.12**	**J**	0.40	0.015	mg/L		12/15/22 06:30	12/16/22 12:25	1
Chromium	ND		0.0050	0.0011	mg/L		12/15/22 06:30	12/16/22 12:25	1
Cobalt	ND		0.0050	0.00054	mg/L		12/15/22 06:30	12/16/22 12:25	1
Copper	ND		0.0050	0.0012	mg/L		12/15/22 06:30	12/16/22 12:25	1
Iron	ND		0.40	0.019	mg/L		12/15/22 06:30	12/16/22 12:25	1
Lead	ND		0.010	0.0025	mg/L		12/15/22 06:30	12/16/22 12:25	1
Magnesium	**0.056**	**J**	0.40	0.054	mg/L		12/15/22 06:30	12/16/22 12:25	1
Manganese	ND		0.020	0.0083	mg/L		12/15/22 06:30	12/16/22 12:25	1
Molybdenum	ND		0.010	0.00052	mg/L		12/15/22 06:30	12/16/22 12:25	1
Nickel	ND		0.0050	0.0028	mg/L		12/15/22 06:30	12/16/22 12:25	1
Phosphorus	ND	cn	0.40	0.011	mg/L		12/15/22 06:30	12/16/22 12:25	1
Potassium	**0.21**	**J**	1.0	0.081	mg/L		12/15/22 06:30	12/16/22 12:25	1
Silicon	**0.078**	**J**	0.10	0.016	mg/L		12/15/22 06:30	12/16/22 12:25	1
Silver	ND		0.0080	0.00049	mg/L		12/15/22 06:30	12/16/22 12:25	1
Sodium	**0.53**		0.40	0.039	mg/L		12/15/22 06:30	12/16/22 12:25	1
Strontium	**0.0028**	**J**	0.010	0.00032	mg/L		12/15/22 06:30	12/16/22 12:25	1
Tin	ND		0.010	0.0034	mg/L		12/15/22 06:30	12/16/22 12:25	1
Titanium	ND		0.0050	0.00028	mg/L		12/15/22 06:30	12/16/22 12:25	1
Tungsten	ND		0.10	0.0021	mg/L		12/15/22 06:30	12/16/22 12:25	1
Vanadium	ND		0.0050	0.00069	mg/L		12/15/22 06:30	12/16/22 12:25	1
Zinc	ND		0.040	0.0023	mg/L		12/15/22 06:30	12/16/22 12:25	1

Method: SW846 6020B - Metals (ICP/MS) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND		0.10	0.0043	ug/L		12/15/22 04:20	12/22/22 15:14	1
Arsenic	ND		0.10	0.025	ug/L		12/15/22 04:20	12/27/22 12:48	1

Client Sample ID: SWFTS-EM40-FB1 — Lab Sample ID: 550-194920-6

Date Collected: 12/13/22 09:08 — **Matrix: Water**
Date Received: 12/14/22 10:00

Method: SW846 6020B - Metals (ICP/MS) - Dissolved (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Selenium	ND		0.050	0.0074	ug/L		12/15/22 04:20	12/27/22 12:48	1
Thallium	ND		0.010	0.0013	ug/L		12/15/22 04:20	12/22/22 15:14	1

Client Sample ID: PC-94-EM40 — Lab Sample ID: 550-194920-7

Date Collected: 12/13/22 10:12 — **Matrix: Water**
Date Received: 12/14/22 10:00

Method: RSK-175 - Dissolved Gases (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Methane	ND		5.0	0.63	ug/L			12/17/22 02:33	1

Method: MCAWW 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Nitrate as N	**11**		0.10	0.028	mg/L			12/14/22 17:32	2
Sulfate	**1700**		100	21	mg/L			12/14/22 19:59	50

Method: EPA 300.1B - Disinfection By-Products, (IC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chlorate	**21000**		2000	490	ug/L			12/20/22 21:37	100

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Dichloroacetic acid(Surr)	*111*		*90 - 115*		*12/20/22 21:37*	*100*

Method: EPA 314.0 - Perchlorate (IC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perchlorate	**5500**		200	63	ug/L			12/14/22 16:51	200

Method: SW846 6010B - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Manganese	**3.2**		0.020	0.0083	mg/L		12/15/22 06:43	12/16/22 13:30	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon (SM 5310B)	**1.6**		0.50	0.26	mg/L			12/16/22 19:24	1

Client Sample ID: PC-94-EM40 — Lab Sample ID: 550-194920-8

Date Collected: 12/13/22 10:12 — **Matrix: Water**
Date Received: 12/14/22 10:00

Method: SW846 6010B - Metals (ICP) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	**0.31**		0.20	0.080	mg/L		12/15/22 06:30	12/16/22 12:28	1
Barium	**0.027**		0.0050	0.00057	mg/L		12/15/22 06:30	12/16/22 12:28	1
Beryllium	ND		0.0010	0.00019	mg/L		12/15/22 06:30	12/16/22 12:28	1
Boron	**2.2**	**B**	0.050	0.0024	mg/L		12/15/22 06:30	12/16/22 12:28	1
Cadmium	ND		0.0010	0.00072	mg/L		12/15/22 06:30	12/16/22 12:28	1
Calcium	**330**		0.40	0.015	mg/L		12/15/22 06:30	12/16/22 12:28	1
Chromium	ND		0.0050	0.0011	mg/L		12/15/22 06:30	12/16/22 12:28	1
Cobalt	**0.0043**	**J**	0.0050	0.00054	mg/L		12/15/22 06:30	12/16/22 12:28	1
Copper	ND		0.0050	0.0012	mg/L		12/15/22 06:30	12/16/22 12:28	1
Iron	**0.032**	**J B**	0.40	0.019	mg/L		12/15/22 06:30	12/16/22 12:28	1
Lead	ND		0.010	0.0025	mg/L		12/15/22 06:30	12/16/22 12:28	1

Client Sample ID: PC-94-EM40 — Lab Sample ID: 550-194920-8

Date Collected: 12/13/22 10:12 — **Matrix: Water**
Date Received: 12/14/22 10:00

Method: SW846 6010B - Metals (ICP) - Dissolved (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Magnesium	170		0.40	0.054	mg/L		12/15/22 06:30	12/16/22 12:28	1
Manganese	2.8		0.020	0.0083	mg/L		12/15/22 06:30	12/16/22 12:28	1
Molybdenum	0.12		0.010	0.00052	mg/L		12/15/22 06:30	12/16/22 12:28	1
Nickel	0.0036	J	0.0050	0.0028	mg/L		12/15/22 06:30	12/16/22 12:28	1
Phosphorus	ND	cn	0.40	0.011	mg/L		12/15/22 06:30	12/16/22 12:28	1
Potassium	54		1.0	0.081	mg/L		12/15/22 06:30	12/16/22 12:28	1
Silicon	32		0.10	0.016	mg/L		12/15/22 06:30	12/16/22 12:28	1
Silver	ND		0.0080	0.00049	mg/L		12/15/22 06:30	12/16/22 12:28	1
Sodium	620		0.40	0.039	mg/L		12/15/22 06:30	12/16/22 12:28	1
Strontium	8.9		0.010	0.00032	mg/L		12/15/22 06:30	12/16/22 12:28	1
Tin	ND		0.010	0.0034	mg/L		12/15/22 06:30	12/16/22 12:28	1
Titanium	ND		0.0050	0.00028	mg/L		12/15/22 06:30	12/16/22 12:28	1
Tungsten	0.0055	J	0.10	0.0021	mg/L		12/15/22 06:30	12/16/22 12:28	1
Vanadium	0.028		0.0050	0.00069	mg/L		12/15/22 06:30	12/16/22 12:28	1
Zinc	ND		0.040	0.0023	mg/L		12/15/22 06:30	12/16/22 12:28	1

Method: SW846 6020B - Metals (ICP/MS) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	0.017	J B	0.10	0.0043	ug/L		12/15/22 04:20	12/22/22 15:16	1
Arsenic	4.3		0.10	0.025	ug/L		12/15/22 04:20	12/27/22 12:50	1
Selenium	3.8		0.050	0.0074	ug/L		12/15/22 04:20	12/27/22 12:50	1
Thallium	0.026		0.010	0.0013	ug/L		12/15/22 04:20	12/22/22 15:16	1

Client Sample ID: SWFTS-MW-09A-EM40 — Lab Sample ID: 550-194920-9

Date Collected: 12/13/22 11:14 — **Matrix: Water**
Date Received: 12/14/22 10:00

Method: RSK-175 - Dissolved Gases (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Methane	ND		5.0	0.63	ug/L			12/17/22 02:46	1

Method: MCAWW 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Nitrate as N	11		0.10	0.028	mg/L			12/14/22 17:50	2
Sulfate	1600		100	21	mg/L			12/14/22 20:17	50

Method: EPA 300.1B - Disinfection By-Products, (IC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chlorate	22000		2000	490	ug/L			12/20/22 23:06	100

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Dichloroacetic acid(Surr)	*112*		*90 - 115*		*12/20/22 23:06*	*100*

Method: EPA 314.0 - Perchlorate (IC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perchlorate	5700		200	63	ug/L			12/14/22 17:14	200

Method: SW846 6010B - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Manganese	3.1		0.020	0.0083	mg/L		12/15/22 06:43	12/16/22 13:33	1

Client Sample ID: SWFTS-MW-09A-EM40 — Lab Sample ID: 550-194920-9

Date Collected: 12/13/22 11:14 — **Matrix: Water**
Date Received: 12/14/22 10:00

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon (SM 5310B)	1.6		0.50	0.26	mg/L			12/16/22 19:35	1

Client Sample ID: SWFTS-MW-09A-EM40 — Lab Sample ID: 550-194920-10

Date Collected: 12/13/22 11:14 — **Matrix: Water**
Date Received: 12/14/22 10:00

Method: SW846 6010B - Metals (ICP) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	0.30		0.20	0.080	mg/L		12/15/22 06:30	12/16/22 12:31	1
Barium	0.030		0.0050	0.00057	mg/L		12/15/22 06:30	12/16/22 12:31	1
Beryllium	ND		0.0010	0.00019	mg/L		12/15/22 06:30	12/16/22 12:31	1
Boron	2.2	B	0.050	0.0024	mg/L		12/15/22 06:30	12/16/22 12:31	1
Cadmium	ND		0.0010	0.00072	mg/L		12/15/22 06:30	12/16/22 12:31	1
Calcium	320		0.40	0.015	mg/L		12/15/22 06:30	12/16/22 12:31	1
Chromium	ND		0.0050	0.0011	mg/L		12/15/22 06:30	12/16/22 12:31	1
Cobalt	0.0022	J	0.0050	0.00054	mg/L		12/15/22 06:30	12/16/22 12:31	1
Copper	ND		0.0050	0.0012	mg/L		12/15/22 06:30	12/16/22 12:31	1
Iron	0.027	J B	0.40	0.019	mg/L		12/15/22 06:30	12/16/22 12:31	1
Lead	ND		0.010	0.0025	mg/L		12/15/22 06:30	12/16/22 12:31	1
Magnesium	160		0.40	0.054	mg/L		12/15/22 06:30	12/16/22 12:31	1
Manganese	3.0		0.020	0.0083	mg/L		12/15/22 06:30	12/16/22 12:31	1
Molybdenum	0.10		0.010	0.00052	mg/L		12/15/22 06:30	12/16/22 12:31	1
Nickel	0.0053		0.0050	0.0028	mg/L		12/15/22 06:30	12/16/22 12:31	1
Phosphorus	ND	cn	0.40	0.011	mg/L		12/15/22 06:30	12/16/22 12:31	1
Potassium	56		1.0	0.081	mg/L		12/15/22 06:30	12/16/22 12:31	1
Silicon	32		0.10	0.016	mg/L		12/15/22 06:30	12/16/22 12:31	1
Silver	ND		0.0080	0.00049	mg/L		12/15/22 06:30	12/16/22 12:31	1
Sodium	630		0.40	0.039	mg/L		12/15/22 06:30	12/16/22 12:31	1
Strontium	8.7		0.010	0.00032	mg/L		12/15/22 06:30	12/16/22 12:31	1
Tin	ND		0.010	0.0034	mg/L		12/15/22 06:30	12/16/22 12:31	1
Titanium	ND		0.0050	0.00028	mg/L		12/15/22 06:30	12/16/22 12:31	1
Tungsten	0.0047	J	0.10	0.0021	mg/L		12/15/22 06:30	12/16/22 12:31	1
Vanadium	0.024		0.0050	0.00069	mg/L		12/15/22 06:30	12/16/22 12:31	1
Zinc	ND		0.040	0.0023	mg/L		12/15/22 06:30	12/16/22 12:31	1

Method: SW846 6020B - Metals (ICP/MS) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	0.015	J B	0.10	0.0043	ug/L		12/15/22 04:20	12/22/22 15:18	1
Arsenic	4.1		0.10	0.025	ug/L		12/15/22 04:20	12/27/22 12:52	1
Selenium	3.7		0.050	0.0074	ug/L		12/15/22 04:20	12/27/22 12:52	1
Thallium	0.039		0.010	0.0013	ug/L		12/15/22 04:20	12/22/22 15:18	1

Client Sample ID: SWFTS-EM40-EB1 — Lab Sample ID: 550-194920-11

Date Collected: 12/13/22 11:14 — **Matrix: Water**
Date Received: 12/14/22 10:00

Method: RSK-175 - Dissolved Gases (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Methane	ND		5.0	0.63	ug/L			12/17/22 02:59	1

Client Sample ID: SWFTS-EM40-EB1 — Lab Sample ID: 550-194920-11

Date Collected: 12/13/22 11:14 — **Matrix: Water**
Date Received: 12/14/22 10:00

Method: MCAWW 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Nitrate as N	ND		0.050	0.014	mg/L			12/14/22 18:45	1
Sulfate	**6.5**		2.0	0.43	mg/L			12/14/22 18:45	1

Method: EPA 300.1B - Disinfection By-Products, (IC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chlorate	ND		20	4.9	ug/L			12/21/22 00:34	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Dichloroacetic acid(Surr)	*107*		*90 - 115*		*12/21/22 00:34*	*1*

Method: EPA 314.0 - Perchlorate (IC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perchlorate	ND		1.0	0.31	ug/L			12/14/22 17:37	1

Method: SW846 6010B - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Manganese	ND		0.020	0.0083	mg/L		12/15/22 06:43	12/16/22 13:36	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon (SM 5310B)	ND		0.50	0.26	mg/L			12/16/22 19:48	1

Client Sample ID: SWFTS-EM40-EB1 — Lab Sample ID: 550-194920-12

Date Collected: 12/13/22 11:14 — **Matrix: Water**
Date Received: 12/14/22 10:00

Method: SW846 6010B - Metals (ICP) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	ND		0.20	0.080	mg/L		12/15/22 06:30	12/16/22 12:39	1
Barium	ND		0.0050	0.00057	mg/L		12/15/22 06:30	12/16/22 12:39	1
Beryllium	ND		0.0010	0.00019	mg/L		12/15/22 06:30	12/16/22 12:39	1
Boron	**0.0051**	**J B**	0.050	0.0024	mg/L		12/15/22 06:30	12/16/22 12:39	1
Cadmium	ND		0.0010	0.00072	mg/L		12/15/22 06:30	12/16/22 12:39	1
Calcium	**0.040**	**J**	0.40	0.015	mg/L		12/15/22 06:30	12/16/22 12:39	1
Chromium	ND		0.0050	0.0011	mg/L		12/15/22 06:30	12/16/22 12:39	1
Cobalt	ND		0.0050	0.00054	mg/L		12/15/22 06:30	12/16/22 12:39	1
Copper	ND		0.0050	0.0012	mg/L		12/15/22 06:30	12/16/22 12:39	1
Iron	ND		0.40	0.019	mg/L		12/15/22 06:30	12/16/22 12:39	1
Lead	ND		0.010	0.0025	mg/L		12/15/22 06:30	12/16/22 12:39	1
Magnesium	ND		0.40	0.054	mg/L		12/15/22 06:30	12/16/22 12:39	1
Manganese	ND		0.020	0.0083	mg/L		12/15/22 06:30	12/16/22 12:39	1
Molybdenum	ND		0.010	0.00052	mg/L		12/15/22 06:30	12/16/22 12:39	1
Nickel	ND		0.0050	0.0028	mg/L		12/15/22 06:30	12/16/22 12:39	1
Phosphorus	ND	cn	0.40	0.011	mg/L		12/15/22 06:30	12/16/22 12:39	1
Potassium	**0.14**	**J**	1.0	0.081	mg/L		12/15/22 06:30	12/16/22 12:39	1
Silicon	**0.067**	**J**	0.10	0.016	mg/L		12/15/22 06:30	12/16/22 12:39	1
Silver	**0.00055**	**J B**	0.0080	0.00049	mg/L		12/15/22 06:30	12/16/22 12:39	1
Sodium	**0.19**	**J**	0.40	0.039	mg/L		12/15/22 06:30	12/16/22 12:39	1
Strontium	**0.00072**	**J**	0.010	0.00032	mg/L		12/15/22 06:30	12/16/22 12:39	1
Tin	ND		0.010	0.0034	mg/L		12/15/22 06:30	12/16/22 12:39	1
Titanium	ND		0.0050	0.00028	mg/L		12/15/22 06:30	12/16/22 12:39	1

Client Sample ID: SWFTS-EM40-EB1 — Lab Sample ID: 550-194920-12

Date Collected: 12/13/22 11:14 — **Matrix: Water**
Date Received: 12/14/22 10:00

Method: SW846 6010B - Metals (ICP) - Dissolved (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Tungsten	ND		0.10	0.0021	mg/L		12/15/22 06:30	12/16/22 12:39	1
Vanadium	ND		0.0050	0.00069	mg/L		12/15/22 06:30	12/16/22 12:39	1
Zinc	ND		0.040	0.0023	mg/L		12/15/22 06:30	12/16/22 12:39	1

Method: SW846 6020B - Metals (ICP/MS) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND		0.10	0.0043	ug/L		12/15/22 04:20	12/22/22 15:24	1
Arsenic	**0.027**	**J**	0.10	0.025	ug/L		12/15/22 04:20	12/27/22 12:59	1
Selenium	ND		0.050	0.0074	ug/L		12/15/22 04:20	12/27/22 12:59	1
Thallium	ND		0.010	0.0013	ug/L		12/15/22 04:20	12/22/22 15:24	1

Client Sample ID: SWFTS-MW-09B-EM40 — Lab Sample ID: 550-194920-13

Date Collected: 12/13/22 12:38 — **Matrix: Water**
Date Received: 12/14/22 10:00

Method: RSK-175 - Dissolved Gases (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Methane	ND		5.0	0.63	ug/L			12/17/22 03:13	1

Method: MCAWW 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Nitrate as N	**15**		0.10	0.028	mg/L			12/14/22 18:09	2
Sulfate	**1600**		100	21	mg/L			12/14/22 20:36	50

Method: EPA 300.1B - Disinfection By-Products, (IC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chlorate	**28000**		2000	490	ug/L			12/21/22 01:04	100

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Dichloroacetic acid(Surr)	*108*		*90 - 115*		*12/21/22 01:04*	*100*

Method: EPA 314.0 - Perchlorate (IC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perchlorate	**7200**		500	160	ug/L			12/14/22 18:00	500

Method: SW846 6010B - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Manganese	**1.1**		0.020	0.0083	mg/L		12/15/22 06:43	12/16/22 13:44	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon (SM 5310B)	**1.5**		0.50	0.26	mg/L			12/16/22 20:02	1

Client Sample ID: SWFTS-MW-09B-EM40 — Lab Sample ID: 550-194920-14

Date Collected: 12/13/22 12:38 — **Matrix: Water**
Date Received: 12/14/22 10:00

Method: SW846 6010B - Metals (ICP) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	**0.29**		0.20	0.080	mg/L		12/15/22 06:30	12/16/22 12:42	1
Barium	**0.025**		0.0050	0.00057	mg/L		12/15/22 06:30	12/16/22 12:42	1
Beryllium	ND		0.0010	0.00019	mg/L		12/15/22 06:30	12/16/22 12:42	1

Client Sample ID: SWFTS-MW-09B-EM40 — Lab Sample ID: 550-194920-14

Date Collected: 12/13/22 12:38 — **Matrix: Water**
Date Received: 12/14/22 10:00

Method: SW846 6010B - Metals (ICP) - Dissolved (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	2.2	B	0.050	0.0024	mg/L		12/15/22 06:30	12/16/22 12:42	1
Cadmium	ND		0.0010	0.00072	mg/L		12/15/22 06:30	12/16/22 12:42	1
Calcium	310		0.40	0.015	mg/L		12/15/22 06:30	12/16/22 12:42	1
Chromium	0.0048	J	0.0050	0.0011	mg/L		12/15/22 06:30	12/16/22 12:42	1
Cobalt	0.0013	J	0.0050	0.00054	mg/L		12/15/22 06:30	12/16/22 12:42	1
Copper	ND		0.0050	0.0012	mg/L		12/15/22 06:30	12/16/22 12:42	1
Iron	0.027	J B	0.40	0.019	mg/L		12/15/22 06:30	12/16/22 12:42	1
Lead	ND		0.010	0.0025	mg/L		12/15/22 06:30	12/16/22 12:42	1
Magnesium	150		0.40	0.054	mg/L		12/15/22 06:30	12/16/22 12:42	1
Manganese	1.1		0.020	0.0083	mg/L		12/15/22 06:30	12/16/22 12:42	1
Molybdenum	0.069		0.010	0.00052	mg/L		12/15/22 06:30	12/16/22 12:42	1
Nickel	0.0049	J	0.0050	0.0028	mg/L		12/15/22 06:30	12/16/22 12:42	1
Phosphorus	ND	cn	0.40	0.011	mg/L		12/15/22 06:30	12/16/22 12:42	1
Potassium	48		1.0	0.081	mg/L		12/15/22 06:30	12/16/22 12:42	1
Silicon	35		0.10	0.016	mg/L		12/15/22 06:30	12/16/22 12:42	1
Silver	ND		0.0080	0.00049	mg/L		12/15/22 06:30	12/16/22 12:42	1
Sodium	620		0.40	0.039	mg/L		12/15/22 06:30	12/16/22 12:42	1
Strontium	8.4		0.010	0.00032	mg/L		12/15/22 06:30	12/16/22 12:42	1
Tin	ND		0.010	0.0034	mg/L		12/15/22 06:30	12/16/22 12:42	1
Titanium	ND		0.0050	0.00028	mg/L		12/15/22 06:30	12/16/22 12:42	1
Tungsten	0.0050	J	0.10	0.0021	mg/L		12/15/22 06:30	12/16/22 12:42	1
Vanadium	0.038		0.0050	0.00069	mg/L		12/15/22 06:30	12/16/22 12:42	1
Zinc	ND		0.040	0.0023	mg/L		12/15/22 06:30	12/16/22 12:42	1

Method: SW846 6020B - Metals (ICP/MS) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	0.020	J B	0.10	0.0043	ug/L		12/15/22 04:20	12/22/22 15:26	1
Arsenic	6.8		0.10	0.025	ug/L		12/15/22 04:20	12/27/22 13:01	1
Selenium	4.9		0.050	0.0074	ug/L		12/15/22 04:20	12/27/22 13:01	1
Thallium	0.032		0.010	0.0013	ug/L		12/15/22 04:20	12/22/22 15:26	1

Client Sample ID: SWFTS-MW-03-EM40 — Lab Sample ID: 550-194920-15

Date Collected: 12/13/22 13:37 — **Matrix: Water**
Date Received: 12/14/22 10:00

Method: RSK-175 - Dissolved Gases (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Methane	ND		5.0	0.63	ug/L			12/17/22 03:26	1

Method: MCAWW 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Nitrate as N	9.2		0.10	0.028	mg/L			12/14/22 12:37	2
Sulfate	2100		100	21	mg/L			12/14/22 13:33	50

Method: EPA 300.1B - Disinfection By-Products, (IC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chlorate	7900		1000	240	ug/L			12/20/22 17:12	50

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Dichloroacetic acid(Surr)	*109*		*90 - 115*		*12/20/22 17:12*	*50*

Client Sample ID: SWFTS-MW-03-EM40 Lab Sample ID: 550-194920-15

Date Collected: 12/13/22 13:37 **Matrix: Water**
Date Received: 12/14/22 10:00

Method: EPA 314.0 - Perchlorate (IC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perchlorate	3000		200	63	ug/L			12/15/22 12:12	200

Method: SW846 6010B - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Manganese	2.1		0.020	0.0083	mg/L		12/15/22 06:43	12/16/22 13:19	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon (SM 5310B)	1.4		0.50	0.26	mg/L			12/16/22 21:36	1

Client Sample ID: SWFTS-MW-03-EM40 Lab Sample ID: 550-194920-16

Date Collected: 12/13/22 13:37 **Matrix: Water**
Date Received: 12/14/22 10:00

Method: SW846 6010B - Metals (ICP) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	0.37		0.20	0.080	mg/L		12/15/22 06:30	12/16/22 12:16	1
Barium	0.023		0.0050	0.00057	mg/L		12/15/22 06:30	12/16/22 12:16	1
Beryllium	ND		0.0010	0.00019	mg/L		12/15/22 06:30	12/16/22 12:16	1
Boron	2.5	B	0.050	0.0024	mg/L		12/15/22 06:30	12/16/22 12:16	1
Cadmium	ND		0.0010	0.00072	mg/L		12/15/22 06:30	12/16/22 12:16	1
Calcium	410		0.40	0.015	mg/L		12/15/22 06:30	12/16/22 12:16	1
Chromium	ND		0.0050	0.0011	mg/L		12/15/22 06:30	12/16/22 12:16	1
Cobalt	ND		0.0050	0.00054	mg/L		12/15/22 06:30	12/16/22 12:16	1
Copper	ND		0.0050	0.0012	mg/L		12/15/22 06:30	12/16/22 12:16	1
Iron	0.037	J B	0.40	0.019	mg/L		12/15/22 06:30	12/16/22 12:16	1
Lead	ND		0.010	0.0025	mg/L		12/15/22 06:30	12/16/22 12:16	1
Magnesium	220		0.40	0.054	mg/L		12/15/22 06:30	12/16/22 12:16	1
Manganese	1.8		0.020	0.0083	mg/L		12/15/22 06:30	12/16/22 12:16	1
Molybdenum	0.24		0.010	0.00052	mg/L		12/15/22 06:30	12/16/22 12:16	1
Nickel	0.0054		0.0050	0.0028	mg/L		12/15/22 06:30	12/16/22 12:16	1
Phosphorus	ND	cn	0.40	0.011	mg/L		12/15/22 06:30	12/16/22 12:16	1
Potassium	60		1.0	0.081	mg/L		12/15/22 06:30	12/16/22 12:16	1
Silicon	34		0.10	0.016	mg/L		12/15/22 06:30	12/16/22 12:16	1
Silver	ND		0.0080	0.00049	mg/L		12/15/22 06:30	12/16/22 12:16	1
Sodium	670		0.40	0.039	mg/L		12/15/22 06:30	12/16/22 12:16	1
Strontium	10		0.010	0.00032	mg/L		12/15/22 06:30	12/16/22 12:16	1
Tin	ND		0.010	0.0034	mg/L		12/15/22 06:30	12/16/22 12:16	1
Titanium	0.0012	J	0.0050	0.00028	mg/L		12/15/22 06:30	12/16/22 12:16	1
Tungsten	0.012	J	0.10	0.0021	mg/L		12/15/22 06:30	12/16/22 12:16	1
Vanadium	0.029		0.0050	0.00069	mg/L		12/15/22 06:30	12/16/22 12:16	1
Zinc	ND		0.040	0.0023	mg/L		12/15/22 06:30	12/16/22 12:16	1

Method: SW846 6020B - Metals (ICP/MS) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	0.023	J B	0.10	0.0043	ug/L		12/15/22 04:20	12/22/22 15:08	1
Arsenic	4.8	F1	0.10	0.025	ug/L		12/15/22 04:20	12/27/22 12:42	1
Selenium	4.6	F1	0.050	0.0074	ug/L		12/15/22 04:20	12/27/22 12:42	1
Thallium	0.080		0.010	0.0013	ug/L		12/15/22 04:20	12/22/22 15:08	1

Surrogate Summary

Client: Tetra Tech, Inc.
Job ID: 550-194920-1
Project/Site: Tetra Tech M11 SWF Treatability Study

Method: 300.1B - Disinfection By-Products, (IC)

Matrix: Water **Prep Type: Total/NA**

		Percent Surrogate Recovery (Acceptance Limits)
Lab Sample ID	Client Sample ID	DCAA (90-115)
550-194920-1	PC-92-EM40	106
550-194920-3	SWFTS-MW-01-EM40	108
550-194920-5	SWFTS-EM40-FB1	110
550-194920-7	PC-94-EM40	111
550-194920-9	SWFTS-MW-09A-EM40	112
550-194920-9 MS	SWFTS-MW-09A-EM40	108
550-194920-9 MSD	SWFTS-MW-09A-EM40	108
550-194920-11	SWFTS-EM40-EB1	107
550-194920-13	SWFTS-MW-09B-EM40	108
550-194920-15	SWFTS-MW-03-EM40	109
550-194920-15 MS	SWFTS-MW-03-EM40	111
550-194920-15 MSD	SWFTS-MW-03-EM40	108
LCS 550-291159/6	Lab Control Sample	91
LCSD 550-291159/7	Lab Control Sample Dup	112
MB 550-291159/5	Method Blank	90

Surrogate Legend

DCAA = Dichloroacetic acid(Surr)

Method: 300.1B - Disinfection By-Products, (IC)

Matrix: Water **Prep Type: Total/NA**

		Percent Surrogate Recovery (Acceptance Limits)
Lab Sample ID	Client Sample ID	DCAA (50-150)
MRL 550-291159/1003	Lab Control Sample	112

Surrogate Legend

DCAA = Dichloroacetic acid(Surr)

Method: RSK-175 - Dissolved Gases (GC)

Lab Sample ID: MB 280-597026/38
Matrix: Water
Analysis Batch: 597026

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Methane	ND		5.0	0.63	ug/L			12/17/22 01:12	1

Lab Sample ID: LCS 280-597026/36
Matrix: Water
Analysis Batch: 597026

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Methane			65.7	65.0		ug/L		99	75 - 125		

Lab Sample ID: LCSD 280-597026/37
Matrix: Water
Analysis Batch: 597026

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Methane			65.7	65.1		ug/L		99	75 - 125	0	20

Lab Sample ID: 550-194920-15 MS
Matrix: Water
Analysis Batch: 597026

Client Sample ID: SWFTS-MW-03-EM40
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits		
Methane	ND		65.7	63.6		ug/L		97	52 - 145		

Lab Sample ID: 550-194920-15 MSD
Matrix: Water
Analysis Batch: 597026

Client Sample ID: SWFTS-MW-03-EM40
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Methane	ND		65.7	63.3		ug/L		96	52 - 145	1	20

Lab Sample ID: 550-194920-15 DU
Matrix: Water
Analysis Batch: 597026

Client Sample ID: SWFTS-MW-03-EM40
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier		DU Result	DU Qualifier	Unit	D			RPD	RPD Limit
Methane	ND			ND		ug/L				NC	20

Method: 300.0 - Anions, Ion Chromatography

Lab Sample ID: MB 550-290813/2
Matrix: Water
Analysis Batch: 290813

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Nitrate as N	ND		0.050	0.014	mg/L			12/14/22 10:47	1
Sulfate	ND		2.0	0.43	mg/L			12/14/22 10:47	1

Method: 300.0 - Anions, Ion Chromatography (Continued)

Lab Sample ID: LCS 550-290813/5
Matrix: Water
Analysis Batch: 290813

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Nitrate as N			4.00	4.20		mg/L		105	90 - 110		
Sulfate			20.0	21.3		mg/L		106	90 - 110		

Lab Sample ID: LCSD 550-290813/7
Matrix: Water
Analysis Batch: 290813

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Nitrate as N			4.00	4.20		mg/L		105	90 - 110	0	20
Sulfate			20.0	21.6		mg/L		108	90 - 110	2	20

Lab Sample ID: 550-194920-15 MS
Matrix: Water
Analysis Batch: 290813

Client Sample ID: SWFTS-MW-03-EM40
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits		
Nitrate as N	9.0		8.00	17.7		mg/L		108	80 - 120		

Lab Sample ID: 550-194920-15 MS
Matrix: Water
Analysis Batch: 290813

Client Sample ID: SWFTS-MW-03-EM40
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits		
Sulfate	2100		1000	3150		mg/L		105	80 - 120		

Lab Sample ID: 550-194920-15 MSD
Matrix: Water
Analysis Batch: 290813

Client Sample ID: SWFTS-MW-03-EM40
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Nitrate as N	9.0		8.00	17.7		mg/L		108	80 - 120	NC	20

Lab Sample ID: 550-194920-15 MSD
Matrix: Water
Analysis Batch: 290813

Client Sample ID: SWFTS-MW-03-EM40
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Sulfate	2100		1000	3140		mg/L		104	80 - 120	0	20

Lab Sample ID: MB 550-290815/2
Matrix: Water
Analysis Batch: 290815

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Nitrate as N	ND		0.050	0.014	mg/L			12/14/22 10:37	1
Sulfate	ND		2.0	0.43	mg/L			12/14/22 10:37	1

Method: 300.0 - Anions, Ion Chromatography (Continued)

Lab Sample ID: LCS 550-290815/5
Matrix: Water
Analysis Batch: 290815

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Nitrate as N			4.00	4.11		mg/L		103	90 - 110		
Sulfate			20.0	20.9		mg/L		105	90 - 110		

Lab Sample ID: LCSD 550-290815/6
Matrix: Water
Analysis Batch: 290815

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Nitrate as N			4.00	4.10		mg/L		103	90 - 110	0	20
Sulfate			20.0	21.6		mg/L		108	90 - 110	3	20

Lab Sample ID: 550-194927-A-1 MS
Matrix: Water
Analysis Batch: 290815

Client Sample ID: Matrix Spike
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits		
Nitrate as N	11		4.00	14.7		mg/L		90	80 - 120		
Sulfate	200	E	20.0	215	E 4	mg/L		60	80 - 120		

Lab Sample ID: 550-194927-A-1 MSD
Matrix: Water
Analysis Batch: 290815

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Nitrate as N	11		4.00	14.8		mg/L		92	80 - 120	1	20
Sulfate	200	E	20.0	215	E 4	mg/L		61	80 - 120	0	20

Method: 300.1B - Disinfection By-Products, (IC)

Lab Sample ID: MB 550-291159/5
Matrix: Water
Analysis Batch: 291159

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chlorate	ND		20	4.9	ug/L			12/20/22 15:44	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Dichloroacetic acid(Surr)	*90*		*90 - 115*		*12/20/22 15:44*	*1*

Lab Sample ID: LCS 550-291159/6
Matrix: Water
Analysis Batch: 291159

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Chlorate			100	110		ug/L		110	75 - 125		

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
Dichloroacetic acid(Surr)	*91*		*90 - 115*

Method: 300.1B - Disinfection By-Products, (IC) (Continued)

Lab Sample ID: LCSD 550-291159/7
Matrix: Water
Analysis Batch: 291159

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Chlorate			100	107		ug/L		107	75 - 125	3	25

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
Dichloroacetic acid(Surr)	*112*		*90 - 115*

Lab Sample ID: MRL 550-291159/1003
Matrix: Water
Analysis Batch: 291159

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte			Spike Added	MRL Result	MRL Qualifier	Unit	D	%Rec	%Rec Limits		
Chlorate			20.0	23.6		ug/L		118	50 - 150		

Surrogate	*MRL %Recovery*	*MRL Qualifier*	*Limits*
Dichloroacetic acid(Surr)	*112*		*50 - 150*

Lab Sample ID: 550-194920-9 MS
Matrix: Water
Analysis Batch: 291159

Client Sample ID: SWFTS-MW-09A-EM40
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits		
Chlorate	22000		10000	33300		ug/L		112	75 - 125		

Surrogate	*MS %Recovery*	*MS Qualifier*	*Limits*
Dichloroacetic acid(Surr)	*108*		*90 - 115*

Lab Sample ID: 550-194920-9 MSD
Matrix: Water
Analysis Batch: 291159

Client Sample ID: SWFTS-MW-09A-EM40
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Chlorate	22000		10000	33200		ug/L		111	75 - 125	0	25

Surrogate	*MSD %Recovery*	*MSD Qualifier*	*Limits*
Dichloroacetic acid(Surr)	*108*		*90 - 115*

Lab Sample ID: 550-194920-15 MS
Matrix: Water
Analysis Batch: 291159

Client Sample ID: SWFTS-MW-03-EM40
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits		
Chlorate	7900		5000	13100		ug/L		104	75 - 125		

Surrogate	*MS %Recovery*	*MS Qualifier*	*Limits*
Dichloroacetic acid(Surr)	*111*		*90 - 115*

Method: 300.1B - Disinfection By-Products, (IC) (Continued)

Lab Sample ID: 550-194920-15 MSD
Matrix: Water
Analysis Batch: 291159

Client Sample ID: SWFTS-MW-03-EM40
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Chlorate	7900		5000	12500		ug/L		92	75 - 125	5	25

Surrogate	*MSD %Recovery*	*MSD Qualifier*	*Limits*
Dichloroacetic acid(Surr)	*108*		*90 - 115*

Method: 314.0 - Perchlorate (IC)

Lab Sample ID: MB 550-290772/1002
Matrix: Water
Analysis Batch: 290772

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perchlorate	ND		1.0	0.31	ug/L			12/14/22 09:37	1

Lab Sample ID: LCS 550-290772/4
Matrix: Water
Analysis Batch: 290772

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Perchlorate	25.0	25.1		ug/L		100	85 - 115

Lab Sample ID: LCSD 550-290772/5
Matrix: Water
Analysis Batch: 290772

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Perchlorate	25.0	25.1		ug/L		100	85 - 115	0	15

Lab Sample ID: MRL 550-290772/1003
Matrix: Water
Analysis Batch: 290772

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	MRL Result	MRL Qualifier	Unit	D	%Rec	%Rec Limits
Perchlorate	1.00	0.959	J	ug/L		96	75 - 125

Lab Sample ID: 550-194889-A-1 MS
Matrix: Water
Analysis Batch: 290772

Client Sample ID: Matrix Spike
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Perchlorate	2.1		25.0	27.7		ug/L		102	80 - 120

Lab Sample ID: 550-194889-A-1 MSD
Matrix: Water
Analysis Batch: 290772

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Perchlorate	2.1		25.0	27.4		ug/L		101	80 - 120	1	15

Method: 314.0 - Perchlorate (IC) (Continued)

Lab Sample ID: MB 550-290875/1002
Matrix: Water
Analysis Batch: 290875

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perchlorate	ND		1.0	0.31	ug/L			12/15/22 10:43	1

Lab Sample ID: LCS 550-290875/4
Matrix: Water
Analysis Batch: 290875

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Perchlorate	25.0	22.6		ug/L		90	85 - 115

Lab Sample ID: LCSD 550-290875/5
Matrix: Water
Analysis Batch: 290875

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Perchlorate	25.0	22.6		ug/L		90	85 - 115	0	15

Lab Sample ID: MRL 550-290875/1003
Matrix: Water
Analysis Batch: 290875

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	MRL Result	MRL Qualifier	Unit	D	%Rec	%Rec Limits
Perchlorate	1.00	1.11		ug/L		111	75 - 125

Lab Sample ID: 550-194920-15 MS
Matrix: Water
Analysis Batch: 290875

Client Sample ID: SWFTS-MW-03-EM40
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Perchlorate	3000		5000	7470		ug/L		90	80 - 120

Lab Sample ID: 550-194920-15 MSD
Matrix: Water
Analysis Batch: 290875

Client Sample ID: SWFTS-MW-03-EM40
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Perchlorate	3000		5000	7600		ug/L		93	80 - 120	2	15

Method: 6010B - Metals (ICP)

Lab Sample ID: MB 550-290825/1-A
Matrix: Water
Analysis Batch: 291020

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 290825

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	ND		0.20	0.080	mg/L		12/15/22 06:30	12/16/22 11:59	1
Barium	ND		0.0050	0.00057	mg/L		12/15/22 06:30	12/16/22 11:59	1
Beryllium	ND		0.0010	0.00019	mg/L		12/15/22 06:30	12/16/22 11:59	1
Boron	0.00502	J	0.050	0.0024	mg/L		12/15/22 06:30	12/16/22 11:59	1
Cadmium	ND		0.0010	0.00072	mg/L		12/15/22 06:30	12/16/22 11:59	1
Calcium	ND		0.40	0.015	mg/L		12/15/22 06:30	12/16/22 11:59	1

Method: 6010B - Metals (ICP) (Continued)

Lab Sample ID: MB 550-290825/1-A
Matrix: Water
Analysis Batch: 291020

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 290825

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chromium	ND		0.0050	0.0011	mg/L		12/15/22 06:30	12/16/22 11:59	1
Cobalt	ND		0.0050	0.00054	mg/L		12/15/22 06:30	12/16/22 11:59	1
Copper	ND		0.0050	0.0012	mg/L		12/15/22 06:30	12/16/22 11:59	1
Iron	0.0757	J	0.40	0.019	mg/L		12/15/22 06:30	12/16/22 11:59	1
Lead	ND		0.010	0.0025	mg/L		12/15/22 06:30	12/16/22 11:59	1
Magnesium	ND		0.40	0.054	mg/L		12/15/22 06:30	12/16/22 11:59	1
Manganese	ND		0.020	0.0083	mg/L		12/15/22 06:30	12/16/22 11:59	1
Molybdenum	ND		0.010	0.00052	mg/L		12/15/22 06:30	12/16/22 11:59	1
Nickel	ND		0.0050	0.0028	mg/L		12/15/22 06:30	12/16/22 11:59	1
Phosphorus	ND		0.40	0.011	mg/L		12/15/22 06:30	12/16/22 11:59	1
Potassium	ND		1.0	0.081	mg/L		12/15/22 06:30	12/16/22 11:59	1
Silicon	ND		0.10	0.016	mg/L		12/15/22 06:30	12/16/22 11:59	1
Silver	0.000560	J	0.0080	0.00049	mg/L		12/15/22 06:30	12/16/22 11:59	1
Sodium	ND		0.40	0.039	mg/L		12/15/22 06:30	12/16/22 11:59	1
Strontium	ND		0.010	0.00032	mg/L		12/15/22 06:30	12/16/22 11:59	1
Tin	ND		0.010	0.0034	mg/L		12/15/22 06:30	12/16/22 11:59	1
Titanium	ND		0.0050	0.00028	mg/L		12/15/22 06:30	12/16/22 11:59	1
Tungsten	ND		0.10	0.0021	mg/L		12/15/22 06:30	12/16/22 11:59	1
Vanadium	ND		0.0050	0.00069	mg/L		12/15/22 06:30	12/16/22 11:59	1
Zinc	ND		0.040	0.0023	mg/L		12/15/22 06:30	12/16/22 11:59	1

Lab Sample ID: LCS 550-290825/2-A
Matrix: Water
Analysis Batch: 291020

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 290825

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Aluminum	20.0	19.9		mg/L		99	88 - 110
Barium	1.00	1.02		mg/L		102	90 - 110
Beryllium	1.00	1.01		mg/L		101	90 - 111
Boron	1.00	1.04		mg/L		104	88 - 110
Cadmium	1.00	0.980		mg/L		98	90 - 110
Calcium	21.0	21.2		mg/L		101	88 - 112
Chromium	1.00	0.963		mg/L		96	90 - 110
Cobalt	1.00	0.970		mg/L		97	90 - 112
Copper	1.00	0.994		mg/L		99	87 - 110
Iron	1.00	0.983		mg/L		98	85 - 112
Lead	1.00	0.982		mg/L		98	90 - 113
Magnesium	21.0	21.0		mg/L		100	89 - 110
Manganese	1.00	0.954		mg/L		95	90 - 110
Molybdenum	1.00	0.981		mg/L		98	89 - 110
Nickel	1.00	0.966		mg/L		97	88 - 114
Potassium	20.0	19.4		mg/L		97	87 - 114
Silicon	5.00	4.62		mg/L		92	88 - 110
Silver	0.0750	0.0708		mg/L		94	84 - 111
Sodium	20.0	19.8		mg/L		99	84 - 110
Strontium	1.00	0.986		mg/L		99	88 - 110
Tin	1.00	0.972		mg/L		97	90 - 112
Titanium	1.00	0.985		mg/L		99	90 - 110
Tungsten	1.00	0.958		mg/L		96	80 - 120

Method: 6010B - Metals (ICP) (Continued)

Lab Sample ID: LCS 550-290825/2-A
Matrix: Water
Analysis Batch: 291020

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 290825

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Vanadium	1.00	0.980		mg/L		98	90 - 110
Zinc	1.00	0.996		mg/L		100	90 - 114

Lab Sample ID: LCSD 550-290825/3-A
Matrix: Water
Analysis Batch: 291020

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 290825

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Aluminum	20.0	20.0		mg/L		100	88 - 110	1	20
Barium	1.00	1.02		mg/L		102	90 - 110	0	20
Beryllium	1.00	1.02		mg/L		102	90 - 111	1	20
Boron	1.00	1.05		mg/L		105	88 - 110	1	20
Cadmium	1.00	0.992		mg/L		99	90 - 110	1	20
Calcium	21.0	21.3		mg/L		102	88 - 112	1	20
Chromium	1.00	0.971		mg/L		97	90 - 110	1	20
Cobalt	1.00	0.988		mg/L		99	90 - 112	2	20
Copper	1.00	1.00		mg/L		100	87 - 110	1	20
Iron	1.00	0.977		mg/L		98	85 - 112	1	20
Lead	1.00	0.991		mg/L		99	90 - 113	1	20
Magnesium	21.0	21.1		mg/L		101	89 - 110	1	20
Manganese	1.00	0.963		mg/L		96	90 - 110	1	20
Molybdenum	1.00	0.991		mg/L		99	89 - 110	1	20
Nickel	1.00	0.979		mg/L		98	88 - 114	1	20
Potassium	20.0	19.5		mg/L		98	87 - 114	0	20
Silicon	5.00	4.64		mg/L		93	88 - 110	0	20
Silver	0.0750	0.0717		mg/L		96	84 - 111	1	20
Sodium	20.0	20.0		mg/L		100	84 - 110	1	20
Strontium	1.00	0.993		mg/L		99	88 - 110	1	20
Tin	1.00	0.975		mg/L		98	90 - 112	0	20
Titanium	1.00	0.996		mg/L		100	90 - 110	1	20
Tungsten	1.00	0.976		mg/L		98	80 - 120	2	20
Vanadium	1.00	0.989		mg/L		99	90 - 110	1	20
Zinc	1.00	1.00		mg/L		100	90 - 114	1	20

Lab Sample ID: MB 550-290826/1-A
Matrix: Water
Analysis Batch: 291039

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 290826

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Manganese	ND		0.020	0.0083	mg/L		12/15/22 06:43	12/16/22 13:02	1

Lab Sample ID: LCS 550-290826/2-A
Matrix: Water
Analysis Batch: 291039

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 290826

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Manganese	1.00	0.991		mg/L		99	90 - 110

Method: 6010B - Metals (ICP) (Continued)

Lab Sample ID: LCSD 550-290826/3-A
Matrix: Water
Analysis Batch: 291039

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 290826

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Manganese			1.00	0.970		mg/L		97	90 - 110	2	20

Lab Sample ID: 550-194920-15 MS
Matrix: Water
Analysis Batch: 291039

Client Sample ID: SWFTS-MW-03-EM40
Prep Type: Total/NA
Prep Batch: 290826

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Manganese	2.1		1.00	2.94		mg/L		87	75 - 125

Lab Sample ID: 550-194920-15 MSD
Matrix: Water
Analysis Batch: 291039

Client Sample ID: SWFTS-MW-03-EM40
Prep Type: Total/NA
Prep Batch: 290826

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Manganese	2.1		1.00	2.89		mg/L		83	75 - 125	2	20

Lab Sample ID: 550-194920-16 MS
Matrix: Water
Analysis Batch: 291020

Client Sample ID: SWFTS-MW-03-EM40
Prep Type: Dissolved
Prep Batch: 290825

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Aluminum	0.37		20.0	22.0		mg/L		108	75 - 125
Barium	0.023		1.00	1.12		mg/L		109	75 - 125
Beryllium	ND		1.00	1.07		mg/L		107	75 - 125
Boron	2.5	B	1.00	3.46		mg/L		92	75 - 125
Cadmium	ND		1.00	1.02		mg/L		102	75 - 125
Calcium	410		21.0	413	4	mg/L		-5	75 - 125
Chromium	ND		1.00	0.939		mg/L		94	75 - 125
Cobalt	ND		1.00	0.957		mg/L		96	75 - 125
Copper	ND		1.00	1.03		mg/L		103	75 - 125
Iron	0.037	J B	1.00	1.06		mg/L		102	75 - 125
Lead	ND		1.00	0.784		mg/L		78	75 - 125
Magnesium	220		21.0	227	4	mg/L		54	75 - 125
Manganese	1.8		1.00	2.57		mg/L		82	75 - 125
Molybdenum	0.24		1.00	1.22		mg/L		97	75 - 125
Nickel	0.0054		1.00	0.953		mg/L		95	75 - 125
Potassium	60		20.0	78.1		mg/L		92	75 - 125
Silicon	34		5.00	37.0	4	mg/L		59	75 - 125
Silver	ND		0.0750	0.0747		mg/L		100	75 - 125
Sodium	670		20.0	655	4	mg/L		-64	75 - 125
Strontium	10		1.00	10.7	4	mg/L		53	75 - 125
Tin	ND		1.00	0.959		mg/L		96	75 - 125
Titanium	0.0012	J	1.00	0.996		mg/L		99	75 - 125
Tungsten	0.012	J	1.00	0.987		mg/L		98	75 - 125
Vanadium	0.029		1.00	1.02		mg/L		99	75 - 125
Zinc	ND		1.00	0.940		mg/L		94	75 - 125

Method: 6010B - Metals (ICP) (Continued)

Lab Sample ID: 550-194920-16 MSD
Matrix: Water
Analysis Batch: 291020

Client Sample ID: SWFTS-MW-03-EM40
Prep Type: Dissolved
Prep Batch: 290825

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Aluminum	0.37		20.0	21.9		mg/L		108	75 - 125	0	20
Barium	0.023		1.00	1.12		mg/L		109	75 - 125	0	20
Beryllium	ND		1.00	1.07		mg/L		107	75 - 125	0	20
Boron	2.5	B	1.00	3.45		mg/L		92	75 - 125	0	20
Cadmium	ND		1.00	1.02		mg/L		102	75 - 125	0	20
Calcium	410		21.0	409	4	mg/L		-28	75 - 125	1	20
Chromium	ND		1.00	0.941		mg/L		94	75 - 125	0	20
Cobalt	ND		1.00	0.956		mg/L		96	75 - 125	0	20
Copper	ND		1.00	1.05		mg/L		105	75 - 125	2	20
Iron	0.037	J B	1.00	1.05		mg/L		101	75 - 125	1	20
Lead	ND		1.00	0.784		mg/L		78	75 - 125	0	20
Magnesium	220		21.0	224	4	mg/L		40	75 - 125	1	20
Manganese	1.8		1.00	2.57		mg/L		81	75 - 125	0	20
Molybdenum	0.24		1.00	1.22		mg/L		98	75 - 125	0	20
Nickel	0.0054		1.00	0.954		mg/L		95	75 - 125	0	20
Potassium	60		20.0	77.5		mg/L		89	75 - 125	1	20
Silicon	34		5.00	36.8	4	mg/L		54	75 - 125	1	20
Silver	ND		0.0750	0.0744		mg/L		99	75 - 125	0	20
Sodium	670		20.0	648	4	mg/L		-103	75 - 125	1	20
Strontium	10		1.00	10.5	4	mg/L		25	75 - 125	3	20
Tin	ND		1.00	0.958		mg/L		96	75 - 125	0	20
Titanium	0.0012	J	1.00	1.01		mg/L		101	75 - 125	1	20
Tungsten	0.012	J	1.00	0.988		mg/L		98	75 - 125	0	20
Vanadium	0.029		1.00	1.03		mg/L		100	75 - 125	1	20
Zinc	ND		1.00	0.942		mg/L		94	75 - 125	0	20

Method: 6020B - Metals (ICP/MS)

Lab Sample ID: MB 550-290824/1-A
Matrix: Water
Analysis Batch: 291383

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 290824

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	0.0440	J	1.0	0.043	ug/L		12/15/22 04:20	12/22/22 14:55	1
Thallium	ND		0.10	0.013	ug/L		12/15/22 04:20	12/22/22 14:55	1

Lab Sample ID: MB 550-290824/1-A
Matrix: Water
Analysis Batch: 291500

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 290824

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	ND		1.0	0.25	ug/L		12/15/22 04:20	12/27/22 12:30	1
Selenium	ND		0.50	0.074	ug/L		12/15/22 04:20	12/27/22 12:30	1

Method: 6020B - Metals (ICP/MS) (Continued)

Lab Sample ID: LCS 550-290824/2-A
Matrix: Water
Analysis Batch: 291383

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 290824

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Antimony	100	99.8		ug/L		100	80 - 120
Thallium	100	104		ug/L		104	80 - 120

Lab Sample ID: LCS 550-290824/2-A
Matrix: Water
Analysis Batch: 291500

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 290824

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Arsenic	100	99.2		ug/L		99	80 - 120
Selenium	100	98.2		ug/L		98	80 - 120

Lab Sample ID: LCSD 550-290824/3-A
Matrix: Water
Analysis Batch: 291383

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 290824

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Antimony	100	99.9		ug/L		100	80 - 120	0	20
Thallium	100	107		ug/L		107	80 - 120	3	20

Lab Sample ID: LCSD 550-290824/3-A
Matrix: Water
Analysis Batch: 291500

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 290824

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Arsenic	100	101		ug/L		101	80 - 120	1	20
Selenium	100	99.9		ug/L		100	80 - 120	2	20

Lab Sample ID: 550-194920-16 MS
Matrix: Water
Analysis Batch: 291383

Client Sample ID: SWFTS-MW-03-EM40
Prep Type: Dissolved
Prep Batch: 290824

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Antimony	0.023	J B	100	111		ug/L		111	75 - 125
Thallium	0.080		100	105		ug/L		105	75 - 125

Lab Sample ID: 550-194920-16 MS
Matrix: Water
Analysis Batch: 291500

Client Sample ID: SWFTS-MW-03-EM40
Prep Type: Dissolved
Prep Batch: 290824

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Arsenic	4.8	F1	100	152	F1	ug/L		147	75 - 125
Selenium	4.6	F1	100	158	F1	ug/L		153	75 - 125

Lab Sample ID: 550-194920-16 MSD
Matrix: Water
Analysis Batch: 291383

Client Sample ID: SWFTS-MW-03-EM40
Prep Type: Dissolved
Prep Batch: 290824

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Antimony	0.023	J B	100	106		ug/L		106	75 - 125	4	20
Thallium	0.080		100	99.1		ug/L		99	75 - 125	5	20

Method: 6020B - Metals (ICP/MS)

Lab Sample ID: 550-194920-16 MSD
Matrix: Water
Analysis Batch: 291500

Client Sample ID: SWFTS-MW-03-EM40
Prep Type: Dissolved
Prep Batch: 290824

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Arsenic	4.8	F1	100	153	F1	ug/L		148	75 - 125	1	20
Selenium	4.6	F1	100	159	F1	ug/L		155	75 - 125	1	20

Method: SM 5310B - Organic Carbon, Total (TOC)

Lab Sample ID: MB 550-290973/34
Matrix: Water
Analysis Batch: 290973

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon	ND		0.50	0.26	mg/L			12/16/22 20:54	1

Lab Sample ID: MB 550-290973/5
Matrix: Water
Analysis Batch: 290973

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon	ND		0.50	0.26	mg/L			12/16/22 14:30	1

Lab Sample ID: LCS 550-290973/35
Matrix: Water
Analysis Batch: 290973

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Total Organic Carbon	20.0	19.1		mg/L		95	90 - 110

Lab Sample ID: LCS 550-290973/6
Matrix: Water
Analysis Batch: 290973

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Total Organic Carbon	20.0	19.2		mg/L		96	90 - 110

Lab Sample ID: LCSD 550-290973/36
Matrix: Water
Analysis Batch: 290973

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Total Organic Carbon	20.0	19.5		mg/L		97	90 - 110	2	20

Lab Sample ID: LCSD 550-290973/7
Matrix: Water
Analysis Batch: 290973

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Total Organic Carbon	20.0	18.8		mg/L		94	90 - 110	2	20

Method: SM 5310B - Organic Carbon, Total (TOC) (Continued)

Lab Sample ID: 550-194920-15 MS
Matrix: Water
Analysis Batch: 290973

Client Sample ID: SWFTS-MW-03-EM40
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits		
Total Organic Carbon	1.4		20.0	19.9		mg/L		93	90 - 110		

Lab Sample ID: 550-194920-15 MSD
Matrix: Water
Analysis Batch: 290973

Client Sample ID: SWFTS-MW-03-EM40
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Total Organic Carbon	1.4		20.0	19.6		mg/L		91	90 - 110	1	20

Lab Sample ID: 550-194993-A-1 MS ^10
Matrix: Water
Analysis Batch: 290973

Client Sample ID: Matrix Spike
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits		
Total Organic Carbon	14		200	205		mg/L		96	90 - 110		

Lab Sample ID: 550-194993-A-1 MSD ^10
Matrix: Water
Analysis Batch: 290973

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Total Organic Carbon	14		200	200		mg/L		93	90 - 110	2	20

GC VOA

Analysis Batch: 597026

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
550-194920-1	PC-92-EM40	Total/NA	Water	RSK-175	
550-194920-3	SWFTS-MW-01-EM40	Total/NA	Water	RSK-175	
550-194920-5	SWFTS-EM40-FB1	Total/NA	Water	RSK-175	
550-194920-7	PC-94-EM40	Total/NA	Water	RSK-175	
550-194920-9	SWFTS-MW-09A-EM40	Total/NA	Water	RSK-175	
550-194920-11	SWFTS-EM40-EB1	Total/NA	Water	RSK-175	
550-194920-13	SWFTS-MW-09B-EM40	Total/NA	Water	RSK-175	
550-194920-15	SWFTS-MW-03-EM40	Total/NA	Water	RSK-175	
MB 280-597026/38	Method Blank	Total/NA	Water	RSK-175	
LCS 280-597026/36	Lab Control Sample	Total/NA	Water	RSK-175	
LCSD 280-597026/37	Lab Control Sample Dup	Total/NA	Water	RSK-175	
550-194920-15 MS	SWFTS-MW-03-EM40	Total/NA	Water	RSK-175	
550-194920-15 MSD	SWFTS-MW-03-EM40	Total/NA	Water	RSK-175	
550-194920-15 DU	SWFTS-MW-03-EM40	Total/NA	Water	RSK-175	

HPLC/IC

Analysis Batch: 290772

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
550-194920-1	PC-92-EM40	Total/NA	Water	314.0	
550-194920-3	SWFTS-MW-01-EM40	Total/NA	Water	314.0	
550-194920-5	SWFTS-EM40-FB1	Total/NA	Water	314.0	
550-194920-7	PC-94-EM40	Total/NA	Water	314.0	
550-194920-9	SWFTS-MW-09A-EM40	Total/NA	Water	314.0	
550-194920-11	SWFTS-EM40-EB1	Total/NA	Water	314.0	
550-194920-13	SWFTS-MW-09B-EM40	Total/NA	Water	314.0	
MB 550-290772/1002	Method Blank	Total/NA	Water	314.0	
LCS 550-290772/4	Lab Control Sample	Total/NA	Water	314.0	
LCSD 550-290772/5	Lab Control Sample Dup	Total/NA	Water	314.0	
MRL 550-290772/1003	Lab Control Sample	Total/NA	Water	314.0	
550-194889-A-1 MS	Matrix Spike	Total/NA	Water	314.0	
550-194889-A-1 MSD	Matrix Spike Duplicate	Total/NA	Water	314.0	

Analysis Batch: 290813

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
550-194920-1	PC-92-EM40	Total/NA	Water	300.0	
550-194920-3	SWFTS-MW-01-EM40	Total/NA	Water	300.0	
550-194920-5	SWFTS-EM40-FB1	Total/NA	Water	300.0	
550-194920-7	PC-94-EM40	Total/NA	Water	300.0	
550-194920-7	PC-94-EM40	Total/NA	Water	300.0	
550-194920-9	SWFTS-MW-09A-EM40	Total/NA	Water	300.0	
550-194920-9	SWFTS-MW-09A-EM40	Total/NA	Water	300.0	
550-194920-11	SWFTS-EM40-EB1	Total/NA	Water	300.0	
550-194920-13	SWFTS-MW-09B-EM40	Total/NA	Water	300.0	
550-194920-13	SWFTS-MW-09B-EM40	Total/NA	Water	300.0	
550-194920-15	SWFTS-MW-03-EM40	Total/NA	Water	300.0	
550-194920-15	SWFTS-MW-03-EM40	Total/NA	Water	300.0	
MB 550-290813/2	Method Blank	Total/NA	Water	300.0	
LCS 550-290813/5	Lab Control Sample	Total/NA	Water	300.0	
LCSD 550-290813/7	Lab Control Sample Dup	Total/NA	Water	300.0	
550-194920-15 MS	SWFTS-MW-03-EM40	Total/NA	Water	300.0	

HPLC/IC (Continued)

Analysis Batch: 290813 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
550-194920-15 MS	SWFTS-MW-03-EM40	Total/NA	Water	300.0	
550-194920-15 MSD	SWFTS-MW-03-EM40	Total/NA	Water	300.0	
550-194920-15 MSD	SWFTS-MW-03-EM40	Total/NA	Water	300.0	

Analysis Batch: 290815

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
550-194920-1	PC-92-EM40	Total/NA	Water	300.0	
550-194920-3	SWFTS-MW-01-EM40	Total/NA	Water	300.0	
MB 550-290815/2	Method Blank	Total/NA	Water	300.0	
LCS 550-290815/5	Lab Control Sample	Total/NA	Water	300.0	
LCSD 550-290815/6	Lab Control Sample Dup	Total/NA	Water	300.0	
550-194927-A-1 MS	Matrix Spike	Total/NA	Water	300.0	
550-194927-A-1 MSD	Matrix Spike Duplicate	Total/NA	Water	300.0	

Analysis Batch: 290875

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
550-194920-15	SWFTS-MW-03-EM40	Total/NA	Water	314.0	
MB 550-290875/1002	Method Blank	Total/NA	Water	314.0	
LCS 550-290875/4	Lab Control Sample	Total/NA	Water	314.0	
LCSD 550-290875/5	Lab Control Sample Dup	Total/NA	Water	314.0	
MRL 550-290875/1003	Lab Control Sample	Total/NA	Water	314.0	
550-194920-15 MS	SWFTS-MW-03-EM40	Total/NA	Water	314.0	
550-194920-15 MSD	SWFTS-MW-03-EM40	Total/NA	Water	314.0	

Analysis Batch: 291159

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
550-194920-1	PC-92-EM40	Total/NA	Water	300.1B	
550-194920-3	SWFTS-MW-01-EM40	Total/NA	Water	300.1B	
550-194920-5	SWFTS-EM40-FB1	Total/NA	Water	300.1B	
550-194920-7	PC-94-EM40	Total/NA	Water	300.1B	
550-194920-9	SWFTS-MW-09A-EM40	Total/NA	Water	300.1B	
550-194920-11	SWFTS-EM40-EB1	Total/NA	Water	300.1B	
550-194920-13	SWFTS-MW-09B-EM40	Total/NA	Water	300.1B	
550-194920-15	SWFTS-MW-03-EM40	Total/NA	Water	300.1B	
MB 550-291159/5	Method Blank	Total/NA	Water	300.1B	
LCS 550-291159/6	Lab Control Sample	Total/NA	Water	300.1B	
LCSD 550-291159/7	Lab Control Sample Dup	Total/NA	Water	300.1B	
MRL 550-291159/1003	Lab Control Sample	Total/NA	Water	300.1B	
550-194920-9 MS	SWFTS-MW-09A-EM40	Total/NA	Water	300.1B	
550-194920-9 MSD	SWFTS-MW-09A-EM40	Total/NA	Water	300.1B	
550-194920-15 MS	SWFTS-MW-03-EM40	Total/NA	Water	300.1B	
550-194920-15 MSD	SWFTS-MW-03-EM40	Total/NA	Water	300.1B	

Metals

Prep Batch: 290824

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
550-194920-2	PC-92-EM40	Dissolved	Water	3005A	
550-194920-4	SWFTS-MW-01-EM40	Dissolved	Water	3005A	
550-194920-6	SWFTS-EM40-FB1	Dissolved	Water	3005A	
550-194920-8	PC-94-EM40	Dissolved	Water	3005A	

Metals (Continued)

Prep Batch: 290824 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
550-194920-10	SWFTS-MW-09A-EM40	Dissolved	Water	3005A	
550-194920-12	SWFTS-EM40-EB1	Dissolved	Water	3005A	
550-194920-14	SWFTS-MW-09B-EM40	Dissolved	Water	3005A	
550-194920-16	SWFTS-MW-03-EM40	Dissolved	Water	3005A	
MB 550-290824/1-A	Method Blank	Total/NA	Water	3005A	
LCS 550-290824/2-A	Lab Control Sample	Total/NA	Water	3005A	
LCSD 550-290824/3-A	Lab Control Sample Dup	Total/NA	Water	3005A	
550-194920-16 MS	SWFTS-MW-03-EM40	Dissolved	Water	3005A	
550-194920-16 MSD	SWFTS-MW-03-EM40	Dissolved	Water	3005A	

Prep Batch: 290825

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
550-194920-2	PC-92-EM40	Dissolved	Water	3005A	
550-194920-4	SWFTS-MW-01-EM40	Dissolved	Water	3005A	
550-194920-6	SWFTS-EM40-FB1	Dissolved	Water	3005A	
550-194920-8	PC-94-EM40	Dissolved	Water	3005A	
550-194920-10	SWFTS-MW-09A-EM40	Dissolved	Water	3005A	
550-194920-12	SWFTS-EM40-EB1	Dissolved	Water	3005A	
550-194920-14	SWFTS-MW-09B-EM40	Dissolved	Water	3005A	
550-194920-16	SWFTS-MW-03-EM40	Dissolved	Water	3005A	
MB 550-290825/1-A	Method Blank	Total/NA	Water	3005A	
LCS 550-290825/2-A	Lab Control Sample	Total/NA	Water	3005A	
LCSD 550-290825/3-A	Lab Control Sample Dup	Total/NA	Water	3005A	
550-194920-16 MS	SWFTS-MW-03-EM40	Dissolved	Water	3005A	
550-194920-16 MSD	SWFTS-MW-03-EM40	Dissolved	Water	3005A	

Prep Batch: 290826

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
550-194920-1	PC-92-EM40	Total/NA	Water	3005A	
550-194920-3	SWFTS-MW-01-EM40	Total/NA	Water	3005A	
550-194920-5	SWFTS-EM40-FB1	Total/NA	Water	3005A	
550-194920-7	PC-94-EM40	Total/NA	Water	3005A	
550-194920-9	SWFTS-MW-09A-EM40	Total/NA	Water	3005A	
550-194920-11	SWFTS-EM40-EB1	Total/NA	Water	3005A	
550-194920-13	SWFTS-MW-09B-EM40	Total/NA	Water	3005A	
550-194920-15	SWFTS-MW-03-EM40	Total/NA	Water	3005A	
MB 550-290826/1-A	Method Blank	Total/NA	Water	3005A	
LCS 550-290826/2-A	Lab Control Sample	Total/NA	Water	3005A	
LCSD 550-290826/3-A	Lab Control Sample Dup	Total/NA	Water	3005A	
550-194920-15 MS	SWFTS-MW-03-EM40	Total/NA	Water	3005A	
550-194920-15 MSD	SWFTS-MW-03-EM40	Total/NA	Water	3005A	

Analysis Batch: 291020

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
550-194920-2	PC-92-EM40	Dissolved	Water	6010B	290825
550-194920-4	SWFTS-MW-01-EM40	Dissolved	Water	6010B	290825
550-194920-6	SWFTS-EM40-FB1	Dissolved	Water	6010B	290825
550-194920-8	PC-94-EM40	Dissolved	Water	6010B	290825
550-194920-10	SWFTS-MW-09A-EM40	Dissolved	Water	6010B	290825
550-194920-12	SWFTS-EM40-EB1	Dissolved	Water	6010B	290825
550-194920-14	SWFTS-MW-09B-EM40	Dissolved	Water	6010B	290825

Metals (Continued)

Analysis Batch: 291020 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
550-194920-16	SWFTS-MW-03-EM40	Dissolved	Water	6010B	290825
MB 550-290825/1-A	Method Blank	Total/NA	Water	6010B	290825
LCS 550-290825/2-A	Lab Control Sample	Total/NA	Water	6010B	290825
LCSD 550-290825/3-A	Lab Control Sample Dup	Total/NA	Water	6010B	290825
550-194920-16 MS	SWFTS-MW-03-EM40	Dissolved	Water	6010B	290825
550-194920-16 MSD	SWFTS-MW-03-EM40	Dissolved	Water	6010B	290825

Analysis Batch: 291039

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
550-194920-1	PC-92-EM40	Total/NA	Water	6010B	290826
550-194920-3	SWFTS-MW-01-EM40	Total/NA	Water	6010B	290826
550-194920-5	SWFTS-EM40-FB1	Total/NA	Water	6010B	290826
550-194920-7	PC-94-EM40	Total/NA	Water	6010B	290826
550-194920-9	SWFTS-MW-09A-EM40	Total/NA	Water	6010B	290826
550-194920-11	SWFTS-EM40-EB1	Total/NA	Water	6010B	290826
550-194920-13	SWFTS-MW-09B-EM40	Total/NA	Water	6010B	290826
550-194920-15	SWFTS-MW-03-EM40	Total/NA	Water	6010B	290826
MB 550-290826/1-A	Method Blank	Total/NA	Water	6010B	290826
LCS 550-290826/2-A	Lab Control Sample	Total/NA	Water	6010B	290826
LCSD 550-290826/3-A	Lab Control Sample Dup	Total/NA	Water	6010B	290826
550-194920-15 MS	SWFTS-MW-03-EM40	Total/NA	Water	6010B	290826
550-194920-15 MSD	SWFTS-MW-03-EM40	Total/NA	Water	6010B	290826

Analysis Batch: 291383

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
550-194920-2	PC-92-EM40	Dissolved	Water	6020B	290824
550-194920-4	SWFTS-MW-01-EM40	Dissolved	Water	6020B	290824
550-194920-6	SWFTS-EM40-FB1	Dissolved	Water	6020B	290824
550-194920-8	PC-94-EM40	Dissolved	Water	6020B	290824
550-194920-10	SWFTS-MW-09A-EM40	Dissolved	Water	6020B	290824
550-194920-12	SWFTS-EM40-EB1	Dissolved	Water	6020B	290824
550-194920-14	SWFTS-MW-09B-EM40	Dissolved	Water	6020B	290824
550-194920-16	SWFTS-MW-03-EM40	Dissolved	Water	6020B	290824
MB 550-290824/1-A	Method Blank	Total/NA	Water	6020B	290824
LCS 550-290824/2-A	Lab Control Sample	Total/NA	Water	6020B	290824
LCSD 550-290824/3-A	Lab Control Sample Dup	Total/NA	Water	6020B	290824
550-194920-16 MS	SWFTS-MW-03-EM40	Dissolved	Water	6020B	290824
550-194920-16 MSD	SWFTS-MW-03-EM40	Dissolved	Water	6020B	290824

Analysis Batch: 291500

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
550-194920-2	PC-92-EM40	Dissolved	Water	6020B	290824
550-194920-4	SWFTS-MW-01-EM40	Dissolved	Water	6020B	290824
550-194920-6	SWFTS-EM40-FB1	Dissolved	Water	6020B	290824
550-194920-8	PC-94-EM40	Dissolved	Water	6020B	290824
550-194920-10	SWFTS-MW-09A-EM40	Dissolved	Water	6020B	290824
550-194920-12	SWFTS-EM40-EB1	Dissolved	Water	6020B	290824
550-194920-14	SWFTS-MW-09B-EM40	Dissolved	Water	6020B	290824
550-194920-16	SWFTS-MW-03-EM40	Dissolved	Water	6020B	290824
MB 550-290824/1-A	Method Blank	Total/NA	Water	6020B	290824
LCS 550-290824/2-A	Lab Control Sample	Total/NA	Water	6020B	290824

Metals (Continued)

Analysis Batch: 291500 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
LCSD 550-290824/3-A	Lab Control Sample Dup	Total/NA	Water	6020B	290824
550-194920-16 MS	SWFTS-MW-03-EM40	Dissolved	Water	6020B	290824
550-194920-16 MSD	SWFTS-MW-03-EM40	Dissolved	Water	6020B	290824

General Chemistry

Analysis Batch: 290973

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
550-194920-1	PC-92-EM40	Total/NA	Water	SM 5310B	
550-194920-3	SWFTS-MW-01-EM40	Total/NA	Water	SM 5310B	
550-194920-5	SWFTS-EM40-FB1	Total/NA	Water	SM 5310B	
550-194920-7	PC-94-EM40	Total/NA	Water	SM 5310B	
550-194920-9	SWFTS-MW-09A-EM40	Total/NA	Water	SM 5310B	
550-194920-11	SWFTS-EM40-EB1	Total/NA	Water	SM 5310B	
550-194920-13	SWFTS-MW-09B-EM40	Total/NA	Water	SM 5310B	
550-194920-15	SWFTS-MW-03-EM40	Total/NA	Water	SM 5310B	
MB 550-290973/34	Method Blank	Total/NA	Water	SM 5310B	
MB 550-290973/5	Method Blank	Total/NA	Water	SM 5310B	
LCS 550-290973/35	Lab Control Sample	Total/NA	Water	SM 5310B	
LCS 550-290973/6	Lab Control Sample	Total/NA	Water	SM 5310B	
LCSD 550-290973/36	Lab Control Sample Dup	Total/NA	Water	SM 5310B	
LCSD 550-290973/7	Lab Control Sample Dup	Total/NA	Water	SM 5310B	
550-194920-15 MS	SWFTS-MW-03-EM40	Total/NA	Water	SM 5310B	
550-194920-15 MSD	SWFTS-MW-03-EM40	Total/NA	Water	SM 5310B	
550-194993-A-1 MS ^10	Matrix Spike	Total/NA	Water	SM 5310B	
550-194993-A-1 MSD ^10	Matrix Spike Duplicate	Total/NA	Water	SM 5310B	

Lab Chronicle

Client: Tetra Tech, Inc.
Job ID: 550-194920-1
Project/Site: Tetra Tech M11 SWF Treatability Study

Client Sample ID: PC-92-EM40
Lab Sample ID: 550-194920-1
Date Collected: 12/13/22 08:13
Matrix: Water
Date Received: 12/14/22 10:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	RSK-175		1	597026	JPH	EET DEN	12/17/22 01:52
Total/NA	Analysis	300.0		1	290813	AS1	EET PHX	12/14/22 16:55
Total/NA	Analysis	300.0		50	290815	AS1	EET PHX	12/14/22 21:13
Total/NA	Analysis	300.1B		100	291159	MEG	EET PHX	12/20/22 20:09
Total/NA	Analysis	314.0		200	290772	RDC	EET PHX	12/14/22 15:43
Total/NA	Prep	3005A			290826	SGO	EET PHX	12/15/22 06:43
Total/NA	Analysis	6010B		1	291039	CHS	EET PHX	12/16/22 13:22
Total/NA	Analysis	SM 5310B		1	290973	RDC	EET PHX	12/16/22 18:47

Client Sample ID: PC-92-EM40
Lab Sample ID: 550-194920-2
Date Collected: 12/13/22 08:13
Matrix: Water
Date Received: 12/14/22 10:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Dissolved	Prep	3005A			290825	SGO	EET PHX	12/15/22 06:30
Dissolved	Analysis	6010B		1	291020	CHS	EET PHX	12/16/22 12:19
Dissolved	Prep	3005A			290824	SGO	EET PHX	12/15/22 04:20
Dissolved	Analysis	6020B		1	291383	ARE	EET PHX	12/22/22 15:10
Dissolved	Prep	3005A			290824	SGO	EET PHX	12/15/22 04:20
Dissolved	Analysis	6020B		1	291500	ARE	EET PHX	12/27/22 12:44

Client Sample ID: SWFTS-MW-01-EM40
Lab Sample ID: 550-194920-3
Date Collected: 12/13/22 09:08
Matrix: Water
Date Received: 12/14/22 10:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	RSK-175		1	597026	JPH	EET DEN	12/17/22 02:06
Total/NA	Analysis	300.0		1	290813	AS1	EET PHX	12/14/22 17:13
Total/NA	Analysis	300.0		50	290815	AS1	EET PHX	12/14/22 21:41
Total/NA	Analysis	300.1B		50	291159	MEG	EET PHX	12/20/22 20:38
Total/NA	Analysis	314.0		200	290772	RDC	EET PHX	12/14/22 16:05
Total/NA	Prep	3005A			290826	SGO	EET PHX	12/15/22 06:43
Total/NA	Analysis	6010B		1	291039	CHS	EET PHX	12/16/22 13:24
Total/NA	Analysis	SM 5310B		1	290973	RDC	EET PHX	12/16/22 18:59

Client Sample ID: SWFTS-MW-01-EM40
Lab Sample ID: 550-194920-4
Date Collected: 12/13/22 09:08
Matrix: Water
Date Received: 12/14/22 10:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Dissolved	Prep	3005A			290825	SGO	EET PHX	12/15/22 06:30
Dissolved	Analysis	6010B		1	291020	CHS	EET PHX	12/16/22 12:22
Dissolved	Prep	3005A			290824	SGO	EET PHX	12/15/22 04:20
Dissolved	Analysis	6020B		1	291383	ARE	EET PHX	12/22/22 15:12

Lab Chronicle

Client: Tetra Tech, Inc.
Job ID: 550-194920-1
Project/Site: Tetra Tech M11 SWF Treatability Study

Client Sample ID: SWFTS-MW-01-EM40
Lab Sample ID: 550-194920-4
Date Collected: 12/13/22 09:08
Matrix: Water
Date Received: 12/14/22 10:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Dissolved	Prep	3005A			290824	SGO	EET PHX	12/15/22 04:20
Dissolved	Analysis	6020B		1	291500	ARE	EET PHX	12/27/22 12:46

Client Sample ID: SWFTS-EM40-FB1
Lab Sample ID: 550-194920-5
Date Collected: 12/13/22 09:08
Matrix: Water
Date Received: 12/14/22 10:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	RSK-175		1	597026	JPH	EET DEN	12/17/22 02:19
Total/NA	Analysis	300.0		1	290813	AS1	EET PHX	12/14/22 15:05
Total/NA	Analysis	300.1B		1	291159	MEG	EET PHX	12/20/22 21:08
Total/NA	Analysis	314.0		1	290772	RDC	EET PHX	12/14/22 16:28
Total/NA	Prep	3005A			290826	SGO	EET PHX	12/15/22 06:43
Total/NA	Analysis	6010B		1	291039	CHS	EET PHX	12/16/22 13:27
Total/NA	Analysis	SM 5310B		1	290973	RDC	EET PHX	12/16/22 19:10

Client Sample ID: SWFTS-EM40-FB1
Lab Sample ID: 550-194920-6
Date Collected: 12/13/22 09:08
Matrix: Water
Date Received: 12/14/22 10:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Dissolved	Prep	3005A			290825	SGO	EET PHX	12/15/22 06:30
Dissolved	Analysis	6010B		1	291020	CHS	EET PHX	12/16/22 12:25
Dissolved	Prep	3005A			290824	SGO	EET PHX	12/15/22 04:20
Dissolved	Analysis	6020B		1	291383	ARE	EET PHX	12/22/22 15:14
Dissolved	Prep	3005A			290824	SGO	EET PHX	12/15/22 04:20
Dissolved	Analysis	6020B		1	291500	ARE	EET PHX	12/27/22 12:48

Client Sample ID: PC-94-EM40
Lab Sample ID: 550-194920-7
Date Collected: 12/13/22 10:12
Matrix: Water
Date Received: 12/14/22 10:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	RSK-175		1	597026	JPH	EET DEN	12/17/22 02:33
Total/NA	Analysis	300.0		2	290813	AS1	EET PHX	12/14/22 17:32
Total/NA	Analysis	300.0		50	290813	AS1	EET PHX	12/14/22 19:59
Total/NA	Analysis	300.1B		100	291159	MEG	EET PHX	12/20/22 21:37
Total/NA	Analysis	314.0		200	290772	RDC	EET PHX	12/14/22 16:51
Total/NA	Prep	3005A			290826	SGO	EET PHX	12/15/22 06:43
Total/NA	Analysis	6010B		1	291039	CHS	EET PHX	12/16/22 13:30
Total/NA	Analysis	SM 5310B		1	290973	RDC	EET PHX	12/16/22 19:24

Lab Chronicle

Client: Tetra Tech, Inc.
Job ID: 550-194920-1
Project/Site: Tetra Tech M11 SWF Treatability Study

Client Sample ID: PC-94-EM40
Lab Sample ID: 550-194920-8
Date Collected: 12/13/22 10:12
Matrix: Water
Date Received: 12/14/22 10:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Dissolved	Prep	3005A			290825	SGO	EET PHX	12/15/22 06:30
Dissolved	Analysis	6010B		1	291020	CHS	EET PHX	12/16/22 12:28
Dissolved	Prep	3005A			290824	SGO	EET PHX	12/15/22 04:20
Dissolved	Analysis	6020B		1	291383	ARE	EET PHX	12/22/22 15:16
Dissolved	Prep	3005A			290824	SGO	EET PHX	12/15/22 04:20
Dissolved	Analysis	6020B		1	291500	ARE	EET PHX	12/27/22 12:50

Client Sample ID: SWFTS-MW-09A-EM40
Lab Sample ID: 550-194920-9
Date Collected: 12/13/22 11:14
Matrix: Water
Date Received: 12/14/22 10:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	RSK-175		1	597026	JPH	EET DEN	12/17/22 02:46
Total/NA	Analysis	300.0		2	290813	AS1	EET PHX	12/14/22 17:50
Total/NA	Analysis	300.0		50	290813	AS1	EET PHX	12/14/22 20:17
Total/NA	Analysis	300.1B		100	291159	MEG	EET PHX	12/20/22 23:06
Total/NA	Analysis	314.0		200	290772	RDC	EET PHX	12/14/22 17:14
Total/NA	Prep	3005A			290826	SGO	EET PHX	12/15/22 06:43
Total/NA	Analysis	6010B		1	291039	CHS	EET PHX	12/16/22 13:33
Total/NA	Analysis	SM 5310B		1	290973	RDC	EET PHX	12/16/22 19:35

Client Sample ID: SWFTS-MW-09A-EM40
Lab Sample ID: 550-194920-10
Date Collected: 12/13/22 11:14
Matrix: Water
Date Received: 12/14/22 10:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Dissolved	Prep	3005A			290825	SGO	EET PHX	12/15/22 06:30
Dissolved	Analysis	6010B		1	291020	CHS	EET PHX	12/16/22 12:31
Dissolved	Prep	3005A			290824	SGO	EET PHX	12/15/22 04:20
Dissolved	Analysis	6020B		1	291383	ARE	EET PHX	12/22/22 15:18
Dissolved	Prep	3005A			290824	SGO	EET PHX	12/15/22 04:20
Dissolved	Analysis	6020B		1	291500	ARE	EET PHX	12/27/22 12:52

Client Sample ID: SWFTS-EM40-EB1
Lab Sample ID: 550-194920-11
Date Collected: 12/13/22 11:14
Matrix: Water
Date Received: 12/14/22 10:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	RSK-175		1	597026	JPH	EET DEN	12/17/22 02:59
Total/NA	Analysis	300.0		1	290813	AS1	EET PHX	12/14/22 18:45
Total/NA	Analysis	300.1B		1	291159	MEG	EET PHX	12/21/22 00:34
Total/NA	Analysis	314.0		1	290772	RDC	EET PHX	12/14/22 17:37
Total/NA	Prep	3005A			290826	SGO	EET PHX	12/15/22 06:43
Total/NA	Analysis	6010B		1	291039	CHS	EET PHX	12/16/22 13:36

Lab Chronicle

Client: Tetra Tech, Inc.
Job ID: 550-194920-1
Project/Site: Tetra Tech M11 SWF Treatability Study

Client Sample ID: SWFTS-EM40-EB1
Lab Sample ID: 550-194920-11
Date Collected: 12/13/22 11:14
Matrix: Water
Date Received: 12/14/22 10:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	SM 5310B		1	290973	RDC	EET PHX	12/16/22 19:48

Client Sample ID: SWFTS-EM40-EB1
Lab Sample ID: 550-194920-12
Date Collected: 12/13/22 11:14
Matrix: Water
Date Received: 12/14/22 10:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Dissolved	Prep	3005A			290825	SGO	EET PHX	12/15/22 06:30
Dissolved	Analysis	6010B		1	291020	CHS	EET PHX	12/16/22 12:39
Dissolved	Prep	3005A			290824	SGO	EET PHX	12/15/22 04:20
Dissolved	Analysis	6020B		1	291383	ARE	EET PHX	12/22/22 15:24
Dissolved	Prep	3005A			290824	SGO	EET PHX	12/15/22 04:20
Dissolved	Analysis	6020B		1	291500	ARE	EET PHX	12/27/22 12:59

Client Sample ID: SWFTS-MW-09B-EM40
Lab Sample ID: 550-194920-13
Date Collected: 12/13/22 12:38
Matrix: Water
Date Received: 12/14/22 10:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	RSK-175		1	597026	JPH	EET DEN	12/17/22 03:13
Total/NA	Analysis	300.0		2	290813	AS1	EET PHX	12/14/22 18:09
Total/NA	Analysis	300.0		50	290813	AS1	EET PHX	12/14/22 20:36
Total/NA	Analysis	300.1B		100	291159	MEG	EET PHX	12/21/22 01:04
Total/NA	Analysis	314.0		500	290772	RDC	EET PHX	12/14/22 18:00
Total/NA	Prep	3005A			290826	SGO	EET PHX	12/15/22 06:43
Total/NA	Analysis	6010B		1	291039	CHS	EET PHX	12/16/22 13:44
Total/NA	Analysis	SM 5310B		1	290973	RDC	EET PHX	12/16/22 20:02

Client Sample ID: SWFTS-MW-09B-EM40
Lab Sample ID: 550-194920-14
Date Collected: 12/13/22 12:38
Matrix: Water
Date Received: 12/14/22 10:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Dissolved	Prep	3005A			290825	SGO	EET PHX	12/15/22 06:30
Dissolved	Analysis	6010B		1	291020	CHS	EET PHX	12/16/22 12:42
Dissolved	Prep	3005A			290824	SGO	EET PHX	12/15/22 04:20
Dissolved	Analysis	6020B		1	291383	ARE	EET PHX	12/22/22 15:26
Dissolved	Prep	3005A			290824	SGO	EET PHX	12/15/22 04:20
Dissolved	Analysis	6020B		1	291500	ARE	EET PHX	12/27/22 13:01

Lab Chronicle

Client: Tetra Tech, Inc.
Job ID: 550-194920-1
Project/Site: Tetra Tech M11 SWF Treatability Study

Client Sample ID: SWFTS-MW-03-EM40
Lab Sample ID: 550-194920-15
Date Collected: 12/13/22 13:37
Matrix: Water
Date Received: 12/14/22 10:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	RSK-175		1	597026	JPH	EET DEN	12/17/22 03:26
Total/NA	Analysis	300.0		2	290813	AS1	EET PHX	12/14/22 12:37
Total/NA	Analysis	300.0		50	290813	AS1	EET PHX	12/14/22 13:33
Total/NA	Analysis	300.1B		50	291159	MEG	EET PHX	12/20/22 17:12
Total/NA	Analysis	314.0		200	290875	RDC	EET PHX	12/15/22 12:12
Total/NA	Prep	3005A			290826	SGO	EET PHX	12/15/22 06:43
Total/NA	Analysis	6010B		1	291039	CHS	EET PHX	12/16/22 13:19
Total/NA	Analysis	SM 5310B		1	290973	RDC	EET PHX	12/16/22 21:36

Client Sample ID: SWFTS-MW-03-EM40
Lab Sample ID: 550-194920-16
Date Collected: 12/13/22 13:37
Matrix: Water
Date Received: 12/14/22 10:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Dissolved	Prep	3005A			290825	SGO	EET PHX	12/15/22 06:30
Dissolved	Analysis	6010B		1	291020	CHS	EET PHX	12/16/22 12:16
Dissolved	Prep	3005A			290824	SGO	EET PHX	12/15/22 04:20
Dissolved	Analysis	6020B		1	291383	ARE	EET PHX	12/22/22 15:08
Dissolved	Prep	3005A			290824	SGO	EET PHX	12/15/22 04:20
Dissolved	Analysis	6020B		1	291500	ARE	EET PHX	12/27/22 12:42

Laboratory References:

EET DEN = Eurofins Denver, 4955 Yarrow Street, Arvada, CO 80002, TEL (303)736-0100

EET PHX = Eurofins Phoenix, 4625 East Cotton Center Boulevard, Suite #189, Phoenix, AZ 85040, TEL (602)437-3340

Accreditation/Certification Summary

Client: Tetra Tech, Inc.
Job ID: 550-194920-1
Project/Site: Tetra Tech M11 SWF Treatability Study

Laboratory: Eurofins Phoenix

All accreditations/certifications held by this laboratory are listed. Not all accreditations/certifications are applicable to this report.

Authority	Program	Identification Number	Expiration Date
Arizona	State	AZ0728	06-10-23
California	State	2941	03-09-23
Nevada	State	AZ1030	07-31-23
Oregon	NELAP	AZ100001	03-09-23
USDA	US Federal Programs	P330-19-00227	08-27-22 *

Laboratory: Eurofins Denver

All accreditations/certifications held by this laboratory are listed. Not all accreditations/certifications are applicable to this report.

Authority	Program	Identification Number	Expiration Date
A2LA	Dept. of Defense ELAP	2907.01	10-31-23
A2LA	ISO/IEC 17025	2907.01	10-31-23
Alabama	State Program	40730	09-30-12 *
Alaska (UST)	State	18-001	02-08-23
Arizona	State	AZ0713	12-20-22
Arkansas DEQ	State	19-047-0	05-31-23
California	State	2513	01-08-23
Connecticut	State	PH-0686	09-30-22 *
Florida	NELAP	E87667-57	06-30-23
Georgia	State	4025-011	01-08-23
Illinois	NELAP	2000172019-1	04-30-23
Iowa	State	IA#370	12-01-24
Kansas	NELAP	E-10166	04-30-23
Kentucky (WW)	State	KY98047	12-31-22
Louisiana	NELAP	30785	06-30-14 *
Louisiana	NELAP	30785	06-30-23
Louisiana (All)	NELAP	30785	06-30-23
Minnesota	NELAP	1788752	12-31-22
Nevada	State	CO000262020-1	07-31-23
New Hampshire	NELAP	205319	04-28-23
New Jersey	NELAP	190002	06-30-23
New York	NELAP	59923	04-01-23
North Carolina (WW/SW)	State	358	12-31-22
North Dakota	State	R-034	01-08-23
Oklahoma	NELAP	8614	08-31-23
Oregon	NELAP	4025-011	01-09-23
Pennsylvania	NELAP	013	07-31-23
South Carolina	State	72002001	01-08-23
Texas	NELAP	TX104704183-08-TX	09-30-09 *
Texas	NELAP	T104704183-21-19	09-30-23
US Fish & Wildlife	US Federal Programs	058448	07-31-23
USDA	US Federal Programs	P330-20-00065	03-06-23
Utah	NELAP	QUAN5	06-30-13 *
Utah	NELAP	CO000262019-11	07-31-23
Virginia	NELAP	10490	06-14-23
Washington	State	C583-19	08-03-23
Wisconsin	State	999615430	08-31-23

* Accreditation/Certification renewal pending - accreditation/certification considered valid.

Method Summary

Client: Tetra Tech, Inc.
Job ID: 550-194920-1
Project/Site: Tetra Tech M11 SWF Treatability Study

Method	Method Description	Protocol	Laboratory
RSK-175	Dissolved Gases (GC)	RSK	EET DEN
300.0	Anions, Ion Chromatography	MCAWW	EET PHX
300.1B	Disinfection By-Products, (IC)	EPA	EET PHX
314.0	Perchlorate (IC)	EPA	EET PHX
6010B	Metals (ICP)	SW846	EET PHX
6020B	Metals (ICP/MS)	SW846	EET PHX
SM 5310B	Organic Carbon, Total (TOC)	SM	EET PHX
3005A	Preparation, Total Metals	SW846	EET PHX

Protocol References:

EPA = US Environmental Protection Agency

MCAWW = "Methods For Chemical Analysis Of Water And Wastes", EPA-600/4-79-020, March 1983 And Subsequent Revisions.

RSK = Sample Prep And Calculations For Dissolved Gas Analysis In Water Samples Using A GC Headspace Equilibration Technique, RSKSOP-175, Rev. 0, 8/11/94, USEPA Research Lab

SM = "Standard Methods For The Examination Of Water And Wastewater"

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

Laboratory References:

EET DEN = Eurofins Denver, 4955 Yarrow Street, Arvada, CO 80002, TEL (303)736-0100

EET PHX = Eurofins Phoenix, 4625 East Cotton Center Boulevard, Suite #189, Phoenix, AZ 85040, TEL (602)437-3340

TestAmerica
Las Vegas
219

194920

Tetra Tech
1093 Commerce Park Drive
Oak Ridge, TN37830
(865)483-9900

CHAIN-OF-CUSTODY

NERT-M11
Groundwater Sampling

Laboratory Name: Eurofins TestAmerica, Phoenix (602) 437-3340 | Address: 4625 East Cotton Ctr Blvd, Suite 189, Phoenix, AZ 85040 | Contact: Mary Charlson 602-659-7627 | Page 1 of 1

Project Name: Tetra Tech M11 SWF Treatability Study
Project No. M11-CWP-04
NERT - Seep Well Field Area Bioremediation Treatability Study
Report to: Maureen McMyler, 1093 Commerce Park Dr. (865)220-4762
Bill to: Sunshine Pryor, 350 Indiana St., Golden, CO 80401 (303) 217-5700

Sampler: Dylan Begley
Sampler Phone: 623-271-0886
Project Contact: Maureen McMyler
Site Telephone No.: (702) 966-8340
Project Manager/Supervisor: Dana Grady

Analysis and Method Requested

Item No.	Sample Number	Date	Time	G=Grab C=Comp	Matrix	Sample Description, Location	Number of Containers	Perchlorate E314.0	TOC SM5310B	Chlorate E300.1	Sulfate/Nitrate E300.0 SHORT HOLD NITRATE!	Total Mn HNO3	Dissolved metals HNO3	Methane HCl	Remarks
						Preservation Code:	-	N	A	L	N				Notes
1	PC-92-EM40	12/13/22	0813	G	W	-	12	✓	✓	✓	✓	✓	✓	✓	-01 & 02
2	SWFTS-MW-01-EM40		0908												-03 & 04
3	~~Field QC 01~~ SWFTS-EM40-FB1		0908												-05 & 06
4	~~SWFTS~~ PC-94-EM40		1012												-07 & 08
5	SWFTS-MW-09A-EM40		1114												-09 & 10
6	~~Field QC 01~~ SWFTS-EM40-EB1		1114												-11 & 12
7	SWFTS-MW-09B-EM40		1238												-13 & 14
8	SWFTS-MW-03-EM40		1337												-15 & 16
9	SWFTS-MW-03-EM40-MS/MSD		1337												-15 & 16
10															

Preservation Codes:
A- HCL
D-Nitric Acid
L-EDA
N-None
S-H2SO4
Other:

550-194920 Chain of Custody

Transfers Relinquished By (Signature)	Date/Time	Transfers Accepted By (Signature)	Date/Time
Dyl Begly	12/13/22 1500	TALVS	12/13/22 1500
TALVS	12/13/22 1600		
	12/14/22 1000	Laboratory: EETA PHX	

Special Instructions:
FedEx 2.1-4 2.4°C 1ve CS

FedEx Airbill No.:
Sampler's Signature: (REQUIRED)
Sampler's Signature: Dyl Begly

TAT: ___Standard ___ Rush Due: _____ Received Good Condition ___ Y ___ N ___ Cold

TH 240 20.2/20.5 16.3/16.6

12/28/2022

Eurofins Phoenix
4625 East Cotton Center Boulevard Suite #189
Phoenix, AZ 85040
Phone. 602-437-3340

Chain of Custody Record

eurofins

Client Information (Sub Contract Lab)	Sampler:	Lab PM: Sester, Rachel E	Carrier Tracking No(s):	COC No.: 550-35629.1
Client Contact: Shipping/Receiving	Phone:	E-Mail: Rachel.Sester@et.eurofinsus.com	State of Origin: Nevada	Page: Page 1 of 2
Company: TestAmerica Laboratories, Inc.		Accreditations Required (See note): State Program - Nevada		Job #: 550-194920-1
Address: 4955 Yarrow Street, ,	Due Date Requested: 12/29/2022			
City: Arvada	TAT Requested (days):			
State, Zip: CO, 80002				
Phone: 303-736-0100(Tel) 303-431-7171(Fax)	PO #:			
Email:	WO #:			
Project Name: Tetra Tech M11 SWF Treatability Study	Project #: 55015433			
Site:	SSOW#:			

Analysis Requested

Preservation Codes:
A - HCL, B - NaOH, C - Zn Acetate, D - Nitric Acid, E - NaHSO4, F - MeOH, G - Amchlor, H - Ascorbic Acid, I - Ice, J - DI Water, K - EDTA, L - EDA, M - Hexane, N - None, O - AsNaO2, P - Na2O4S, Q - Na2SO3, R - Na2S2O3, S - H2SO4, T - TSP Dodecahydrate, U - Acetone, V - MCAA, W - pH 4-5, Y - Trizma, Z - other (specify)
Other:

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	RSK_175/ (MOD) Local Method	Total Number of containers	Special Instructions/Note:
			Preservation Code:						
PC-92-EM40 (550-194920-1)	12/13/22	08:13 Pacific		Water			X	3	
SWFTS-MW-01-EM40 (550-194920-3)	12/13/22	09:08 Pacific		Water			X	3	
SWFTS-EM40-FB1 (550-194920-5)	12/13/22	09:08 Pacific		Water			X	3	
PC-94-EM40 (550-194920-7)	12/13/22	10:12 Pacific		Water			X	3	
SWFTS-MW-09A-EM40 (550-194920-9)	12/13/22	11:14 Pacific		Water			X	3	
SWFTS-EM40-EB1 (550-194920-11)	12/13/22	11:14 Pacific		Water			X	3	
SWFTS-MW-09B-EM40 (550-194920-13)	12/13/22	12:38 Pacific		Water			X	3	
SWFTS-MW-03-EM40 (550-194920-15)	12/13/22	13:37 Pacific		Water			X	2	
SWFTS-MW-03-EM40 (550-194920-15MS)	12/13/22	13:37 Pacific	MS	Water			X	2	

Note: Since laboratory accreditations are subject to change, Eurofins Environment Testing Southwest, LLC places the ownership of method, analyte & accreditation compliance upon our subcontract laboratories. This sample shipment is forwarded under chain-of-custody. If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed, the samples must be shipped back to the Eurofins Environment Testing Southwest, LLC laboratory or other instructions will be provided. Any changes to accreditation status should be brought to Eurofins Environment Testing Southwest, LLC attention immediately. If all requested accreditations are current to date, return the signed Chain of Custody attesting to said compliance to Eurofins Environment Testing Southwest, LLC.

Possible Hazard Identification	***Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)***
Unconfirmed	☐ *Return To Client* ☐ *Disposal By Lab* ☐ *Archive For* _____ *Months*
Deliverable Requested: I, II, III, IV, Other (specify) Primary Deliverable Rank: 2	Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:

	Relinquished by	Date/Time	Company	Received by	Date/Time	Company
1	[illegible] 12-14-22	14:20	EETSAS	Fedex		
2	Fedex				12-15-22 0915	ETADEN
3						

Custody Seals Intact: Δ Yes Δ No	Custody Seal No.:	Cooler Temperature(s) °C and Other Remarks: 0.1 -0.0 IR 12

Ver: 06/08/2021

Eurofins Phoenix
4625 East Cotton Center Boulevard Suite #189
Phoenix, AZ 85040
Phone: 602-437-3340

Chain of Custody Record

eurofins

Client Information (Sub Contract Lab)	Sampler	Lab PM: Sester, Rachel E	Carrier Tracking No(s)	COC No: 550-35629 2
Client Contact: Shipping/Receiving	Phone	E-Mail: Rachel.Sester@et.eurofinsus.com	State of Origin: Nevada	Page: Page 2 of 2
Company: TestAmerica Laboratories, Inc.		Accreditations Required (See note): State Program - Nevada		Job #: 550-194920-1
Address: 4955 Yarrow Street,	Due Date Requested: 12/29/2022			
City: Arvada	TAT Requested (days):			
State, Zip: CO, 80002				
Phone: 303-736-0100(Tel) 303-431-7171(Fax)	PO #:			
Email:	WO #:			
Project Name: Tetra Tech M11 SWF Treatability Study	Project #: 55015433			
Site:	SSOW#:			

Analysis Requested

Preservation Codes:

A - HCL, B - NaOH, C - Zn Acetate, D - Nitric Acid, E - NaHSO4, F - MeOH, G - Amchlor, H - Ascorbic Acid, I - Ice, J - DI Water, K - EDTA, L - EDA, M - Hexane, N - None, O - AsNaO2, P - Na2O4S, Q - Na2SO3, R - Na2S2O3, S - H2SO4, T - TSP Dodecahydrate, U - Acetone, V - MCAA, W - pH 4-5, Y - Trizma, Z - other (specify)

Other:

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	RSK_175/ (MOD) Local Method	Total Number of containers	Special Instructions/Note:
			Preservation Code:						
SWFTS-MW-03-EM40 (550-194920-15MSD)	12/13/22	13:37 Pacific	MSD	Water			X	2	

Note. Since laboratory accreditations are subject to change, Eurofins Environment Testing Southwest, LLC places the ownership of method, analyte & accreditation compliance upon our subcontract laboratories. This sample shipment is forwarded under chain-of-custody. If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed, the samples must be shipped back to the Eurofins Environment Testing Southwest, LLC laboratory or other instructions will be provided. Any changes to accreditation status should be brought to Eurofins Environment Testing Southwest, LLC attention immediately. If all requested accreditations are current to date, return the signed Chain of Custody attesting to said compliance to Eurofins Environment Testing Southwest, LLC.

Possible Hazard Identification	Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
Unconfirmed	☐ Return To Client ☐ Disposal By Lab ☐ Archive For _____ Months
Deliverable Requested: I, II, III, IV, Other (specify) Primary Deliverable Rank: 2	Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:

	Relinquished by	Date/Time	Company	Received by	Date/Time	Company
1	[illegible] 12-14-22	14:20	ECSW	FEDEX		
2	FedEx				12-15-22 0915	ETADEM
3						

Custody Seals Intact: Δ Yes Δ No	Custody Seal No.:	Cooler Temperature(s) °C and Other Remarks: 0.4 C 0.0 12 17

Ver: 06/08/2021

Login Sample Receipt Checklist

Client: Tetra Tech, Inc.

Job Number: 550-194920-1

Login Number: 194920
List Number: 1
Creator: Gravlin, Andrea

List Source: Eurofins Phoenix

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	True	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	False	Refer to Job Narrative for details.
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	False	Check done at department level as required.

Login Sample Receipt Checklist

Client: Tetra Tech, Inc.

Job Number: 550-194920-1

Login Number: 194920
List Number: 2
Creator: Lee, Jerry

List Source: Eurofins Denver
List Creation: 12/15/22 04:05 PM

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	True	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	N/A	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	N/A	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

ANALYTICAL REPORT

PREPARED FOR

Attn: Dana Grady
Tetra Tech, Inc.
1093 Commerce Park Drive
Suite 100
Oak Ridge, Tennessee 37830

Generated 12/30/2022 1:30:39 PM

JOB DESCRIPTION

Tetra Tech M11 SWF Treatability Study

JOB NUMBER

550-195013-1

Eurofins Phoenix
4625 East Cotton Center Boulevard
Suite #189
Phoenix AZ 85040

See page two for job notes and contact information.

my EOL

Job Notes

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The data in the report relate to the field sample(s) as received by the laboratory and associated QC. All results have been reviewed and have been found to be compliant with laboratory and accreditation requirements, with the exception of the noted deviation(s). For questions, please contact the Project Manager.

The test results in this report relate only to the samples as received by the laboratory and will meet all requirements of the methodology, with any exceptions noted. This report shall not be reproduced except in full, without the express written approval of the laboratory. All questions should be directed to the Eurofins Environment Testing Southwest, LLC Project Manager.

Authorization

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Authorized for release by
Rachel Sester, Project Manager I
Rachel.Sester@et.eurofinsus.com
(602)659-7615

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Definitions/Glossary

Client: Tetra Tech, Inc. Job ID: 550-195013-1
Project/Site: Tetra Tech M11 SWF Treatability Study

Qualifiers

HPLC/IC

Qualifier	Qualifier Description
4	MS, MSD: The analyte present in the original sample is greater than 4 times the matrix spike concentration; therefore, control limits are not applicable.
D	Sample results are obtained from a dilution; the surrogate or matrix spike recoveries reported are calculated from diluted samples.
E	Result exceeded calibration range.
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

Metals

Qualifier	Qualifier Description
^2	Calibration Blank (ICB and/or CCB) is outside acceptance limits.
4	MS, MSD: The analyte present in the original sample is greater than 4 times the matrix spike concentration; therefore, control limits are not applicable.
B	Compound was found in the blank and sample.
cn	Refer to Case Narrative for further detail
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

General Chemistry

Qualifier	Qualifier Description
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CFU	Colony Forming Unit
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MCL	EPA recommended "Maximum Contaminant Level"
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
MPN	Most Probable Number
MQL	Method Quantitation Limit
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
NEG	Negative / Absent
POS	Positive / Present
PQL	Practical Quantitation Limit
PRES	Presumptive
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)
TNTC	Too Numerous To Count

Job ID: 550-195013-1

Laboratory: Eurofins Phoenix

Narrative

Job Narrative
550-195013-1

Receipt
The samples were received on 12/15/2022 10:00 AM. Unless otherwise noted below, the samples arrived in good condition, and, where required, properly preserved and on ice. The temperature of the cooler at receipt time was 3.0°C

GC VOA
No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

HPLC/IC
Method 300.1B_28D: The following sample was diluted for Chlorate by method EPA 300.1B due to an abundance of non-target analytes present within the sample matrix: SWFTS-MW16-EM40 (550-195013-15). In the diluted sample this analyte was not detected or was beneath the lowest calibration limit. As such, an elevated reporting limit (RL) has been provided.

Method 300_ORGFMS: The following samples were diluted due to the nature of the sample matrix: SWFTS-MW18-EM40 (550-195013-11) and SWFTS-MW17-EM40 (550-195013-13). Elevated reporting limits (RLs) are provided.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

Metals
Method 6010B: The continuing calibration blank (CCB) for analytical batch 550-291022 contained Sodium above the reporting limit (RL). All reported samples associated with this CCB were either ND for this analyte or contained this analyte at a concentration greater than 10X the value found in the CCB; therefore, re-analysis of samples was not performed.

Method 6010B: The spiking solution used during the extraction process for the laboratory control sample/ laboratory control sample duplicate (LCS/LCSD) and matrix spike/matrix spike duplicate (MS/MSD) and post digestion spike (PDS) associated with preparation batch 550-290884 did not contain Phosphorus; therefore, percent recoveries are unavailable. The affected samples could not be re-prepared and / or re-analyzed with a spike containing these analytes. The instrument QC was within acceptance criteria and may be used to evaluate these analytes for this method. The results have been reported with cn qualifiers. Affected samples: SWFTS-MW22-EM40 (550-195013-2), SWFTS-MW19-EM40 (550-195013-4), SWFTS-MW19-EM40-FD (550-195013-5), SWFTS-MW19-EM40-FD (550-195013-6), SWFTS-EM40-FB2 (550-195013-8), SWFTS-EM40-EB2 (550-195013-10), SWFTS-MW18-EM40 (550-195013-12), SWFTS-MW17-EM40 (550-195013-14), SWFTS-MW16-EM40 (550-195013-16), (LCS 550-290884/2-A), (LCSD 550-290884/3-A), (550-195013-J-5-A MS), (550-195013-J-5-B MSD) and (550-195013-J-5-C PDS).

Method 6010B: The following sample was diluted to bring the concentration of target analytes within the calibration range: SWFTS-MW22-EM40 (550-195013-2). Elevated reporting limits (RLs) are provided.

Method 6010B: The continuing calibration blank (CCB) for analytical batch 550-291022 contained Sodium above the reporting limit (RL). All reported samples associated with this CCB were either ND for this analyte or contained this analyte at a concentration greater than 10X the value found in the CCB; therefore, re-analysis of samples was not performed.

Method 6010B: The spiking solution used during the extraction process for the laboratory control sample/ laboratory control sample duplicate (LCS/LCSD) and matrix spike/matrix spike duplicate (MS/MSD) and post digestion spike (PDS) associated with preparation batch 550-290884 did not contain Phosphorus; therefore, percent recoveries are unavailable. The affected samples could not be re-prepared and / or re-analyzed with a spike containing these analytes. The instrument QC was within acceptance criteria and may be used to evaluate these analytes for this method. The results have been reported with cn qualifiers. Affected samples: SWFTS-MW22-EM40 (550-195013-2), SWFTS-MW19-EM40 (550-195013-4), SWFTS-MW19-EM40-FD (550-195013-5), SWFTS-MW19-EM40-FD (550-195013-6), SWFTS-EM40-FB2 (550-195013-8), SWFTS-EM40-EB2 (550-195013-10), SWFTS-MW18-EM40 (550-195013-12), SWFTS-MW17-EM40 (550-195013-14), SWFTS-MW16-EM40 (550-195013-16), (LCS 550-290884/2-A), (LCSD 550-290884/3-A), (550-195013-J-5-A MS), (550-195013-J-5-B MSD) and (550-195013-J-5-C PDS).

Job ID: 550-195013-1 (Continued)

Laboratory: Eurofins Phoenix (Continued)

Method 6010B: The following sample was diluted to bring the concentration of target analytes within the calibration range: SWFTS-MW22-EM40 (550-195013-2). Elevated reporting limits (RLs) are provided.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

General Chemistry

No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

Sample Summary

Client: Tetra Tech, Inc.
Job ID: 550-195013-1
Project/Site: Tetra Tech M11 SWF Treatability Study

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
550-195013-1	SWFTS-MW22-EM40	Water	12/14/22 08:35	12/15/22 10:00
550-195013-2	SWFTS-MW22-EM40	Water	12/14/22 08:35	12/15/22 10:00
550-195013-3	SWFTS-MW19-EM40	Water	12/14/22 09:30	12/15/22 10:00
550-195013-4	SWFTS-MW19-EM40	Water	12/14/22 09:30	12/15/22 10:00
550-195013-5	SWFTS-MW19-EM40-FD	Water	12/14/22 09:30	12/15/22 10:00
550-195013-6	SWFTS-MW19-EM40-FD	Water	12/14/22 09:30	12/15/22 10:00
550-195013-7	SWFTS-EM40-FB2	Water	12/14/22 10:00	12/15/22 10:00
550-195013-8	SWFTS-EM40-FB2	Water	12/14/22 10:00	12/15/22 10:00
550-195013-9	SWFTS-EM40-EB2	Water	12/14/22 10:15	12/15/22 10:00
550-195013-10	SWFTS-EM40-EB2	Water	12/14/22 10:15	12/15/22 10:00
550-195013-11	SWFTS-MW18-EM40	Water	12/14/22 11:15	12/15/22 10:00
550-195013-12	SWFTS-MW18-EM40	Water	12/14/22 11:15	12/15/22 10:00
550-195013-13	SWFTS-MW17-EM40	Water	12/14/22 12:30	12/15/22 10:00
550-195013-14	SWFTS-MW17-EM40	Water	12/14/22 12:30	12/15/22 10:00
550-195013-15	SWFTS-MW16-EM40	Water	12/14/22 13:40	12/15/22 10:00
550-195013-16	SWFTS-MW16-EM40	Water	12/14/22 13:40	12/15/22 10:00

Detection Summary

Client: Tetra Tech, Inc.
Job ID: 550-195013-1
Project/Site: Tetra Tech M11 SWF Treatability Study

Client Sample ID: SWFTS-MW22-EM40 — Lab Sample ID: 550-195013-1

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Nitrate as N	6.0		0.050	0.014	mg/L	1		300.0	Total/NA
Sulfate	1500		100	21	mg/L	50		300.0	Total/NA
Chlorate	15000		2000	490	ug/L	100		300.1B	Total/NA
Perchlorate	8000		200	63	ug/L	200		314.0	Total/NA
Manganese	0.75		0.020	0.0083	mg/L	1		6010B	Total/NA
Total Organic Carbon	1.5	J	2.0	1.0	mg/L	4		SM 5310B	Total/NA

Client Sample ID: SWFTS-MW22-EM40 — Lab Sample ID: 550-195013-2

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Aluminum	0.29		0.20	0.080	mg/L	1		6010B	Dissolved
Barium	0.025		0.0050	0.00057	mg/L	1		6010B	Dissolved
Boron	2.4	B	0.050	0.0024	mg/L	1		6010B	Dissolved
Calcium	330	B	0.40	0.015	mg/L	1		6010B	Dissolved
Cobalt	0.0010	J	0.0050	0.00054	mg/L	1		6010B	Dissolved
Iron	0.028	J	0.40	0.019	mg/L	1		6010B	Dissolved
Magnesium	180		0.40	0.054	mg/L	1		6010B	Dissolved
Manganese	0.55		0.020	0.0083	mg/L	1		6010B	Dissolved
Molybdenum	0.048		0.010	0.00052	mg/L	1		6010B	Dissolved
Potassium	37	B	1.0	0.081	mg/L	1		6010B	Dissolved
Silicon	41		0.10	0.016	mg/L	1		6010B	Dissolved
Sodium	790	B	0.80	0.078	mg/L	2		6010B	Dissolved
Strontium	8.6	B	0.010	0.00032	mg/L	1		6010B	Dissolved
Titanium	0.00032	J	0.0050	0.00028	mg/L	1		6010B	Dissolved
Tungsten	0.0047	J	0.10	0.0021	mg/L	1		6010B	Dissolved
Vanadium	0.040		0.0050	0.00069	mg/L	1		6010B	Dissolved
Antimony	0.23	J	1.0	0.043	ug/L	1		6020B	Dissolved
Arsenic	66		1.0	0.25	ug/L	1		6020B	Dissolved
Selenium	45		0.50	0.074	ug/L	1		6020B	Dissolved
Thallium	0.18		0.10	0.013	ug/L	1		6020B	Dissolved

Client Sample ID: SWFTS-MW19-EM40 — Lab Sample ID: 550-195013-3

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Nitrate as N	3.5		0.050	0.014	mg/L	1		300.0	Total/NA
Sulfate	1100		100	21	mg/L	50		300.0	Total/NA
Chlorate	8900		1000	240	ug/L	50		300.1B	Total/NA
Perchlorate	5200		200	63	ug/L	200		314.0	Total/NA
Manganese	0.015	J	0.020	0.0083	mg/L	1		6010B	Total/NA
Total Organic Carbon	2.6		0.50	0.26	mg/L	1		SM 5310B	Total/NA

Client Sample ID: SWFTS-MW19-EM40 — Lab Sample ID: 550-195013-4

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Aluminum	0.20		0.20	0.080	mg/L	1		6010B	Dissolved
Barium	0.013		0.0050	0.00057	mg/L	1		6010B	Dissolved
Beryllium	0.00019	J	0.0010	0.00019	mg/L	1		6010B	Dissolved
Boron	1.4	B	0.050	0.0024	mg/L	1		6010B	Dissolved
Calcium	220	B	0.40	0.015	mg/L	1		6010B	Dissolved
Cobalt	0.0030	J	0.0050	0.00054	mg/L	1		6010B	Dissolved
Iron	0.019	J	0.40	0.019	mg/L	1		6010B	Dissolved
Magnesium	100		0.40	0.054	mg/L	1		6010B	Dissolved

This Detection Summary does not include radiochemical test results.

Eurofins Phoenix

Client Sample ID: SWFTS-MW19-EM40 (Continued) Lab Sample ID: 550-195013-4

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Molybdenum	0.090		0.010	0.00052	mg/L	1		6010B	Dissolved
Nickel	0.0051		0.0050	0.0028	mg/L	1		6010B	Dissolved
Potassium	25	B	1.0	0.081	mg/L	1		6010B	Dissolved
Silicon	38		0.10	0.016	mg/L	1		6010B	Dissolved
Sodium	570	^2 B	0.40	0.039	mg/L	1		6010B	Dissolved
Strontium	5.9	B	0.010	0.00032	mg/L	1		6010B	Dissolved
Tungsten	0.0033	J	0.10	0.0021	mg/L	1		6010B	Dissolved
Vanadium	0.036		0.0050	0.00069	mg/L	1		6010B	Dissolved
Antimony	0.15	J	1.0	0.043	ug/L	1		6020B	Dissolved
Arsenic	74		1.0	0.25	ug/L	1		6020B	Dissolved
Selenium	18		0.50	0.074	ug/L	1		6020B	Dissolved
Thallium	0.094	J	0.10	0.013	ug/L	1		6020B	Dissolved

Client Sample ID: SWFTS-MW19-EM40-FD Lab Sample ID: 550-195013-5

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Nitrate as N	3.5		0.050	0.014	mg/L	1		300.0	Total/NA
Sulfate	1100		100	21	mg/L	50		300.0	Total/NA
Chlorate	9100		1000	240	ug/L	50		300.1B	Total/NA
Perchlorate	5300		200	63	ug/L	200		314.0	Total/NA
Total Organic Carbon	2.7		0.50	0.26	mg/L	1		SM 5310B	Total/NA

Client Sample ID: SWFTS-MW19-EM40-FD Lab Sample ID: 550-195013-6

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Aluminum	0.21		0.20	0.080	mg/L	1		6010B	Dissolved
Barium	0.012		0.0050	0.00057	mg/L	1		6010B	Dissolved
Boron	1.4	B	0.050	0.0024	mg/L	1		6010B	Dissolved
Calcium	210	B	0.40	0.015	mg/L	1		6010B	Dissolved
Cobalt	0.0031	J	0.0050	0.00054	mg/L	1		6010B	Dissolved
Magnesium	96		0.40	0.054	mg/L	1		6010B	Dissolved
Molybdenum	0.089		0.010	0.00052	mg/L	1		6010B	Dissolved
Nickel	0.0066		0.0050	0.0028	mg/L	1		6010B	Dissolved
Potassium	24	B	1.0	0.081	mg/L	1		6010B	Dissolved
Silicon	36		0.10	0.016	mg/L	1		6010B	Dissolved
Sodium	550	^2 B	0.40	0.039	mg/L	1		6010B	Dissolved
Strontium	5.8	B	0.010	0.00032	mg/L	1		6010B	Dissolved
Tungsten	0.0025	J	0.10	0.0021	mg/L	1		6010B	Dissolved
Vanadium	0.035		0.0050	0.00069	mg/L	1		6010B	Dissolved
Antimony	0.12	J	1.0	0.043	ug/L	1		6020B	Dissolved
Arsenic	73		1.0	0.25	ug/L	1		6020B	Dissolved
Selenium	18		0.50	0.074	ug/L	1		6020B	Dissolved
Thallium	0.087	J	0.10	0.013	ug/L	1		6020B	Dissolved

Client Sample ID: SWFTS-EM40-FB2 Lab Sample ID: 550-195013-7

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Sulfate	7.5		2.0	0.43	mg/L	1		300.0	Total/NA

Client Sample ID: SWFTS-EM40-FB2 Lab Sample ID: 550-195013-8

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Boron	0.0063	J B	0.050	0.0024	mg/L	1		6010B	Dissolved

This Detection Summary does not include radiochemical test results.

Client Sample ID: SWFTS-EM40-FB2 (Continued) — Lab Sample ID: 550-195013-8

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Calcium	0.10	J B	0.40	0.015	mg/L	1		6010B	Dissolved
Potassium	0.11	J B	1.0	0.081	mg/L	1		6010B	Dissolved
Silicon	0.086	J	0.10	0.016	mg/L	1		6010B	Dissolved
Sodium	0.11	J B	0.40	0.039	mg/L	1		6010B	Dissolved
Strontium	0.0027	J B	0.010	0.00032	mg/L	1		6010B	Dissolved
Zinc	0.0067	J	0.040	0.0023	mg/L	1		6010B	Dissolved
Antimony	0.094	J	1.0	0.043	ug/L	1		6020B	Dissolved
Arsenic	0.26	J	1.0	0.25	ug/L	1		6020B	Dissolved

Client Sample ID: SWFTS-EM40-EB2 — Lab Sample ID: 550-195013-9

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Sulfate	7.9		2.0	0.43	mg/L	1		300.0	Total/NA

Client Sample ID: SWFTS-EM40-EB2 — Lab Sample ID: 550-195013-10

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Boron	0.0049	J B	0.050	0.0024	mg/L	1		6010B	Dissolved
Calcium	0.017	J B	0.40	0.015	mg/L	1		6010B	Dissolved
Silicon	0.065	J	0.10	0.016	mg/L	1		6010B	Dissolved
Silver	0.00051	J B	0.0080	0.00049	mg/L	1		6010B	Dissolved
Sodium	0.15	J ^2 B	0.40	0.039	mg/L	1		6010B	Dissolved
Strontium	0.00050	J B	0.010	0.00032	mg/L	1		6010B	Dissolved
Antimony	0.093	J	1.0	0.043	ug/L	1		6020B	Dissolved
Arsenic	0.41	J	1.0	0.25	ug/L	1		6020B	Dissolved
Selenium	0.40	J	0.50	0.074	ug/L	1		6020B	Dissolved

Client Sample ID: SWFTS-MW18-EM40 — Lab Sample ID: 550-195013-11

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Methane	20		5.0	0.63	ug/L	1		RSK-175	Total/NA
Nitrate as N	11	D	0.10	0.028	mg/L	2		300.0	Total/NA
Sulfate	1800		100	21	mg/L	50		300.0	Total/NA
Chlorate	13000		1000	240	ug/L	50		300.1B	Total/NA
Perchlorate	2400		200	63	ug/L	200		314.0	Total/NA
Manganese	1.1		0.020	0.0083	mg/L	1		6010B	Total/NA
Total Organic Carbon	2.2		0.50	0.26	mg/L	1		SM 5310B	Total/NA

Client Sample ID: SWFTS-MW18-EM40 — Lab Sample ID: 550-195013-12

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Aluminum	0.30		0.20	0.080	mg/L	1		6010B	Dissolved
Barium	0.034		0.0050	0.00057	mg/L	1		6010B	Dissolved
Boron	2.5	B	0.050	0.0024	mg/L	1		6010B	Dissolved
Calcium	330	B	0.40	0.015	mg/L	1		6010B	Dissolved
Cobalt	0.0023	J	0.0050	0.00054	mg/L	1		6010B	Dissolved
Iron	0.032	J	0.40	0.019	mg/L	1		6010B	Dissolved
Magnesium	180		0.40	0.054	mg/L	1		6010B	Dissolved
Manganese	0.81		0.020	0.0083	mg/L	1		6010B	Dissolved
Molybdenum	0.17		0.010	0.00052	mg/L	1		6010B	Dissolved
Potassium	45	B	1.0	0.081	mg/L	1		6010B	Dissolved
Silicon	33		0.10	0.016	mg/L	1		6010B	Dissolved
Sodium	590	B	0.40	0.039	mg/L	1		6010B	Dissolved

This Detection Summary does not include radiochemical test results.

Client Sample ID: SWFTS-MW18-EM40 (Continued) Lab Sample ID: 550-195013-12

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Strontium	8.4	B	0.010	0.00032	mg/L	1		6010B	Dissolved
Tungsten	0.0054	J	0.10	0.0021	mg/L	1		6010B	Dissolved
Vanadium	0.026		0.0050	0.00069	mg/L	1		6010B	Dissolved
Antimony	0.16	J	1.0	0.043	ug/L	1		6020B	Dissolved
Arsenic	60		1.0	0.25	ug/L	1		6020B	Dissolved
Selenium	47		0.50	0.074	ug/L	1		6020B	Dissolved
Thallium	0.055	J	0.10	0.013	ug/L	1		6020B	Dissolved

Client Sample ID: SWFTS-MW17-EM40 Lab Sample ID: 550-195013-13

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Nitrate as N	14	D	0.10	0.028	mg/L	2		300.0	Total/NA
Sulfate	1900		100	21	mg/L	50		300.0	Total/NA
Chlorate	19000		2000	490	ug/L	100		300.1B	Total/NA
Perchlorate	1800		100	31	ug/L	100		314.0	Total/NA
Total Organic Carbon	1.1		0.50	0.26	mg/L	1		SM 5310B	Total/NA

Client Sample ID: SWFTS-MW17-EM40 Lab Sample ID: 550-195013-14

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Aluminum	0.35		0.20	0.080	mg/L	1		6010B	Dissolved
Barium	0.019		0.0050	0.00057	mg/L	1		6010B	Dissolved
Boron	1.5	B	0.050	0.0024	mg/L	1		6010B	Dissolved
Calcium	480	B	0.40	0.015	mg/L	1		6010B	Dissolved
Chromium	0.015		0.0050	0.0011	mg/L	1		6010B	Dissolved
Copper	0.0023	J	0.0050	0.0012	mg/L	1		6010B	Dissolved
Iron	0.029	J	0.40	0.019	mg/L	1		6010B	Dissolved
Magnesium	140		0.40	0.054	mg/L	1		6010B	Dissolved
Molybdenum	0.17		0.010	0.00052	mg/L	1		6010B	Dissolved
Potassium	75	B	1.0	0.081	mg/L	1		6010B	Dissolved
Silicon	34		0.10	0.016	mg/L	1		6010B	Dissolved
Sodium	420	B	0.40	0.039	mg/L	1		6010B	Dissolved
Strontium	9.8	B	0.010	0.00032	mg/L	1		6010B	Dissolved
Tungsten	0.0052	J	0.10	0.0021	mg/L	1		6010B	Dissolved
Vanadium	0.023		0.0050	0.00069	mg/L	1		6010B	Dissolved
Antimony	0.27	J	1.0	0.043	ug/L	1		6020B	Dissolved
Arsenic	58		1.0	0.25	ug/L	1		6020B	Dissolved
Selenium	28		0.50	0.074	ug/L	1		6020B	Dissolved
Thallium	0.088	J	0.10	0.013	ug/L	1		6020B	Dissolved

Client Sample ID: SWFTS-MW16-EM40 Lab Sample ID: 550-195013-15

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Methane	5100		5.0	0.63	ug/L	1		RSK-175	Total/NA
Nitrate as N	0.088		0.050	0.014	mg/L	1		300.0	Total/NA
Sulfate	1600		100	21	mg/L	50		300.0	Total/NA
Perchlorate	82		20	6.3	ug/L	20		314.0	Total/NA
Manganese	1.5		0.020	0.0083	mg/L	1		6010B	Total/NA
Total Organic Carbon	2.4		2.0	1.0	mg/L	4		SM 5310B	Total/NA

This Detection Summary does not include radiochemical test results.

Detection Summary

Client: Tetra Tech, Inc.
Job ID: 550-195013-1
Project/Site: Tetra Tech M11 SWF Treatability Study

Client Sample ID: SWFTS-MW16-EM40
Lab Sample ID: 550-195013-16

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Aluminum	0.30		0.20	0.080	mg/L	1		6010B	Dissolved
Barium	0.046		0.0050	0.00057	mg/L	1		6010B	Dissolved
Boron	2.1	B	0.050	0.0024	mg/L	1		6010B	Dissolved
Calcium	350	B	0.40	0.015	mg/L	1		6010B	Dissolved
Iron	2.2		0.40	0.019	mg/L	1		6010B	Dissolved
Magnesium	180		0.40	0.054	mg/L	1		6010B	Dissolved
Manganese	1.4		0.020	0.0083	mg/L	1		6010B	Dissolved
Molybdenum	0.063		0.010	0.00052	mg/L	1		6010B	Dissolved
Potassium	59	B	1.0	0.081	mg/L	1		6010B	Dissolved
Silicon	34		0.10	0.016	mg/L	1		6010B	Dissolved
Sodium	590	B	0.40	0.039	mg/L	1		6010B	Dissolved
Strontium	9.0	B	0.010	0.00032	mg/L	1		6010B	Dissolved
Tungsten	0.0046	J	0.10	0.0021	mg/L	1		6010B	Dissolved
Vanadium	0.0020	J	0.0050	0.00069	mg/L	1		6010B	Dissolved
Antimony	0.18	J	1.0	0.043	ug/L	1		6020B	Dissolved
Arsenic	39		1.0	0.25	ug/L	1		6020B	Dissolved
Selenium	0.75		0.50	0.074	ug/L	1		6020B	Dissolved
Thallium	0.026	J	0.10	0.013	ug/L	1		6020B	Dissolved

This Detection Summary does not include radiochemical test results.

Client Sample ID: SWFTS-MW22-EM40 — Lab Sample ID: 550-195013-1

Date Collected: 12/14/22 08:35 — **Matrix: Water**
Date Received: 12/15/22 10:00

Method: RSK-175 - Dissolved Gases (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Methane	ND		5.0	0.63	ug/L			12/20/22 17:17	1

Method: MCAWW 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Nitrate as N	**6.0**		0.050	0.014	mg/L			12/15/22 16:45	1
Sulfate	**1500**		100	21	mg/L			12/15/22 22:23	50

Method: EPA 300.1B - Disinfection By-Products, (IC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chlorate	**15000**		2000	490	ug/L			12/21/22 01:33	100

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Dichloroacetic acid(Surr)	*107*		*90 - 115*		*12/21/22 01:33*	*100*

Method: EPA 314.0 - Perchlorate (IC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perchlorate	**8000**		200	63	ug/L			12/15/22 14:27	200

Method: SW846 6010B - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Manganese	**0.75**		0.020	0.0083	mg/L		12/15/22 14:30	12/16/22 15:20	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon (SM 5310B)	**1.5**	**J**	2.0	1.0	mg/L			12/16/22 23:52	4

Client Sample ID: SWFTS-MW22-EM40 — Lab Sample ID: 550-195013-2

Date Collected: 12/14/22 08:35 — **Matrix: Water**
Date Received: 12/15/22 10:00

Method: SW846 6010B - Metals (ICP) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	**0.29**		0.20	0.080	mg/L		12/15/22 14:30	12/16/22 14:30	1
Barium	**0.025**		0.0050	0.00057	mg/L		12/15/22 14:30	12/16/22 14:30	1
Beryllium	ND		0.0010	0.00019	mg/L		12/15/22 14:30	12/16/22 14:30	1
Boron	**2.4**	**B**	0.050	0.0024	mg/L		12/15/22 14:30	12/16/22 14:30	1
Cadmium	ND		0.0010	0.00072	mg/L		12/15/22 14:30	12/16/22 14:30	1
Calcium	**330**	**B**	0.40	0.015	mg/L		12/15/22 14:30	12/16/22 14:30	1
Chromium	ND		0.0050	0.0011	mg/L		12/15/22 14:30	12/16/22 14:30	1
Cobalt	**0.0010**	**J**	0.0050	0.00054	mg/L		12/15/22 14:30	12/16/22 14:30	1
Copper	ND		0.0050	0.0012	mg/L		12/15/22 14:30	12/16/22 14:30	1
Iron	**0.028**	**J**	0.40	0.019	mg/L		12/15/22 14:30	12/16/22 14:30	1
Lead	ND		0.010	0.0025	mg/L		12/15/22 14:30	12/16/22 14:30	1
Magnesium	**180**		0.40	0.054	mg/L		12/15/22 14:30	12/16/22 14:30	1
Manganese	**0.55**		0.020	0.0083	mg/L		12/15/22 14:30	12/16/22 14:30	1
Molybdenum	**0.048**		0.010	0.00052	mg/L		12/15/22 14:30	12/16/22 14:30	1
Nickel	ND		0.0050	0.0028	mg/L		12/15/22 14:30	12/16/22 14:30	1
Phosphorus	ND	cn	0.40	0.011	mg/L		12/15/22 14:30	12/16/22 14:30	1
Potassium	**37**	**B**	1.0	0.081	mg/L		12/15/22 14:30	12/16/22 14:30	1
Silicon	**41**		0.10	0.016	mg/L		12/15/22 14:30	12/16/22 14:30	1
Silver	ND		0.0080	0.00049	mg/L		12/15/22 14:30	12/16/22 14:30	1

Client Sample ID: SWFTS-MW22-EM40 — Lab Sample ID: 550-195013-2

Date Collected: 12/14/22 08:35 — **Matrix: Water**
Date Received: 12/15/22 10:00

Method: SW846 6010B - Metals (ICP) - Dissolved (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sodium	790	B	0.80	0.078	mg/L		12/15/22 14:30	12/19/22 15:43	2
Strontium	8.6	B	0.010	0.00032	mg/L		12/15/22 14:30	12/16/22 14:30	1
Tin	ND		0.010	0.0034	mg/L		12/15/22 14:30	12/16/22 14:30	1
Titanium	0.00032	J	0.0050	0.00028	mg/L		12/15/22 14:30	12/16/22 14:30	1
Tungsten	0.0047	J	0.10	0.0021	mg/L		12/15/22 14:30	12/16/22 14:30	1
Vanadium	0.040		0.0050	0.00069	mg/L		12/15/22 14:30	12/16/22 14:30	1
Zinc	ND		0.040	0.0023	mg/L		12/15/22 14:30	12/16/22 14:30	1

Method: SW846 6020B - Metals (ICP/MS) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	0.23	J	1.0	0.043	ug/L		12/15/22 15:50	12/22/22 15:53	1
Arsenic	66		1.0	0.25	ug/L		12/15/22 15:50	12/27/22 13:28	1
Selenium	45		0.50	0.074	ug/L		12/15/22 15:50	12/27/22 13:28	1
Thallium	0.18		0.10	0.013	ug/L		12/15/22 15:50	12/22/22 15:53	1

Client Sample ID: SWFTS-MW19-EM40 — Lab Sample ID: 550-195013-3

Date Collected: 12/14/22 09:30 — **Matrix: Water**
Date Received: 12/15/22 10:00

Method: RSK-175 - Dissolved Gases (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Methane	ND		5.0	0.63	ug/L			12/20/22 17:30	1

Method: MCAWW 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Nitrate as N	3.5		0.050	0.014	mg/L			12/15/22 17:03	1
Sulfate	1100		100	21	mg/L			12/16/22 15:26	50

Method: EPA 300.1B - Disinfection By-Products, (IC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chlorate	8900		1000	240	ug/L			12/21/22 02:03	50

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Dichloroacetic acid(Surr)	*111*		*90 - 115*		*12/21/22 02:03*	*50*

Method: EPA 314.0 - Perchlorate (IC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perchlorate	5200		200	63	ug/L			12/16/22 12:00	200

Method: SW846 6010B - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Manganese	0.015	J	0.020	0.0083	mg/L		12/15/22 14:30	12/16/22 14:27	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon (SM 5310B)	2.6		0.50	0.26	mg/L			12/17/22 00:06	1

Client Sample ID: SWFTS-MW19-EM40 — Lab Sample ID: 550-195013-4

Date Collected: 12/14/22 09:30 — **Matrix: Water**
Date Received: 12/15/22 10:00

Method: SW846 6010B - Metals (ICP) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	0.20		0.20	0.080	mg/L		12/15/22 14:30	12/16/22 14:32	1
Barium	0.013		0.0050	0.00057	mg/L		12/15/22 14:30	12/16/22 14:32	1
Beryllium	0.00019	J	0.0010	0.00019	mg/L		12/15/22 14:30	12/16/22 14:32	1
Boron	1.4	B	0.050	0.0024	mg/L		12/15/22 14:30	12/16/22 14:32	1
Cadmium	ND		0.0010	0.00072	mg/L		12/15/22 14:30	12/16/22 14:32	1
Calcium	220	B	0.40	0.015	mg/L		12/15/22 14:30	12/16/22 14:32	1
Chromium	ND		0.0050	0.0011	mg/L		12/15/22 14:30	12/16/22 14:32	1
Cobalt	0.0030	J	0.0050	0.00054	mg/L		12/15/22 14:30	12/16/22 14:32	1
Copper	ND		0.0050	0.0012	mg/L		12/15/22 14:30	12/16/22 14:32	1
Iron	0.019	J	0.40	0.019	mg/L		12/15/22 14:30	12/16/22 14:32	1
Lead	ND		0.010	0.0025	mg/L		12/15/22 14:30	12/16/22 14:32	1
Magnesium	100		0.40	0.054	mg/L		12/15/22 14:30	12/16/22 14:32	1
Manganese	ND		0.020	0.0083	mg/L		12/15/22 14:30	12/16/22 14:32	1
Molybdenum	0.090		0.010	0.00052	mg/L		12/15/22 14:30	12/16/22 14:32	1
Nickel	0.0051		0.0050	0.0028	mg/L		12/15/22 14:30	12/16/22 14:32	1
Phosphorus	ND	cn	0.40	0.011	mg/L		12/15/22 14:30	12/16/22 14:32	1
Potassium	25	B	1.0	0.081	mg/L		12/15/22 14:30	12/16/22 14:32	1
Silicon	38		0.10	0.016	mg/L		12/15/22 14:30	12/16/22 14:32	1
Silver	ND		0.0080	0.00049	mg/L		12/15/22 14:30	12/16/22 14:32	1
Sodium	570	^2 B	0.40	0.039	mg/L		12/15/22 14:30	12/16/22 14:32	1
Strontium	5.9	B	0.010	0.00032	mg/L		12/15/22 14:30	12/16/22 14:32	1
Tin	ND		0.010	0.0034	mg/L		12/15/22 14:30	12/16/22 14:32	1
Titanium	ND		0.0050	0.00028	mg/L		12/15/22 14:30	12/16/22 14:32	1
Tungsten	0.0033	J	0.10	0.0021	mg/L		12/15/22 14:30	12/16/22 14:32	1
Vanadium	0.036		0.0050	0.00069	mg/L		12/15/22 14:30	12/16/22 14:32	1
Zinc	ND		0.040	0.0023	mg/L		12/15/22 14:30	12/16/22 14:32	1

Method: SW846 6020B - Metals (ICP/MS) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	0.15	J	1.0	0.043	ug/L		12/15/22 15:50	12/22/22 15:56	1
Arsenic	74		1.0	0.25	ug/L		12/15/22 15:50	12/27/22 13:30	1
Selenium	18		0.50	0.074	ug/L		12/15/22 15:50	12/27/22 13:30	1
Thallium	0.094	J	0.10	0.013	ug/L		12/15/22 15:50	12/22/22 15:56	1

Client Sample ID: SWFTS-MW19-EM40-FD — Lab Sample ID: 550-195013-5

Date Collected: 12/14/22 09:30 — **Matrix: Water**
Date Received: 12/15/22 10:00

Method: RSK-175 - Dissolved Gases (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Methane	ND		5.0	0.63	ug/L			12/20/22 17:44	1

Method: MCAWW 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Nitrate as N	3.5		0.050	0.014	mg/L			12/15/22 17:22	1
Sulfate	1100		100	21	mg/L			12/15/22 18:40	50

Method: EPA 300.1B - Disinfection By-Products, (IC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chlorate	9100		1000	240	ug/L			12/21/22 02:32	50

Client Sample ID: SWFTS-MW19-EM40-FD
Lab Sample ID: 550-195013-5
Date Collected: 12/14/22 09:30
Matrix: Water
Date Received: 12/15/22 10:00

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Dichloroacetic acid(Surr)	*109*		*90 - 115*		*12/21/22 02:32*	*50*

Method: EPA 314.0 - Perchlorate (IC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perchlorate	**5300**		200	63	ug/L			12/16/22 13:08	200

Method: SW846 6010B - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Manganese	ND		0.020	0.0083	mg/L		12/15/22 14:30	12/16/22 14:24	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon (SM 5310B)	**2.7**		0.50	0.26	mg/L			12/17/22 00:44	1

Client Sample ID: SWFTS-MW19-EM40-FD
Lab Sample ID: 550-195013-6
Date Collected: 12/14/22 09:30
Matrix: Water
Date Received: 12/15/22 10:00

Method: SW846 6010B - Metals (ICP) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	**0.21**		0.20	0.080	mg/L		12/15/22 14:30	12/16/22 14:35	1
Barium	**0.012**		0.0050	0.00057	mg/L		12/15/22 14:30	12/16/22 14:35	1
Beryllium	ND		0.0010	0.00019	mg/L		12/15/22 14:30	12/16/22 14:35	1
Boron	**1.4**	**B**	0.050	0.0024	mg/L		12/15/22 14:30	12/16/22 14:35	1
Cadmium	ND		0.0010	0.00072	mg/L		12/15/22 14:30	12/16/22 14:35	1
Calcium	**210**	**B**	0.40	0.015	mg/L		12/15/22 14:30	12/16/22 14:35	1
Chromium	ND		0.0050	0.0011	mg/L		12/15/22 14:30	12/16/22 14:35	1
Cobalt	**0.0031**	**J**	0.0050	0.00054	mg/L		12/15/22 14:30	12/16/22 14:35	1
Copper	ND		0.0050	0.0012	mg/L		12/15/22 14:30	12/16/22 14:35	1
Iron	ND		0.40	0.019	mg/L		12/15/22 14:30	12/16/22 14:35	1
Lead	ND		0.010	0.0025	mg/L		12/15/22 14:30	12/16/22 14:35	1
Magnesium	**96**		0.40	0.054	mg/L		12/15/22 14:30	12/16/22 14:35	1
Manganese	ND		0.020	0.0083	mg/L		12/15/22 14:30	12/16/22 14:35	1
Molybdenum	**0.089**		0.010	0.00052	mg/L		12/15/22 14:30	12/16/22 14:35	1
Nickel	**0.0066**		0.0050	0.0028	mg/L		12/15/22 14:30	12/16/22 14:35	1
Phosphorus	ND	cn	0.40	0.011	mg/L		12/15/22 14:30	12/16/22 14:35	1
Potassium	**24**	**B**	1.0	0.081	mg/L		12/15/22 14:30	12/16/22 14:35	1
Silicon	**36**		0.10	0.016	mg/L		12/15/22 14:30	12/16/22 14:35	1
Silver	ND		0.0080	0.00049	mg/L		12/15/22 14:30	12/16/22 14:35	1
Sodium	**550**	**^2 B**	0.40	0.039	mg/L		12/15/22 14:30	12/16/22 14:35	1
Strontium	**5.8**	**B**	0.010	0.00032	mg/L		12/15/22 14:30	12/16/22 14:35	1
Tin	ND		0.010	0.0034	mg/L		12/15/22 14:30	12/16/22 14:35	1
Titanium	ND		0.0050	0.00028	mg/L		12/15/22 14:30	12/16/22 14:35	1
Tungsten	**0.0025**	**J**	0.10	0.0021	mg/L		12/15/22 14:30	12/16/22 14:35	1
Vanadium	**0.035**		0.0050	0.00069	mg/L		12/15/22 14:30	12/16/22 14:35	1
Zinc	ND		0.040	0.0023	mg/L		12/15/22 14:30	12/16/22 14:35	1

Method: SW846 6020B - Metals (ICP/MS) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	**0.12**	**J**	1.0	0.043	ug/L		12/15/22 15:50	12/22/22 15:58	1
Arsenic	**73**		1.0	0.25	ug/L		12/15/22 15:50	12/27/22 13:32	1

Client Sample ID: SWFTS-MW19-EM40-FD
Lab Sample ID: 550-195013-6
Date Collected: 12/14/22 09:30 **Matrix: Water**
Date Received: 12/15/22 10:00

Method: SW846 6020B - Metals (ICP/MS) - Dissolved (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Selenium	**18**		0.50	0.074	ug/L		12/15/22 15:50	12/27/22 13:32	1
Thallium	**0.087**	**J**	0.10	0.013	ug/L		12/15/22 15:50	12/22/22 15:58	1

Client Sample ID: SWFTS-EM40-FB2
Lab Sample ID: 550-195013-7
Date Collected: 12/14/22 10:00 **Matrix: Water**
Date Received: 12/15/22 10:00

Method: RSK-175 - Dissolved Gases (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Methane	ND		5.0	0.63	ug/L			12/20/22 17:58	1

Method: MCAWW 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Nitrate as N	ND		0.050	0.014	mg/L			12/15/22 16:20	1
Sulfate	**7.5**		2.0	0.43	mg/L			12/15/22 16:20	1

Method: EPA 300.1B - Disinfection By-Products, (IC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chlorate	ND		20	4.9	ug/L			12/21/22 03:02	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Dichloroacetic acid(Surr)	*108*		*90 - 115*		*12/21/22 03:02*	*1*

Method: EPA 314.0 - Perchlorate (IC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perchlorate	ND		1.0	0.31	ug/L			12/15/22 15:34	1

Method: SW846 6010B - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Manganese	ND		0.020	0.0083	mg/L		12/15/22 14:30	12/16/22 14:38	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon (SM 5310B)	ND		0.50	0.26	mg/L			12/17/22 00:59	1

Client Sample ID: SWFTS-EM40-FB2
Lab Sample ID: 550-195013-8
Date Collected: 12/14/22 10:00 **Matrix: Water**
Date Received: 12/15/22 10:00

Method: SW846 6010B - Metals (ICP) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	ND		0.20	0.080	mg/L		12/15/22 14:30	12/16/22 14:41	1
Barium	ND		0.0050	0.00057	mg/L		12/15/22 14:30	12/16/22 14:41	1
Beryllium	ND		0.0010	0.00019	mg/L		12/15/22 14:30	12/16/22 14:41	1
Boron	**0.0063**	**J B**	0.050	0.0024	mg/L		12/15/22 14:30	12/16/22 14:41	1
Cadmium	ND		0.0010	0.00072	mg/L		12/15/22 14:30	12/16/22 14:41	1
Calcium	**0.10**	**J B**	0.40	0.015	mg/L		12/15/22 14:30	12/16/22 14:41	1
Chromium	ND		0.0050	0.0011	mg/L		12/15/22 14:30	12/16/22 14:41	1
Cobalt	ND		0.0050	0.00054	mg/L		12/15/22 14:30	12/16/22 14:41	1
Copper	ND		0.0050	0.0012	mg/L		12/15/22 14:30	12/16/22 14:41	1
Iron	ND		0.40	0.019	mg/L		12/15/22 14:30	12/16/22 14:41	1
Lead	ND		0.010	0.0025	mg/L		12/15/22 14:30	12/16/22 14:41	1

Client Sample ID: SWFTS-EM40-FB2 — Lab Sample ID: 550-195013-8

Date Collected: 12/14/22 10:00 — **Matrix: Water**
Date Received: 12/15/22 10:00

Method: SW846 6010B - Metals (ICP) - Dissolved (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Magnesium	ND		0.40	0.054	mg/L		12/15/22 14:30	12/16/22 14:41	1
Manganese	ND		0.020	0.0083	mg/L		12/15/22 14:30	12/16/22 14:41	1
Molybdenum	ND		0.010	0.00052	mg/L		12/15/22 14:30	12/16/22 14:41	1
Nickel	ND		0.0050	0.0028	mg/L		12/15/22 14:30	12/16/22 14:41	1
Phosphorus	ND	cn	0.40	0.011	mg/L		12/15/22 14:30	12/16/22 14:41	1
Potassium	**0.11**	**J B**	1.0	0.081	mg/L		12/15/22 14:30	12/16/22 14:41	1
Silicon	**0.086**	**J**	0.10	0.016	mg/L		12/15/22 14:30	12/16/22 14:41	1
Silver	ND		0.0080	0.00049	mg/L		12/15/22 14:30	12/16/22 14:41	1
Sodium	**0.11**	**J B**	0.40	0.039	mg/L		12/15/22 14:30	12/19/22 15:46	1
Strontium	**0.0027**	**J B**	0.010	0.00032	mg/L		12/15/22 14:30	12/16/22 14:41	1
Tin	ND		0.010	0.0034	mg/L		12/15/22 14:30	12/16/22 14:41	1
Titanium	ND		0.0050	0.00028	mg/L		12/15/22 14:30	12/16/22 14:41	1
Tungsten	ND		0.10	0.0021	mg/L		12/15/22 14:30	12/16/22 14:41	1
Vanadium	ND		0.0050	0.00069	mg/L		12/15/22 14:30	12/16/22 14:41	1
Zinc	**0.0067**	**J**	0.040	0.0023	mg/L		12/15/22 14:30	12/16/22 14:41	1

Method: SW846 6020B - Metals (ICP/MS) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	**0.094**	**J**	1.0	0.043	ug/L		12/15/22 15:50	12/22/22 16:00	1
Arsenic	**0.26**	**J**	1.0	0.25	ug/L		12/15/22 15:50	12/27/22 13:34	1
Selenium	ND		0.50	0.074	ug/L		12/15/22 15:50	12/27/22 13:34	1
Thallium	ND		0.10	0.013	ug/L		12/15/22 15:50	12/22/22 16:00	1

Client Sample ID: SWFTS-EM40-EB2 — Lab Sample ID: 550-195013-9

Date Collected: 12/14/22 10:15 — **Matrix: Water**
Date Received: 12/15/22 10:00

Method: RSK-175 - Dissolved Gases (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Methane	ND		5.0	0.63	ug/L			12/20/22 18:25	1

Method: MCAWW 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Nitrate as N	ND		0.050	0.014	mg/L			12/15/22 16:48	1
Sulfate	**7.9**		2.0	0.43	mg/L			12/15/22 16:48	1

Method: EPA 300.1B - Disinfection By-Products, (IC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chlorate	ND		20	4.9	ug/L			12/21/22 03:31	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Dichloroacetic acid(Surr)	*108*		*90 - 115*		*12/21/22 03:31*	*1*

Method: EPA 314.0 - Perchlorate (IC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perchlorate	ND		1.0	0.31	ug/L			12/15/22 14:08	1

Method: SW846 6010B - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Manganese	ND		0.020	0.0083	mg/L		12/15/22 14:30	12/16/22 14:44	1

Client Sample ID: SWFTS-EM40-EB2 — Lab Sample ID: 550-195013-9

Date Collected: 12/14/22 10:15 — **Matrix: Water**
Date Received: 12/15/22 10:00

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon (SM 5310B)	ND		0.50	0.26	mg/L			12/17/22 01:10	1

Client Sample ID: SWFTS-EM40-EB2 — Lab Sample ID: 550-195013-10

Date Collected: 12/14/22 10:15 — **Matrix: Water**
Date Received: 12/15/22 10:00

Method: SW846 6010B - Metals (ICP) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	ND		0.20	0.080	mg/L		12/15/22 14:30	12/16/22 14:46	1
Barium	ND		0.0050	0.00057	mg/L		12/15/22 14:30	12/16/22 14:46	1
Beryllium	ND		0.0010	0.00019	mg/L		12/15/22 14:30	12/16/22 14:46	1
Boron	**0.0049**	**J B**	0.050	0.0024	mg/L		12/15/22 14:30	12/16/22 14:46	1
Cadmium	ND		0.0010	0.00072	mg/L		12/15/22 14:30	12/16/22 14:46	1
Calcium	**0.017**	**J B**	0.40	0.015	mg/L		12/15/22 14:30	12/16/22 14:46	1
Chromium	ND		0.0050	0.0011	mg/L		12/15/22 14:30	12/16/22 14:46	1
Cobalt	ND		0.0050	0.00054	mg/L		12/15/22 14:30	12/16/22 14:46	1
Copper	ND		0.0050	0.0012	mg/L		12/15/22 14:30	12/16/22 14:46	1
Iron	ND		0.40	0.019	mg/L		12/15/22 14:30	12/16/22 14:46	1
Lead	ND		0.010	0.0025	mg/L		12/15/22 14:30	12/16/22 14:46	1
Magnesium	ND		0.40	0.054	mg/L		12/15/22 14:30	12/16/22 14:46	1
Manganese	ND		0.020	0.0083	mg/L		12/15/22 14:30	12/16/22 14:46	1
Molybdenum	ND		0.010	0.00052	mg/L		12/15/22 14:30	12/16/22 14:46	1
Nickel	ND		0.0050	0.0028	mg/L		12/15/22 14:30	12/16/22 14:46	1
Phosphorus	ND	cn	0.40	0.011	mg/L		12/15/22 14:30	12/16/22 14:46	1
Potassium	ND		1.0	0.081	mg/L		12/15/22 14:30	12/16/22 14:46	1
Silicon	**0.065**	**J**	0.10	0.016	mg/L		12/15/22 14:30	12/16/22 14:46	1
Silver	**0.00051**	**J B**	0.0080	0.00049	mg/L		12/15/22 14:30	12/16/22 14:46	1
Sodium	**0.15**	**J ^2 B**	0.40	0.039	mg/L		12/15/22 14:30	12/16/22 14:46	1
Strontium	**0.00050**	**J B**	0.010	0.00032	mg/L		12/15/22 14:30	12/16/22 14:46	1
Tin	ND		0.010	0.0034	mg/L		12/15/22 14:30	12/16/22 14:46	1
Titanium	ND		0.0050	0.00028	mg/L		12/15/22 14:30	12/16/22 14:46	1
Tungsten	ND		0.10	0.0021	mg/L		12/15/22 14:30	12/16/22 14:46	1
Vanadium	ND		0.0050	0.00069	mg/L		12/15/22 14:30	12/16/22 14:46	1
Zinc	ND		0.040	0.0023	mg/L		12/15/22 14:30	12/16/22 14:46	1

Method: SW846 6020B - Metals (ICP/MS) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	**0.093**	**J**	1.0	0.043	ug/L		12/15/22 15:50	12/22/22 16:02	1
Arsenic	**0.41**	**J**	1.0	0.25	ug/L		12/15/22 15:50	12/27/22 13:36	1
Selenium	**0.40**	**J**	0.50	0.074	ug/L		12/15/22 15:50	12/27/22 13:36	1
Thallium	ND		0.10	0.013	ug/L		12/15/22 15:50	12/22/22 16:02	1

Client Sample ID: SWFTS-MW18-EM40 — Lab Sample ID: 550-195013-11

Date Collected: 12/14/22 11:15 — **Matrix: Water**
Date Received: 12/15/22 10:00

Method: RSK-175 - Dissolved Gases (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Methane	**20**		5.0	0.63	ug/L			12/20/22 18:39	1

Client Sample ID: SWFTS-MW18-EM40 — Lab Sample ID: 550-195013-11

Date Collected: 12/14/22 11:15 — **Matrix: Water**
Date Received: 12/15/22 10:00

Method: MCAWW 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Nitrate as N	11	D	0.10	0.028	mg/L			12/15/22 17:40	2
Sulfate	1800		100	21	mg/L			12/15/22 19:08	50

Method: EPA 300.1B - Disinfection By-Products, (IC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chlorate	13000		1000	240	ug/L			12/21/22 09:25	50

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Dichloroacetic acid(Surr)	*109*		*90 - 115*		*12/21/22 09:25*	*50*

Method: EPA 314.0 - Perchlorate (IC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perchlorate	2400		200	63	ug/L			12/15/22 14:31	200

Method: SW846 6010B - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Manganese	1.1		0.020	0.0083	mg/L		12/15/22 14:30	12/16/22 14:49	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon (SM 5310B)	2.2		0.50	0.26	mg/L			12/17/22 01:23	1

Client Sample ID: SWFTS-MW18-EM40 — Lab Sample ID: 550-195013-12

Date Collected: 12/14/22 11:15 — **Matrix: Water**
Date Received: 12/15/22 10:00

Method: SW846 6010B - Metals (ICP) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	0.30		0.20	0.080	mg/L		12/15/22 14:30	12/16/22 14:58	1
Barium	0.034		0.0050	0.00057	mg/L		12/15/22 14:30	12/16/22 14:58	1
Beryllium	ND		0.0010	0.00019	mg/L		12/15/22 14:30	12/16/22 14:58	1
Boron	2.5	B	0.050	0.0024	mg/L		12/15/22 14:30	12/16/22 14:58	1
Cadmium	ND		0.0010	0.00072	mg/L		12/15/22 14:30	12/16/22 14:58	1
Calcium	330	B	0.40	0.015	mg/L		12/15/22 14:30	12/16/22 14:58	1
Chromium	ND		0.0050	0.0011	mg/L		12/15/22 14:30	12/16/22 14:58	1
Cobalt	0.0023	J	0.0050	0.00054	mg/L		12/15/22 14:30	12/16/22 14:58	1
Copper	ND		0.0050	0.0012	mg/L		12/15/22 14:30	12/16/22 14:58	1
Iron	0.032	J	0.40	0.019	mg/L		12/15/22 14:30	12/16/22 14:58	1
Lead	ND		0.010	0.0025	mg/L		12/15/22 14:30	12/16/22 14:58	1
Magnesium	180		0.40	0.054	mg/L		12/15/22 14:30	12/16/22 14:58	1
Manganese	0.81		0.020	0.0083	mg/L		12/15/22 14:30	12/16/22 14:58	1
Molybdenum	0.17		0.010	0.00052	mg/L		12/15/22 14:30	12/16/22 14:58	1
Nickel	ND		0.0050	0.0028	mg/L		12/15/22 14:30	12/16/22 14:58	1
Phosphorus	ND	cn	0.40	0.011	mg/L		12/15/22 14:30	12/16/22 14:58	1
Potassium	45	B	1.0	0.081	mg/L		12/15/22 14:30	12/16/22 14:58	1
Silicon	33		0.10	0.016	mg/L		12/15/22 14:30	12/16/22 14:58	1
Silver	ND		0.0080	0.00049	mg/L		12/15/22 14:30	12/16/22 14:58	1
Sodium	590	B	0.40	0.039	mg/L		12/15/22 14:30	12/16/22 14:58	1
Strontium	8.4	B	0.010	0.00032	mg/L		12/15/22 14:30	12/16/22 14:58	1
Tin	ND		0.010	0.0034	mg/L		12/15/22 14:30	12/16/22 14:58	1
Titanium	ND		0.0050	0.00028	mg/L		12/15/22 14:30	12/16/22 14:58	1

Client Sample ID: SWFTS-MW18-EM40 — Lab Sample ID: 550-195013-12

Date Collected: 12/14/22 11:15 — **Matrix: Water**
Date Received: 12/15/22 10:00

Method: SW846 6010B - Metals (ICP) - Dissolved (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Tungsten	0.0054	J	0.10	0.0021	mg/L		12/15/22 14:30	12/16/22 14:58	1
Vanadium	0.026		0.0050	0.00069	mg/L		12/15/22 14:30	12/16/22 14:58	1
Zinc	ND		0.040	0.0023	mg/L		12/15/22 14:30	12/16/22 14:58	1

Method: SW846 6020B - Metals (ICP/MS) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	0.16	J	1.0	0.043	ug/L		12/15/22 15:50	12/22/22 16:04	1
Arsenic	60		1.0	0.25	ug/L		12/15/22 15:50	12/27/22 13:38	1
Selenium	47		0.50	0.074	ug/L		12/15/22 15:50	12/27/22 13:38	1
Thallium	0.055	J	0.10	0.013	ug/L		12/15/22 15:50	12/22/22 16:04	1

Client Sample ID: SWFTS-MW17-EM40 — Lab Sample ID: 550-195013-13

Date Collected: 12/14/22 12:30 — **Matrix: Water**
Date Received: 12/15/22 10:00

Method: RSK-175 - Dissolved Gases (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Methane	ND		5.0	0.63	ug/L			12/20/22 18:52	1

Method: MCAWW 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Nitrate as N	14	D	0.10	0.028	mg/L			12/15/22 17:58	2
Sulfate	1900		100	21	mg/L			12/16/22 15:44	50

Method: EPA 300.1B - Disinfection By-Products, (IC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chlorate	19000		2000	490	ug/L			12/21/22 09:54	100

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Dichloroacetic acid(Surr)	*109*		*90 - 115*		*12/21/22 09:54*	*100*

Method: EPA 314.0 - Perchlorate (IC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perchlorate	1800		100	31	ug/L			12/20/22 12:04	100

Method: SW846 6010B - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Manganese	ND		0.020	0.0083	mg/L		12/15/22 14:30	12/16/22 15:01	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon (SM 5310B)	1.1		0.50	0.26	mg/L			12/17/22 01:35	1

Client Sample ID: SWFTS-MW17-EM40 — Lab Sample ID: 550-195013-14

Date Collected: 12/14/22 12:30 — **Matrix: Water**
Date Received: 12/15/22 10:00

Method: SW846 6010B - Metals (ICP) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	0.35		0.20	0.080	mg/L		12/15/22 14:30	12/16/22 15:03	1
Barium	0.019		0.0050	0.00057	mg/L		12/15/22 14:30	12/16/22 15:03	1
Beryllium	ND		0.0010	0.00019	mg/L		12/15/22 14:30	12/16/22 15:03	1

Client Sample ID: SWFTS-MW17-EM40 — Lab Sample ID: 550-195013-14

Date Collected: 12/14/22 12:30 — **Matrix: Water**
Date Received: 12/15/22 10:00

Method: SW846 6010B - Metals (ICP) - Dissolved (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	1.5	B	0.050	0.0024	mg/L		12/15/22 14:30	12/16/22 15:03	1
Cadmium	ND		0.0010	0.00072	mg/L		12/15/22 14:30	12/16/22 15:03	1
Calcium	480	B	0.40	0.015	mg/L		12/15/22 14:30	12/16/22 15:03	1
Chromium	0.015		0.0050	0.0011	mg/L		12/15/22 14:30	12/16/22 15:03	1
Cobalt	ND		0.0050	0.00054	mg/L		12/15/22 14:30	12/16/22 15:03	1
Copper	0.0023	J	0.0050	0.0012	mg/L		12/15/22 14:30	12/16/22 15:03	1
Iron	0.029	J	0.40	0.019	mg/L		12/15/22 14:30	12/16/22 15:03	1
Lead	ND		0.010	0.0025	mg/L		12/15/22 14:30	12/16/22 15:03	1
Magnesium	140		0.40	0.054	mg/L		12/15/22 14:30	12/16/22 15:03	1
Manganese	ND		0.020	0.0083	mg/L		12/15/22 14:30	12/16/22 15:03	1
Molybdenum	0.17		0.010	0.00052	mg/L		12/15/22 14:30	12/16/22 15:03	1
Nickel	ND		0.0050	0.0028	mg/L		12/15/22 14:30	12/16/22 15:03	1
Phosphorus	ND	cn	0.40	0.011	mg/L		12/15/22 14:30	12/16/22 15:03	1
Potassium	75	B	1.0	0.081	mg/L		12/15/22 14:30	12/16/22 15:03	1
Silicon	34		0.10	0.016	mg/L		12/15/22 14:30	12/16/22 15:03	1
Silver	ND		0.0080	0.00049	mg/L		12/15/22 14:30	12/16/22 15:03	1
Sodium	420	B	0.40	0.039	mg/L		12/15/22 14:30	12/16/22 15:03	1
Strontium	9.8	B	0.010	0.00032	mg/L		12/15/22 14:30	12/16/22 15:03	1
Tin	ND		0.010	0.0034	mg/L		12/15/22 14:30	12/16/22 15:03	1
Titanium	ND		0.0050	0.00028	mg/L		12/15/22 14:30	12/16/22 15:03	1
Tungsten	0.0052	J	0.10	0.0021	mg/L		12/15/22 14:30	12/16/22 15:03	1
Vanadium	0.023		0.0050	0.00069	mg/L		12/15/22 14:30	12/16/22 15:03	1
Zinc	ND		0.040	0.0023	mg/L		12/15/22 14:30	12/16/22 15:03	1

Method: SW846 6020B - Metals (ICP/MS) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	0.27	J	1.0	0.043	ug/L		12/15/22 15:50	12/22/22 16:10	1
Arsenic	58		1.0	0.25	ug/L		12/15/22 15:50	12/27/22 13:44	1
Selenium	28		0.50	0.074	ug/L		12/15/22 15:50	12/27/22 13:44	1
Thallium	0.088	J	0.10	0.013	ug/L		12/15/22 15:50	12/22/22 16:10	1

Client Sample ID: SWFTS-MW16-EM40 — Lab Sample ID: 550-195013-15

Date Collected: 12/14/22 13:40 — **Matrix: Water**
Date Received: 12/15/22 10:00

Method: RSK-175 - Dissolved Gases (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Methane	5100		5.0	0.63	ug/L			12/20/22 19:06	1

Method: MCAWW 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Nitrate as N	0.088		0.050	0.014	mg/L			12/15/22 18:17	1
Sulfate	1600		100	21	mg/L			12/16/22 16:03	50

Method: EPA 300.1B - Disinfection By-Products, (IC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chlorate	ND	D	40	9.8	ug/L			12/21/22 10:24	2

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Dichloroacetic acid(Surr)	*111*		*90 - 115*		*12/21/22 10:24*	*2*

Client Sample ID: SWFTS-MW16-EM40 — Lab Sample ID: 550-195013-15

Date Collected: 12/14/22 13:40 — **Matrix: Water**
Date Received: 12/15/22 10:00

Method: EPA 314.0 - Perchlorate (IC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perchlorate	82		20	6.3	ug/L			12/15/22 15:16	20

Method: SW846 6010B - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Manganese	1.5		0.020	0.0083	mg/L		12/15/22 14:30	12/16/22 15:06	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon (SM 5310B)	2.4		2.0	1.0	mg/L			12/17/22 01:49	4

Client Sample ID: SWFTS-MW16-EM40 — Lab Sample ID: 550-195013-16

Date Collected: 12/14/22 13:40 — **Matrix: Water**
Date Received: 12/15/22 10:00

Method: SW846 6010B - Metals (ICP) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	0.30		0.20	0.080	mg/L		12/15/22 14:30	12/16/22 15:09	1
Barium	0.046		0.0050	0.00057	mg/L		12/15/22 14:30	12/16/22 15:09	1
Beryllium	ND		0.0010	0.00019	mg/L		12/15/22 14:30	12/16/22 15:09	1
Boron	2.1	B	0.050	0.0024	mg/L		12/15/22 14:30	12/16/22 15:09	1
Cadmium	ND		0.0010	0.00072	mg/L		12/15/22 14:30	12/16/22 15:09	1
Calcium	350	B	0.40	0.015	mg/L		12/15/22 14:30	12/16/22 15:09	1
Chromium	ND		0.0050	0.0011	mg/L		12/15/22 14:30	12/16/22 15:09	1
Cobalt	ND		0.0050	0.00054	mg/L		12/15/22 14:30	12/16/22 15:09	1
Copper	ND		0.0050	0.0012	mg/L		12/15/22 14:30	12/16/22 15:09	1
Iron	2.2		0.40	0.019	mg/L		12/15/22 14:30	12/16/22 15:09	1
Lead	ND		0.010	0.0025	mg/L		12/15/22 14:30	12/16/22 15:09	1
Magnesium	180		0.40	0.054	mg/L		12/15/22 14:30	12/16/22 15:09	1
Manganese	1.4		0.020	0.0083	mg/L		12/15/22 14:30	12/16/22 15:09	1
Molybdenum	0.063		0.010	0.00052	mg/L		12/15/22 14:30	12/16/22 15:09	1
Nickel	ND		0.0050	0.0028	mg/L		12/15/22 14:30	12/16/22 15:09	1
Phosphorus	ND	cn	0.40	0.011	mg/L		12/15/22 14:30	12/16/22 15:09	1
Potassium	59	B	1.0	0.081	mg/L		12/15/22 14:30	12/16/22 15:09	1
Silicon	34		0.10	0.016	mg/L		12/15/22 14:30	12/16/22 15:09	1
Silver	ND		0.0080	0.00049	mg/L		12/15/22 14:30	12/16/22 15:09	1
Sodium	590	B	0.40	0.039	mg/L		12/15/22 14:30	12/16/22 15:09	1
Strontium	9.0	B	0.010	0.00032	mg/L		12/15/22 14:30	12/16/22 15:09	1
Tin	ND		0.010	0.0034	mg/L		12/15/22 14:30	12/16/22 15:09	1
Titanium	ND		0.0050	0.00028	mg/L		12/15/22 14:30	12/16/22 15:09	1
Tungsten	0.0046	J	0.10	0.0021	mg/L		12/15/22 14:30	12/16/22 15:09	1
Vanadium	0.0020	J	0.0050	0.00069	mg/L		12/15/22 14:30	12/16/22 15:09	1
Zinc	ND		0.040	0.0023	mg/L		12/15/22 14:30	12/16/22 15:09	1

Method: SW846 6020B - Metals (ICP/MS) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	0.18	J	1.0	0.043	ug/L		12/15/22 15:50	12/22/22 16:12	1
Arsenic	39		1.0	0.25	ug/L		12/15/22 15:50	12/27/22 13:46	1
Selenium	0.75		0.50	0.074	ug/L		12/15/22 15:50	12/27/22 13:46	1
Thallium	0.026	J	0.10	0.013	ug/L		12/15/22 15:50	12/22/22 16:12	1

Surrogate Summary

Client: Tetra Tech, Inc.
Job ID: 550-195013-1
Project/Site: Tetra Tech M11 SWF Treatability Study

Method: 300.1B - Disinfection By-Products, (IC)

Matrix: Water
Prep Type: Total/NA

		Percent Surrogate Recovery (Acceptance Limits)
Lab Sample ID	Client Sample ID	DCAA (90-115)
550-194920-K-9 MS	Matrix Spike	108
550-194920-K-9 MSD	Matrix Spike Duplicate	108
550-194920-K-15 MS	Matrix Spike	111
550-194920-K-15 MSD	Matrix Spike Duplicate	108
550-195013-1	SWFTS-MW22-EM40	107
550-195013-3	SWFTS-MW19-EM40	111
550-195013-5	SWFTS-MW19-EM40-FD	109
550-195013-7	SWFTS-EM40-FB2	108
550-195013-9	SWFTS-EM40-EB2	108
550-195013-11	SWFTS-MW18-EM40	109
550-195013-13	SWFTS-MW17-EM40	109
550-195013-15	SWFTS-MW16-EM40	111
550-195017-A-2 MS	Matrix Spike	110
550-195017-A-2 MSD	Matrix Spike Duplicate	109
LCS 550-291159/6	Lab Control Sample	91
LCS 550-291225/5	Lab Control Sample	109
LCSD 550-291159/7	Lab Control Sample Dup	112
LCSD 550-291225/6	Lab Control Sample Dup	108
MB 550-291159/5	Method Blank	90
MB 550-291225/4	Method Blank	107

Surrogate Legend

DCAA = Dichloroacetic acid(Surr)

Method: 300.1B - Disinfection By-Products, (IC)

Matrix: Water
Prep Type: Total/NA

		Percent Surrogate Recovery (Acceptance Limits)
Lab Sample ID	Client Sample ID	DCAA (50-150)
MRL 550-291159/1003	Lab Control Sample	112
MRL 550-291225/1002	Lab Control Sample	110

Surrogate Legend

DCAA = Dichloroacetic acid(Surr)

Method: RSK-175 - Dissolved Gases (GC)

Lab Sample ID: MB 280-597367/3
Matrix: Water
Analysis Batch: 597367

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Methane	ND		5.0	0.63	ug/L			12/20/22 15:38	1

Lab Sample ID: LCS 280-597367/4
Matrix: Water
Analysis Batch: 597367

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Methane	65.7	67.2		ug/L		102	75 - 125

Lab Sample ID: LCSD 280-597367/5
Matrix: Water
Analysis Batch: 597367

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Methane	65.7	67.2		ug/L		102	75 - 125	0	20

Lab Sample ID: 550-195013-7 DU
Matrix: Water
Analysis Batch: 597367

Client Sample ID: SWFTS-EM40-FB2
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Methane	ND		ND		ug/L		NC	20

Method: 300.0 - Anions, Ion Chromatography

Lab Sample ID: MB 550-290912/2
Matrix: Water
Analysis Batch: 290912

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Nitrate as N	ND		0.050	0.014	mg/L			12/15/22 10:55	1

Lab Sample ID: LCS 550-290912/5
Matrix: Water
Analysis Batch: 290912

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Nitrate as N	4.00	4.16		mg/L		104	90 - 110
Sulfate	20.0	21.6		mg/L		108	90 - 110

Lab Sample ID: LCSD 550-290912/6
Matrix: Water
Analysis Batch: 290912

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Nitrate as N	4.00	4.16		mg/L		104	90 - 110	0	20

Method: 300.0 - Anions, Ion Chromatography (Continued)

Lab Sample ID: 550-194997-E-7 MS
Matrix: Water
Analysis Batch: 290912

Client Sample ID: Matrix Spike
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits		
Nitrate as N	ND		4.00	4.13		mg/L		103	80 - 120		

Lab Sample ID: 550-194997-E-7 MSD
Matrix: Water
Analysis Batch: 290912

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Nitrate as N	ND		4.00	4.14		mg/L		104	80 - 120	0	20

Lab Sample ID: MB 550-290914/2
Matrix: Water
Analysis Batch: 290914

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Nitrate as N	ND		0.050	0.014	mg/L			12/15/22 11:13	1
Sulfate	ND		2.0	0.43	mg/L			12/15/22 11:13	1

Lab Sample ID: LCS 550-290914/5
Matrix: Water
Analysis Batch: 290914

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Nitrate as N			4.00	4.12		mg/L		103	90 - 110		
Sulfate			20.0	21.1		mg/L		106	90 - 110		

Lab Sample ID: LCSD 550-290914/6
Matrix: Water
Analysis Batch: 290914

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Nitrate as N			4.00	4.12		mg/L		103	90 - 110	0	20
Sulfate			20.0	21.4		mg/L		107	90 - 110	1	20

Lab Sample ID: 550-195008-A-1 MS
Matrix: Water
Analysis Batch: 290914

Client Sample ID: Matrix Spike
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits		
Nitrate as N	6.7		4.00	10.6		mg/L		98	80 - 120		
Sulfate	220	E	20.0	237	E 4	mg/L		62	80 - 120		

Lab Sample ID: 550-195008-A-1 MSD
Matrix: Water
Analysis Batch: 290914

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Nitrate as N	6.7		4.00	10.6		mg/L		97	80 - 120	0	20
Sulfate	220	E	20.0	236	E 4	mg/L		58	80 - 120	0	20

Method: 300.0 - Anions, Ion Chromatography (Continued)

Lab Sample ID: MB 550-290915/2
Matrix: Water
Analysis Batch: 290915

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Nitrate as N	ND		0.050	0.014	mg/L			12/15/22 10:45	1
Sulfate	ND		2.0	0.43	mg/L			12/15/22 10:45	1

Lab Sample ID: LCS 550-290915/5
Matrix: Water
Analysis Batch: 290915

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Nitrate as N			4.00	4.06		mg/L		102	90 - 110		
Sulfate			20.0	20.8		mg/L		104	90 - 110		

Lab Sample ID: LCSD 550-290915/6
Matrix: Water
Analysis Batch: 290915

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Nitrate as N			4.00	4.07		mg/L		102	90 - 110	0	20
Sulfate			20.0	21.4		mg/L		107	90 - 110	3	20

Lab Sample ID: 550-194999-A-1 MS
Matrix: Water
Analysis Batch: 290915

Client Sample ID: Matrix Spike
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits		
Nitrate as N	ND		4.00	4.06		mg/L		102	80 - 120		
Sulfate	300	E	20.0	302	E 4	mg/L		-0.3	80 - 120		

Lab Sample ID: 550-194999-A-1 MSD
Matrix: Water
Analysis Batch: 290915

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Nitrate as N	ND		4.00	4.15		mg/L		104	80 - 120	2	20
Sulfate	300	E	20.0	303	E 4	mg/L		2	80 - 120	0	20

Lab Sample ID: MB 550-290964/2
Matrix: Water
Analysis Batch: 290964

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Nitrate as N	ND		0.050	0.014	mg/L			12/16/22 11:45	1
Sulfate	ND		2.0	0.43	mg/L			12/16/22 11:45	1

Lab Sample ID: LCS 550-290964/5
Matrix: Water
Analysis Batch: 290964

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Nitrate as N			4.00	4.13		mg/L		103	90 - 110		
Sulfate			20.0	21.2		mg/L		106	90 - 110		

Method: 300.0 - Anions, Ion Chromatography

Lab Sample ID: LCSD 550-290964/7
Matrix: Water
Analysis Batch: 290964

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Nitrate as N			4.00	4.13		mg/L		103	90 - 110	0	20
Sulfate			20.0	20.8		mg/L		104	90 - 110	2	20

Lab Sample ID: 550-195103-J-1 MS
Matrix: Water
Analysis Batch: 290964

Client Sample ID: Matrix Spike
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits		
Nitrate as N	14		20.0	34.4		mg/L		103	80 - 120		

Lab Sample ID: 550-195103-J-1 MS
Matrix: Water
Analysis Batch: 290964

Client Sample ID: Matrix Spike
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits		
Sulfate	1900		1000	2910		mg/L		104	80 - 120		

Lab Sample ID: 550-195103-J-1 MSD
Matrix: Water
Analysis Batch: 290964

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Nitrate as N	14		20.0	34.5		mg/L		104	80 - 120	0	20

Lab Sample ID: 550-195103-J-1 MSD
Matrix: Water
Analysis Batch: 290964

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Sulfate	1900		1000	2920		mg/L		105	80 - 120	0	20

Method: 300.1B - Disinfection By-Products, (IC)

Lab Sample ID: MB 550-291159/5
Matrix: Water
Analysis Batch: 291159

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chlorate	ND		20	4.9	ug/L			12/20/22 15:44	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Dichloroacetic acid(Surr)	*90*		*90 - 115*		*12/20/22 15:44*	*1*

Lab Sample ID: LCS 550-291159/6
Matrix: Water
Analysis Batch: 291159

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Chlorate			100	110		ug/L		110	75 - 125		

Method: 300.1B - Disinfection By-Products, (IC) (Continued)

Lab Sample ID: LCS 550-291159/6
Matrix: Water
Analysis Batch: 291159

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Surrogate	LCS %Recovery	LCS Qualifier	Limits
Dichloroacetic acid(Surr)	91		90 - 115

Lab Sample ID: LCSD 550-291159/7
Matrix: Water
Analysis Batch: 291159

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Chlorate			100	107		ug/L		107	75 - 125	3	25

Surrogate	LCSD %Recovery	LCSD Qualifier	Limits
Dichloroacetic acid(Surr)	112		90 - 115

Lab Sample ID: MRL 550-291159/1003
Matrix: Water
Analysis Batch: 291159

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte			Spike Added	MRL Result	MRL Qualifier	Unit	D	%Rec	%Rec Limits
Chlorate			20.0	23.6		ug/L		118	50 - 150

Surrogate	MRL %Recovery	MRL Qualifier	Limits
Dichloroacetic acid(Surr)	112		50 - 150

Lab Sample ID: 550-194920-K-9 MS
Matrix: Water
Analysis Batch: 291159

Client Sample ID: Matrix Spike
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Chlorate	22000		10000	33300		ug/L		112	75 - 125

Surrogate	MS %Recovery	MS Qualifier	Limits
Dichloroacetic acid(Surr)	108		90 - 115

Lab Sample ID: 550-194920-K-9 MSD
Matrix: Water
Analysis Batch: 291159

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Chlorate	22000		10000	33200		ug/L		111	75 - 125	0	25

Surrogate	MSD %Recovery	MSD Qualifier	Limits
Dichloroacetic acid(Surr)	108		90 - 115

Method: 300.1B - Disinfection By-Products, (IC) (Continued)

Lab Sample ID: 550-194920-K-15 MS
Matrix: Water
Analysis Batch: 291159

Client Sample ID: Matrix Spike
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits		
Chlorate	7900		5000	13100		ug/L		104	75 - 125		

Surrogate	*MS %Recovery*	*MS Qualifier*	*Limits*
Dichloroacetic acid(Surr)	*111*		*90 - 115*

Lab Sample ID: 550-194920-K-15 MSD
Matrix: Water
Analysis Batch: 291159

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Chlorate	7900		5000	12500		ug/L		92	75 - 125	5	25

Surrogate	*MSD %Recovery*	*MSD Qualifier*	*Limits*
Dichloroacetic acid(Surr)	*108*		*90 - 115*

Lab Sample ID: MB 550-291225/4
Matrix: Water
Analysis Batch: 291225

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chlorate	ND		20	4.9	ug/L			12/21/22 06:28	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Dichloroacetic acid(Surr)	*107*		*90 - 115*		*12/21/22 06:28*	*1*

Lab Sample ID: LCS 550-291225/5
Matrix: Water
Analysis Batch: 291225

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Chlorate			100	110		ug/L		110	75 - 125		

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
Dichloroacetic acid(Surr)	*109*		*90 - 115*

Lab Sample ID: LCSD 550-291225/6
Matrix: Water
Analysis Batch: 291225

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Chlorate			100	108		ug/L		108	75 - 125	2	25

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
Dichloroacetic acid(Surr)	*108*		*90 - 115*

Method: 300.1B - Disinfection By-Products, (IC) (Continued)

Lab Sample ID: MRL 550-291225/1002
Matrix: Water
Analysis Batch: 291225

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte			Spike Added	MRL Result	MRL Qualifier	Unit	D	%Rec	%Rec Limits		
Chlorate			20.0	23.5		ug/L		118	50 - 150		

Surrogate	*MRL %Recovery*	*MRL Qualifier*	*Limits*
Dichloroacetic acid(Surr)	*110*		*50 - 150*

Lab Sample ID: 550-195017-A-2 MS
Matrix: Water
Analysis Batch: 291225

Client Sample ID: Matrix Spike
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits		
Chlorate	100		200	313		ug/L		106	75 - 125		

Surrogate	*MS %Recovery*	*MS Qualifier*	*Limits*
Dichloroacetic acid(Surr)	*110*		*90 - 115*

Lab Sample ID: 550-195017-A-2 MSD
Matrix: Water
Analysis Batch: 291225

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Chlorate	100		200	310		ug/L		104	75 - 125	1	25

Surrogate	*MSD %Recovery*	*MSD Qualifier*	*Limits*
Dichloroacetic acid(Surr)	*109*		*90 - 115*

Method: 314.0 - Perchlorate (IC)

Lab Sample ID: MB 550-290875/1002
Matrix: Water
Analysis Batch: 290875

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perchlorate	ND		1.0	0.31	ug/L			12/15/22 10:43	1

Lab Sample ID: LCS 550-290875/4
Matrix: Water
Analysis Batch: 290875

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Perchlorate			25.0	22.6		ug/L		90	85 - 115		

Lab Sample ID: LCSD 550-290875/5
Matrix: Water
Analysis Batch: 290875

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Perchlorate			25.0	22.6		ug/L		90	85 - 115	0	15

Method: 314.0 - Perchlorate (IC) (Continued)

Lab Sample ID: MRL 550-290875/1003
Matrix: Water
Analysis Batch: 290875

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	MRL Result	MRL Qualifier	Unit	D	%Rec	%Rec Limits
Perchlorate	1.00	1.11		ug/L		111	75 - 125

Lab Sample ID: 550-194920-E-15 MS
Matrix: Water
Analysis Batch: 290875

Client Sample ID: Matrix Spike
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Perchlorate	3000		5000	7470		ug/L		90	80 - 120

Lab Sample ID: 550-194920-E-15 MSD
Matrix: Water
Analysis Batch: 290875

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Perchlorate	3000		5000	7600		ug/L		93	80 - 120	2	15

Lab Sample ID: MB 550-290892/1002
Matrix: Water
Analysis Batch: 290892

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perchlorate	ND		1.0	0.31	ug/L			12/15/22 10:42	1

Lab Sample ID: LCS 550-290892/4
Matrix: Water
Analysis Batch: 290892

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Perchlorate	25.0	24.7		ug/L		99	85 - 115

Lab Sample ID: LCSD 550-290892/5
Matrix: Water
Analysis Batch: 290892

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Perchlorate	25.0	24.1		ug/L		96	85 - 115	2	15

Lab Sample ID: MRL 550-290892/1003
Matrix: Water
Analysis Batch: 290892

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	MRL Result	MRL Qualifier	Unit	D	%Rec	%Rec Limits
Perchlorate	1.00	0.942	J	ug/L		94	75 - 125

Lab Sample ID: 550-194965-A-1 MS
Matrix: Water
Analysis Batch: 290892

Client Sample ID: Matrix Spike
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Perchlorate	370000		500000	823000		ug/L		92	80 - 120

Method: 314.0 - Perchlorate (IC)

Lab Sample ID: 550-194965-A-1 MSD
Matrix: Water
Analysis Batch: 290892

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Perchlorate	370000		500000	836000		ug/L		94	80 - 120	1	15

Lab Sample ID: MB 550-290947/1002
Matrix: Water
Analysis Batch: 290947

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perchlorate	ND		1.0	0.31	ug/L			12/16/22 10:31	1

Lab Sample ID: LCS 550-290947/4
Matrix: Water
Analysis Batch: 290947

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Perchlorate	25.0	22.8		ug/L		91	85 - 115

Lab Sample ID: LCSD 550-290947/5
Matrix: Water
Analysis Batch: 290947

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Perchlorate	25.0	22.6		ug/L		90	85 - 115	1	15

Lab Sample ID: MRL 550-290947/1003
Matrix: Water
Analysis Batch: 290947

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	MRL Result	MRL Qualifier	Unit	D	%Rec	%Rec Limits
Perchlorate	1.00	0.996	J	ug/L		100	75 - 125

Lab Sample ID: 550-195013-3 MS
Matrix: Water
Analysis Batch: 290947

Client Sample ID: SWFTS-MW19-EM40
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Perchlorate	5200		5000	9680		ug/L		89	80 - 120

Lab Sample ID: 550-195013-3 MSD
Matrix: Water
Analysis Batch: 290947

Client Sample ID: SWFTS-MW19-EM40
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Perchlorate	5200		5000	9700		ug/L		89	80 - 120	0	15

Lab Sample ID: MB 550-291132/1002
Matrix: Water
Analysis Batch: 291132

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perchlorate	ND		1.0	0.31	ug/L			12/20/22 09:27	1

Method: 314.0 - Perchlorate (IC)

Lab Sample ID: LCS 550-291132/4
Matrix: Water
Analysis Batch: 291132

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Perchlorate			25.0	23.2		ug/L		93	85 - 115		

Lab Sample ID: LCSD 550-291132/5
Matrix: Water
Analysis Batch: 291132

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Perchlorate			25.0	22.4		ug/L		90	85 - 115	4	15

Lab Sample ID: MRL 550-291132/1003
Matrix: Water
Analysis Batch: 291132

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte			Spike Added	MRL Result	MRL Qualifier	Unit	D	%Rec	%Rec Limits		
Perchlorate			1.00	0.945	J	ug/L		94	75 - 125		

Lab Sample ID: 550-195103-G-1 MS
Matrix: Water
Analysis Batch: 291132

Client Sample ID: Matrix Spike
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits		
Perchlorate	12000		25000	34500		ug/L		91	80 - 120		

Lab Sample ID: 550-195103-G-1 MSD
Matrix: Water
Analysis Batch: 291132

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Perchlorate	12000		25000	34700		ug/L		92	80 - 120	1	15

Method: 6010B - Metals (ICP)

Lab Sample ID: MB 550-290884/1-A
Matrix: Water
Analysis Batch: 291022

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 290884

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	ND		0.20	0.080	mg/L		12/15/22 14:30	12/16/22 14:07	1
Barium	ND		0.0050	0.00057	mg/L		12/15/22 14:30	12/16/22 14:07	1
Beryllium	ND		0.0010	0.00019	mg/L		12/15/22 14:30	12/16/22 14:07	1
Boron	0.00477	J	0.050	0.0024	mg/L		12/15/22 14:30	12/16/22 14:07	1
Cadmium	ND		0.0010	0.00072	mg/L		12/15/22 14:30	12/16/22 14:07	1
Calcium	0.0266	J	0.40	0.015	mg/L		12/15/22 14:30	12/16/22 14:07	1
Chromium	ND		0.0050	0.0011	mg/L		12/15/22 14:30	12/16/22 14:07	1
Cobalt	ND		0.0050	0.00054	mg/L		12/15/22 14:30	12/16/22 14:07	1
Copper	ND		0.0050	0.0012	mg/L		12/15/22 14:30	12/16/22 14:07	1
Iron	ND		0.40	0.019	mg/L		12/15/22 14:30	12/16/22 14:07	1
Lead	ND		0.010	0.0025	mg/L		12/15/22 14:30	12/16/22 14:07	1
Magnesium	ND		0.40	0.054	mg/L		12/15/22 14:30	12/16/22 14:07	1
Manganese	ND		0.020	0.0083	mg/L		12/15/22 14:30	12/16/22 14:07	1

Method: 6010B - Metals (ICP) (Continued)

Lab Sample ID: MB 550-290884/1-A
Matrix: Water
Analysis Batch: 291022

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 290884

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Molybdenum	ND		0.010	0.00052	mg/L		12/15/22 14:30	12/16/22 14:07	1
Nickel	ND		0.0050	0.0028	mg/L		12/15/22 14:30	12/16/22 14:07	1
Phosphorus	ND		0.40	0.011	mg/L		12/15/22 14:30	12/16/22 14:07	1
Potassium	0.142	J	1.0	0.081	mg/L		12/15/22 14:30	12/16/22 14:07	1
Silicon	ND		0.10	0.016	mg/L		12/15/22 14:30	12/16/22 14:07	1
Silver	0.000670	J	0.0080	0.00049	mg/L		12/15/22 14:30	12/16/22 14:07	1
Sodium	0.289	J	0.40	0.039	mg/L		12/15/22 14:30	12/16/22 14:07	1
Strontium	0.000670	J	0.010	0.00032	mg/L		12/15/22 14:30	12/16/22 14:07	1
Tin	ND		0.010	0.0034	mg/L		12/15/22 14:30	12/16/22 14:07	1
Titanium	ND		0.0050	0.00028	mg/L		12/15/22 14:30	12/16/22 14:07	1
Tungsten	ND		0.10	0.0021	mg/L		12/15/22 14:30	12/16/22 14:07	1
Vanadium	ND		0.0050	0.00069	mg/L		12/15/22 14:30	12/16/22 14:07	1
Zinc	ND		0.040	0.0023	mg/L		12/15/22 14:30	12/16/22 14:07	1

Lab Sample ID: LCS 550-290884/2-A
Matrix: Water
Analysis Batch: 291022

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 290884

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Aluminum	20.0	18.1		mg/L		90	88 - 110
Barium	1.00	0.926		mg/L		93	90 - 110
Beryllium	1.00	1.03		mg/L		103	90 - 111
Boron	1.00	0.922		mg/L		92	88 - 110
Cadmium	1.00	1.00		mg/L		100	90 - 110
Calcium	21.0	19.3		mg/L		92	88 - 112
Chromium	1.00	0.977		mg/L		98	90 - 110
Cobalt	1.00	0.998		mg/L		100	90 - 112
Copper	1.00	0.996		mg/L		100	87 - 110
Iron	1.00	0.976		mg/L		98	85 - 112
Lead	1.00	0.989		mg/L		99	90 - 113
Magnesium	21.0	19.0		mg/L		90	89 - 110
Manganese	1.00	0.969		mg/L		97	90 - 110
Molybdenum	1.00	0.994		mg/L		99	89 - 110
Nickel	1.00	0.997		mg/L		100	88 - 114
Potassium	20.0	17.5		mg/L		88	87 - 114
Silicon	5.00	4.74		mg/L		95	88 - 110
Silver	0.0750	0.0730		mg/L		97	84 - 111
Sodium	20.0	18.1		mg/L		91	84 - 110
Strontium	1.00	1.02		mg/L		102	88 - 110
Tin	1.00	0.978		mg/L		98	90 - 112
Titanium	1.00	0.998		mg/L		100	90 - 110
Tungsten	1.00	0.974		mg/L		97	80 - 120
Vanadium	1.00	0.986		mg/L		99	90 - 110
Zinc	1.00	1.00		mg/L		100	90 - 114

Method: 6010B - Metals (ICP) (Continued)

Lab Sample ID: LCSD 550-290884/3-A
Client Sample ID: Lab Control Sample Dup
Matrix: Water
Prep Type: Total/NA
Analysis Batch: 291022
Prep Batch: 290884

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Aluminum			20.0	20.3		mg/L		102	88 - 110	12	20
Barium			1.00	1.04		mg/L		104	90 - 110	12	20
Beryllium			1.00	1.02		mg/L		102	90 - 111	0	20
Boron			1.00	1.04		mg/L		104	88 - 110	12	20
Cadmium			1.00	1.00		mg/L		100	90 - 110	0	20
Calcium			21.0	21.6		mg/L		103	88 - 112	11	20
Chromium			1.00	0.974		mg/L		97	90 - 110	0	20
Cobalt			1.00	0.997		mg/L		100	90 - 112	0	20
Copper			1.00	0.996		mg/L		100	87 - 110	0	20
Iron			1.00	0.980		mg/L		98	85 - 112	0	20
Lead			1.00	0.989		mg/L		99	90 - 113	0	20
Magnesium			21.0	21.2		mg/L		101	89 - 110	11	20
Manganese			1.00	0.966		mg/L		97	90 - 110	0	20
Molybdenum			1.00	0.996		mg/L		100	89 - 110	0	20
Nickel			1.00	0.995		mg/L		100	88 - 114	0	20
Potassium			20.0	19.7		mg/L		98	87 - 114	12	20
Silicon			5.00	4.72		mg/L		94	88 - 110	0	20
Silver			0.0750	0.0738		mg/L		98	84 - 111	1	20
Sodium			20.0	20.3		mg/L		101	84 - 110	11	20
Strontium			1.00	1.01		mg/L		101	88 - 110	1	20
Tin			1.00	0.979		mg/L		98	90 - 112	0	20
Titanium			1.00	0.996		mg/L		100	90 - 110	0	20
Tungsten			1.00	0.983		mg/L		98	80 - 120	1	20
Vanadium			1.00	0.984		mg/L		98	90 - 110	0	20
Zinc			1.00	0.995		mg/L		99	90 - 114	1	20

Lab Sample ID: 550-195013-5 MS
Client Sample ID: SWFTS-MW19-EM40-FD
Matrix: Water
Prep Type: Total/NA
Analysis Batch: 291022
Prep Batch: 290884

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Aluminum	0.46		20.0	21.9		mg/L		107	75 - 125
Barium	0.016		1.00	1.10		mg/L		108	75 - 125
Beryllium	0.00040	J	1.00	1.07		mg/L		107	75 - 125
Boron	1.5	B	1.00	2.50		mg/L		104	75 - 125
Cadmium	ND		1.00	1.03		mg/L		103	75 - 125
Calcium	220	B	21.0	234	4	mg/L		86	75 - 125
Chromium	ND		1.00	0.960		mg/L		96	75 - 125
Cobalt	0.0030	J	1.00	0.987		mg/L		98	75 - 125
Copper	ND		1.00	1.05		mg/L		105	75 - 125
Iron	0.24	J	1.00	1.26		mg/L		102	75 - 125
Lead	ND		1.00	0.874		mg/L		87	75 - 125
Magnesium	99		21.0	119	4	mg/L		96	75 - 125
Manganese	ND		1.00	0.968		mg/L		97	75 - 125
Molybdenum	0.097		1.00	1.10		mg/L		100	75 - 125
Nickel	0.0077		1.00	0.991		mg/L		98	75 - 125
Potassium	24	B	20.0	45.5		mg/L		105	75 - 125
Silicon	38		5.00	42.7	4	mg/L		93	75 - 125
Silver	ND		0.0750	0.0753		mg/L		100	75 - 125

Method: 6010B - Metals (ICP) (Continued)

Lab Sample ID: 550-195013-5 MS
Matrix: Water
Analysis Batch: 291022

Client Sample ID: SWFTS-MW19-EM40-FD
Prep Type: Total/NA
Prep Batch: 290884

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Sodium	570	^2 B	20.0	580	4	mg/L		59	75 - 125
Strontium	5.9	B	1.00	6.76	4	mg/L		88	75 - 125
Tin	ND		1.00	0.994		mg/L		99	75 - 125
Titanium	0.015		1.00	1.04		mg/L		102	75 - 125
Tungsten	0.0077	J	1.00	0.991		mg/L		98	75 - 125
Vanadium	0.038		1.00	1.05		mg/L		101	75 - 125
Zinc	ND		1.00	0.969		mg/L		97	75 - 125

Lab Sample ID: 550-195013-5 MSD
Matrix: Water
Analysis Batch: 291022

Client Sample ID: SWFTS-MW19-EM40-FD
Prep Type: Total/NA
Prep Batch: 290884

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Aluminum	0.46		20.0	22.4		mg/L		109	75 - 125	2	20
Barium	0.016		1.00	1.13		mg/L		111	75 - 125	3	20
Beryllium	0.00040	J	1.00	1.10		mg/L		110	75 - 125	3	20
Boron	1.5	B	1.00	2.48		mg/L		102	75 - 125	1	20
Cadmium	ND		1.00	1.03		mg/L		103	75 - 125	0	20
Calcium	220	B	21.0	237	4	mg/L		102	75 - 125	1	20
Chromium	ND		1.00	0.961		mg/L		96	75 - 125	0	20
Cobalt	0.0030	J	1.00	0.989		mg/L		99	75 - 125	0	20
Copper	ND		1.00	1.05		mg/L		105	75 - 125	0	20
Iron	0.24	J	1.00	1.29		mg/L		105	75 - 125	2	20
Lead	ND		1.00	0.876		mg/L		88	75 - 125	0	20
Magnesium	99		21.0	121	4	mg/L		102	75 - 125	1	20
Manganese	ND		1.00	0.970		mg/L		97	75 - 125	0	20
Molybdenum	0.097		1.00	1.10		mg/L		100	75 - 125	0	20
Nickel	0.0077		1.00	0.990		mg/L		98	75 - 125	0	20
Potassium	24	B	20.0	46.5		mg/L		110	75 - 125	2	20
Silicon	38		5.00	43.4	4	mg/L		106	75 - 125	2	20
Silver	ND		0.0750	0.0752		mg/L		100	75 - 125	0	20
Sodium	570	^2 B	20.0	590	4	mg/L		110	75 - 125	2	20
Strontium	5.9	B	1.00	6.98	4	mg/L		109	75 - 125	3	20
Tin	ND		1.00	0.991		mg/L		99	75 - 125	0	20
Titanium	0.015		1.00	1.04		mg/L		102	75 - 125	0	20
Tungsten	0.0077	J	1.00	1.00		mg/L		99	75 - 125	1	20
Vanadium	0.038		1.00	1.05		mg/L		101	75 - 125	0	20
Zinc	ND		1.00	0.972		mg/L		97	75 - 125	0	20

Method: 6020B - Metals (ICP/MS)

Lab Sample ID: MB 550-290897/1-A
Matrix: Water
Analysis Batch: 291384

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 290897

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND		1.0	0.043	ug/L		12/15/22 15:50	12/22/22 15:41	1
Thallium	ND		0.10	0.013	ug/L		12/15/22 15:50	12/22/22 15:41	1

Method: 6020B - Metals (ICP/MS) (Continued)

Lab Sample ID: MB 550-290897/1-A
Matrix: Water
Analysis Batch: 291501

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 290897

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	ND		1.0	0.25	ug/L		12/15/22 15:50	12/27/22 13:15	1
Selenium	ND		0.50	0.074	ug/L		12/15/22 15:50	12/27/22 13:15	1

Lab Sample ID: LCS 550-290897/2-A
Matrix: Water
Analysis Batch: 291384

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 290897

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Antimony	100	98.6		ug/L		99	80 - 120
Thallium	100	102		ug/L		102	80 - 120

Lab Sample ID: LCS 550-290897/2-A
Matrix: Water
Analysis Batch: 291501

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 290897

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Arsenic	100	96.0		ug/L		96	80 - 120
Selenium	100	96.3		ug/L		96	80 - 120

Lab Sample ID: LCSD 550-290897/3-A
Matrix: Water
Analysis Batch: 291384

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 290897

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Antimony	100	101		ug/L		101	80 - 120	2	20
Thallium	100	101		ug/L		101	80 - 120	1	20

Lab Sample ID: LCSD 550-290897/3-A
Matrix: Water
Analysis Batch: 291501

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 290897

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Arsenic	100	93.5		ug/L		94	80 - 120	3	20
Selenium	100	94.9		ug/L		95	80 - 120	1	20

Lab Sample ID: 550-195013-2 MS
Matrix: Water
Analysis Batch: 291384

Client Sample ID: SWFTS-MW22-EM40
Prep Type: Dissolved
Prep Batch: 290897

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Antimony	0.23	J	100	103		ug/L		103	75 - 125
Thallium	0.18		100	97.2		ug/L		97	75 - 125

Lab Sample ID: 550-195013-2 MS
Matrix: Water
Analysis Batch: 291501

Client Sample ID: SWFTS-MW22-EM40
Prep Type: Dissolved
Prep Batch: 290897

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Arsenic	66		100	167		ug/L		101	75 - 125
Selenium	45		100	153		ug/L		107	75 - 125

Method: 6020B - Metals (ICP/MS)

Lab Sample ID: 550-195013-2 MSD
Matrix: Water
Analysis Batch: 291384

Client Sample ID: SWFTS-MW22-EM40
Prep Type: Dissolved
Prep Batch: 290897

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Antimony	0.23	J	100	103		ug/L		103	75 - 125	0	20
Thallium	0.18		100	96.5		ug/L		96	75 - 125	1	20

Lab Sample ID: 550-195013-2 MSD
Matrix: Water
Analysis Batch: 291501

Client Sample ID: SWFTS-MW22-EM40
Prep Type: Dissolved
Prep Batch: 290897

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Arsenic	66		100	166		ug/L		99	75 - 125	1	20
Selenium	45		100	151		ug/L		106	75 - 125	1	20

Method: SM 5310B - Organic Carbon, Total (TOC)

Lab Sample ID: MB 550-290973/34
Matrix: Water
Analysis Batch: 290973

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon	ND		0.50	0.26	mg/L			12/16/22 20:54	1

Lab Sample ID: LCS 550-290973/35
Matrix: Water
Analysis Batch: 290973

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Total Organic Carbon	20.0	19.1		mg/L		95	90 - 110

Lab Sample ID: LCSD 550-290973/36
Matrix: Water
Analysis Batch: 290973

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Total Organic Carbon	20.0	19.5		mg/L		97	90 - 110	2	20

Lab Sample ID: 550-194920-C-15 MS
Matrix: Water
Analysis Batch: 290973

Client Sample ID: Matrix Spike
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Total Organic Carbon	1.4		20.0	19.9		mg/L		93	90 - 110

Lab Sample ID: 550-194920-D-15 MSD
Matrix: Water
Analysis Batch: 290973

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Total Organic Carbon	1.4		20.0	19.6		mg/L		91	90 - 110	1	20

GC VOA

Analysis Batch: 597367

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
550-195013-1	SWFTS-MW22-EM40	Total/NA	Water	RSK-175	
550-195013-3	SWFTS-MW19-EM40	Total/NA	Water	RSK-175	
550-195013-5	SWFTS-MW19-EM40-FD	Total/NA	Water	RSK-175	
550-195013-7	SWFTS-EM40-FB2	Total/NA	Water	RSK-175	
550-195013-9	SWFTS-EM40-EB2	Total/NA	Water	RSK-175	
550-195013-11	SWFTS-MW18-EM40	Total/NA	Water	RSK-175	
550-195013-13	SWFTS-MW17-EM40	Total/NA	Water	RSK-175	
550-195013-15	SWFTS-MW16-EM40	Total/NA	Water	RSK-175	
MB 280-597367/3	Method Blank	Total/NA	Water	RSK-175	
LCS 280-597367/4	Lab Control Sample	Total/NA	Water	RSK-175	
LCSD 280-597367/5	Lab Control Sample Dup	Total/NA	Water	RSK-175	
550-195013-7 DU	SWFTS-EM40-FB2	Total/NA	Water	RSK-175	

HPLC/IC

Analysis Batch: 290875

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
550-195013-1	SWFTS-MW22-EM40	Total/NA	Water	314.0	
550-195013-7	SWFTS-EM40-FB2	Total/NA	Water	314.0	
MB 550-290875/1002	Method Blank	Total/NA	Water	314.0	
LCS 550-290875/4	Lab Control Sample	Total/NA	Water	314.0	
LCSD 550-290875/5	Lab Control Sample Dup	Total/NA	Water	314.0	
MRL 550-290875/1003	Lab Control Sample	Total/NA	Water	314.0	
550-194920-E-15 MS	Matrix Spike	Total/NA	Water	314.0	
550-194920-E-15 MSD	Matrix Spike Duplicate	Total/NA	Water	314.0	

Analysis Batch: 290892

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
550-195013-9	SWFTS-EM40-EB2	Total/NA	Water	314.0	
550-195013-11	SWFTS-MW18-EM40	Total/NA	Water	314.0	
550-195013-15	SWFTS-MW16-EM40	Total/NA	Water	314.0	
MB 550-290892/1002	Method Blank	Total/NA	Water	314.0	
LCS 550-290892/4	Lab Control Sample	Total/NA	Water	314.0	
LCSD 550-290892/5	Lab Control Sample Dup	Total/NA	Water	314.0	
MRL 550-290892/1003	Lab Control Sample	Total/NA	Water	314.0	
550-194965-A-1 MS	Matrix Spike	Total/NA	Water	314.0	
550-194965-A-1 MSD	Matrix Spike Duplicate	Total/NA	Water	314.0	

Analysis Batch: 290912

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
550-195013-1	SWFTS-MW22-EM40	Total/NA	Water	300.0	
550-195013-3	SWFTS-MW19-EM40	Total/NA	Water	300.0	
550-195013-5	SWFTS-MW19-EM40-FD	Total/NA	Water	300.0	
550-195013-11	SWFTS-MW18-EM40	Total/NA	Water	300.0	
550-195013-13	SWFTS-MW17-EM40	Total/NA	Water	300.0	
550-195013-15	SWFTS-MW16-EM40	Total/NA	Water	300.0	
MB 550-290912/2	Method Blank	Total/NA	Water	300.0	
LCS 550-290912/5	Lab Control Sample	Total/NA	Water	300.0	
LCSD 550-290912/6	Lab Control Sample Dup	Total/NA	Water	300.0	
550-194997-E-7 MS	Matrix Spike	Total/NA	Water	300.0	
550-194997-E-7 MSD	Matrix Spike Duplicate	Total/NA	Water	300.0	

HPLC/IC

Analysis Batch: 290914

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
550-195013-1	SWFTS-MW22-EM40	Total/NA	Water	300.0	
MB 550-290914/2	Method Blank	Total/NA	Water	300.0	
LCS 550-290914/5	Lab Control Sample	Total/NA	Water	300.0	
LCSD 550-290914/6	Lab Control Sample Dup	Total/NA	Water	300.0	
550-195008-A-1 MS	Matrix Spike	Total/NA	Water	300.0	
550-195008-A-1 MSD	Matrix Spike Duplicate	Total/NA	Water	300.0	

Analysis Batch: 290915

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
550-195013-5	SWFTS-MW19-EM40-FD	Total/NA	Water	300.0	
550-195013-7	SWFTS-EM40-FB2	Total/NA	Water	300.0	
550-195013-9	SWFTS-EM40-EB2	Total/NA	Water	300.0	
550-195013-11	SWFTS-MW18-EM40	Total/NA	Water	300.0	
MB 550-290915/2	Method Blank	Total/NA	Water	300.0	
LCS 550-290915/5	Lab Control Sample	Total/NA	Water	300.0	
LCSD 550-290915/6	Lab Control Sample Dup	Total/NA	Water	300.0	
550-194999-A-1 MS	Matrix Spike	Total/NA	Water	300.0	
550-194999-A-1 MSD	Matrix Spike Duplicate	Total/NA	Water	300.0	

Analysis Batch: 290947

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
550-195013-3	SWFTS-MW19-EM40	Total/NA	Water	314.0	
550-195013-5	SWFTS-MW19-EM40-FD	Total/NA	Water	314.0	
MB 550-290947/1002	Method Blank	Total/NA	Water	314.0	
LCS 550-290947/4	Lab Control Sample	Total/NA	Water	314.0	
LCSD 550-290947/5	Lab Control Sample Dup	Total/NA	Water	314.0	
MRL 550-290947/1003	Lab Control Sample	Total/NA	Water	314.0	
550-195013-3 MS	SWFTS-MW19-EM40	Total/NA	Water	314.0	
550-195013-3 MSD	SWFTS-MW19-EM40	Total/NA	Water	314.0	

Analysis Batch: 290964

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
550-195013-3	SWFTS-MW19-EM40	Total/NA	Water	300.0	
550-195013-13	SWFTS-MW17-EM40	Total/NA	Water	300.0	
550-195013-15	SWFTS-MW16-EM40	Total/NA	Water	300.0	
MB 550-290964/2	Method Blank	Total/NA	Water	300.0	
LCS 550-290964/5	Lab Control Sample	Total/NA	Water	300.0	
LCSD 550-290964/7	Lab Control Sample Dup	Total/NA	Water	300.0	
550-195103-J-1 MS	Matrix Spike	Total/NA	Water	300.0	
550-195103-J-1 MS	Matrix Spike	Total/NA	Water	300.0	
550-195103-J-1 MSD	Matrix Spike Duplicate	Total/NA	Water	300.0	
550-195103-J-1 MSD	Matrix Spike Duplicate	Total/NA	Water	300.0	

Analysis Batch: 291132

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
550-195013-13	SWFTS-MW17-EM40	Total/NA	Water	314.0	
MB 550-291132/1002	Method Blank	Total/NA	Water	314.0	
LCS 550-291132/4	Lab Control Sample	Total/NA	Water	314.0	
LCSD 550-291132/5	Lab Control Sample Dup	Total/NA	Water	314.0	
MRL 550-291132/1003	Lab Control Sample	Total/NA	Water	314.0	
550-195103-G-1 MS	Matrix Spike	Total/NA	Water	314.0	

HPLC/IC (Continued)

Analysis Batch: 291132 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
550-195103-G-1 MSD	Matrix Spike Duplicate	Total/NA	Water	314.0	

Analysis Batch: 291159

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
550-195013-1	SWFTS-MW22-EM40	Total/NA	Water	300.1B	
550-195013-3	SWFTS-MW19-EM40	Total/NA	Water	300.1B	
550-195013-5	SWFTS-MW19-EM40-FD	Total/NA	Water	300.1B	
550-195013-7	SWFTS-EM40-FB2	Total/NA	Water	300.1B	
550-195013-9	SWFTS-EM40-EB2	Total/NA	Water	300.1B	
MB 550-291159/5	Method Blank	Total/NA	Water	300.1B	
LCS 550-291159/6	Lab Control Sample	Total/NA	Water	300.1B	
LCSD 550-291159/7	Lab Control Sample Dup	Total/NA	Water	300.1B	
MRL 550-291159/1003	Lab Control Sample	Total/NA	Water	300.1B	
550-194920-K-9 MS	Matrix Spike	Total/NA	Water	300.1B	
550-194920-K-9 MSD	Matrix Spike Duplicate	Total/NA	Water	300.1B	
550-194920-K-15 MS	Matrix Spike	Total/NA	Water	300.1B	
550-194920-K-15 MSD	Matrix Spike Duplicate	Total/NA	Water	300.1B	

Analysis Batch: 291225

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
550-195013-11	SWFTS-MW18-EM40	Total/NA	Water	300.1B	
550-195013-13	SWFTS-MW17-EM40	Total/NA	Water	300.1B	
550-195013-15	SWFTS-MW16-EM40	Total/NA	Water	300.1B	
MB 550-291225/4	Method Blank	Total/NA	Water	300.1B	
LCS 550-291225/5	Lab Control Sample	Total/NA	Water	300.1B	
LCSD 550-291225/6	Lab Control Sample Dup	Total/NA	Water	300.1B	
MRL 550-291225/1002	Lab Control Sample	Total/NA	Water	300.1B	
550-195017-A-2 MS	Matrix Spike	Total/NA	Water	300.1B	
550-195017-A-2 MSD	Matrix Spike Duplicate	Total/NA	Water	300.1B	

Metals

Prep Batch: 290884

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
550-195013-1	SWFTS-MW22-EM40	Total/NA	Water	3005A	
550-195013-2	SWFTS-MW22-EM40	Dissolved	Water	3005A	
550-195013-3	SWFTS-MW19-EM40	Total/NA	Water	3005A	
550-195013-4	SWFTS-MW19-EM40	Dissolved	Water	3005A	
550-195013-5	SWFTS-MW19-EM40-FD	Total/NA	Water	3005A	
550-195013-6	SWFTS-MW19-EM40-FD	Dissolved	Water	3005A	
550-195013-7	SWFTS-EM40-FB2	Total/NA	Water	3005A	
550-195013-8	SWFTS-EM40-FB2	Dissolved	Water	3005A	
550-195013-9	SWFTS-EM40-EB2	Total/NA	Water	3005A	
550-195013-10	SWFTS-EM40-EB2	Dissolved	Water	3005A	
550-195013-11	SWFTS-MW18-EM40	Total/NA	Water	3005A	
550-195013-12	SWFTS-MW18-EM40	Dissolved	Water	3005A	
550-195013-13	SWFTS-MW17-EM40	Total/NA	Water	3005A	
550-195013-14	SWFTS-MW17-EM40	Dissolved	Water	3005A	
550-195013-15	SWFTS-MW16-EM40	Total/NA	Water	3005A	
550-195013-16	SWFTS-MW16-EM40	Dissolved	Water	3005A	
MB 550-290884/1-A	Method Blank	Total/NA	Water	3005A	

Metals (Continued)

Prep Batch: 290884 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
LCS 550-290884/2-A	Lab Control Sample	Total/NA	Water	3005A	
LCSD 550-290884/3-A	Lab Control Sample Dup	Total/NA	Water	3005A	
550-195013-5 MS	SWFTS-MW19-EM40-FD	Total/NA	Water	3005A	
550-195013-5 MSD	SWFTS-MW19-EM40-FD	Total/NA	Water	3005A	

Prep Batch: 290897

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
550-195013-2	SWFTS-MW22-EM40	Dissolved	Water	3005A	
550-195013-4	SWFTS-MW19-EM40	Dissolved	Water	3005A	
550-195013-6	SWFTS-MW19-EM40-FD	Dissolved	Water	3005A	
550-195013-8	SWFTS-EM40-FB2	Dissolved	Water	3005A	
550-195013-10	SWFTS-EM40-EB2	Dissolved	Water	3005A	
550-195013-12	SWFTS-MW18-EM40	Dissolved	Water	3005A	
550-195013-14	SWFTS-MW17-EM40	Dissolved	Water	3005A	
550-195013-16	SWFTS-MW16-EM40	Dissolved	Water	3005A	
MB 550-290897/1-A	Method Blank	Total/NA	Water	3005A	
LCS 550-290897/2-A	Lab Control Sample	Total/NA	Water	3005A	
LCSD 550-290897/3-A	Lab Control Sample Dup	Total/NA	Water	3005A	
550-195013-2 MS	SWFTS-MW22-EM40	Dissolved	Water	3005A	
550-195013-2 MSD	SWFTS-MW22-EM40	Dissolved	Water	3005A	

Analysis Batch: 291022

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
550-195013-1	SWFTS-MW22-EM40	Total/NA	Water	6010B	290884
550-195013-2	SWFTS-MW22-EM40	Dissolved	Water	6010B	290884
550-195013-3	SWFTS-MW19-EM40	Total/NA	Water	6010B	290884
550-195013-4	SWFTS-MW19-EM40	Dissolved	Water	6010B	290884
550-195013-5	SWFTS-MW19-EM40-FD	Total/NA	Water	6010B	290884
550-195013-6	SWFTS-MW19-EM40-FD	Dissolved	Water	6010B	290884
550-195013-7	SWFTS-EM40-FB2	Total/NA	Water	6010B	290884
550-195013-8	SWFTS-EM40-FB2	Dissolved	Water	6010B	290884
550-195013-9	SWFTS-EM40-EB2	Total/NA	Water	6010B	290884
550-195013-10	SWFTS-EM40-EB2	Dissolved	Water	6010B	290884
550-195013-11	SWFTS-MW18-EM40	Total/NA	Water	6010B	290884
550-195013-12	SWFTS-MW18-EM40	Dissolved	Water	6010B	290884
550-195013-13	SWFTS-MW17-EM40	Total/NA	Water	6010B	290884
550-195013-14	SWFTS-MW17-EM40	Dissolved	Water	6010B	290884
550-195013-15	SWFTS-MW16-EM40	Total/NA	Water	6010B	290884
550-195013-16	SWFTS-MW16-EM40	Dissolved	Water	6010B	290884
MB 550-290884/1-A	Method Blank	Total/NA	Water	6010B	290884
LCS 550-290884/2-A	Lab Control Sample	Total/NA	Water	6010B	290884
LCSD 550-290884/3-A	Lab Control Sample Dup	Total/NA	Water	6010B	290884
550-195013-5 MS	SWFTS-MW19-EM40-FD	Total/NA	Water	6010B	290884
550-195013-5 MSD	SWFTS-MW19-EM40-FD	Total/NA	Water	6010B	290884

Analysis Batch: 291102

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
550-195013-2	SWFTS-MW22-EM40	Dissolved	Water	6010B	290884
550-195013-8	SWFTS-EM40-FB2	Dissolved	Water	6010B	290884

Metals

Analysis Batch: 291384

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
550-195013-2	SWFTS-MW22-EM40	Dissolved	Water	6020B	290897
550-195013-4	SWFTS-MW19-EM40	Dissolved	Water	6020B	290897
550-195013-6	SWFTS-MW19-EM40-FD	Dissolved	Water	6020B	290897
550-195013-8	SWFTS-EM40-FB2	Dissolved	Water	6020B	290897
550-195013-10	SWFTS-EM40-EB2	Dissolved	Water	6020B	290897
550-195013-12	SWFTS-MW18-EM40	Dissolved	Water	6020B	290897
550-195013-14	SWFTS-MW17-EM40	Dissolved	Water	6020B	290897
550-195013-16	SWFTS-MW16-EM40	Dissolved	Water	6020B	290897
MB 550-290897/1-A	Method Blank	Total/NA	Water	6020B	290897
LCS 550-290897/2-A	Lab Control Sample	Total/NA	Water	6020B	290897
LCSD 550-290897/3-A	Lab Control Sample Dup	Total/NA	Water	6020B	290897
550-195013-2 MS	SWFTS-MW22-EM40	Dissolved	Water	6020B	290897
550-195013-2 MSD	SWFTS-MW22-EM40	Dissolved	Water	6020B	290897

Analysis Batch: 291501

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
550-195013-2	SWFTS-MW22-EM40	Dissolved	Water	6020B	290897
550-195013-4	SWFTS-MW19-EM40	Dissolved	Water	6020B	290897
550-195013-6	SWFTS-MW19-EM40-FD	Dissolved	Water	6020B	290897
550-195013-8	SWFTS-EM40-FB2	Dissolved	Water	6020B	290897
550-195013-10	SWFTS-EM40-EB2	Dissolved	Water	6020B	290897
550-195013-12	SWFTS-MW18-EM40	Dissolved	Water	6020B	290897
550-195013-14	SWFTS-MW17-EM40	Dissolved	Water	6020B	290897
550-195013-16	SWFTS-MW16-EM40	Dissolved	Water	6020B	290897
MB 550-290897/1-A	Method Blank	Total/NA	Water	6020B	290897
LCS 550-290897/2-A	Lab Control Sample	Total/NA	Water	6020B	290897
LCSD 550-290897/3-A	Lab Control Sample Dup	Total/NA	Water	6020B	290897
550-195013-2 MS	SWFTS-MW22-EM40	Dissolved	Water	6020B	290897
550-195013-2 MSD	SWFTS-MW22-EM40	Dissolved	Water	6020B	290897

General Chemistry

Analysis Batch: 290973

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
550-195013-1	SWFTS-MW22-EM40	Total/NA	Water	SM 5310B	
550-195013-3	SWFTS-MW19-EM40	Total/NA	Water	SM 5310B	
550-195013-5	SWFTS-MW19-EM40-FD	Total/NA	Water	SM 5310B	
550-195013-7	SWFTS-EM40-FB2	Total/NA	Water	SM 5310B	
550-195013-9	SWFTS-EM40-EB2	Total/NA	Water	SM 5310B	
550-195013-11	SWFTS-MW18-EM40	Total/NA	Water	SM 5310B	
550-195013-13	SWFTS-MW17-EM40	Total/NA	Water	SM 5310B	
550-195013-15	SWFTS-MW16-EM40	Total/NA	Water	SM 5310B	
MB 550-290973/34	Method Blank	Total/NA	Water	SM 5310B	
LCS 550-290973/35	Lab Control Sample	Total/NA	Water	SM 5310B	
LCSD 550-290973/36	Lab Control Sample Dup	Total/NA	Water	SM 5310B	
550-194920-C-15 MS	Matrix Spike	Total/NA	Water	SM 5310B	
550-194920-D-15 MSD	Matrix Spike Duplicate	Total/NA	Water	SM 5310B	

Lab Chronicle

Client: Tetra Tech, Inc. Job ID: 550-195013-1
Project/Site: Tetra Tech M11 SWF Treatability Study

Client Sample ID: SWFTS-MW22-EM40 Lab Sample ID: 550-195013-1
Date Collected: 12/14/22 08:35 **Matrix: Water**
Date Received: 12/15/22 10:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	RSK-175		1	597367	JPH	EET DEN	12/20/22 17:17
Total/NA	Analysis	300.0		1	290912	AS1	EET PHX	12/15/22 16:45
Total/NA	Analysis	300.0		50	290914	AS1	EET PHX	12/15/22 22:23
Total/NA	Analysis	300.1B		100	291159	MEG	EET PHX	12/21/22 01:33
Total/NA	Analysis	314.0		200	290875	RDC	EET PHX	12/15/22 14:27
Total/NA	Prep	3005A			290884	ABA	EET PHX	12/15/22 14:30
Total/NA	Analysis	6010B		1	291022	CHS	EET PHX	12/16/22 15:20
Total/NA	Analysis	SM 5310B		4	290973	RDC	EET PHX	12/16/22 23:52

Client Sample ID: SWFTS-MW22-EM40 Lab Sample ID: 550-195013-2
Date Collected: 12/14/22 08:35 **Matrix: Water**
Date Received: 12/15/22 10:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Dissolved	Prep	3005A			290884	ABA	EET PHX	12/15/22 14:30
Dissolved	Analysis	6010B		1	291022	CHS	EET PHX	12/16/22 14:30
Dissolved	Prep	3005A			290884	ABA	EET PHX	12/15/22 14:30
Dissolved	Analysis	6010B		2	291102	CHS	EET PHX	12/19/22 15:43
Dissolved	Prep	3005A			290897	ABA	EET PHX	12/15/22 15:50
Dissolved	Analysis	6020B		1	291384	ARE	EET PHX	12/22/22 15:53
Dissolved	Prep	3005A			290897	ABA	EET PHX	12/15/22 15:50
Dissolved	Analysis	6020B		1	291501	ARE	EET PHX	12/27/22 13:28

Client Sample ID: SWFTS-MW19-EM40 Lab Sample ID: 550-195013-3
Date Collected: 12/14/22 09:30 **Matrix: Water**
Date Received: 12/15/22 10:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	RSK-175		1	597367	JPH	EET DEN	12/20/22 17:30
Total/NA	Analysis	300.0		1	290912	AS1	EET PHX	12/15/22 17:03
Total/NA	Analysis	300.0		50	290964	AS1	EET PHX	12/16/22 15:26
Total/NA	Analysis	300.1B		50	291159	MEG	EET PHX	12/21/22 02:03
Total/NA	Analysis	314.0		200	290947	RDC	EET PHX	12/16/22 12:00
Total/NA	Prep	3005A			290884	ABA	EET PHX	12/15/22 14:30
Total/NA	Analysis	6010B		1	291022	CHS	EET PHX	12/16/22 14:27
Total/NA	Analysis	SM 5310B		1	290973	RDC	EET PHX	12/17/22 00:06

Client Sample ID: SWFTS-MW19-EM40 Lab Sample ID: 550-195013-4
Date Collected: 12/14/22 09:30 **Matrix: Water**
Date Received: 12/15/22 10:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Dissolved	Prep	3005A			290884	ABA	EET PHX	12/15/22 14:30
Dissolved	Analysis	6010B		1	291022	CHS	EET PHX	12/16/22 14:32

Lab Chronicle

Client: Tetra Tech, Inc. Job ID: 550-195013-1
Project/Site: Tetra Tech M11 SWF Treatability Study

Client Sample ID: SWFTS-MW19-EM40 Lab Sample ID: 550-195013-4

Date Collected: 12/14/22 09:30 **Matrix: Water**
Date Received: 12/15/22 10:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Dissolved	Prep	3005A			290897	ABA	EET PHX	12/15/22 15:50
Dissolved	Analysis	6020B		1	291384	ARE	EET PHX	12/22/22 15:56
Dissolved	Prep	3005A			290897	ABA	EET PHX	12/15/22 15:50
Dissolved	Analysis	6020B		1	291501	ARE	EET PHX	12/27/22 13:30

Client Sample ID: SWFTS-MW19-EM40-FD Lab Sample ID: 550-195013-5

Date Collected: 12/14/22 09:30 **Matrix: Water**
Date Received: 12/15/22 10:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	RSK-175		1	597367	JPH	EET DEN	12/20/22 17:44
Total/NA	Analysis	300.0		1	290912	AS1	EET PHX	12/15/22 17:22
Total/NA	Analysis	300.0		50	290915	AS1	EET PHX	12/15/22 18:40
Total/NA	Analysis	300.1B		50	291159	MEG	EET PHX	12/21/22 02:32
Total/NA	Analysis	314.0		200	290947	RDC	EET PHX	12/16/22 13:08
Total/NA	Prep	3005A			290884	ABA	EET PHX	12/15/22 14:30
Total/NA	Analysis	6010B		1	291022	CHS	EET PHX	12/16/22 14:24
Total/NA	Analysis	SM 5310B		1	290973	RDC	EET PHX	12/17/22 00:44

Client Sample ID: SWFTS-MW19-EM40-FD Lab Sample ID: 550-195013-6

Date Collected: 12/14/22 09:30 **Matrix: Water**
Date Received: 12/15/22 10:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Dissolved	Prep	3005A			290884	ABA	EET PHX	12/15/22 14:30
Dissolved	Analysis	6010B		1	291022	CHS	EET PHX	12/16/22 14:35
Dissolved	Prep	3005A			290897	ABA	EET PHX	12/15/22 15:50
Dissolved	Analysis	6020B		1	291384	ARE	EET PHX	12/22/22 15:58
Dissolved	Prep	3005A			290897	ABA	EET PHX	12/15/22 15:50
Dissolved	Analysis	6020B		1	291501	ARE	EET PHX	12/27/22 13:32

Client Sample ID: SWFTS-EM40-FB2 Lab Sample ID: 550-195013-7

Date Collected: 12/14/22 10:00 **Matrix: Water**
Date Received: 12/15/22 10:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	RSK-175		1	597367	JPH	EET DEN	12/20/22 17:58
Total/NA	Analysis	300.0		1	290915	AS1	EET PHX	12/15/22 16:20
Total/NA	Analysis	300.1B		1	291159	MEG	EET PHX	12/21/22 03:02
Total/NA	Analysis	314.0		1	290875	RDC	EET PHX	12/15/22 15:34
Total/NA	Prep	3005A			290884	ABA	EET PHX	12/15/22 14:30
Total/NA	Analysis	6010B		1	291022	CHS	EET PHX	12/16/22 14:38
Total/NA	Analysis	SM 5310B		1	290973	RDC	EET PHX	12/17/22 00:59

Client Sample ID: SWFTS-EM40-FB2 — Lab Sample ID: 550-195013-8

Date Collected: 12/14/22 10:00 — **Matrix: Water**
Date Received: 12/15/22 10:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Dissolved	Prep	3005A			290884	ABA	EET PHX	12/15/22 14:30
Dissolved	Analysis	6010B		1	291022	CHS	EET PHX	12/16/22 14:41
Dissolved	Prep	3005A			290884	ABA	EET PHX	12/15/22 14:30
Dissolved	Analysis	6010B		1	291102	CHS	EET PHX	12/19/22 15:46
Dissolved	Prep	3005A			290897	ABA	EET PHX	12/15/22 15:50
Dissolved	Analysis	6020B		1	291384	ARE	EET PHX	12/22/22 16:00
Dissolved	Prep	3005A			290897	ABA	EET PHX	12/15/22 15:50
Dissolved	Analysis	6020B		1	291501	ARE	EET PHX	12/27/22 13:34

Client Sample ID: SWFTS-EM40-EB2 — Lab Sample ID: 550-195013-9

Date Collected: 12/14/22 10:15 — **Matrix: Water**
Date Received: 12/15/22 10:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	RSK-175		1	597367	JPH	EET DEN	12/20/22 18:25
Total/NA	Analysis	300.0		1	290915	AS1	EET PHX	12/15/22 16:48
Total/NA	Analysis	300.1B		1	291159	MEG	EET PHX	12/21/22 03:31
Total/NA	Analysis	314.0		1	290892	RDC	EET PHX	12/15/22 14:08
Total/NA	Prep	3005A			290884	ABA	EET PHX	12/15/22 14:30
Total/NA	Analysis	6010B		1	291022	CHS	EET PHX	12/16/22 14:44
Total/NA	Analysis	SM 5310B		1	290973	RDC	EET PHX	12/17/22 01:10

Client Sample ID: SWFTS-EM40-EB2 — Lab Sample ID: 550-195013-10

Date Collected: 12/14/22 10:15 — **Matrix: Water**
Date Received: 12/15/22 10:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Dissolved	Prep	3005A			290884	ABA	EET PHX	12/15/22 14:30
Dissolved	Analysis	6010B		1	291022	CHS	EET PHX	12/16/22 14:46
Dissolved	Prep	3005A			290897	ABA	EET PHX	12/15/22 15:50
Dissolved	Analysis	6020B		1	291384	ARE	EET PHX	12/22/22 16:02
Dissolved	Prep	3005A			290897	ABA	EET PHX	12/15/22 15:50
Dissolved	Analysis	6020B		1	291501	ARE	EET PHX	12/27/22 13:36

Client Sample ID: SWFTS-MW18-EM40 — Lab Sample ID: 550-195013-11

Date Collected: 12/14/22 11:15 — **Matrix: Water**
Date Received: 12/15/22 10:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	RSK-175		1	597367	JPH	EET DEN	12/20/22 18:39
Total/NA	Analysis	300.0		2	290912	AS1	EET PHX	12/15/22 17:40
Total/NA	Analysis	300.0		50	290915	AS1	EET PHX	12/15/22 19:08
Total/NA	Analysis	300.1B		50	291225	MEG	EET PHX	12/21/22 09:25
Total/NA	Analysis	314.0		200	290892	RDC	EET PHX	12/15/22 14:31

Lab Chronicle

Client: Tetra Tech, Inc. Job ID: 550-195013-1
Project/Site: Tetra Tech M11 SWF Treatability Study

Client Sample ID: SWFTS-MW18-EM40 Lab Sample ID: 550-195013-11

Date Collected: 12/14/22 11:15 **Matrix: Water**
Date Received: 12/15/22 10:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	3005A			290884	ABA	EET PHX	12/15/22 14:30
Total/NA	Analysis	6010B		1	291022	CHS	EET PHX	12/16/22 14:49
Total/NA	Analysis	SM 5310B		1	290973	RDC	EET PHX	12/17/22 01:23

Client Sample ID: SWFTS-MW18-EM40 Lab Sample ID: 550-195013-12

Date Collected: 12/14/22 11:15 **Matrix: Water**
Date Received: 12/15/22 10:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Dissolved	Prep	3005A			290884	ABA	EET PHX	12/15/22 14:30
Dissolved	Analysis	6010B		1	291022	CHS	EET PHX	12/16/22 14:58
Dissolved	Prep	3005A			290897	ABA	EET PHX	12/15/22 15:50
Dissolved	Analysis	6020B		1	291384	ARE	EET PHX	12/22/22 16:04
Dissolved	Prep	3005A			290897	ABA	EET PHX	12/15/22 15:50
Dissolved	Analysis	6020B		1	291501	ARE	EET PHX	12/27/22 13:38

Client Sample ID: SWFTS-MW17-EM40 Lab Sample ID: 550-195013-13

Date Collected: 12/14/22 12:30 **Matrix: Water**
Date Received: 12/15/22 10:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	RSK-175		1	597367	JPH	EET DEN	12/20/22 18:52
Total/NA	Analysis	300.0		2	290912	AS1	EET PHX	12/15/22 17:58
Total/NA	Analysis	300.0		50	290964	AS1	EET PHX	12/16/22 15:44
Total/NA	Analysis	300.1B		100	291225	MEG	EET PHX	12/21/22 09:54
Total/NA	Analysis	314.0		100	291132	RDC	EET PHX	12/20/22 12:04
Total/NA	Prep	3005A			290884	ABA	EET PHX	12/15/22 14:30
Total/NA	Analysis	6010B		1	291022	CHS	EET PHX	12/16/22 15:01
Total/NA	Analysis	SM 5310B		1	290973	RDC	EET PHX	12/17/22 01:35

Client Sample ID: SWFTS-MW17-EM40 Lab Sample ID: 550-195013-14

Date Collected: 12/14/22 12:30 **Matrix: Water**
Date Received: 12/15/22 10:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Dissolved	Prep	3005A			290884	ABA	EET PHX	12/15/22 14:30
Dissolved	Analysis	6010B		1	291022	CHS	EET PHX	12/16/22 15:03
Dissolved	Prep	3005A			290897	ABA	EET PHX	12/15/22 15:50
Dissolved	Analysis	6020B		1	291384	ARE	EET PHX	12/22/22 16:10
Dissolved	Prep	3005A			290897	ABA	EET PHX	12/15/22 15:50
Dissolved	Analysis	6020B		1	291501	ARE	EET PHX	12/27/22 13:44

Lab Chronicle

Client: Tetra Tech, Inc. Job ID: 550-195013-1
Project/Site: Tetra Tech M11 SWF Treatability Study

Client Sample ID: SWFTS-MW16-EM40 Lab Sample ID: 550-195013-15

Date Collected: 12/14/22 13:40 **Matrix: Water**
Date Received: 12/15/22 10:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	RSK-175		1	597367	JPH	EET DEN	12/20/22 19:06
Total/NA	Analysis	300.0		1	290912	AS1	EET PHX	12/15/22 18:17
Total/NA	Analysis	300.0		50	290964	AS1	EET PHX	12/16/22 16:03
Total/NA	Analysis	300.1B		2	291225	MEG	EET PHX	12/21/22 10:24
Total/NA	Analysis	314.0		20	290892	RDC	EET PHX	12/15/22 15:16
Total/NA	Prep	3005A			290884	ABA	EET PHX	12/15/22 14:30
Total/NA	Analysis	6010B		1	291022	CHS	EET PHX	12/16/22 15:06
Total/NA	Analysis	SM 5310B		4	290973	RDC	EET PHX	12/17/22 01:49

Client Sample ID: SWFTS-MW16-EM40 Lab Sample ID: 550-195013-16

Date Collected: 12/14/22 13:40 **Matrix: Water**
Date Received: 12/15/22 10:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Dissolved	Prep	3005A			290884	ABA	EET PHX	12/15/22 14:30
Dissolved	Analysis	6010B		1	291022	CHS	EET PHX	12/16/22 15:09
Dissolved	Prep	3005A			290897	ABA	EET PHX	12/15/22 15:50
Dissolved	Analysis	6020B		1	291384	ARE	EET PHX	12/22/22 16:12
Dissolved	Prep	3005A			290897	ABA	EET PHX	12/15/22 15:50
Dissolved	Analysis	6020B		1	291501	ARE	EET PHX	12/27/22 13:46

Laboratory References:

EET DEN = Eurofins Denver, 4955 Yarrow Street, Arvada, CO 80002, TEL (303)736-0100

EET PHX = Eurofins Phoenix, 4625 East Cotton Center Boulevard, Suite #189, Phoenix, AZ 85040, TEL (602)437-3340

Accreditation/Certification Summary

Client: Tetra Tech, Inc.
Job ID: 550-195013-1
Project/Site: Tetra Tech M11 SWF Treatability Study

Laboratory: Eurofins Phoenix

All accreditations/certifications held by this laboratory are listed. Not all accreditations/certifications are applicable to this report.

Authority	Program	Identification Number	Expiration Date
Arizona	State	AZ0728	06-10-23
California	State	2941	03-09-23
Nevada	State	AZ1030	07-31-23
Oregon	NELAP	AZ100001	03-09-23
USDA	US Federal Programs	P330-19-00227	08-27-22 *

Laboratory: Eurofins Denver

All accreditations/certifications held by this laboratory are listed. Not all accreditations/certifications are applicable to this report.

Authority	Program	Identification Number	Expiration Date
A2LA	Dept. of Defense ELAP	2907.01	10-31-23
A2LA	ISO/IEC 17025	2907.01	10-31-23
Alabama	State Program	40730	09-30-12 *
Alaska (UST)	State	18-001	02-08-23
Arizona	State	AZ0713	12-20-22
Arkansas DEQ	State	19-047-0	05-31-23
California	State	2513	01-08-23
Connecticut	State	PH-0686	09-30-22 *
Florida	NELAP	E87667-57	06-30-23
Georgia	State	4025-011	01-08-23
Illinois	NELAP	2000172019-1	04-30-23
Iowa	State	IA#370	12-01-24
Kansas	NELAP	E-10166	04-30-23
Kentucky (WW)	State	KY98047	12-31-22
Louisiana	NELAP	30785	06-30-14 *
Louisiana	NELAP	30785	06-30-23
Louisiana (All)	NELAP	30785	06-30-23
Minnesota	NELAP	1788752	12-31-22
Nevada	State	CO000262020-1	07-31-23
New Hampshire	NELAP	205319	04-28-23
New Jersey	NELAP	190002	06-30-23
New York	NELAP	59923	04-01-23
North Carolina (WW/SW)	State	358	12-31-22
North Dakota	State	R-034	01-08-23
Oklahoma	NELAP	8614	08-31-23
Oregon	NELAP	4025-011	01-09-23
Pennsylvania	NELAP	013	07-31-23
South Carolina	State	72002001	01-08-23
Texas	NELAP	TX104704183-08-TX	09-30-09 *
Texas	NELAP	T104704183-21-19	09-30-23
US Fish & Wildlife	US Federal Programs	058448	07-31-23
USDA	US Federal Programs	P330-20-00065	03-06-23
Utah	NELAP	QUAN5	06-30-13 *
Utah	NELAP	CO000262019-11	07-31-23
Virginia	NELAP	10490	06-14-23
Washington	State	C583-19	08-03-23
Wisconsin	State	999615430	08-31-23

* Accreditation/Certification renewal pending - accreditation/certification considered valid.

Method Summary

Client: Tetra Tech, Inc.
Job ID: 550-195013-1
Project/Site: Tetra Tech M11 SWF Treatability Study

Method	Method Description	Protocol	Laboratory
RSK-175	Dissolved Gases (GC)	RSK	EET DEN
300.0	Anions, Ion Chromatography	MCAWW	EET PHX
300.1B	Disinfection By-Products, (IC)	EPA	EET PHX
314.0	Perchlorate (IC)	EPA	EET PHX
6010B	Metals (ICP)	SW846	EET PHX
6020B	Metals (ICP/MS)	SW846	EET PHX
SM 5310B	Organic Carbon, Total (TOC)	SM	EET PHX
3005A	Preparation, Total Metals	SW846	EET PHX

Protocol References:

EPA = US Environmental Protection Agency

MCAWW = "Methods For Chemical Analysis Of Water And Wastes", EPA-600/4-79-020, March 1983 And Subsequent Revisions.

RSK = Sample Prep And Calculations For Dissolved Gas Analysis In Water Samples Using A GC Headspace Equilibration Technique, RSKSOP-175, Rev. 0, 8/11/94, USEPA Research Lab

SM = "Standard Methods For The Examination Of Water And Wastewater"

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

Laboratory References:

EET DEN = Eurofins Denver, 4955 Yarrow Street, Arvada, CO 80002, TEL (303)736-0100

EET PHX = Eurofins Phoenix, 4625 East Cotton Center Boulevard, Suite #189, Phoenix, AZ 85040, TEL (602)437-3340

Tetra Tech
1093 Commerce Park Drive
Oak Ridge, TN37830
(865)483-9900

CHAIN-OF-CUSTODY

TestAmerica Las Vegas 219

195013

NERT-M11
Groundwater Sampling

Laboratory Name: Eurofins TestAmerica, Phoenix (602) 437-3340 | Address: 4625 East Cotton Ctr Blvd Suite 189 Phoenix, AZ 85040 | Contact: Mary Charlson 602-659-7627 | Page ___ of ___

Project Name: Tetra Tech M11 SWF Treatability Study | Sampler: J. Bunkers | Sampler Phone: 7027672053

Project No. M11-CWP-18-WA5
NERT - Seep Well Field Area Bioremediation Treatability Study | Project Contact: **Maureen McMyler** | Site Telephone No.: (702) 966-8340

Report to: Maureen McMyler, 1093 Commerce Park Dr. (865)220-4762 | Project Manager/Supervisor: **Dana Grady**

Bill to: Sunshine Pryor, 350 Indiana St., Golden, CO 80401 (303) 217-5700

Analysis and Method Requested

Item No.	Sample Number	Date	Time	G=Grab C=Comp	Matrix	Sample Description, Location	Number of Containers	Perchlorate E314.0	TOC SM5310B	Chlorate E300.1	Sulfate/Nitrate E300.0 SHORT HOLD NITRATE!	Dissolved Metals (field filtered)	Total Mn by 6010B	Methane by RSK175 (no headspace)	Notes
	Preservation Code:						-	N	A	L	N	D	D	A	
1	SWFTS-MW22-EM40	12/14/22	0835	G	W		12	X	X	X	X	X	X	X	-1+2
2	SWFTS-MW19-EM40	12/14/22	0930	G	W		12	X	X	X	X	X	X	X	-3+4
3	SWFTS-MW19-EM40-FD	12/14/22	0930	G	W		12	X	X	X	X	X	X	X	-5+6
4	SWFTS-EM40-FB2	12/14/22	1000	G	W		12	X	X	X	X	X	X	X	-7+8
5	SWFTS-EM40-EB2	12/14/22	1015	G	W		12	X	X	X	X	X	X	X	-9+10
6	SWFTS-MW18-EM40	12/14/22	1115	G	W		12	X	X	X	X	X	X	X	-11+12
7	SWFTS-MW17-EM40	12/14/22	1230	G	W		12	X	X	X	X	X	X	X	-13+14
8	SWFTS-MW16-EM40	12/14/22	1340	G	W		12	X	X	X	X	X	X	X	-15+16
9															
10															

550-195013 Chain of Custody

Transfers Relinquished By (Signature)	Date/Time	Transfers Accepted By (Signature)	Date/Time	Special Instructions:
	12/14/22 1500		12/14/22 1500	
	12/14/22 1600			
	12-15-22 10:00	Laboratory	FedEx Airbill No.:	FedEx Airbill No.:
			Sampler's Signature: (REQUIRED)	Sampler's Signature:

TAT ___Standard ___ Rush Due _____ | Received Good Condition ____ Y ____ N ____ Cold

Fedex

Temp 3.0 °C

Eurofins Phoenix
4625 East Cotton Center Boulevard Suite #189
Phoenix, AZ 85040
Phone. 602-437-3340

Chain of Custody Record

eurofins

Client Information (Sub Contract Lab)	Sampler:	Lab PM: Sester, Rachel E	Carrier Tracking No(s):	COC No: 550-35636.1
Client Contact: Shipping/Receiving	Phone:	E-Mail: Rachel Sester@et.eurofinsus.com	State of Origin: Nevada	Page: Page 1 of 1
Company: TestAmerica Laboratories, Inc.		Accreditations Required (See note): State Program - Nevada		Job #: 550-195013-1
Address: 4955 Yarrow Street, ,	Due Date Requested: 1/1/2023			
City: Arvada	TAT Requested (days):			
State, Zip: CO, 80002				
Phone: 303-736-0100(Tel) 303-431-7171(Fax)	PO #:			
Email:	WO #:			
Project Name: Tetra Tech M11 SWF Treatability Study	Project #: 55015433			
Site:	SSOW#:			

Analysis Requested

Preservation Codes:
A - HCL
B - NaOH
C - Zn Acetate
D - Nitric Acid
E - NaHSO4
F - MeOH
G - Amchlor
H - Ascorbic Acid
I - Ice
J - DI Water
K - EDTA
L - EDA
M - Hexane
N - None
O - AsNaO2
P - Na2O4S
Q - Na2SO3
R - Na2S2O3
S - H2SO4
T - TSP Dodecahydrate
U - Acetone
V - MCAA
W - pH 4-5
Y - Trizma
Z - other (specify)
Other:

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	RSK_175/ (MOD) Local Method	Total Number of containers	Special Instructions/Note:
			Preservation Code:						
SWFTS-MW22-EM40 (550-195013-1)	12/14/22	08:35 Pacific		Water			X	3	
SWFTS-MW19-EM40 (550-195013-3)	12/14/22	09:30 Pacific		Water			X	3	
SWFTS-MW19-EM40-FD (550-195013-5)	12/14/22	09:30 Pacific		Water			X	3	
SWFTS-EM40-FB2 (550-195013-7)	12/14/22	10:00 Pacific		Water			X	3	
SWFTS-EM40-EB2 (550-195013-9)	12/14/22	10:15 Pacific		Water			X	3	
SWFTS-MW18-EM40 (550-195013-11)	12/14/22	11:15 Pacific		Water			X	3	
SWFTS-MW17-EM40 (550-195013-13)	12/14/22	12:30 Pacific		Water			X	3	
SWFTS-MW16-EM40 (550-195013-15)	12/14/22	13:40 Pacific		Water			X	3	

Note: Since laboratory accreditations are subject to change, Eurofins Environment Testing Southwest, LLC places the ownership of method, analyte & accreditation compliance upon our subcontract laboratories. This sample shipment is forwarded under chain-of-custody. If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed, the samples must be shipped back to the Eurofins Environment Testing Southwest, LLC laboratory or other instructions will be provided. Any changes to accreditation status should be brought to Eurofins Environment Testing Southwest, LLC attention immediately. If all requested accreditations are current to date, return the signed Chain of Custody attesting to said compliance to Eurofins Environment Testing Southwest, LLC.

Possible Hazard Identification
Unconfirmed

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
☐ *Return To Client* ☐ *Disposal By Lab* ☐ *Archive For* _____ *Months*

Deliverable Requested: I, II, III, IV, Other (specify) Primary Deliverable Rank: 2

Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:		
Relinquished by: [illegible]	Date/Time: 15:00	Company: EETSW	Received by: Fedex	Date/Time:	Company
Relinquished by: Fedex	Date/Time:	Company	Received by: [illegible]	Date/Time: 12/16/22 915	Company: ETA/DEN
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

Custody Seals Intact: Δ Yes Δ No | Custody Seal No.: | Cooler Temperature(s) °C and Other Remarks: 1.5 1R12 CF 0.0

Ver: 06/08/2021

Login Sample Receipt Checklist

Client: Tetra Tech, Inc.

Job Number: 550-195013-1

Login Number: 195013
List Number: 1
Creator: Maycock, Lisa

List Source: Eurofins Phoenix

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	True	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	False	Check done at department level as required.

Login Sample Receipt Checklist

Client: Tetra Tech, Inc.

Job Number: 550-195013-1

Login Number: 195013
List Number: 2
Creator: Lee, Jerry

List Source: Eurofins Denver
List Creation: 12/16/22 02:54 PM

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	True	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	N/A	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	N/A	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

eurofins | Environment Testing

ANALYTICAL REPORT

PREPARED FOR

Attn: Dana Grady
Tetra Tech, Inc.
1093 Commerce Park Drive
Suite 100
Oak Ridge, Tennessee 37830

Generated 12/30/2022 1:46:47 PM

JOB DESCRIPTION

Tetra Tech M11 SWF Treatability Study

JOB NUMBER

550-195015-1

Eurofins Phoenix
4625 East Cotton Center Boulevard
Suite #189
Phoenix AZ 85040

See page two for job notes and contact information.

Job Notes

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The data in the report relate to the field sample(s) as received by the laboratory and associated QC. All results have been reviewed and have been found to be compliant with laboratory and accreditation requirements, with the exception of the noted deviation(s). For questions, please contact the Project Manager.

The test results in this report relate only to the samples as received by the laboratory and will meet all requirements of the methodology, with any exceptions noted. This report shall not be reproduced except in full, without the express written approval of the laboratory. All questions should be directed to the Eurofins Environment Testing Southwest, LLC Project Manager.

Authorization

Generated
12/30/2022 1:46:47 PM

Authorized for release by
Rachel Sester, Project Manager I
Rachel.Sester@et.eurofinsus.com
(602)659-7615

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Qualifiers

GC VOA

Qualifier	Qualifier Description
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

HPLC/IC

Qualifier	Qualifier Description
4	MS, MSD: The analyte present in the original sample is greater than 4 times the matrix spike concentration; therefore, control limits are not applicable.
D	Sample results are obtained from a dilution; the surrogate or matrix spike recoveries reported are calculated from diluted samples.
E	Result exceeded calibration range.
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

Metals

Qualifier	Qualifier Description
^2	Calibration Blank (ICB and/or CCB) is outside acceptance limits.
4	MS, MSD: The analyte present in the original sample is greater than 4 times the matrix spike concentration; therefore, control limits are not applicable.
B	Compound was found in the blank and sample.
cn	Refer to Case Narrative for further detail
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

General Chemistry

Qualifier	Qualifier Description
F1	MS and/or MSD recovery exceeds control limits.
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CFU	Colony Forming Unit
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MCL	EPA recommended "Maximum Contaminant Level"
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
MPN	Most Probable Number
MQL	Method Quantitation Limit
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
NEG	Negative / Absent
POS	Positive / Present
PQL	Practical Quantitation Limit
PRES	Presumptive
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)

Glossary (Continued)

Abbreviation	These commonly used abbreviations may or may not be present in this report.
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)
TNTC	Too Numerous To Count

Job ID: 550-195015-1

Laboratory: Eurofins Phoenix

Narrative

Job Narrative
550-195015-1

Receipt
The samples were received on 12/15/2022 10:00 AM. Unless otherwise noted below, the samples arrived in good condition, and, where required, properly preserved and on ice. The temperature of the cooler at receipt time was 2.6°C

GC VOA
No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

HPLC/IC
Method 300.1B_28D: The following samples were diluted for Chlorate by method EPA 300.1B due to an abundance of non-target analytes present within the sample matrix: SWFTS-MW06A-EM40 (550-195015-5) and SWFTS-MW-06A-EM40-FD (550-195015-7). In the diluted samples this analyte was not detected or was beneath the lowest calibration limit. As such, elevated reporting limits (RLs) have been provided.

Method 300_ORGFMS: The following sample was diluted due to the nature of the sample matrix: SWFTS-MW-08C-EM40 (550-195015-15). Elevated reporting limits (RLs) are provided.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

Metals
Method 6010B: The continuing calibration blank (CCB) for analytical batch 550-291022 contained Sodium above the reporting limit (RL). All reported samples associated with this CCB were either ND for this analyte or contained this analyte at a concentration greater than 10X the value found in the CCB; therefore, re-analysis of samples was not performed.

Method 6010B: The spiking solution used during the extraction process for the laboratory control sample/ laboratory control sample duplicate (LCS/LCSD) and matrix spike/matrix spike duplicate (MS/MSD) and post digestion spike (PDS) associated with preparation batch 550-290884 did not contain Phosphorus; therefore, percent recoveries are unavailable. The affected samples could not be re-prepared and / or re-analyzed with a spike containing these analytes. The instrument QC was within acceptance criteria and may be used to evaluate these analytes for this method. The results have been reported with cn qualifiers. Affected samples: SWFTS-MW-04-EM40 (550-195015-2), (LCS 550-290884/2-A), (LCSD 550-290884/3-A), (550-195013-J-5-D), (550-195013-J-5-A MS), (550-195013-J-5-B MSD) and (550-195013-J-5-C PDS).

Method 6010B: The continuing calibration blank (CCB) for analytical batch 550-291111 contained Silicon above the reporting limit (RL). All reported samples associated with this CCB were either ND for this analyte or contained this analyte at a concentration greater than 10X the value found in the CCB; therefore, re-analysis of samples was not performed.

Method 6010B: The following samples were diluted to bring the concentration of target analytes within the calibration range: SWFTS-MW-02-EM40 (550-195015-4) and SWFTS-MW-08C-EM40 (550-195015-16). Elevated reporting limits (RLs) are provided.

Method 6010B: The spiking solution used during the extraction process for the laboratory control sample/ laboratory control sample duplicate (LCS/LCSD) and matrix spike/matrix spike duplicate (MS/MSD) and post digestion spike (PDS) associated with preparation batch 550-290891 did not contain Phosphorus; therefore, percent recoveries are unavailable. The affected samples could not be re-prepared and / or re-analyzed with a spike containing these analytes. The instrument QC was within acceptance criteria and may be used to evaluate these analytes for this method. The results have been reported with cn qualifiers. Affected samples: SWFTS-MW-02-EM40 (550-195015-4), SWFTS-MW06A-EM40 (550-195015-6), SWFTS-MW-06A-EM40-FD (550-195015-8), SWFTS-MW-06B-EM40 (550-195015-10), SWFTS-MW-07A-EM40 (550-195015-12), SWFTS-MW-07B-EM40 (550-195015-14), SWFTS-MW-08C-EM40 (550-195015-16), (LCS 550-290891/2-A), (LCSD 550-290891/3-A), (550-195015-J-5-A MS), (550-195015-J-5-B MSD) and (550-195015-J-5-C PDS).

Method 6010B: The continuing calibration blank (CCB) for analytical batch 550-291022 contained Sodium above the reporting limit (RL). All reported samples associated with this CCB were either ND for this analyte or contained this analyte at a concentration greater than 10X

Job ID: 550-195015-1 (Continued)

Laboratory: Eurofins Phoenix (Continued)

the value found in the CCB; therefore, re-analysis of samples was not performed.

Method 6010B: The spiking solution used during the extraction process for the laboratory control sample/ laboratory control sample duplicate (LCS/LCSD) and matrix spike/matrix spike duplicate (MS/MSD) and post digestion spike (PDS) associated with preparation batch 550-290884 did not contain Phosphorus; therefore, percent recoveries are unavailable. The affected samples could not be re-prepared and / or re-analyzed with a spike containing these analytes. The instrument QC was within acceptance criteria and may be used to evaluate these analytes for this method. The results have been reported with cn qualifiers. Affected samples: SWFTS-MW-04-EM40 (550-195015-2), (LCS 550-290884/2-A), (LCSD 550-290884/3-A), (550-195013-J-5-D), (550-195013-J-5-A MS), (550-195013-J-5-B MSD) and (550-195013-J-5-C PDS).

Method 6010B: The continuing calibration blank (CCB) for analytical batch 550-291111 contained Silicon above the reporting limit (RL). All reported samples associated with this CCB were either ND for this analyte or contained this analyte at a concentration greater than 10X the value found in the CCB; therefore, re-analysis of samples was not performed.

Method 6010B: The following samples were diluted to bring the concentration of target analytes within the calibration range: SWFTS-MW-02-EM40 (550-195015-4) and SWFTS-MW-08C-EM40 (550-195015-16). Elevated reporting limits (RLs) are provided.

Method 6010B: The spiking solution used during the extraction process for the laboratory control sample/ laboratory control sample duplicate (LCS/LCSD) and matrix spike/matrix spike duplicate (MS/MSD) and post digestion spike (PDS) associated with preparation batch 550-290891 did not contain Phosphorus; therefore, percent recoveries are unavailable. The affected samples could not be re-prepared and / or re-analyzed with a spike containing these analytes. The instrument QC was within acceptance criteria and may be used to evaluate these analytes for this method. The results have been reported with cn qualifiers. Affected samples: SWFTS-MW-02-EM40 (550-195015-4), SWFTS-MW06A-EM40 (550-195015-6), SWFTS-MW-06A-EM40-FD (550-195015-8), SWFTS-MW-06B-EM40 (550-195015-10), SWFTS-MW-07A-EM40 (550-195015-12), SWFTS-MW-07B-EM40 (550-195015-14), SWFTS-MW-08C-EM40 (550-195015-16), (LCS 550-290891/2-A), (LCSD 550-290891/3-A), (550-195015-J-5-A MS), (550-195015-J-5-B MSD) and (550-195015-J-5-C PDS).

No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

General Chemistry

No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

Sample Summary

Client: Tetra Tech, Inc.
Job ID: 550-195015-1
Project/Site: Tetra Tech M11 SWF Treatability Study

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
550-195015-1	SWFTS-MW-04-EM40	Water	12/14/22 08:10	12/15/22 10:00
550-195015-2	SWFTS-MW-04-EM40	Water	12/14/22 08:10	12/15/22 10:00
550-195015-3	SWFTS-MW-02-EM40	Water	12/14/22 09:17	12/15/22 10:00
550-195015-4	SWFTS-MW-02-EM40	Water	12/14/22 09:17	12/15/22 10:00
550-195015-5	SWFTS-MW06A-EM40	Water	12/14/22 10:28	12/15/22 10:00
550-195015-6	SWFTS-MW06A-EM40	Water	12/14/22 10:28	12/15/22 10:00
550-195015-7	SWFTS-MW-06A-EM40-FD	Water	12/14/22 10:28	12/15/22 10:00
550-195015-8	SWFTS-MW-06A-EM40-FD	Water	12/14/22 10:28	12/15/22 10:00
550-195015-9	SWFTS-MW-06B-EM40	Water	12/14/22 11:37	12/15/22 10:00
550-195015-10	SWFTS-MW-06B-EM40	Water	12/14/22 11:37	12/15/22 10:00
550-195015-11	SWFTS-MW-07A-EM40	Water	12/14/22 12:27	12/15/22 10:00
550-195015-12	SWFTS-MW-07A-EM40	Water	12/14/22 12:27	12/15/22 10:00
550-195015-13	SWFTS-MW-07B-EM40	Water	12/14/22 13:18	12/15/22 10:00
550-195015-14	SWFTS-MW-07B-EM40	Water	12/14/22 13:18	12/15/22 10:00
550-195015-15	SWFTS-MW-08C-EM40	Water	12/14/22 14:13	12/15/22 10:00
550-195015-16	SWFTS-MW-08C-EM40	Water	12/14/22 14:13	12/15/22 10:00

Detection Summary

Client: Tetra Tech, Inc.
Job ID: 550-195015-1
Project/Site: Tetra Tech M11 SWF Treatability Study

Client Sample ID: SWFTS-MW-04-EM40 — Lab Sample ID: 550-195015-1

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Nitrate as N	2.9		0.050	0.014	mg/L	1		300.0	Total/NA
Sulfate	790		100	21	mg/L	50		300.0	Total/NA
Chlorate	6800		2000	490	ug/L	100		300.1B	Total/NA
Perchlorate	4000		200	63	ug/L	200		314.0	Total/NA
Manganese	0.82		0.020	0.0083	mg/L	1		6010B	Total/NA
Total Organic Carbon	2.7		0.50	0.26	mg/L	1		SM 5310B	Total/NA

Client Sample ID: SWFTS-MW-04-EM40 — Lab Sample ID: 550-195015-2

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Aluminum	0.16	J	0.20	0.080	mg/L	1		6010B	Dissolved
Barium	0.016		0.0050	0.00057	mg/L	1		6010B	Dissolved
Boron	1.0	B	0.050	0.0024	mg/L	1		6010B	Dissolved
Calcium	160	B	0.40	0.015	mg/L	1		6010B	Dissolved
Cobalt	0.0024	J	0.0050	0.00054	mg/L	1		6010B	Dissolved
Copper	0.0015	J	0.0050	0.0012	mg/L	1		6010B	Dissolved
Magnesium	64		0.40	0.054	mg/L	1		6010B	Dissolved
Manganese	0.75		0.020	0.0083	mg/L	1		6010B	Dissolved
Molybdenum	0.024		0.010	0.00052	mg/L	1		6010B	Dissolved
Nickel	0.014		0.0050	0.0028	mg/L	1		6010B	Dissolved
Potassium	19	B	1.0	0.081	mg/L	1		6010B	Dissolved
Silicon	35		0.10	0.016	mg/L	1		6010B	Dissolved
Sodium	490	B	0.40	0.039	mg/L	1		6010B	Dissolved
Strontium	4.3	B	0.010	0.00032	mg/L	1		6010B	Dissolved
Tungsten	0.0064	J	0.10	0.0021	mg/L	1		6010B	Dissolved
Vanadium	0.047		0.0050	0.00069	mg/L	1		6010B	Dissolved
Antimony	0.17	J	1.0	0.043	ug/L	1		6020B	Dissolved
Arsenic	88		1.0	0.25	ug/L	1		6020B	Dissolved
Selenium	5.7		0.50	0.074	ug/L	1		6020B	Dissolved
Thallium	0.69		0.10	0.013	ug/L	1		6020B	Dissolved

Client Sample ID: SWFTS-MW-02-EM40 — Lab Sample ID: 550-195015-3

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Methane	21		5.0	0.63	ug/L	1		RSK-175	Total/NA
Nitrate as N	6.8		0.050	0.014	mg/L	1		300.0	Total/NA
Sulfate	1900		100	21	mg/L	50		300.0	Total/NA
Chlorate	9700		2000	490	ug/L	100		300.1B	Total/NA
Perchlorate	8600		500	160	ug/L	500		314.0	Total/NA
Manganese	3.7		0.020	0.0083	mg/L	1		6010B	Total/NA
Total Organic Carbon	2.8		0.50	0.26	mg/L	1		SM 5310B	Total/NA

Client Sample ID: SWFTS-MW-02-EM40 — Lab Sample ID: 550-195015-4

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Aluminum	0.28		0.20	0.080	mg/L	1		6010B	Dissolved
Barium	0.026		0.0050	0.00057	mg/L	1		6010B	Dissolved
Boron	3.1		0.050	0.0024	mg/L	1		6010B	Dissolved
Calcium	370		0.40	0.015	mg/L	1		6010B	Dissolved
Cobalt	0.0085		0.0050	0.00054	mg/L	1		6010B	Dissolved
Iron	0.032	J	0.40	0.019	mg/L	1		6010B	Dissolved
Magnesium	200		0.40	0.054	mg/L	1		6010B	Dissolved

This Detection Summary does not include radiochemical test results.

Eurofins Phoenix

Detection Summary

Client: Tetra Tech, Inc.
Job ID: 550-195015-1
Project/Site: Tetra Tech M11 SWF Treatability Study

Client Sample ID: SWFTS-MW-02-EM40 (Continued) — Lab Sample ID: 550-195015-4

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Manganese	3.6		0.020	0.0083	mg/L	1		6010B	Dissolved
Molybdenum	0.11		0.010	0.00052	mg/L	1		6010B	Dissolved
Nickel	0.0098		0.0050	0.0028	mg/L	1		6010B	Dissolved
Potassium	39		1.0	0.081	mg/L	1		6010B	Dissolved
Silicon	33	^2	0.10	0.016	mg/L	1		6010B	Dissolved
Sodium	980		1.6	0.16	mg/L	4		6010B	Dissolved
Strontium	9.7		0.010	0.00032	mg/L	1		6010B	Dissolved
Tungsten	0.0075	J	0.10	0.0021	mg/L	1		6010B	Dissolved
Vanadium	0.036		0.0050	0.00069	mg/L	1		6010B	Dissolved
Antimony	0.25	J	1.0	0.043	ug/L	1		6020B	Dissolved
Arsenic	62		1.0	0.25	ug/L	1		6020B	Dissolved
Selenium	47		0.50	0.074	ug/L	1		6020B	Dissolved
Thallium	0.29		0.10	0.013	ug/L	1		6020B	Dissolved

Client Sample ID: SWFTS-MW06A-EM40 — Lab Sample ID: 550-195015-5

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Nitrate as N	0.29		0.050	0.014	mg/L	1		300.0	Total/NA
Sulfate	700		100	21	mg/L	50		300.0	Total/NA
Chlorate	96	J	100	24	ug/L	5		300.1B	Total/NA
Perchlorate	1300		100	31	ug/L	100		314.0	Total/NA
Manganese	0.80		0.020	0.0083	mg/L	1		6010B	Total/NA
Total Organic Carbon	3.2		0.50	0.26	mg/L	1		SM 5310B	Total/NA

Client Sample ID: SWFTS-MW06A-EM40 — Lab Sample ID: 550-195015-6

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Aluminum	0.15	J	0.20	0.080	mg/L	1		6010B	Dissolved
Barium	0.019		0.0050	0.00057	mg/L	1		6010B	Dissolved
Boron	0.75		0.050	0.0024	mg/L	1		6010B	Dissolved
Calcium	160		0.40	0.015	mg/L	1		6010B	Dissolved
Cobalt	0.0033	J	0.0050	0.00054	mg/L	1		6010B	Dissolved
Magnesium	65		0.40	0.054	mg/L	1		6010B	Dissolved
Manganese	0.70		0.020	0.0083	mg/L	1		6010B	Dissolved
Molybdenum	0.011		0.010	0.00052	mg/L	1		6010B	Dissolved
Nickel	0.015		0.0050	0.0028	mg/L	1		6010B	Dissolved
Potassium	18		1.0	0.081	mg/L	1		6010B	Dissolved
Silicon	33	^2	0.10	0.016	mg/L	1		6010B	Dissolved
Sodium	370		0.40	0.039	mg/L	1		6010B	Dissolved
Strontium	3.7		0.010	0.00032	mg/L	1		6010B	Dissolved
Tungsten	0.0080	J	0.10	0.0021	mg/L	1		6010B	Dissolved
Vanadium	0.051		0.0050	0.00069	mg/L	1		6010B	Dissolved
Antimony	0.18	J	1.0	0.043	ug/L	1		6020B	Dissolved
Arsenic	93		1.0	0.25	ug/L	1		6020B	Dissolved
Selenium	0.88		0.50	0.074	ug/L	1		6020B	Dissolved
Thallium	0.36		0.10	0.013	ug/L	1		6020B	Dissolved

Client Sample ID: SWFTS-MW-06A-EM40-FD — Lab Sample ID: 550-195015-7

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Nitrate as N	0.29		0.050	0.014	mg/L	1		300.0	Total/NA
Sulfate	700		100	21	mg/L	50		300.0	Total/NA

This Detection Summary does not include radiochemical test results.

Client Sample ID: SWFTS-MW-06A-EM40-FD (Continued) Lab Sample ID: 550-195015-7

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Chlorate	92	J	100	24	ug/L	5		300.1B	Total/NA
Perchlorate	1300		100	31	ug/L	100		314.0	Total/NA
Manganese	0.80		0.020	0.0083	mg/L	1		6010B	Total/NA
Total Organic Carbon	3.1		0.50	0.26	mg/L	1		SM 5310B	Total/NA

Client Sample ID: SWFTS-MW-06A-EM40-FD Lab Sample ID: 550-195015-8

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Aluminum	0.14	J	0.20	0.080	mg/L	1		6010B	Dissolved
Barium	0.019		0.0050	0.00057	mg/L	1		6010B	Dissolved
Boron	0.74		0.050	0.0024	mg/L	1		6010B	Dissolved
Calcium	160		0.40	0.015	mg/L	1		6010B	Dissolved
Cobalt	0.0039	J	0.0050	0.00054	mg/L	1		6010B	Dissolved
Copper	0.0015	J	0.0050	0.0012	mg/L	1		6010B	Dissolved
Iron	0.019	J	0.40	0.019	mg/L	1		6010B	Dissolved
Magnesium	64		0.40	0.054	mg/L	1		6010B	Dissolved
Manganese	0.69		0.020	0.0083	mg/L	1		6010B	Dissolved
Molybdenum	0.011		0.010	0.00052	mg/L	1		6010B	Dissolved
Nickel	0.017		0.0050	0.0028	mg/L	1		6010B	Dissolved
Potassium	18		1.0	0.081	mg/L	1		6010B	Dissolved
Silicon	33	^2	0.10	0.016	mg/L	1		6010B	Dissolved
Sodium	360		0.40	0.039	mg/L	1		6010B	Dissolved
Strontium	3.6		0.010	0.00032	mg/L	1		6010B	Dissolved
Tungsten	0.0061	J	0.10	0.0021	mg/L	1		6010B	Dissolved
Vanadium	0.050		0.0050	0.00069	mg/L	1		6010B	Dissolved
Antimony	0.16	J	1.0	0.043	ug/L	1		6020B	Dissolved
Arsenic	95		1.0	0.25	ug/L	1		6020B	Dissolved
Selenium	0.59		0.50	0.074	ug/L	1		6020B	Dissolved
Thallium	0.38		0.10	0.013	ug/L	1		6020B	Dissolved

Client Sample ID: SWFTS-MW-06B-EM40 Lab Sample ID: 550-195015-9

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Methane	0.73	J	5.0	0.63	ug/L	1		RSK-175	Total/NA
Nitrate as N	0.75		0.050	0.014	mg/L	1		300.0	Total/NA
Sulfate	970		100	21	mg/L	50		300.0	Total/NA
Chlorate	300		40	9.8	ug/L	2		300.1B	Total/NA
Perchlorate	1300		100	31	ug/L	100		314.0	Total/NA
Manganese	0.97		0.020	0.0083	mg/L	1		6010B	Total/NA
Total Organic Carbon	3.3		2.0	1.0	mg/L	4		SM 5310B	Total/NA

Client Sample ID: SWFTS-MW-06B-EM40 Lab Sample ID: 550-195015-10

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Aluminum	0.13	J	0.20	0.080	mg/L	1		6010B	Dissolved
Barium	0.014		0.0050	0.00057	mg/L	1		6010B	Dissolved
Boron	0.71		0.050	0.0024	mg/L	1		6010B	Dissolved
Calcium	160		0.40	0.015	mg/L	1		6010B	Dissolved
Cobalt	0.0042	J	0.0050	0.00054	mg/L	1		6010B	Dissolved
Magnesium	64		0.40	0.054	mg/L	1		6010B	Dissolved
Manganese	0.76		0.020	0.0083	mg/L	1		6010B	Dissolved
Molybdenum	0.011		0.010	0.00052	mg/L	1		6010B	Dissolved

This Detection Summary does not include radiochemical test results.

Client Sample ID: SWFTS-MW-06B-EM40 (Continued) — Lab Sample ID: 550-195015-10

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Nickel	0.014		0.0050	0.0028	mg/L	1		6010B	Dissolved
Potassium	17		1.0	0.081	mg/L	1		6010B	Dissolved
Silicon	33	^2	0.10	0.016	mg/L	1		6010B	Dissolved
Sodium	370		0.40	0.039	mg/L	1		6010B	Dissolved
Strontium	3.5		0.010	0.00032	mg/L	1		6010B	Dissolved
Tungsten	0.0080	J	0.10	0.0021	mg/L	1		6010B	Dissolved
Vanadium	0.052		0.0050	0.00069	mg/L	1		6010B	Dissolved
Antimony	0.30	J	1.0	0.043	ug/L	1		6020B	Dissolved
Arsenic	95		1.0	0.25	ug/L	1		6020B	Dissolved
Selenium	0.78		0.50	0.074	ug/L	1		6020B	Dissolved
Thallium	0.41		0.10	0.013	ug/L	1		6020B	Dissolved

Client Sample ID: SWFTS-MW-07A-EM40 — Lab Sample ID: 550-195015-11

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Nitrate as N	21		0.25	0.070	mg/L	5		300.0	Total/NA
Sulfate	2800		100	21	mg/L	50		300.0	Total/NA
Chlorate	17000		2000	490	ug/L	100		300.1B	Total/NA
Perchlorate	9000		500	160	ug/L	500		314.0	Total/NA
Manganese	1.2		0.020	0.0083	mg/L	1		6010B	Total/NA
Total Organic Carbon	2.1		0.50	0.26	mg/L	1		SM 5310B	Total/NA

Client Sample ID: SWFTS-MW-07A-EM40 — Lab Sample ID: 550-195015-12

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Aluminum	0.23		0.20	0.080	mg/L	1		6010B	Dissolved
Barium	0.016		0.0050	0.00057	mg/L	1		6010B	Dissolved
Boron	2.0		0.050	0.0024	mg/L	1		6010B	Dissolved
Calcium	330		0.40	0.015	mg/L	1		6010B	Dissolved
Iron	0.024	J	0.40	0.019	mg/L	1		6010B	Dissolved
Magnesium	150		0.40	0.054	mg/L	1		6010B	Dissolved
Manganese	0.91		0.020	0.0083	mg/L	1		6010B	Dissolved
Molybdenum	0.042		0.010	0.00052	mg/L	1		6010B	Dissolved
Potassium	33		1.0	0.081	mg/L	1		6010B	Dissolved
Silicon	36	^2	0.10	0.016	mg/L	1		6010B	Dissolved
Sodium	670		0.40	0.039	mg/L	1		6010B	Dissolved
Strontium	8.5		0.010	0.00032	mg/L	1		6010B	Dissolved
Tungsten	0.0023	J	0.10	0.0021	mg/L	1		6010B	Dissolved
Vanadium	0.031		0.0050	0.00069	mg/L	1		6010B	Dissolved
Antimony	0.11	J	1.0	0.043	ug/L	1		6020B	Dissolved
Arsenic	79		1.0	0.25	ug/L	1		6020B	Dissolved
Selenium	63		0.50	0.074	ug/L	1		6020B	Dissolved
Thallium	0.27		0.10	0.013	ug/L	1		6020B	Dissolved

Client Sample ID: SWFTS-MW-07B-EM40 — Lab Sample ID: 550-195015-13

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Nitrate as N	19		0.25	0.070	mg/L	5		300.0	Total/NA
Sulfate	1900		100	21	mg/L	50		300.0	Total/NA
Chlorate	12000		2000	490	ug/L	100		300.1B	Total/NA
Perchlorate	4900		500	160	ug/L	500		314.0	Total/NA
Manganese	0.77		0.020	0.0083	mg/L	1		6010B	Total/NA

This Detection Summary does not include radiochemical test results.

Detection Summary

Client: Tetra Tech, Inc.
Job ID: 550-195015-1
Project/Site: Tetra Tech M11 SWF Treatability Study

Client Sample ID: SWFTS-MW-07B-EM40 (Continued) — Lab Sample ID: 550-195015-13

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Total Organic Carbon	2.1		0.50	0.26	mg/L	1		SM 5310B	Total/NA

Client Sample ID: SWFTS-MW-07B-EM40 — Lab Sample ID: 550-195015-14

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Aluminum	0.22		0.20	0.080	mg/L	1		6010B	Dissolved
Barium	0.014		0.0050	0.00057	mg/L	1		6010B	Dissolved
Boron	1.9		0.050	0.0024	mg/L	1		6010B	Dissolved
Calcium	280		0.40	0.015	mg/L	1		6010B	Dissolved
Chromium	0.0022	J	0.0050	0.0011	mg/L	1		6010B	Dissolved
Iron	0.050	J	0.40	0.019	mg/L	1		6010B	Dissolved
Magnesium	120		0.40	0.054	mg/L	1		6010B	Dissolved
Manganese	0.69		0.020	0.0083	mg/L	1		6010B	Dissolved
Molybdenum	0.062		0.010	0.00052	mg/L	1		6010B	Dissolved
Potassium	30		1.0	0.081	mg/L	1		6010B	Dissolved
Silicon	39	^2	0.10	0.016	mg/L	1		6010B	Dissolved
Sodium	570		0.40	0.039	mg/L	1		6010B	Dissolved
Strontium	7.3		0.010	0.00032	mg/L	1		6010B	Dissolved
Vanadium	0.039		0.0050	0.00069	mg/L	1		6010B	Dissolved
Antimony	0.14	J	1.0	0.043	ug/L	1		6020B	Dissolved
Arsenic	83		1.0	0.25	ug/L	1		6020B	Dissolved
Selenium	42		0.50	0.074	ug/L	1		6020B	Dissolved
Thallium	0.29		0.10	0.013	ug/L	1		6020B	Dissolved

Client Sample ID: SWFTS-MW-08C-EM40 — Lab Sample ID: 550-195015-15

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Nitrate as N	14	D	0.10	0.028	mg/L	2		300.0	Total/NA
Sulfate	2600		100	21	mg/L	50		300.0	Total/NA
Chlorate	39000		4000	980	ug/L	200		300.1B	Total/NA
Perchlorate	8800		500	160	ug/L	500		314.0	Total/NA
Total Organic Carbon	1.2	J	2.0	1.0	mg/L	4		SM 5310B	Total/NA

Client Sample ID: SWFTS-MW-08C-EM40 — Lab Sample ID: 550-195015-16

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Aluminum	0.35		0.20	0.080	mg/L	1		6010B	Dissolved
Barium	0.015		0.0050	0.00057	mg/L	1		6010B	Dissolved
Boron	3.1		0.050	0.0024	mg/L	1		6010B	Dissolved
Calcium	540		0.40	0.015	mg/L	1		6010B	Dissolved
Chromium	0.043		0.0050	0.0011	mg/L	1		6010B	Dissolved
Iron	0.040	J	0.40	0.019	mg/L	1		6010B	Dissolved
Magnesium	350		0.40	0.054	mg/L	1		6010B	Dissolved
Molybdenum	0.22		0.010	0.00052	mg/L	1		6010B	Dissolved
Potassium	55		1.0	0.081	mg/L	1		6010B	Dissolved
Silicon	30	^2	0.10	0.016	mg/L	1		6010B	Dissolved
Sodium	830		1.6	0.16	mg/L	4		6010B	Dissolved
Strontium	13		0.010	0.00032	mg/L	1		6010B	Dissolved
Tungsten	0.0025	J	0.10	0.0021	mg/L	1		6010B	Dissolved
Vanadium	0.025		0.0050	0.00069	mg/L	1		6010B	Dissolved
Antimony	0.094	J	1.0	0.043	ug/L	1		6020B	Dissolved
Arsenic	46		1.0	0.25	ug/L	1		6020B	Dissolved

This Detection Summary does not include radiochemical test results.

Client Sample ID: SWFTS-MW-08C-EM40 (Continued)
Lab Sample ID: 550-195015-16

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Selenium	66		0.50	0.074	ug/L	1		6020B	Dissolved
Thallium	0.047	J	0.10	0.013	ug/L	1		6020B	Dissolved

This Detection Summary does not include radiochemical test results.

Client Sample ID: SWFTS-MW-04-EM40 — Lab Sample ID: 550-195015-1

Date Collected: 12/14/22 08:10 — **Matrix: Water**
Date Received: 12/15/22 10:00

Method: RSK-175 - Dissolved Gases (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Methane	ND		5.0	0.63	ug/L			12/20/22 19:20	1

Method: MCAWW 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Nitrate as N	**2.9**		0.050	0.014	mg/L			12/15/22 18:35	1
Sulfate	**790**		100	21	mg/L			12/15/22 19:36	50

Method: EPA 300.1B - Disinfection By-Products, (IC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chlorate	**6800**		2000	490	ug/L			12/21/22 22:40	100

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Dichloroacetic acid(Surr)	*109*		*90 - 115*		*12/21/22 22:40*	*100*

Method: EPA 314.0 - Perchlorate (IC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perchlorate	**4000**		200	63	ug/L			12/15/22 15:39	200

Method: SW846 6010B - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Manganese	**0.82**		0.020	0.0083	mg/L		12/15/22 14:30	12/16/22 15:12	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon (SM 5310B)	**2.7**		0.50	0.26	mg/L			12/17/22 02:00	1

Client Sample ID: SWFTS-MW-04-EM40 — Lab Sample ID: 550-195015-2

Date Collected: 12/14/22 08:10 — **Matrix: Water**
Date Received: 12/15/22 10:00

Method: SW846 6010B - Metals (ICP) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	**0.16**	**J**	0.20	0.080	mg/L		12/15/22 14:30	12/16/22 15:15	1
Barium	**0.016**		0.0050	0.00057	mg/L		12/15/22 14:30	12/16/22 15:15	1
Beryllium	ND		0.0010	0.00019	mg/L		12/15/22 14:30	12/16/22 15:15	1
Boron	**1.0**	**B**	0.050	0.0024	mg/L		12/15/22 14:30	12/16/22 15:15	1
Cadmium	ND		0.0010	0.00072	mg/L		12/15/22 14:30	12/16/22 15:15	1
Calcium	**160**	**B**	0.40	0.015	mg/L		12/15/22 14:30	12/16/22 15:15	1
Chromium	ND		0.0050	0.0011	mg/L		12/15/22 14:30	12/16/22 15:15	1
Cobalt	**0.0024**	**J**	0.0050	0.00054	mg/L		12/15/22 14:30	12/16/22 15:15	1
Copper	**0.0015**	**J**	0.0050	0.0012	mg/L		12/15/22 14:30	12/16/22 15:15	1
Iron	ND		0.40	0.019	mg/L		12/15/22 14:30	12/16/22 15:15	1
Lead	ND		0.010	0.0025	mg/L		12/15/22 14:30	12/16/22 15:15	1
Magnesium	**64**		0.40	0.054	mg/L		12/15/22 14:30	12/16/22 15:15	1
Manganese	**0.75**		0.020	0.0083	mg/L		12/15/22 14:30	12/16/22 15:15	1
Molybdenum	**0.024**		0.010	0.00052	mg/L		12/15/22 14:30	12/16/22 15:15	1
Nickel	**0.014**		0.0050	0.0028	mg/L		12/15/22 14:30	12/16/22 15:15	1
Phosphorus	ND	cn	0.40	0.011	mg/L		12/15/22 14:30	12/16/22 15:15	1
Potassium	**19**	**B**	1.0	0.081	mg/L		12/15/22 14:30	12/16/22 15:15	1
Silicon	**35**		0.10	0.016	mg/L		12/15/22 14:30	12/16/22 15:15	1
Silver	ND		0.0080	0.00049	mg/L		12/15/22 14:30	12/16/22 15:15	1

Client Sample ID: SWFTS-MW-04-EM40 — Lab Sample ID: 550-195015-2

Date Collected: 12/14/22 08:10 — **Matrix: Water**
Date Received: 12/15/22 10:00

Method: SW846 6010B - Metals (ICP) - Dissolved (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sodium	490	B	0.40	0.039	mg/L		12/15/22 14:30	12/16/22 15:15	1
Strontium	4.3	B	0.010	0.00032	mg/L		12/15/22 14:30	12/16/22 15:15	1
Tin	ND		0.010	0.0034	mg/L		12/15/22 14:30	12/16/22 15:15	1
Titanium	ND		0.0050	0.00028	mg/L		12/15/22 14:30	12/16/22 15:15	1
Tungsten	0.0064	J	0.10	0.0021	mg/L		12/15/22 14:30	12/16/22 15:15	1
Vanadium	0.047		0.0050	0.00069	mg/L		12/15/22 14:30	12/16/22 15:15	1
Zinc	ND		0.040	0.0023	mg/L		12/15/22 14:30	12/16/22 15:15	1

Method: SW846 6020B - Metals (ICP/MS) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	0.17	J	1.0	0.043	ug/L		12/15/22 15:50	12/22/22 16:14	1
Arsenic	88		1.0	0.25	ug/L		12/15/22 15:50	12/27/22 13:49	1
Selenium	5.7		0.50	0.074	ug/L		12/15/22 15:50	12/27/22 13:49	1
Thallium	0.69		0.10	0.013	ug/L		12/15/22 15:50	12/22/22 16:14	1

Client Sample ID: SWFTS-MW-02-EM40 — Lab Sample ID: 550-195015-3

Date Collected: 12/14/22 09:17 — **Matrix: Water**
Date Received: 12/15/22 10:00

Method: RSK-175 - Dissolved Gases (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Methane	21		5.0	0.63	ug/L			12/20/22 19:33	1

Method: MCAWW 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Nitrate as N	6.8		0.050	0.014	mg/L			12/15/22 18:54	1
Sulfate	1900		100	21	mg/L			12/15/22 20:04	50

Method: EPA 300.1B - Disinfection By-Products, (IC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chlorate	9700		2000	490	ug/L			12/22/22 00:09	100

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Dichloroacetic acid(Surr)	*113*		*90 - 115*		*12/22/22 00:09*	*100*

Method: EPA 314.0 - Perchlorate (IC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perchlorate	8600		500	160	ug/L			12/15/22 16:41	500

Method: SW846 6010B - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Manganese	3.7		0.020	0.0083	mg/L		12/15/22 14:30	12/16/22 15:18	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon (SM 5310B)	2.8		0.50	0.26	mg/L			12/17/22 02:16	1

Client Sample ID: SWFTS-MW-02-EM40 — Lab Sample ID: 550-195015-4

Date Collected: 12/14/22 09:17 — **Matrix: Water**
Date Received: 12/15/22 10:00

Method: SW846 6010B - Metals (ICP) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	0.28		0.20	0.080	mg/L		12/15/22 15:02	12/19/22 18:24	1
Barium	0.026		0.0050	0.00057	mg/L		12/15/22 15:02	12/19/22 18:24	1
Beryllium	ND		0.0010	0.00019	mg/L		12/15/22 15:02	12/19/22 18:24	1
Boron	3.1		0.050	0.0024	mg/L		12/15/22 15:02	12/19/22 18:24	1
Cadmium	ND		0.0010	0.00072	mg/L		12/15/22 15:02	12/19/22 18:24	1
Calcium	370		0.40	0.015	mg/L		12/15/22 15:02	12/19/22 18:24	1
Chromium	ND		0.0050	0.0011	mg/L		12/15/22 15:02	12/19/22 18:24	1
Cobalt	0.0085		0.0050	0.00054	mg/L		12/15/22 15:02	12/19/22 18:24	1
Copper	ND		0.0050	0.0012	mg/L		12/15/22 15:02	12/19/22 18:24	1
Iron	0.032	J	0.40	0.019	mg/L		12/15/22 15:02	12/19/22 18:24	1
Lead	ND		0.010	0.0025	mg/L		12/15/22 15:02	12/19/22 18:24	1
Magnesium	200		0.40	0.054	mg/L		12/15/22 15:02	12/19/22 18:24	1
Manganese	3.6		0.020	0.0083	mg/L		12/15/22 15:02	12/19/22 18:24	1
Molybdenum	0.11		0.010	0.00052	mg/L		12/15/22 15:02	12/19/22 18:24	1
Nickel	0.0098		0.0050	0.0028	mg/L		12/15/22 15:02	12/19/22 18:24	1
Phosphorus	ND	cn	0.40	0.011	mg/L		12/15/22 15:02	12/19/22 18:24	1
Potassium	39		1.0	0.081	mg/L		12/15/22 15:02	12/19/22 18:24	1
Silicon	33	^2	0.10	0.016	mg/L		12/15/22 15:02	12/19/22 18:24	1
Silver	ND		0.0080	0.00049	mg/L		12/15/22 15:02	12/19/22 18:24	1
Sodium	980		1.6	0.16	mg/L		12/15/22 15:02	12/20/22 11:33	4
Strontium	9.7		0.010	0.00032	mg/L		12/15/22 15:02	12/19/22 18:24	1
Tin	ND		0.010	0.0034	mg/L		12/15/22 15:02	12/19/22 18:24	1
Titanium	ND		0.0050	0.00028	mg/L		12/15/22 15:02	12/19/22 18:24	1
Tungsten	0.0075	J	0.10	0.0021	mg/L		12/15/22 15:02	12/19/22 18:24	1
Vanadium	0.036		0.0050	0.00069	mg/L		12/15/22 15:02	12/19/22 18:24	1
Zinc	ND		0.040	0.0023	mg/L		12/15/22 15:02	12/19/22 18:24	1

Method: SW846 6020B - Metals (ICP/MS) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	0.25	J	1.0	0.043	ug/L		12/15/22 15:50	12/22/22 16:16	1
Arsenic	62		1.0	0.25	ug/L		12/15/22 15:50	12/27/22 13:51	1
Selenium	47		0.50	0.074	ug/L		12/15/22 15:50	12/27/22 13:51	1
Thallium	0.29		0.10	0.013	ug/L		12/15/22 15:50	12/22/22 16:16	1

Client Sample ID: SWFTS-MW06A-EM40 — Lab Sample ID: 550-195015-5

Date Collected: 12/14/22 10:28 — **Matrix: Water**
Date Received: 12/15/22 10:00

Method: RSK-175 - Dissolved Gases (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Methane	ND		5.0	0.63	ug/L			12/20/22 20:01	1

Method: MCAWW 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Nitrate as N	0.29		0.050	0.014	mg/L			12/15/22 19:12	1
Sulfate	700		100	21	mg/L			12/15/22 20:32	50

Method: EPA 300.1B - Disinfection By-Products, (IC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chlorate	96	J	100	24	ug/L			12/22/22 00:38	5

Client Sample ID: SWFTS-MW06A-EM40 — Lab Sample ID: 550-195015-5

Date Collected: 12/14/22 10:28 — **Matrix: Water**
Date Received: 12/15/22 10:00

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Dichloroacetic acid(Surr)	*111*		*90 - 115*		*12/22/22 00:38*	*5*

Method: EPA 314.0 - Perchlorate (IC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perchlorate	**1300**		100	31	ug/L			12/15/22 17:03	100

Method: SW846 6010B - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Manganese	**0.80**		0.020	0.0083	mg/L		12/15/22 15:02	12/19/22 18:21	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon (SM 5310B)	**3.2**		0.50	0.26	mg/L			12/17/22 02:28	1

Client Sample ID: SWFTS-MW06A-EM40 — Lab Sample ID: 550-195015-6

Date Collected: 12/14/22 10:28 — **Matrix: Water**
Date Received: 12/15/22 10:00

Method: SW846 6010B - Metals (ICP) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	**0.15**	**J**	0.20	0.080	mg/L		12/15/22 15:02	12/19/22 18:27	1
Barium	**0.019**		0.0050	0.00057	mg/L		12/15/22 15:02	12/19/22 18:27	1
Beryllium	ND		0.0010	0.00019	mg/L		12/15/22 15:02	12/19/22 18:27	1
Boron	**0.75**		0.050	0.0024	mg/L		12/15/22 15:02	12/19/22 18:27	1
Cadmium	ND		0.0010	0.00072	mg/L		12/15/22 15:02	12/19/22 18:27	1
Calcium	**160**		0.40	0.015	mg/L		12/15/22 15:02	12/19/22 18:27	1
Chromium	ND		0.0050	0.0011	mg/L		12/15/22 15:02	12/19/22 18:27	1
Cobalt	**0.0033**	**J**	0.0050	0.00054	mg/L		12/15/22 15:02	12/19/22 18:27	1
Copper	ND		0.0050	0.0012	mg/L		12/15/22 15:02	12/19/22 18:27	1
Iron	ND		0.40	0.019	mg/L		12/15/22 15:02	12/19/22 18:27	1
Lead	ND		0.010	0.0025	mg/L		12/15/22 15:02	12/19/22 18:27	1
Magnesium	**65**		0.40	0.054	mg/L		12/15/22 15:02	12/19/22 18:27	1
Manganese	**0.70**		0.020	0.0083	mg/L		12/15/22 15:02	12/19/22 18:27	1
Molybdenum	**0.011**		0.010	0.00052	mg/L		12/15/22 15:02	12/19/22 18:27	1
Nickel	**0.015**		0.0050	0.0028	mg/L		12/15/22 15:02	12/19/22 18:27	1
Phosphorus	ND	cn	0.40	0.011	mg/L		12/15/22 15:02	12/19/22 18:27	1
Potassium	**18**		1.0	0.081	mg/L		12/15/22 15:02	12/19/22 18:27	1
Silicon	**33**	**^2**	0.10	0.016	mg/L		12/15/22 15:02	12/19/22 18:27	1
Silver	ND		0.0080	0.00049	mg/L		12/15/22 15:02	12/19/22 18:27	1
Sodium	**370**		0.40	0.039	mg/L		12/15/22 15:02	12/19/22 18:27	1
Strontium	**3.7**		0.010	0.00032	mg/L		12/15/22 15:02	12/19/22 18:27	1
Tin	ND		0.010	0.0034	mg/L		12/15/22 15:02	12/19/22 18:27	1
Titanium	ND		0.0050	0.00028	mg/L		12/15/22 15:02	12/19/22 18:27	1
Tungsten	**0.0080**	**J**	0.10	0.0021	mg/L		12/15/22 15:02	12/19/22 18:27	1
Vanadium	**0.051**		0.0050	0.00069	mg/L		12/15/22 15:02	12/19/22 18:27	1
Zinc	ND		0.040	0.0023	mg/L		12/15/22 15:02	12/19/22 18:27	1

Method: SW846 6020B - Metals (ICP/MS) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	**0.18**	**J**	1.0	0.043	ug/L		12/15/22 15:50	12/22/22 16:18	1
Arsenic	**93**		1.0	0.25	ug/L		12/15/22 15:50	12/27/22 13:53	1

Client Sample ID: SWFTS-MW06A-EM40 — Lab Sample ID: 550-195015-6

Date Collected: 12/14/22 10:28 — **Matrix: Water**
Date Received: 12/15/22 10:00

Method: SW846 6020B - Metals (ICP/MS) - Dissolved (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Selenium	0.88		0.50	0.074	ug/L		12/15/22 15:50	12/27/22 13:53	1
Thallium	0.36		0.10	0.013	ug/L		12/15/22 15:50	12/22/22 16:18	1

Client Sample ID: SWFTS-MW-06A-EM40-FD — Lab Sample ID: 550-195015-7

Date Collected: 12/14/22 10:28 — **Matrix: Water**
Date Received: 12/15/22 10:00

Method: RSK-175 - Dissolved Gases (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Methane	ND		5.0	0.63	ug/L			12/20/22 20:28	1

Method: MCAWW 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Nitrate as N	0.29		0.050	0.014	mg/L			12/15/22 20:26	1
Sulfate	700		100	21	mg/L			12/15/22 21:00	50

Method: EPA 300.1B - Disinfection By-Products, (IC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chlorate	92	J	100	24	ug/L			12/22/22 01:08	5

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Dichloroacetic acid(Surr)	*111*		*90 - 115*		*12/22/22 01:08*	*5*

Method: EPA 314.0 - Perchlorate (IC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perchlorate	1300		100	31	ug/L			12/15/22 17:26	100

Method: SW846 6010B - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Manganese	0.80		0.020	0.0083	mg/L		12/15/22 15:02	12/19/22 18:30	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon (SM 5310B)	3.1		0.50	0.26	mg/L			12/17/22 02:40	1

Client Sample ID: SWFTS-MW-06A-EM40-FD — Lab Sample ID: 550-195015-8

Date Collected: 12/14/22 10:28 — **Matrix: Water**
Date Received: 12/15/22 10:00

Method: SW846 6010B - Metals (ICP) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	0.14	J	0.20	0.080	mg/L		12/15/22 15:02	12/19/22 18:33	1
Barium	0.019		0.0050	0.00057	mg/L		12/15/22 15:02	12/19/22 18:33	1
Beryllium	ND		0.0010	0.00019	mg/L		12/15/22 15:02	12/19/22 18:33	1
Boron	0.74		0.050	0.0024	mg/L		12/15/22 15:02	12/19/22 18:33	1
Cadmium	ND		0.0010	0.00072	mg/L		12/15/22 15:02	12/19/22 18:33	1
Calcium	160		0.40	0.015	mg/L		12/15/22 15:02	12/19/22 18:33	1
Chromium	ND		0.0050	0.0011	mg/L		12/15/22 15:02	12/19/22 18:33	1
Cobalt	0.0039	J	0.0050	0.00054	mg/L		12/15/22 15:02	12/19/22 18:33	1
Copper	0.0015	J	0.0050	0.0012	mg/L		12/15/22 15:02	12/19/22 18:33	1
Iron	0.019	J	0.40	0.019	mg/L		12/15/22 15:02	12/19/22 18:33	1
Lead	ND		0.010	0.0025	mg/L		12/15/22 15:02	12/19/22 18:33	1

Client Sample ID: SWFTS-MW-06A-EM40-FD
Lab Sample ID: 550-195015-8
Date Collected: 12/14/22 10:28
Matrix: Water
Date Received: 12/15/22 10:00

Method: SW846 6010B - Metals (ICP) - Dissolved (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Magnesium	64		0.40	0.054	mg/L		12/15/22 15:02	12/19/22 18:33	1
Manganese	0.69		0.020	0.0083	mg/L		12/15/22 15:02	12/19/22 18:33	1
Molybdenum	0.011		0.010	0.00052	mg/L		12/15/22 15:02	12/19/22 18:33	1
Nickel	0.017		0.0050	0.0028	mg/L		12/15/22 15:02	12/19/22 18:33	1
Phosphorus	ND	cn	0.40	0.011	mg/L		12/15/22 15:02	12/19/22 18:33	1
Potassium	18		1.0	0.081	mg/L		12/15/22 15:02	12/19/22 18:33	1
Silicon	33	^2	0.10	0.016	mg/L		12/15/22 15:02	12/19/22 18:33	1
Silver	ND		0.0080	0.00049	mg/L		12/15/22 15:02	12/19/22 18:33	1
Sodium	360		0.40	0.039	mg/L		12/15/22 15:02	12/19/22 18:33	1
Strontium	3.6		0.010	0.00032	mg/L		12/15/22 15:02	12/19/22 18:33	1
Tin	ND		0.010	0.0034	mg/L		12/15/22 15:02	12/19/22 18:33	1
Titanium	ND		0.0050	0.00028	mg/L		12/15/22 15:02	12/19/22 18:33	1
Tungsten	0.0061	J	0.10	0.0021	mg/L		12/15/22 15:02	12/19/22 18:33	1
Vanadium	0.050		0.0050	0.00069	mg/L		12/15/22 15:02	12/19/22 18:33	1
Zinc	ND		0.040	0.0023	mg/L		12/15/22 15:02	12/19/22 18:33	1

Method: SW846 6020B - Metals (ICP/MS) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	0.16	J	1.0	0.043	ug/L		12/15/22 15:50	12/22/22 16:21	1
Arsenic	95		1.0	0.25	ug/L		12/15/22 15:50	12/27/22 13:55	1
Selenium	0.59		0.50	0.074	ug/L		12/15/22 15:50	12/27/22 13:55	1
Thallium	0.38		0.10	0.013	ug/L		12/15/22 15:50	12/22/22 16:21	1

Client Sample ID: SWFTS-MW-06B-EM40
Lab Sample ID: 550-195015-9
Date Collected: 12/14/22 11:37
Matrix: Water
Date Received: 12/15/22 10:00

Method: RSK-175 - Dissolved Gases (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Methane	0.73	J	5.0	0.63	ug/L			12/20/22 20:41	1

Method: MCAWW 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Nitrate as N	0.75		0.050	0.014	mg/L			12/15/22 20:44	1
Sulfate	970		100	21	mg/L			12/15/22 21:27	50

Method: EPA 300.1B - Disinfection By-Products, (IC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chlorate	300		40	9.8	ug/L			12/22/22 01:37	2

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Dichloroacetic acid(Surr)	*113*		*90 - 115*		*12/22/22 01:37*	*2*

Method: EPA 314.0 - Perchlorate (IC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perchlorate	1300		100	31	ug/L			12/15/22 17:48	100

Method: SW846 6010B - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Manganese	0.97		0.020	0.0083	mg/L		12/15/22 15:02	12/19/22 18:35	1

Client Sample ID: SWFTS-MW-06B-EM40 — Lab Sample ID: 550-195015-9

Date Collected: 12/14/22 11:37 — **Matrix: Water**
Date Received: 12/15/22 10:00

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon (SM 5310B)	3.3		2.0	1.0	mg/L			12/17/22 04:48	4

Client Sample ID: SWFTS-MW-06B-EM40 — Lab Sample ID: 550-195015-10

Date Collected: 12/14/22 11:37 — **Matrix: Water**
Date Received: 12/15/22 10:00

Method: SW846 6010B - Metals (ICP) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	0.13	J	0.20	0.080	mg/L		12/15/22 15:02	12/19/22 18:44	1
Barium	0.014		0.0050	0.00057	mg/L		12/15/22 15:02	12/19/22 18:44	1
Beryllium	ND		0.0010	0.00019	mg/L		12/15/22 15:02	12/19/22 18:44	1
Boron	0.71		0.050	0.0024	mg/L		12/15/22 15:02	12/19/22 18:44	1
Cadmium	ND		0.0010	0.00072	mg/L		12/15/22 15:02	12/19/22 18:44	1
Calcium	160		0.40	0.015	mg/L		12/15/22 15:02	12/19/22 18:44	1
Chromium	ND		0.0050	0.0011	mg/L		12/15/22 15:02	12/19/22 18:44	1
Cobalt	0.0042	J	0.0050	0.00054	mg/L		12/15/22 15:02	12/19/22 18:44	1
Copper	ND		0.0050	0.0012	mg/L		12/15/22 15:02	12/19/22 18:44	1
Iron	ND		0.40	0.019	mg/L		12/15/22 15:02	12/19/22 18:44	1
Lead	ND		0.010	0.0025	mg/L		12/15/22 15:02	12/19/22 18:44	1
Magnesium	64		0.40	0.054	mg/L		12/15/22 15:02	12/19/22 18:44	1
Manganese	0.76		0.020	0.0083	mg/L		12/15/22 15:02	12/19/22 18:44	1
Molybdenum	0.011		0.010	0.00052	mg/L		12/15/22 15:02	12/19/22 18:44	1
Nickel	0.014		0.0050	0.0028	mg/L		12/15/22 15:02	12/19/22 18:44	1
Phosphorus	ND	cn	0.40	0.011	mg/L		12/15/22 15:02	12/19/22 18:44	1
Potassium	17		1.0	0.081	mg/L		12/15/22 15:02	12/19/22 18:44	1
Silicon	33	^2	0.10	0.016	mg/L		12/15/22 15:02	12/19/22 18:44	1
Silver	ND		0.0080	0.00049	mg/L		12/15/22 15:02	12/19/22 18:44	1
Sodium	370		0.40	0.039	mg/L		12/15/22 15:02	12/19/22 18:44	1
Strontium	3.5		0.010	0.00032	mg/L		12/15/22 15:02	12/19/22 18:44	1
Tin	ND		0.010	0.0034	mg/L		12/15/22 15:02	12/19/22 18:44	1
Titanium	ND		0.0050	0.00028	mg/L		12/15/22 15:02	12/19/22 18:44	1
Tungsten	0.0080	J	0.10	0.0021	mg/L		12/15/22 15:02	12/19/22 18:44	1
Vanadium	0.052		0.0050	0.00069	mg/L		12/15/22 15:02	12/19/22 18:44	1
Zinc	ND		0.040	0.0023	mg/L		12/15/22 15:02	12/19/22 18:44	1

Method: SW846 6020B - Metals (ICP/MS) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	0.30	J	1.0	0.043	ug/L		12/15/22 15:50	12/22/22 16:23	1
Arsenic	95		1.0	0.25	ug/L		12/15/22 15:50	12/27/22 13:57	1
Selenium	0.78		0.50	0.074	ug/L		12/15/22 15:50	12/27/22 13:57	1
Thallium	0.41		0.10	0.013	ug/L		12/15/22 15:50	12/22/22 16:23	1

Client Sample ID: SWFTS-MW-07A-EM40 — Lab Sample ID: 550-195015-11

Date Collected: 12/14/22 12:27 — **Matrix: Water**
Date Received: 12/15/22 10:00

Method: RSK-175 - Dissolved Gases (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Methane	ND		5.0	0.63	ug/L			12/20/22 20:55	1

Client Sample ID: SWFTS-MW-07A-EM40 — Lab Sample ID: 550-195015-11

Date Collected: 12/14/22 12:27 — **Matrix: Water**
Date Received: 12/15/22 10:00

Method: MCAWW 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Nitrate as N	21		0.25	0.070	mg/L			12/15/22 21:02	5
Sulfate	2800		100	21	mg/L			12/15/22 21:55	50

Method: EPA 300.1B - Disinfection By-Products, (IC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chlorate	17000		2000	490	ug/L			12/22/22 02:07	100

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Dichloroacetic acid(Surr)	*109*		*90 - 115*		*12/22/22 02:07*	*100*

Method: EPA 314.0 - Perchlorate (IC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perchlorate	9000		500	160	ug/L			12/15/22 18:11	500

Method: SW846 6010B - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Manganese	1.2		0.020	0.0083	mg/L		12/15/22 15:02	12/19/22 18:47	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon (SM 5310B)	2.1		0.50	0.26	mg/L			12/17/22 05:03	1

Client Sample ID: SWFTS-MW-07A-EM40 — Lab Sample ID: 550-195015-12

Date Collected: 12/14/22 12:27 — **Matrix: Water**
Date Received: 12/15/22 10:00

Method: SW846 6010B - Metals (ICP) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	0.23		0.20	0.080	mg/L		12/15/22 15:02	12/19/22 18:50	1
Barium	0.016		0.0050	0.00057	mg/L		12/15/22 15:02	12/19/22 18:50	1
Beryllium	ND		0.0010	0.00019	mg/L		12/15/22 15:02	12/19/22 18:50	1
Boron	2.0		0.050	0.0024	mg/L		12/15/22 15:02	12/19/22 18:50	1
Cadmium	ND		0.0010	0.00072	mg/L		12/15/22 15:02	12/19/22 18:50	1
Calcium	330		0.40	0.015	mg/L		12/15/22 15:02	12/19/22 18:50	1
Chromium	ND		0.0050	0.0011	mg/L		12/15/22 15:02	12/19/22 18:50	1
Cobalt	ND		0.0050	0.00054	mg/L		12/15/22 15:02	12/19/22 18:50	1
Copper	ND		0.0050	0.0012	mg/L		12/15/22 15:02	12/19/22 18:50	1
Iron	0.024	J	0.40	0.019	mg/L		12/15/22 15:02	12/19/22 18:50	1
Lead	ND		0.010	0.0025	mg/L		12/15/22 15:02	12/19/22 18:50	1
Magnesium	150		0.40	0.054	mg/L		12/15/22 15:02	12/19/22 18:50	1
Manganese	0.91		0.020	0.0083	mg/L		12/15/22 15:02	12/19/22 18:50	1
Molybdenum	0.042		0.010	0.00052	mg/L		12/15/22 15:02	12/19/22 18:50	1
Nickel	ND		0.0050	0.0028	mg/L		12/15/22 15:02	12/19/22 18:50	1
Phosphorus	ND	cn	0.40	0.011	mg/L		12/15/22 15:02	12/19/22 18:50	1
Potassium	33		1.0	0.081	mg/L		12/15/22 15:02	12/19/22 18:50	1
Silicon	36	^2	0.10	0.016	mg/L		12/15/22 15:02	12/19/22 18:50	1
Silver	ND		0.0080	0.00049	mg/L		12/15/22 15:02	12/19/22 18:50	1
Sodium	670		0.40	0.039	mg/L		12/15/22 15:02	12/19/22 18:50	1
Strontium	8.5		0.010	0.00032	mg/L		12/15/22 15:02	12/19/22 18:50	1
Tin	ND		0.010	0.0034	mg/L		12/15/22 15:02	12/19/22 18:50	1
Titanium	ND		0.0050	0.00028	mg/L		12/15/22 15:02	12/19/22 18:50	1

Client Sample ID: SWFTS-MW-07A-EM40 — Lab Sample ID: 550-195015-12

Date Collected: 12/14/22 12:27 — **Matrix: Water**
Date Received: 12/15/22 10:00

Method: SW846 6010B - Metals (ICP) - Dissolved (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Tungsten	0.0023	J	0.10	0.0021	mg/L		12/15/22 15:02	12/19/22 18:50	1
Vanadium	0.031		0.0050	0.00069	mg/L		12/15/22 15:02	12/19/22 18:50	1
Zinc	ND		0.040	0.0023	mg/L		12/15/22 15:02	12/19/22 18:50	1

Method: SW846 6020B - Metals (ICP/MS) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	0.11	J	1.0	0.043	ug/L		12/15/22 15:50	12/22/22 16:25	1
Arsenic	79		1.0	0.25	ug/L		12/15/22 15:50	12/27/22 13:59	1
Selenium	63		0.50	0.074	ug/L		12/15/22 15:50	12/27/22 13:59	1
Thallium	0.27		0.10	0.013	ug/L		12/15/22 15:50	12/22/22 16:25	1

Client Sample ID: SWFTS-MW-07B-EM40 — Lab Sample ID: 550-195015-13

Date Collected: 12/14/22 13:18 — **Matrix: Water**
Date Received: 12/15/22 10:00

Method: RSK-175 - Dissolved Gases (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Methane	ND		5.0	0.63	ug/L			12/20/22 21:09	1

Method: MCAWW 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Nitrate as N	19		0.25	0.070	mg/L			12/15/22 21:21	5
Sulfate	1900		100	21	mg/L			12/15/22 22:23	50

Method: EPA 300.1B - Disinfection By-Products, (IC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chlorate	12000		2000	490	ug/L			12/22/22 02:36	100

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Dichloroacetic acid(Surr)	*109*		*90 - 115*		*12/22/22 02:36*	*100*

Method: EPA 314.0 - Perchlorate (IC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perchlorate	4900		500	160	ug/L			12/15/22 18:33	500

Method: SW846 6010B - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Manganese	0.77		0.020	0.0083	mg/L		12/15/22 15:02	12/19/22 18:52	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon (SM 5310B)	2.1		0.50	0.26	mg/L			12/17/22 05:18	1

Client Sample ID: SWFTS-MW-07B-EM40 — Lab Sample ID: 550-195015-14

Date Collected: 12/14/22 13:18 — **Matrix: Water**
Date Received: 12/15/22 10:00

Method: SW846 6010B - Metals (ICP) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	0.22		0.20	0.080	mg/L		12/15/22 15:02	12/19/22 18:55	1
Barium	0.014		0.0050	0.00057	mg/L		12/15/22 15:02	12/19/22 18:55	1
Beryllium	ND		0.0010	0.00019	mg/L		12/15/22 15:02	12/19/22 18:55	1

Client Sample ID: SWFTS-MW-07B-EM40 — Lab Sample ID: 550-195015-14

Date Collected: 12/14/22 13:18 — **Matrix: Water**
Date Received: 12/15/22 10:00

Method: SW846 6010B - Metals (ICP) - Dissolved (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Boron	1.9		0.050	0.0024	mg/L		12/15/22 15:02	12/19/22 18:55	1
Cadmium	ND		0.0010	0.00072	mg/L		12/15/22 15:02	12/19/22 18:55	1
Calcium	280		0.40	0.015	mg/L		12/15/22 15:02	12/19/22 18:55	1
Chromium	0.0022	J	0.0050	0.0011	mg/L		12/15/22 15:02	12/19/22 18:55	1
Cobalt	ND		0.0050	0.00054	mg/L		12/15/22 15:02	12/19/22 18:55	1
Copper	ND		0.0050	0.0012	mg/L		12/15/22 15:02	12/19/22 18:55	1
Iron	0.050	J	0.40	0.019	mg/L		12/15/22 15:02	12/19/22 18:55	1
Lead	ND		0.010	0.0025	mg/L		12/15/22 15:02	12/19/22 18:55	1
Magnesium	120		0.40	0.054	mg/L		12/15/22 15:02	12/19/22 18:55	1
Manganese	0.69		0.020	0.0083	mg/L		12/15/22 15:02	12/19/22 18:55	1
Molybdenum	0.062		0.010	0.00052	mg/L		12/15/22 15:02	12/19/22 18:55	1
Nickel	ND		0.0050	0.0028	mg/L		12/15/22 15:02	12/19/22 18:55	1
Phosphorus	ND	cn	0.40	0.011	mg/L		12/15/22 15:02	12/19/22 18:55	1
Potassium	30		1.0	0.081	mg/L		12/15/22 15:02	12/19/22 18:55	1
Silicon	39	^2	0.10	0.016	mg/L		12/15/22 15:02	12/19/22 18:55	1
Silver	ND		0.0080	0.00049	mg/L		12/15/22 15:02	12/19/22 18:55	1
Sodium	570		0.40	0.039	mg/L		12/15/22 15:02	12/19/22 18:55	1
Strontium	7.3		0.010	0.00032	mg/L		12/15/22 15:02	12/19/22 18:55	1
Tin	ND		0.010	0.0034	mg/L		12/15/22 15:02	12/19/22 18:55	1
Titanium	ND		0.0050	0.00028	mg/L		12/15/22 15:02	12/19/22 18:55	1
Tungsten	ND		0.10	0.0021	mg/L		12/15/22 15:02	12/19/22 18:55	1
Vanadium	0.039		0.0050	0.00069	mg/L		12/15/22 15:02	12/19/22 18:55	1
Zinc	ND		0.040	0.0023	mg/L		12/15/22 15:02	12/19/22 18:55	1

Method: SW846 6020B - Metals (ICP/MS) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	0.14	J	1.0	0.043	ug/L		12/15/22 15:50	12/22/22 16:27	1
Arsenic	83		1.0	0.25	ug/L		12/15/22 15:50	12/27/22 14:01	1
Selenium	42		0.50	0.074	ug/L		12/15/22 15:50	12/27/22 14:01	1
Thallium	0.29		0.10	0.013	ug/L		12/15/22 15:50	12/22/22 16:27	1

Client Sample ID: SWFTS-MW-08C-EM40 — Lab Sample ID: 550-195015-15

Date Collected: 12/14/22 14:13 — **Matrix: Water**
Date Received: 12/15/22 10:00

Method: RSK-175 - Dissolved Gases (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Methane	ND		5.0	0.63	ug/L			12/20/22 21:22	1

Method: MCAWW 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Nitrate as N	14	D	0.10	0.028	mg/L			12/16/22 01:20	2
Sulfate	2600		100	21	mg/L			12/16/22 16:46	50

Method: EPA 300.1B - Disinfection By-Products, (IC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chlorate	39000		4000	980	ug/L			12/22/22 03:06	200

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Dichloroacetic acid(Surr)	*100*		*90 - 115*		*12/22/22 03:06*	*200*

Client Sample ID: SWFTS-MW-08C-EM40 — Lab Sample ID: 550-195015-15

Date Collected: 12/14/22 14:13 — **Matrix: Water**
Date Received: 12/15/22 10:00

Method: EPA 314.0 - Perchlorate (IC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perchlorate	8800		500	160	ug/L			12/15/22 18:55	500

Method: SW846 6010B - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Manganese	ND		0.020	0.0083	mg/L		12/15/22 15:02	12/19/22 18:58	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon (SM 5310B)	1.2	J	2.0	1.0	mg/L			12/17/22 05:29	4

Client Sample ID: SWFTS-MW-08C-EM40 — Lab Sample ID: 550-195015-16

Date Collected: 12/14/22 14:13 — **Matrix: Water**
Date Received: 12/15/22 10:00

Method: SW846 6010B - Metals (ICP) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	0.35		0.20	0.080	mg/L		12/15/22 15:02	12/19/22 19:01	1
Barium	0.015		0.0050	0.00057	mg/L		12/15/22 15:02	12/19/22 19:01	1
Beryllium	ND		0.0010	0.00019	mg/L		12/15/22 15:02	12/19/22 19:01	1
Boron	3.1		0.050	0.0024	mg/L		12/15/22 15:02	12/19/22 19:01	1
Cadmium	ND		0.0010	0.00072	mg/L		12/15/22 15:02	12/19/22 19:01	1
Calcium	540		0.40	0.015	mg/L		12/15/22 15:02	12/19/22 19:01	1
Chromium	0.043		0.0050	0.0011	mg/L		12/15/22 15:02	12/19/22 19:01	1
Cobalt	ND		0.0050	0.00054	mg/L		12/15/22 15:02	12/19/22 19:01	1
Copper	ND		0.0050	0.0012	mg/L		12/15/22 15:02	12/19/22 19:01	1
Iron	0.040	J	0.40	0.019	mg/L		12/15/22 15:02	12/19/22 19:01	1
Lead	ND		0.010	0.0025	mg/L		12/15/22 15:02	12/19/22 19:01	1
Magnesium	350		0.40	0.054	mg/L		12/15/22 15:02	12/19/22 19:01	1
Manganese	ND		0.020	0.0083	mg/L		12/15/22 15:02	12/19/22 19:01	1
Molybdenum	0.22		0.010	0.00052	mg/L		12/15/22 15:02	12/19/22 19:01	1
Nickel	ND		0.0050	0.0028	mg/L		12/15/22 15:02	12/19/22 19:01	1
Phosphorus	ND	cn	0.40	0.011	mg/L		12/15/22 15:02	12/19/22 19:01	1
Potassium	55		1.0	0.081	mg/L		12/15/22 15:02	12/19/22 19:01	1
Silicon	30	^2	0.10	0.016	mg/L		12/15/22 15:02	12/19/22 19:01	1
Silver	ND		0.0080	0.00049	mg/L		12/15/22 15:02	12/19/22 19:01	1
Sodium	830		1.6	0.16	mg/L		12/15/22 15:02	12/20/22 11:36	4
Strontium	13		0.010	0.00032	mg/L		12/15/22 15:02	12/19/22 19:01	1
Tin	ND		0.010	0.0034	mg/L		12/15/22 15:02	12/19/22 19:01	1
Titanium	ND		0.0050	0.00028	mg/L		12/15/22 15:02	12/19/22 19:01	1
Tungsten	0.0025	J	0.10	0.0021	mg/L		12/15/22 15:02	12/19/22 19:01	1
Vanadium	0.025		0.0050	0.00069	mg/L		12/15/22 15:02	12/19/22 19:01	1
Zinc	ND		0.040	0.0023	mg/L		12/15/22 15:02	12/19/22 19:01	1

Method: SW846 6020B - Metals (ICP/MS) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	0.094	J	1.0	0.043	ug/L		12/15/22 15:50	12/22/22 16:29	1
Arsenic	46		1.0	0.25	ug/L		12/15/22 15:50	12/27/22 14:03	1
Selenium	66		0.50	0.074	ug/L		12/15/22 15:50	12/27/22 14:03	1
Thallium	0.047	J	0.10	0.013	ug/L		12/15/22 15:50	12/22/22 16:29	1

Surrogate Summary

Client: Tetra Tech, Inc.
Job ID: 550-195015-1
Project/Site: Tetra Tech M11 SWF Treatability Study

Method: 300.1B - Disinfection By-Products, (IC)

Matrix: Water **Prep Type: Total/NA**

		Percent Surrogate Recovery (Acceptance Limits)							
Lab Sample ID	Client Sample ID	DCAA (90-115)							
550-195015-1	SWFTS-MW-04-EM40	109							
550-195015-1 MS	SWFTS-MW-04-EM40	109							
550-195015-1 MSD	SWFTS-MW-04-EM40	107							
550-195015-3	SWFTS-MW-02-EM40	113							
550-195015-5	SWFTS-MW06A-EM40	111							
550-195015-7	SWFTS-MW-06A-EM40-FD	111							
550-195015-9	SWFTS-MW-06B-EM40	113							
550-195015-11	SWFTS-MW-07A-EM40	109							
550-195015-13	SWFTS-MW-07B-EM40	109							
550-195015-15	SWFTS-MW-08C-EM40	100							
LCS 550-291337/5	Lab Control Sample	114							
LCSD 550-291337/6	Lab Control Sample Dup	114							
MB 550-291337/4	Method Blank	111							

Surrogate Legend

DCAA = Dichloroacetic acid(Surr)

Method: 300.1B - Disinfection By-Products, (IC)

Matrix: Water **Prep Type: Total/NA**

		Percent Surrogate Recovery (Acceptance Limits)							
Lab Sample ID	Client Sample ID	DCAA (50-150)							
MRL 550-291337/1002	Lab Control Sample	114							

Surrogate Legend

DCAA = Dichloroacetic acid(Surr)

Method: RSK-175 - Dissolved Gases (GC)

Lab Sample ID: MB 280-597367/3
Matrix: Water
Analysis Batch: 597367

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Methane	ND		5.0	0.63	ug/L			12/20/22 15:38	1

Lab Sample ID: LCS 280-597367/4
Matrix: Water
Analysis Batch: 597367

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Methane	65.7	67.2		ug/L		102	75 - 125

Lab Sample ID: LCSD 280-597367/5
Matrix: Water
Analysis Batch: 597367

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Methane	65.7	67.2		ug/L		102	75 - 125	0	20

Lab Sample ID: 550-195015-5 DU
Matrix: Water
Analysis Batch: 597367

Client Sample ID: SWFTS-MW06A-EM40
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Methane	ND		0.752	J	ug/L		NC	20

Method: 300.0 - Anions, Ion Chromatography

Lab Sample ID: MB 550-290912/1037
Matrix: Water
Analysis Batch: 290912

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Nitrate as N	ND		0.050	0.014	mg/L			12/15/22 21:58	1

Lab Sample ID: MB 550-290912/2
Matrix: Water
Analysis Batch: 290912

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Nitrate as N	ND		0.050	0.014	mg/L			12/15/22 10:55	1

Lab Sample ID: LCS 550-290912/5
Matrix: Water
Analysis Batch: 290912

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Nitrate as N	4.00	4.16		mg/L		104	90 - 110

Method: 300.0 - Anions, Ion Chromatography (Continued)

Lab Sample ID: LCSD 550-290912/6
Matrix: Water
Analysis Batch: 290912

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Nitrate as N			4.00	4.16		mg/L		104	90 - 110	0	20

Lab Sample ID: 550-194997-E-7 MS
Matrix: Water
Analysis Batch: 290912

Client Sample ID: Matrix Spike
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits		
Nitrate as N	ND		4.00	4.13		mg/L		103	80 - 120		

Lab Sample ID: 550-194997-E-7 MSD
Matrix: Water
Analysis Batch: 290912

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Nitrate as N	ND		4.00	4.14		mg/L		104	80 - 120	0	20

Lab Sample ID: LCS 550-290913/40
Matrix: Water
Analysis Batch: 290913

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Nitrate as N			4.00	4.14		mg/L		104	90 - 110		

Lab Sample ID: LCSD 550-290913/41
Matrix: Water
Analysis Batch: 290913

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Nitrate as N			4.00	4.13		mg/L		103	90 - 110	0	20

Lab Sample ID: 550-195002-B-2 MS
Matrix: Water
Analysis Batch: 290913

Client Sample ID: Matrix Spike
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits		
Nitrate as N	0.53		4.00	4.60		mg/L		102	80 - 120		

Lab Sample ID: 550-195002-B-2 MSD
Matrix: Water
Analysis Batch: 290913

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Nitrate as N	0.53		4.00	4.65		mg/L		103	80 - 120	1	20

Lab Sample ID: MB 550-290915/2
Matrix: Water
Analysis Batch: 290915

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sulfate	ND		2.0	0.43	mg/L			12/15/22 10:45	1

Method: 300.0 - Anions, Ion Chromatography

Lab Sample ID: LCS 550-290915/5
Matrix: Water
Analysis Batch: 290915

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Sulfate	20.0	20.8		mg/L		104	90 - 110

Lab Sample ID: LCSD 550-290915/6
Matrix: Water
Analysis Batch: 290915

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Sulfate	20.0	21.4		mg/L		107	90 - 110	3	20

Lab Sample ID: 550-194999-A-1 MS
Matrix: Water
Analysis Batch: 290915

Client Sample ID: Matrix Spike
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Sulfate	300	E	20.0	302	E 4	mg/L		-0.3	80 - 120

Lab Sample ID: 550-194999-A-1 MSD
Matrix: Water
Analysis Batch: 290915

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Sulfate	300	E	20.0	303	E 4	mg/L		2	80 - 120	0	20

Lab Sample ID: MB 550-290966/2
Matrix: Water
Analysis Batch: 290966

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Nitrate as N	ND		0.050	0.014	mg/L			12/16/22 10:41	1
Sulfate	ND		2.0	0.43	mg/L			12/16/22 10:41	1

Lab Sample ID: LCS 550-290966/5
Matrix: Water
Analysis Batch: 290966

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Nitrate as N	4.00	4.05		mg/L		101	90 - 110
Sulfate	20.0	20.6		mg/L		103	90 - 110

Lab Sample ID: LCSD 550-290966/6
Matrix: Water
Analysis Batch: 290966

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Nitrate as N	4.00	4.06		mg/L		102	90 - 110	0	20
Sulfate	20.0	21.3		mg/L		107	90 - 110	3	20

Method: 300.0 - Anions, Ion Chromatography (Continued)

Lab Sample ID: 550-195033-A-1 MS
Matrix: Water
Analysis Batch: 290966

Client Sample ID: Matrix Spike
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits		
Nitrate as N	3.1		40.0	43.4		mg/L		101	80 - 120		
Sulfate	62		200	263		mg/L		101	80 - 120		

Lab Sample ID: 550-195033-A-1 MSD
Matrix: Water
Analysis Batch: 290966

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Nitrate as N	3.1		40.0	43.3		mg/L		100	80 - 120	0	20
Sulfate	62		200	262		mg/L		100	80 - 120	0	20

Method: 300.1B - Disinfection By-Products, (IC)

Lab Sample ID: MB 550-291337/4
Matrix: Water
Analysis Batch: 291337

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chlorate	ND		20	4.9	ug/L			12/21/22 21:12	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Dichloroacetic acid(Surr)	*111*		*90 - 115*		*12/21/22 21:12*	*1*

Lab Sample ID: LCS 550-291337/5
Matrix: Water
Analysis Batch: 291337

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Chlorate			100	110		ug/L		110	75 - 125		

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
Dichloroacetic acid(Surr)	*114*		*90 - 115*

Lab Sample ID: LCSD 550-291337/6
Matrix: Water
Analysis Batch: 291337

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Chlorate			100	109		ug/L		109	75 - 125	1	25

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
Dichloroacetic acid(Surr)	*114*		*90 - 115*

Method: 300.1B - Disinfection By-Products, (IC) (Continued)

Lab Sample ID: MRL 550-291337/1002
Matrix: Water
Analysis Batch: 291337

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte			Spike Added	MRL Result	MRL Qualifier	Unit	D	%Rec	%Rec Limits		
Chlorate			20.0	24.0		ug/L		120	50 - 150		

Surrogate	*MRL %Recovery*	*MRL Qualifier*	*Limits*
Dichloroacetic acid(Surr)	*114*		*50 - 150*

Lab Sample ID: 550-195015-1 MS
Matrix: Water
Analysis Batch: 291337

Client Sample ID: SWFTS-MW-04-EM40
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits		
Chlorate	6800		10000	19300		ug/L		125	75 - 125		

Surrogate	*MS %Recovery*	*MS Qualifier*	*Limits*
Dichloroacetic acid(Surr)	*109*		*90 - 115*

Lab Sample ID: 550-195015-1 MSD
Matrix: Water
Analysis Batch: 291337

Client Sample ID: SWFTS-MW-04-EM40
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Chlorate	6800		10000	18900		ug/L		121	75 - 125	2	25

Surrogate	*MSD %Recovery*	*MSD Qualifier*	*Limits*
Dichloroacetic acid(Surr)	*107*		*90 - 115*

Method: 314.0 - Perchlorate (IC)

Lab Sample ID: MB 550-290875/1002
Matrix: Water
Analysis Batch: 290875

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perchlorate	ND		1.0	0.31	ug/L			12/15/22 10:43	1

Lab Sample ID: LCS 550-290875/4
Matrix: Water
Analysis Batch: 290875

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Perchlorate			25.0	22.6		ug/L		90	85 - 115		

Lab Sample ID: LCSD 550-290875/5
Matrix: Water
Analysis Batch: 290875

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Perchlorate			25.0	22.6		ug/L		90	85 - 115	0	15

Method: 314.0 - Perchlorate (IC) (Continued)

Lab Sample ID: MRL 550-290875/1003
Matrix: Water
Analysis Batch: 290875

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	MRL Result	MRL Qualifier	Unit	D	%Rec	%Rec Limits
Perchlorate	1.00	1.11		ug/L		111	75 - 125

Lab Sample ID: 550-194920-E-15 MS
Matrix: Water
Analysis Batch: 290875

Client Sample ID: Matrix Spike
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Perchlorate	3000		5000	7470		ug/L		90	80 - 120

Lab Sample ID: 550-194920-E-15 MSD
Matrix: Water
Analysis Batch: 290875

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Perchlorate	3000		5000	7600		ug/L		93	80 - 120	2	15

Lab Sample ID: MB 550-290892/1002
Matrix: Water
Analysis Batch: 290892

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perchlorate	ND		1.0	0.31	ug/L			12/15/22 10:42	1

Lab Sample ID: LCS 550-290892/4
Matrix: Water
Analysis Batch: 290892

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Perchlorate	25.0	24.7		ug/L		99	85 - 115

Lab Sample ID: LCSD 550-290892/5
Matrix: Water
Analysis Batch: 290892

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Perchlorate	25.0	24.1		ug/L		96	85 - 115	2	15

Lab Sample ID: MRL 550-290892/1003
Matrix: Water
Analysis Batch: 290892

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	MRL Result	MRL Qualifier	Unit	D	%Rec	%Rec Limits
Perchlorate	1.00	0.942	J	ug/L		94	75 - 125

Lab Sample ID: 550-194965-A-1 MS
Matrix: Water
Analysis Batch: 290892

Client Sample ID: Matrix Spike
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Perchlorate	370000		500000	823000		ug/L		92	80 - 120

Method: 314.0 - Perchlorate (IC)

Lab Sample ID: 550-194965-A-1 MSD
Matrix: Water
Analysis Batch: 290892

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Perchlorate	370000		500000	836000		ug/L		94	80 - 120	1	15

Method: 6010B - Metals (ICP)

Lab Sample ID: MB 550-290884/1-A
Matrix: Water
Analysis Batch: 291022

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 290884

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	ND		0.20	0.080	mg/L		12/15/22 14:30	12/16/22 14:07	1
Barium	ND		0.0050	0.00057	mg/L		12/15/22 14:30	12/16/22 14:07	1
Beryllium	ND		0.0010	0.00019	mg/L		12/15/22 14:30	12/16/22 14:07	1
Boron	0.00477	J	0.050	0.0024	mg/L		12/15/22 14:30	12/16/22 14:07	1
Cadmium	ND		0.0010	0.00072	mg/L		12/15/22 14:30	12/16/22 14:07	1
Calcium	0.0266	J	0.40	0.015	mg/L		12/15/22 14:30	12/16/22 14:07	1
Chromium	ND		0.0050	0.0011	mg/L		12/15/22 14:30	12/16/22 14:07	1
Cobalt	ND		0.0050	0.00054	mg/L		12/15/22 14:30	12/16/22 14:07	1
Copper	ND		0.0050	0.0012	mg/L		12/15/22 14:30	12/16/22 14:07	1
Iron	ND		0.40	0.019	mg/L		12/15/22 14:30	12/16/22 14:07	1
Lead	ND		0.010	0.0025	mg/L		12/15/22 14:30	12/16/22 14:07	1
Magnesium	ND		0.40	0.054	mg/L		12/15/22 14:30	12/16/22 14:07	1
Manganese	ND		0.020	0.0083	mg/L		12/15/22 14:30	12/16/22 14:07	1
Molybdenum	ND		0.010	0.00052	mg/L		12/15/22 14:30	12/16/22 14:07	1
Nickel	ND		0.0050	0.0028	mg/L		12/15/22 14:30	12/16/22 14:07	1
Phosphorus	ND		0.40	0.011	mg/L		12/15/22 14:30	12/16/22 14:07	1
Potassium	0.142	J	1.0	0.081	mg/L		12/15/22 14:30	12/16/22 14:07	1
Silicon	ND		0.10	0.016	mg/L		12/15/22 14:30	12/16/22 14:07	1
Silver	0.000670	J	0.0080	0.00049	mg/L		12/15/22 14:30	12/16/22 14:07	1
Sodium	0.289	J	0.40	0.039	mg/L		12/15/22 14:30	12/16/22 14:07	1
Strontium	0.000670	J	0.010	0.00032	mg/L		12/15/22 14:30	12/16/22 14:07	1
Tin	ND		0.010	0.0034	mg/L		12/15/22 14:30	12/16/22 14:07	1
Titanium	ND		0.0050	0.00028	mg/L		12/15/22 14:30	12/16/22 14:07	1
Tungsten	ND		0.10	0.0021	mg/L		12/15/22 14:30	12/16/22 14:07	1
Vanadium	ND		0.0050	0.00069	mg/L		12/15/22 14:30	12/16/22 14:07	1
Zinc	ND		0.040	0.0023	mg/L		12/15/22 14:30	12/16/22 14:07	1

Lab Sample ID: LCS 550-290884/2-A
Matrix: Water
Analysis Batch: 291022

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 290884

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Aluminum	20.0	18.1		mg/L		90	88 - 110
Barium	1.00	0.926		mg/L		93	90 - 110
Beryllium	1.00	1.03		mg/L		103	90 - 111
Boron	1.00	0.922		mg/L		92	88 - 110
Cadmium	1.00	1.00		mg/L		100	90 - 110
Calcium	21.0	19.3		mg/L		92	88 - 112
Chromium	1.00	0.977		mg/L		98	90 - 110
Cobalt	1.00	0.998		mg/L		100	90 - 112

Method: 6010B - Metals (ICP) (Continued)

Lab Sample ID: LCS 550-290884/2-A
Matrix: Water
Analysis Batch: 291022

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 290884

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Copper	1.00	0.996		mg/L		100	87 - 110
Iron	1.00	0.976		mg/L		98	85 - 112
Lead	1.00	0.989		mg/L		99	90 - 113
Magnesium	21.0	19.0		mg/L		90	89 - 110
Manganese	1.00	0.969		mg/L		97	90 - 110
Molybdenum	1.00	0.994		mg/L		99	89 - 110
Nickel	1.00	0.997		mg/L		100	88 - 114
Potassium	20.0	17.5		mg/L		88	87 - 114
Silicon	5.00	4.74		mg/L		95	88 - 110
Silver	0.0750	0.0730		mg/L		97	84 - 111
Sodium	20.0	18.1		mg/L		91	84 - 110
Strontium	1.00	1.02		mg/L		102	88 - 110
Tin	1.00	0.978		mg/L		98	90 - 112
Titanium	1.00	0.998		mg/L		100	90 - 110
Tungsten	1.00	0.974		mg/L		97	80 - 120
Vanadium	1.00	0.986		mg/L		99	90 - 110
Zinc	1.00	1.00		mg/L		100	90 - 114

Lab Sample ID: LCSD 550-290884/3-A
Matrix: Water
Analysis Batch: 291022

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 290884

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Aluminum	20.0	20.3		mg/L		102	88 - 110	12	20
Barium	1.00	1.04		mg/L		104	90 - 110	12	20
Beryllium	1.00	1.02		mg/L		102	90 - 111	0	20
Boron	1.00	1.04		mg/L		104	88 - 110	12	20
Cadmium	1.00	1.00		mg/L		100	90 - 110	0	20
Calcium	21.0	21.6		mg/L		103	88 - 112	11	20
Chromium	1.00	0.974		mg/L		97	90 - 110	0	20
Cobalt	1.00	0.997		mg/L		100	90 - 112	0	20
Copper	1.00	0.996		mg/L		100	87 - 110	0	20
Iron	1.00	0.980		mg/L		98	85 - 112	0	20
Lead	1.00	0.989		mg/L		99	90 - 113	0	20
Magnesium	21.0	21.2		mg/L		101	89 - 110	11	20
Manganese	1.00	0.966		mg/L		97	90 - 110	0	20
Molybdenum	1.00	0.996		mg/L		100	89 - 110	0	20
Nickel	1.00	0.995		mg/L		100	88 - 114	0	20
Potassium	20.0	19.7		mg/L		98	87 - 114	12	20
Silicon	5.00	4.72		mg/L		94	88 - 110	0	20
Silver	0.0750	0.0738		mg/L		98	84 - 111	1	20
Sodium	20.0	20.3		mg/L		101	84 - 110	11	20
Strontium	1.00	1.01		mg/L		101	88 - 110	1	20
Tin	1.00	0.979		mg/L		98	90 - 112	0	20
Titanium	1.00	0.996		mg/L		100	90 - 110	0	20
Tungsten	1.00	0.983		mg/L		98	80 - 120	1	20
Vanadium	1.00	0.984		mg/L		98	90 - 110	0	20
Zinc	1.00	0.995		mg/L		99	90 - 114	1	20

Method: 6010B - Metals (ICP) (Continued)

Lab Sample ID: 550-195013-J-5-A MS
Matrix: Water
Analysis Batch: 291022

Client Sample ID: Matrix Spike
Prep Type: Total/NA
Prep Batch: 290884

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Aluminum	0.46		20.0	21.9		mg/L		107	75 - 125
Barium	0.016		1.00	1.10		mg/L		108	75 - 125
Beryllium	0.00040	J	1.00	1.07		mg/L		107	75 - 125
Boron	1.5	B	1.00	2.50		mg/L		104	75 - 125
Cadmium	ND		1.00	1.03		mg/L		103	75 - 125
Calcium	220	B	21.0	234	4	mg/L		86	75 - 125
Chromium	ND		1.00	0.960		mg/L		96	75 - 125
Cobalt	0.0030	J	1.00	0.987		mg/L		98	75 - 125
Copper	ND		1.00	1.05		mg/L		105	75 - 125
Iron	0.24	J	1.00	1.26		mg/L		102	75 - 125
Lead	ND		1.00	0.874		mg/L		87	75 - 125
Magnesium	99		21.0	119	4	mg/L		96	75 - 125
Manganese	ND		1.00	0.968		mg/L		97	75 - 125
Molybdenum	0.097		1.00	1.10		mg/L		100	75 - 125
Nickel	0.0077		1.00	0.991		mg/L		98	75 - 125
Potassium	24	B	20.0	45.5		mg/L		105	75 - 125
Silicon	38		5.00	42.7	4	mg/L		93	75 - 125
Silver	ND		0.0750	0.0753		mg/L		100	75 - 125
Sodium	570	^2 B	20.0	580	4	mg/L		59	75 - 125
Strontium	5.9	B	1.00	6.76	4	mg/L		88	75 - 125
Tin	ND		1.00	0.994		mg/L		99	75 - 125
Titanium	0.015		1.00	1.04		mg/L		102	75 - 125
Tungsten	0.0077	J	1.00	0.991		mg/L		98	75 - 125
Vanadium	0.038		1.00	1.05		mg/L		101	75 - 125
Zinc	ND		1.00	0.969		mg/L		97	75 - 125

Lab Sample ID: 550-195013-J-5-B MSD
Matrix: Water
Analysis Batch: 291022

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total/NA
Prep Batch: 290884

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Aluminum	0.46		20.0	22.4		mg/L		109	75 - 125	2	20
Barium	0.016		1.00	1.13		mg/L		111	75 - 125	3	20
Beryllium	0.00040	J	1.00	1.10		mg/L		110	75 - 125	3	20
Boron	1.5	B	1.00	2.48		mg/L		102	75 - 125	1	20
Cadmium	ND		1.00	1.03		mg/L		103	75 - 125	0	20
Calcium	220	B	21.0	237	4	mg/L		102	75 - 125	1	20
Chromium	ND		1.00	0.961		mg/L		96	75 - 125	0	20
Cobalt	0.0030	J	1.00	0.989		mg/L		99	75 - 125	0	20
Copper	ND		1.00	1.05		mg/L		105	75 - 125	0	20
Iron	0.24	J	1.00	1.29		mg/L		105	75 - 125	2	20
Lead	ND		1.00	0.876		mg/L		88	75 - 125	0	20
Magnesium	99		21.0	121	4	mg/L		102	75 - 125	1	20
Manganese	ND		1.00	0.970		mg/L		97	75 - 125	0	20
Molybdenum	0.097		1.00	1.10		mg/L		100	75 - 125	0	20
Nickel	0.0077		1.00	0.990		mg/L		98	75 - 125	0	20
Potassium	24	B	20.0	46.5		mg/L		110	75 - 125	2	20
Silicon	38		5.00	43.4	4	mg/L		106	75 - 125	2	20
Silver	ND		0.0750	0.0752		mg/L		100	75 - 125	0	20

Method: 6010B - Metals (ICP) (Continued)

Lab Sample ID: 550-195013-J-5-B MSD
Matrix: Water
Analysis Batch: 291022

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total/NA
Prep Batch: 290884

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Sodium	570	^2 B	20.0	590	4	mg/L		110	75 - 125	2	20
Strontium	5.9	B	1.00	6.98	4	mg/L		109	75 - 125	3	20
Tin	ND		1.00	0.991		mg/L		99	75 - 125	0	20
Titanium	0.015		1.00	1.04		mg/L		102	75 - 125	0	20
Tungsten	0.0077	J	1.00	1.00		mg/L		99	75 - 125	1	20
Vanadium	0.038		1.00	1.05		mg/L		101	75 - 125	0	20
Zinc	ND		1.00	0.972		mg/L		97	75 - 125	0	20

Lab Sample ID: MB 550-290891/1-A
Matrix: Water
Analysis Batch: 291111

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 290891

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	ND		0.20	0.080	mg/L		12/15/22 15:02	12/19/22 18:04	1
Barium	ND		0.0050	0.00057	mg/L		12/15/22 15:02	12/19/22 18:04	1
Beryllium	ND		0.0010	0.00019	mg/L		12/15/22 15:02	12/19/22 18:04	1
Boron	ND		0.050	0.0024	mg/L		12/15/22 15:02	12/19/22 18:04	1
Cadmium	ND		0.0010	0.00072	mg/L		12/15/22 15:02	12/19/22 18:04	1
Calcium	ND		0.40	0.015	mg/L		12/15/22 15:02	12/19/22 18:04	1
Chromium	ND		0.0050	0.0011	mg/L		12/15/22 15:02	12/19/22 18:04	1
Cobalt	ND		0.0050	0.00054	mg/L		12/15/22 15:02	12/19/22 18:04	1
Copper	ND		0.0050	0.0012	mg/L		12/15/22 15:02	12/19/22 18:04	1
Iron	ND		0.40	0.019	mg/L		12/15/22 15:02	12/19/22 18:04	1
Lead	ND		0.010	0.0025	mg/L		12/15/22 15:02	12/19/22 18:04	1
Magnesium	ND		0.40	0.054	mg/L		12/15/22 15:02	12/19/22 18:04	1
Manganese	ND		0.020	0.0083	mg/L		12/15/22 15:02	12/19/22 18:04	1
Molybdenum	ND		0.010	0.00052	mg/L		12/15/22 15:02	12/19/22 18:04	1
Nickel	ND		0.0050	0.0028	mg/L		12/15/22 15:02	12/19/22 18:04	1
Phosphorus	0.0178	J	0.40	0.011	mg/L		12/15/22 15:02	12/19/22 18:04	1
Potassium	ND		1.0	0.081	mg/L		12/15/22 15:02	12/19/22 18:04	1
Silicon	ND		0.10	0.016	mg/L		12/15/22 15:02	12/19/22 18:04	1
Silver	0.000740	J	0.0080	0.00049	mg/L		12/15/22 15:02	12/19/22 18:04	1
Sodium	ND		0.40	0.039	mg/L		12/15/22 15:02	12/19/22 18:04	1
Strontium	ND		0.010	0.00032	mg/L		12/15/22 15:02	12/19/22 18:04	1
Tin	ND		0.010	0.0034	mg/L		12/15/22 15:02	12/19/22 18:04	1
Titanium	ND		0.0050	0.00028	mg/L		12/15/22 15:02	12/19/22 18:04	1
Tungsten	ND		0.10	0.0021	mg/L		12/15/22 15:02	12/19/22 18:04	1
Vanadium	ND		0.0050	0.00069	mg/L		12/15/22 15:02	12/19/22 18:04	1
Zinc	ND		0.040	0.0023	mg/L		12/15/22 15:02	12/19/22 18:04	1

Lab Sample ID: LCS 550-290891/2-A
Matrix: Water
Analysis Batch: 291111

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 290891

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Aluminum	20.0	19.6		mg/L		98	88 - 110
Barium	1.00	0.994		mg/L		99	90 - 110
Beryllium	1.00	0.989		mg/L		99	90 - 111
Boron	1.00	1.05		mg/L		105	88 - 110

Method: 6010B - Metals (ICP) (Continued)

Lab Sample ID: LCS 550-290891/2-A
Matrix: Water
Analysis Batch: 291111

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 290891

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Cadmium	1.00	0.988		mg/L		99	90 - 110
Calcium	21.0	21.0		mg/L		100	88 - 112
Chromium	1.00	0.958		mg/L		96	90 - 110
Cobalt	1.00	0.955		mg/L		95	90 - 112
Copper	1.00	0.993		mg/L		99	87 - 110
Iron	1.00	0.931		mg/L		93	85 - 112
Lead	1.00	1.01		mg/L		101	90 - 113
Magnesium	21.0	20.6		mg/L		98	89 - 110
Manganese	1.00	0.940		mg/L		94	90 - 110
Molybdenum	1.00	0.985		mg/L		99	89 - 110
Nickel	1.00	0.985		mg/L		99	88 - 114
Potassium	20.0	19.2		mg/L		96	87 - 114
Silicon	5.00	4.69		mg/L		94	88 - 110
Silver	0.0750	0.0732		mg/L		98	84 - 111
Sodium	20.0	19.5		mg/L		98	84 - 110
Strontium	1.00	0.935		mg/L		93	88 - 110
Tin	1.00	0.969		mg/L		97	90 - 112
Titanium	1.00	0.975		mg/L		98	90 - 110
Tungsten	1.00	0.973		mg/L		97	80 - 120
Vanadium	1.00	0.979		mg/L		98	90 - 110
Zinc	1.00	1.01		mg/L		101	90 - 114

Lab Sample ID: LCSD 550-290891/3-A
Matrix: Water
Analysis Batch: 291145

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 290891

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Aluminum	20.0	20.2		mg/L		101	88 - 110	3	20
Barium	1.00	1.02		mg/L		102	90 - 110	2	20
Beryllium	1.00	1.01		mg/L		101	90 - 111	2	20
Boron	1.00	1.03		mg/L		103	88 - 110	2	20
Cadmium	1.00	0.967		mg/L		97	90 - 110	2	20
Calcium	21.0	21.5		mg/L		102	88 - 112	2	20
Chromium	1.00	0.964		mg/L		96	90 - 110	1	20
Cobalt	1.00	0.942		mg/L		94	90 - 112	1	20
Copper	1.00	0.993		mg/L		99	87 - 110	0	20
Iron	1.00	0.958		mg/L		96	85 - 112	3	20
Lead	1.00	0.980		mg/L		98	90 - 113	3	20
Magnesium	21.0	21.1		mg/L		100	89 - 110	2	20
Manganese	1.00	0.954		mg/L		95	90 - 110	1	20
Molybdenum	1.00	0.976		mg/L		98	89 - 110	1	20
Nickel	1.00	0.989		mg/L		99	88 - 114	0	20
Potassium	20.0	19.8		mg/L		99	87 - 114	3	20
Silicon	5.00	4.79		mg/L		96	88 - 110	2	20
Silver	0.0750	0.0732		mg/L		98	84 - 111	0	20
Sodium	20.0	20.0		mg/L		100	84 - 110	3	20
Strontium	1.00	0.974		mg/L		97	88 - 110	4	20
Tin	1.00	0.959		mg/L		96	90 - 112	1	20
Titanium	1.00	0.982		mg/L		98	90 - 110	1	20

Method: 6010B - Metals (ICP) (Continued)

Lab Sample ID: LCSD 550-290891/3-A
Matrix: Water
Analysis Batch: 291145

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 290891

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Tungsten			1.00	0.958		mg/L		96	80 - 120	2	20
Vanadium			1.00	0.968		mg/L		97	90 - 110	1	20
Zinc			1.00	1.00		mg/L		100	90 - 114	1	20

Lab Sample ID: 550-195015-5 MS
Matrix: Water
Analysis Batch: 291111

Client Sample ID: SWFTS-MW06A-EM40
Prep Type: Total/NA
Prep Batch: 290891

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Aluminum	0.49		20.0	21.4		mg/L		105	75 - 125
Barium	0.025		1.00	1.07		mg/L		105	75 - 125
Beryllium	ND		1.00	1.05		mg/L		105	75 - 125
Boron	0.76		1.00	1.82		mg/L		105	75 - 125
Cadmium	ND		1.00	1.02		mg/L		102	75 - 125
Calcium	160		21.0	174	4	mg/L		50	75 - 125
Chromium	ND		1.00	0.964		mg/L		96	75 - 125
Cobalt	0.0049	J	1.00	0.971		mg/L		97	75 - 125
Copper	0.0020	J	1.00	1.04		mg/L		104	75 - 125
Iron	0.45		1.00	1.52		mg/L		107	75 - 125
Lead	ND		1.00	0.962		mg/L		96	75 - 125
Magnesium	68		21.0	84.6		mg/L		79	75 - 125
Manganese	0.80		1.00	1.70		mg/L		90	75 - 125
Molybdenum	0.013		1.00	1.03		mg/L		101	75 - 125
Nickel	0.019		1.00	1.01		mg/L		99	75 - 125
Potassium	19		20.0	38.1		mg/L		98	75 - 125
Silicon	34	^2	5.00	38.7	4	mg/L		94	75 - 125
Silver	ND		0.0750	0.0738		mg/L		98	75 - 125
Sodium	370		20.0	373	4	mg/L		-7	75 - 125
Strontium	3.7		1.00	4.49		mg/L		79	75 - 125
Tin	ND		1.00	0.995		mg/L		99	75 - 125
Titanium	0.023		1.00	1.03		mg/L		101	75 - 125
Tungsten	0.011	J	1.00	1.01		mg/L		100	75 - 125
Vanadium	0.054		1.00	1.06		mg/L		100	75 - 125
Zinc	ND		1.00	1.01		mg/L		101	75 - 125

Lab Sample ID: 550-195015-5 MSD
Matrix: Water
Analysis Batch: 291111

Client Sample ID: SWFTS-MW06A-EM40
Prep Type: Total/NA
Prep Batch: 290891

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Aluminum	0.49		20.0	21.5		mg/L		105	75 - 125	1	20
Barium	0.025		1.00	1.08		mg/L		105	75 - 125	1	20
Beryllium	ND		1.00	1.06		mg/L		106	75 - 125	1	20
Boron	0.76		1.00	1.82		mg/L		105	75 - 125	0	20
Cadmium	ND		1.00	1.02		mg/L		102	75 - 125	0	20
Calcium	160		21.0	177	4	mg/L		60	75 - 125	1	20
Chromium	ND		1.00	0.958		mg/L		96	75 - 125	1	20
Cobalt	0.0049	J	1.00	0.973		mg/L		97	75 - 125	0	20
Copper	0.0020	J	1.00	1.04		mg/L		104	75 - 125	0	20

Method: 6010B - Metals (ICP) (Continued)

Lab Sample ID: 550-195015-5 MSD
Client Sample ID: SWFTS-MW06A-EM40
Matrix: Water
Prep Type: Total/NA
Analysis Batch: 291111
Prep Batch: 290891

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Iron	0.45		1.00	1.46		mg/L		101	75 - 125	4	20
Lead	ND		1.00	0.959		mg/L		96	75 - 125	0	20
Magnesium	68		21.0	85.7		mg/L		85	75 - 125	1	20
Manganese	0.80		1.00	1.69		mg/L		89	75 - 125	1	20
Molybdenum	0.013		1.00	1.02		mg/L		101	75 - 125	1	20
Nickel	0.019		1.00	1.00		mg/L		98	75 - 125	1	20
Potassium	19		20.0	38.4		mg/L		99	75 - 125	1	20
Silicon	34	^2	5.00	38.8	4	mg/L		95	75 - 125	0	20
Silver	ND		0.0750	0.0739		mg/L		98	75 - 125	0	20
Sodium	370		20.0	374	4	mg/L		2	75 - 125	0	20
Strontium	3.7		1.00	4.57		mg/L		87	75 - 125	2	20
Tin	ND		1.00	0.993		mg/L		99	75 - 125	0	20
Titanium	0.023		1.00	1.02		mg/L		100	75 - 125	1	20
Tungsten	0.011	J	1.00	1.01		mg/L		100	75 - 125	1	20
Vanadium	0.054		1.00	1.05		mg/L		100	75 - 125	0	20
Zinc	ND		1.00	0.999		mg/L		100	75 - 125	1	20

Method: 6020B - Metals (ICP/MS)

Lab Sample ID: MB 550-290897/1-A
Client Sample ID: Method Blank
Matrix: Water
Prep Type: Total/NA
Analysis Batch: 291384
Prep Batch: 290897

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND		1.0	0.043	ug/L		12/15/22 15:50	12/22/22 15:41	1
Thallium	ND		0.10	0.013	ug/L		12/15/22 15:50	12/22/22 15:41	1

Lab Sample ID: MB 550-290897/1-A
Client Sample ID: Method Blank
Matrix: Water
Prep Type: Total/NA
Analysis Batch: 291501
Prep Batch: 290897

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	ND		1.0	0.25	ug/L		12/15/22 15:50	12/27/22 13:15	1
Selenium	ND		0.50	0.074	ug/L		12/15/22 15:50	12/27/22 13:15	1

Lab Sample ID: LCS 550-290897/2-A
Client Sample ID: Lab Control Sample
Matrix: Water
Prep Type: Total/NA
Analysis Batch: 291384
Prep Batch: 290897

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Antimony	100	98.6		ug/L		99	80 - 120
Thallium	100	102		ug/L		102	80 - 120

Lab Sample ID: LCS 550-290897/2-A
Client Sample ID: Lab Control Sample
Matrix: Water
Prep Type: Total/NA
Analysis Batch: 291501
Prep Batch: 290897

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Arsenic	100	96.0		ug/L		96	80 - 120
Selenium	100	96.3		ug/L		96	80 - 120

Method: 6020B - Metals (ICP/MS)

Lab Sample ID: LCSD 550-290897/3-A
Matrix: Water
Analysis Batch: 291384

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 290897

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Antimony			100	101		ug/L		101	80 - 120	2	20
Thallium			100	101		ug/L		101	80 - 120	1	20

Lab Sample ID: LCSD 550-290897/3-A
Matrix: Water
Analysis Batch: 291501

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 290897

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Arsenic			100	93.5		ug/L		94	80 - 120	3	20
Selenium			100	94.9		ug/L		95	80 - 120	1	20

Lab Sample ID: 550-195013-A-2-B MS
Matrix: Water
Analysis Batch: 291384

Client Sample ID: Matrix Spike
Prep Type: Dissolved
Prep Batch: 290897

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits		
Antimony	0.23	J	100	103		ug/L		103	75 - 125		
Thallium	0.18		100	97.2		ug/L		97	75 - 125		

Lab Sample ID: 550-195013-A-2-B MS
Matrix: Water
Analysis Batch: 291501

Client Sample ID: Matrix Spike
Prep Type: Dissolved
Prep Batch: 290897

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits		
Arsenic	66		100	167		ug/L		101	75 - 125		
Selenium	45		100	153		ug/L		107	75 - 125		

Lab Sample ID: 550-195013-A-2-C MSD
Matrix: Water
Analysis Batch: 291384

Client Sample ID: Matrix Spike Duplicate
Prep Type: Dissolved
Prep Batch: 290897

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Antimony	0.23	J	100	103		ug/L		103	75 - 125	0	20
Thallium	0.18		100	96.5		ug/L		96	75 - 125	1	20

Lab Sample ID: 550-195013-A-2-C MSD
Matrix: Water
Analysis Batch: 291501

Client Sample ID: Matrix Spike Duplicate
Prep Type: Dissolved
Prep Batch: 290897

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Arsenic	66		100	166		ug/L		99	75 - 125	1	20
Selenium	45		100	151		ug/L		106	75 - 125	1	20

Method: SM 5310B - Organic Carbon, Total (TOC)

Lab Sample ID: MB 550-290973/34
Matrix: Water
Analysis Batch: 290973

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon	ND		0.50	0.26	mg/L			12/16/22 20:54	1

Lab Sample ID: MB 550-290973/63
Matrix: Water
Analysis Batch: 290973

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon	ND		0.50	0.26	mg/L			12/17/22 03:21	1

Lab Sample ID: LCS 550-290973/35
Matrix: Water
Analysis Batch: 290973

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Total Organic Carbon	20.0	19.1		mg/L		95	90 - 110

Lab Sample ID: LCS 550-290973/64
Matrix: Water
Analysis Batch: 290973

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Total Organic Carbon	20.0	19.5		mg/L		97	90 - 110

Lab Sample ID: LCSD 550-290973/36
Matrix: Water
Analysis Batch: 290973

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Total Organic Carbon	20.0	19.5		mg/L		97	90 - 110	2	20

Lab Sample ID: LCSD 550-290973/65
Matrix: Water
Analysis Batch: 290973

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Total Organic Carbon	20.0	19.5		mg/L		98	90 - 110	0	20

Lab Sample ID: 550-194920-C-15 MS
Matrix: Water
Analysis Batch: 290973

Client Sample ID: Matrix Spike
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Total Organic Carbon	1.4		20.0	19.9		mg/L		93	90 - 110

Lab Sample ID: 550-194920-D-15 MSD
Matrix: Water
Analysis Batch: 290973

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Total Organic Carbon	1.4		20.0	19.6		mg/L		91	90 - 110	1	20

Client: Tetra Tech, Inc.
Job ID: 550-195015-1
Project/Site: Tetra Tech M11 SWF Treatability Study

Method: SM 5310B - Organic Carbon, Total (TOC)

Lab Sample ID: 550-194997-C-7 MSD ^10
Client Sample ID: Matrix Spike Duplicate
Matrix: Water
Prep Type: Total/NA
Analysis Batch: 290973

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Total Organic Carbon	82	F1	200	250	F1	mg/L		84	90 - 110	2	20

Lab Sample ID: 550-194997-D-7 MS ^10
Client Sample ID: Matrix Spike
Matrix: Water
Prep Type: Total/NA
Analysis Batch: 290973

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Total Organic Carbon	82	F1	200	255	F1	mg/L		86	90 - 110

GC VOA

Analysis Batch: 597367

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
550-195015-1	SWFTS-MW-04-EM40	Total/NA	Water	RSK-175	
550-195015-3	SWFTS-MW-02-EM40	Total/NA	Water	RSK-175	
550-195015-5	SWFTS-MW06A-EM40	Total/NA	Water	RSK-175	
550-195015-7	SWFTS-MW-06A-EM40-FD	Total/NA	Water	RSK-175	
550-195015-9	SWFTS-MW-06B-EM40	Total/NA	Water	RSK-175	
550-195015-11	SWFTS-MW-07A-EM40	Total/NA	Water	RSK-175	
550-195015-13	SWFTS-MW-07B-EM40	Total/NA	Water	RSK-175	
550-195015-15	SWFTS-MW-08C-EM40	Total/NA	Water	RSK-175	
MB 280-597367/3	Method Blank	Total/NA	Water	RSK-175	
LCS 280-597367/4	Lab Control Sample	Total/NA	Water	RSK-175	
LCSD 280-597367/5	Lab Control Sample Dup	Total/NA	Water	RSK-175	
550-195015-5 DU	SWFTS-MW06A-EM40	Total/NA	Water	RSK-175	

HPLC/IC

Analysis Batch: 290875

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
550-195015-3	SWFTS-MW-02-EM40	Total/NA	Water	314.0	
550-195015-5	SWFTS-MW06A-EM40	Total/NA	Water	314.0	
550-195015-7	SWFTS-MW-06A-EM40-FD	Total/NA	Water	314.0	
550-195015-9	SWFTS-MW-06B-EM40	Total/NA	Water	314.0	
550-195015-11	SWFTS-MW-07A-EM40	Total/NA	Water	314.0	
550-195015-13	SWFTS-MW-07B-EM40	Total/NA	Water	314.0	
550-195015-15	SWFTS-MW-08C-EM40	Total/NA	Water	314.0	
MB 550-290875/1002	Method Blank	Total/NA	Water	314.0	
LCS 550-290875/4	Lab Control Sample	Total/NA	Water	314.0	
LCSD 550-290875/5	Lab Control Sample Dup	Total/NA	Water	314.0	
MRL 550-290875/1003	Lab Control Sample	Total/NA	Water	314.0	
550-194920-E-15 MS	Matrix Spike	Total/NA	Water	314.0	
550-194920-E-15 MSD	Matrix Spike Duplicate	Total/NA	Water	314.0	

Analysis Batch: 290892

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
550-195015-1	SWFTS-MW-04-EM40	Total/NA	Water	314.0	
MB 550-290892/1002	Method Blank	Total/NA	Water	314.0	
LCS 550-290892/4	Lab Control Sample	Total/NA	Water	314.0	
LCSD 550-290892/5	Lab Control Sample Dup	Total/NA	Water	314.0	
MRL 550-290892/1003	Lab Control Sample	Total/NA	Water	314.0	
550-194965-A-1 MS	Matrix Spike	Total/NA	Water	314.0	
550-194965-A-1 MSD	Matrix Spike Duplicate	Total/NA	Water	314.0	

Analysis Batch: 290912

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
550-195015-1	SWFTS-MW-04-EM40	Total/NA	Water	300.0	
550-195015-3	SWFTS-MW-02-EM40	Total/NA	Water	300.0	
550-195015-5	SWFTS-MW06A-EM40	Total/NA	Water	300.0	
550-195015-7	SWFTS-MW-06A-EM40-FD	Total/NA	Water	300.0	
550-195015-9	SWFTS-MW-06B-EM40	Total/NA	Water	300.0	
550-195015-11	SWFTS-MW-07A-EM40	Total/NA	Water	300.0	
550-195015-13	SWFTS-MW-07B-EM40	Total/NA	Water	300.0	
MB 550-290912/1037	Method Blank	Total/NA	Water	300.0	

HPLC/IC (Continued)

Analysis Batch: 290912 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
MB 550-290912/2	Method Blank	Total/NA	Water	300.0	
LCS 550-290912/5	Lab Control Sample	Total/NA	Water	300.0	
LCSD 550-290912/6	Lab Control Sample Dup	Total/NA	Water	300.0	
550-194997-E-7 MS	Matrix Spike	Total/NA	Water	300.0	
550-194997-E-7 MSD	Matrix Spike Duplicate	Total/NA	Water	300.0	

Analysis Batch: 290913

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
550-195015-15	SWFTS-MW-08C-EM40	Total/NA	Water	300.0	
LCS 550-290913/40	Lab Control Sample	Total/NA	Water	300.0	
LCSD 550-290913/41	Lab Control Sample Dup	Total/NA	Water	300.0	
550-195002-B-2 MS	Matrix Spike	Total/NA	Water	300.0	
550-195002-B-2 MSD	Matrix Spike Duplicate	Total/NA	Water	300.0	

Analysis Batch: 290915

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
550-195015-1	SWFTS-MW-04-EM40	Total/NA	Water	300.0	
550-195015-3	SWFTS-MW-02-EM40	Total/NA	Water	300.0	
550-195015-5	SWFTS-MW06A-EM40	Total/NA	Water	300.0	
550-195015-7	SWFTS-MW-06A-EM40-FD	Total/NA	Water	300.0	
550-195015-9	SWFTS-MW-06B-EM40	Total/NA	Water	300.0	
550-195015-11	SWFTS-MW-07A-EM40	Total/NA	Water	300.0	
550-195015-13	SWFTS-MW-07B-EM40	Total/NA	Water	300.0	
MB 550-290915/2	Method Blank	Total/NA	Water	300.0	
LCS 550-290915/5	Lab Control Sample	Total/NA	Water	300.0	
LCSD 550-290915/6	Lab Control Sample Dup	Total/NA	Water	300.0	
550-194999-A-1 MS	Matrix Spike	Total/NA	Water	300.0	
550-194999-A-1 MSD	Matrix Spike Duplicate	Total/NA	Water	300.0	

Analysis Batch: 290966

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
550-195015-15	SWFTS-MW-08C-EM40	Total/NA	Water	300.0	
MB 550-290966/2	Method Blank	Total/NA	Water	300.0	
LCS 550-290966/5	Lab Control Sample	Total/NA	Water	300.0	
LCSD 550-290966/6	Lab Control Sample Dup	Total/NA	Water	300.0	
550-195033-A-1 MS	Matrix Spike	Total/NA	Water	300.0	
550-195033-A-1 MSD	Matrix Spike Duplicate	Total/NA	Water	300.0	

Analysis Batch: 291337

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
550-195015-1	SWFTS-MW-04-EM40	Total/NA	Water	300.1B	
550-195015-3	SWFTS-MW-02-EM40	Total/NA	Water	300.1B	
550-195015-5	SWFTS-MW06A-EM40	Total/NA	Water	300.1B	
550-195015-7	SWFTS-MW-06A-EM40-FD	Total/NA	Water	300.1B	
550-195015-9	SWFTS-MW-06B-EM40	Total/NA	Water	300.1B	
550-195015-11	SWFTS-MW-07A-EM40	Total/NA	Water	300.1B	
550-195015-13	SWFTS-MW-07B-EM40	Total/NA	Water	300.1B	
550-195015-15	SWFTS-MW-08C-EM40	Total/NA	Water	300.1B	
MB 550-291337/4	Method Blank	Total/NA	Water	300.1B	
LCS 550-291337/5	Lab Control Sample	Total/NA	Water	300.1B	
LCSD 550-291337/6	Lab Control Sample Dup	Total/NA	Water	300.1B	

HPLC/IC (Continued)

Analysis Batch: 291337 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
MRL 550-291337/1002	Lab Control Sample	Total/NA	Water	300.1B	
550-195015-1 MS	SWFTS-MW-04-EM40	Total/NA	Water	300.1B	
550-195015-1 MSD	SWFTS-MW-04-EM40	Total/NA	Water	300.1B	

Metals

Prep Batch: 290884

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
550-195015-1	SWFTS-MW-04-EM40	Total/NA	Water	3005A	
550-195015-2	SWFTS-MW-04-EM40	Dissolved	Water	3005A	
550-195015-3	SWFTS-MW-02-EM40	Total/NA	Water	3005A	
MB 550-290884/1-A	Method Blank	Total/NA	Water	3005A	
LCS 550-290884/2-A	Lab Control Sample	Total/NA	Water	3005A	
LCSD 550-290884/3-A	Lab Control Sample Dup	Total/NA	Water	3005A	
550-195013-J-5-A MS	Matrix Spike	Total/NA	Water	3005A	
550-195013-J-5-B MSD	Matrix Spike Duplicate	Total/NA	Water	3005A	

Prep Batch: 290891

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
550-195015-4	SWFTS-MW-02-EM40	Dissolved	Water	3005A	
550-195015-5	SWFTS-MW06A-EM40	Total/NA	Water	3005A	
550-195015-6	SWFTS-MW06A-EM40	Dissolved	Water	3005A	
550-195015-7	SWFTS-MW-06A-EM40-FD	Total/NA	Water	3005A	
550-195015-8	SWFTS-MW-06A-EM40-FD	Dissolved	Water	3005A	
550-195015-9	SWFTS-MW-06B-EM40	Total/NA	Water	3005A	
550-195015-10	SWFTS-MW-06B-EM40	Dissolved	Water	3005A	
550-195015-11	SWFTS-MW-07A-EM40	Total/NA	Water	3005A	
550-195015-12	SWFTS-MW-07A-EM40	Dissolved	Water	3005A	
550-195015-13	SWFTS-MW-07B-EM40	Total/NA	Water	3005A	
550-195015-14	SWFTS-MW-07B-EM40	Dissolved	Water	3005A	
550-195015-15	SWFTS-MW-08C-EM40	Total/NA	Water	3005A	
550-195015-16	SWFTS-MW-08C-EM40	Dissolved	Water	3005A	
MB 550-290891/1-A	Method Blank	Total/NA	Water	3005A	
LCS 550-290891/2-A	Lab Control Sample	Total/NA	Water	3005A	
LCSD 550-290891/3-A	Lab Control Sample Dup	Total/NA	Water	3005A	
550-195015-5 MS	SWFTS-MW06A-EM40	Total/NA	Water	3005A	
550-195015-5 MSD	SWFTS-MW06A-EM40	Total/NA	Water	3005A	

Prep Batch: 290897

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
550-195015-2	SWFTS-MW-04-EM40	Dissolved	Water	3005A	
550-195015-4	SWFTS-MW-02-EM40	Dissolved	Water	3005A	
550-195015-6	SWFTS-MW06A-EM40	Dissolved	Water	3005A	
550-195015-8	SWFTS-MW-06A-EM40-FD	Dissolved	Water	3005A	
550-195015-10	SWFTS-MW-06B-EM40	Dissolved	Water	3005A	
550-195015-12	SWFTS-MW-07A-EM40	Dissolved	Water	3005A	
550-195015-14	SWFTS-MW-07B-EM40	Dissolved	Water	3005A	
550-195015-16	SWFTS-MW-08C-EM40	Dissolved	Water	3005A	
MB 550-290897/1-A	Method Blank	Total/NA	Water	3005A	
LCS 550-290897/2-A	Lab Control Sample	Total/NA	Water	3005A	
LCSD 550-290897/3-A	Lab Control Sample Dup	Total/NA	Water	3005A	

Metals (Continued)

Prep Batch: 290897 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
550-195013-A-2-B MS	Matrix Spike	Dissolved	Water	3005A	
550-195013-A-2-C MSD	Matrix Spike Duplicate	Dissolved	Water	3005A	

Analysis Batch: 291022

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
550-195015-1	SWFTS-MW-04-EM40	Total/NA	Water	6010B	290884
550-195015-2	SWFTS-MW-04-EM40	Dissolved	Water	6010B	290884
550-195015-3	SWFTS-MW-02-EM40	Total/NA	Water	6010B	290884
MB 550-290884/1-A	Method Blank	Total/NA	Water	6010B	290884
LCS 550-290884/2-A	Lab Control Sample	Total/NA	Water	6010B	290884
LCSD 550-290884/3-A	Lab Control Sample Dup	Total/NA	Water	6010B	290884
550-195013-J-5-A MS	Matrix Spike	Total/NA	Water	6010B	290884
550-195013-J-5-B MSD	Matrix Spike Duplicate	Total/NA	Water	6010B	290884

Analysis Batch: 291111

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
550-195015-4	SWFTS-MW-02-EM40	Dissolved	Water	6010B	290891
550-195015-5	SWFTS-MW06A-EM40	Total/NA	Water	6010B	290891
550-195015-6	SWFTS-MW06A-EM40	Dissolved	Water	6010B	290891
550-195015-7	SWFTS-MW-06A-EM40-FD	Total/NA	Water	6010B	290891
550-195015-8	SWFTS-MW-06A-EM40-FD	Dissolved	Water	6010B	290891
550-195015-9	SWFTS-MW-06B-EM40	Total/NA	Water	6010B	290891
550-195015-10	SWFTS-MW-06B-EM40	Dissolved	Water	6010B	290891
550-195015-11	SWFTS-MW-07A-EM40	Total/NA	Water	6010B	290891
550-195015-12	SWFTS-MW-07A-EM40	Dissolved	Water	6010B	290891
550-195015-13	SWFTS-MW-07B-EM40	Total/NA	Water	6010B	290891
550-195015-14	SWFTS-MW-07B-EM40	Dissolved	Water	6010B	290891
550-195015-15	SWFTS-MW-08C-EM40	Total/NA	Water	6010B	290891
550-195015-16	SWFTS-MW-08C-EM40	Dissolved	Water	6010B	290891
MB 550-290891/1-A	Method Blank	Total/NA	Water	6010B	290891
LCS 550-290891/2-A	Lab Control Sample	Total/NA	Water	6010B	290891
550-195015-5 MS	SWFTS-MW06A-EM40	Total/NA	Water	6010B	290891
550-195015-5 MSD	SWFTS-MW06A-EM40	Total/NA	Water	6010B	290891

Analysis Batch: 291145

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
550-195015-4	SWFTS-MW-02-EM40	Dissolved	Water	6010B	290891
550-195015-16	SWFTS-MW-08C-EM40	Dissolved	Water	6010B	290891
LCSD 550-290891/3-A	Lab Control Sample Dup	Total/NA	Water	6010B	290891

Analysis Batch: 291384

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
550-195015-2	SWFTS-MW-04-EM40	Dissolved	Water	6020B	290897
550-195015-4	SWFTS-MW-02-EM40	Dissolved	Water	6020B	290897
550-195015-6	SWFTS-MW06A-EM40	Dissolved	Water	6020B	290897
550-195015-8	SWFTS-MW-06A-EM40-FD	Dissolved	Water	6020B	290897
550-195015-10	SWFTS-MW-06B-EM40	Dissolved	Water	6020B	290897
550-195015-12	SWFTS-MW-07A-EM40	Dissolved	Water	6020B	290897
550-195015-14	SWFTS-MW-07B-EM40	Dissolved	Water	6020B	290897
550-195015-16	SWFTS-MW-08C-EM40	Dissolved	Water	6020B	290897
MB 550-290897/1-A	Method Blank	Total/NA	Water	6020B	290897

Metals (Continued)

Analysis Batch: 291384 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
LCS 550-290897/2-A	Lab Control Sample	Total/NA	Water	6020B	290897
LCSD 550-290897/3-A	Lab Control Sample Dup	Total/NA	Water	6020B	290897
550-195013-A-2-B MS	Matrix Spike	Dissolved	Water	6020B	290897
550-195013-A-2-C MSD	Matrix Spike Duplicate	Dissolved	Water	6020B	290897

Analysis Batch: 291501

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
550-195015-2	SWFTS-MW-04-EM40	Dissolved	Water	6020B	290897
550-195015-4	SWFTS-MW-02-EM40	Dissolved	Water	6020B	290897
550-195015-6	SWFTS-MW06A-EM40	Dissolved	Water	6020B	290897
550-195015-8	SWFTS-MW-06A-EM40-FD	Dissolved	Water	6020B	290897
550-195015-10	SWFTS-MW-06B-EM40	Dissolved	Water	6020B	290897
550-195015-12	SWFTS-MW-07A-EM40	Dissolved	Water	6020B	290897
550-195015-14	SWFTS-MW-07B-EM40	Dissolved	Water	6020B	290897
550-195015-16	SWFTS-MW-08C-EM40	Dissolved	Water	6020B	290897
MB 550-290897/1-A	Method Blank	Total/NA	Water	6020B	290897
LCS 550-290897/2-A	Lab Control Sample	Total/NA	Water	6020B	290897
LCSD 550-290897/3-A	Lab Control Sample Dup	Total/NA	Water	6020B	290897
550-195013-A-2-B MS	Matrix Spike	Dissolved	Water	6020B	290897
550-195013-A-2-C MSD	Matrix Spike Duplicate	Dissolved	Water	6020B	290897

General Chemistry

Analysis Batch: 290973

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
550-195015-1	SWFTS-MW-04-EM40	Total/NA	Water	SM 5310B	
550-195015-3	SWFTS-MW-02-EM40	Total/NA	Water	SM 5310B	
550-195015-5	SWFTS-MW06A-EM40	Total/NA	Water	SM 5310B	
550-195015-7	SWFTS-MW-06A-EM40-FD	Total/NA	Water	SM 5310B	
550-195015-9	SWFTS-MW-06B-EM40	Total/NA	Water	SM 5310B	
550-195015-11	SWFTS-MW-07A-EM40	Total/NA	Water	SM 5310B	
550-195015-13	SWFTS-MW-07B-EM40	Total/NA	Water	SM 5310B	
550-195015-15	SWFTS-MW-08C-EM40	Total/NA	Water	SM 5310B	
MB 550-290973/34	Method Blank	Total/NA	Water	SM 5310B	
MB 550-290973/63	Method Blank	Total/NA	Water	SM 5310B	
LCS 550-290973/35	Lab Control Sample	Total/NA	Water	SM 5310B	
LCS 550-290973/64	Lab Control Sample	Total/NA	Water	SM 5310B	
LCSD 550-290973/36	Lab Control Sample Dup	Total/NA	Water	SM 5310B	
LCSD 550-290973/65	Lab Control Sample Dup	Total/NA	Water	SM 5310B	
550-194920-C-15 MS	Matrix Spike	Total/NA	Water	SM 5310B	
550-194920-D-15 MSD	Matrix Spike Duplicate	Total/NA	Water	SM 5310B	
550-194997-C-7 MSD ^10	Matrix Spike Duplicate	Total/NA	Water	SM 5310B	
550-194997-D-7 MS ^10	Matrix Spike	Total/NA	Water	SM 5310B	

Lab Chronicle

Client: Tetra Tech, Inc.
Job ID: 550-195015-1
Project/Site: Tetra Tech M11 SWF Treatability Study

Client Sample ID: SWFTS-MW-04-EM40
Lab Sample ID: 550-195015-1
Date Collected: 12/14/22 08:10
Matrix: Water
Date Received: 12/15/22 10:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	RSK-175		1	597367	JPH	EET DEN	12/20/22 19:20
Total/NA	Analysis	300.0		1	290912	AS1	EET PHX	12/15/22 18:35
Total/NA	Analysis	300.0		50	290915	AS1	EET PHX	12/15/22 19:36
Total/NA	Analysis	300.1B		100	291337	MEG	EET PHX	12/21/22 22:40
Total/NA	Analysis	314.0		200	290892	RDC	EET PHX	12/15/22 15:39
Total/NA	Prep	3005A			290884	ABA	EET PHX	12/15/22 14:30
Total/NA	Analysis	6010B		1	291022	CHS	EET PHX	12/16/22 15:12
Total/NA	Analysis	SM 5310B		1	290973	RDC	EET PHX	12/17/22 02:00

Client Sample ID: SWFTS-MW-04-EM40
Lab Sample ID: 550-195015-2
Date Collected: 12/14/22 08:10
Matrix: Water
Date Received: 12/15/22 10:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Dissolved	Prep	3005A			290884	ABA	EET PHX	12/15/22 14:30
Dissolved	Analysis	6010B		1	291022	CHS	EET PHX	12/16/22 15:15
Dissolved	Prep	3005A			290897	ABA	EET PHX	12/15/22 15:50
Dissolved	Analysis	6020B		1	291384	ARE	EET PHX	12/22/22 16:14
Dissolved	Prep	3005A			290897	ABA	EET PHX	12/15/22 15:50
Dissolved	Analysis	6020B		1	291501	ARE	EET PHX	12/27/22 13:49

Client Sample ID: SWFTS-MW-02-EM40
Lab Sample ID: 550-195015-3
Date Collected: 12/14/22 09:17
Matrix: Water
Date Received: 12/15/22 10:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	RSK-175		1	597367	JPH	EET DEN	12/20/22 19:33
Total/NA	Analysis	300.0		1	290912	AS1	EET PHX	12/15/22 18:54
Total/NA	Analysis	300.0		50	290915	AS1	EET PHX	12/15/22 20:04
Total/NA	Analysis	300.1B		100	291337	MEG	EET PHX	12/22/22 00:09
Total/NA	Analysis	314.0		500	290875	RDC	EET PHX	12/15/22 16:41
Total/NA	Prep	3005A			290884	ABA	EET PHX	12/15/22 14:30
Total/NA	Analysis	6010B		1	291022	CHS	EET PHX	12/16/22 15:18
Total/NA	Analysis	SM 5310B		1	290973	RDC	EET PHX	12/17/22 02:16

Client Sample ID: SWFTS-MW-02-EM40
Lab Sample ID: 550-195015-4
Date Collected: 12/14/22 09:17
Matrix: Water
Date Received: 12/15/22 10:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Dissolved	Prep	3005A			290891	ABA	EET PHX	12/15/22 15:02
Dissolved	Analysis	6010B		1	291111	CHS	EET PHX	12/19/22 18:24
Dissolved	Prep	3005A			290891	ABA	EET PHX	12/15/22 15:02
Dissolved	Analysis	6010B		4	291145	CHS	EET PHX	12/20/22 11:33

Lab Chronicle

Client: Tetra Tech, Inc.
Job ID: 550-195015-1
Project/Site: Tetra Tech M11 SWF Treatability Study

Client Sample ID: SWFTS-MW-02-EM40
Lab Sample ID: 550-195015-4
Date Collected: 12/14/22 09:17
Matrix: Water
Date Received: 12/15/22 10:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Dissolved	Prep	3005A			290897	ABA	EET PHX	12/15/22 15:50
Dissolved	Analysis	6020B		1	291384	ARE	EET PHX	12/22/22 16:16
Dissolved	Prep	3005A			290897	ABA	EET PHX	12/15/22 15:50
Dissolved	Analysis	6020B		1	291501	ARE	EET PHX	12/27/22 13:51

Client Sample ID: SWFTS-MW06A-EM40
Lab Sample ID: 550-195015-5
Date Collected: 12/14/22 10:28
Matrix: Water
Date Received: 12/15/22 10:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	RSK-175		1	597367	JPH	EET DEN	12/20/22 20:01
Total/NA	Analysis	300.0		1	290912	AS1	EET PHX	12/15/22 19:12
Total/NA	Analysis	300.0		50	290915	AS1	EET PHX	12/15/22 20:32
Total/NA	Analysis	300.1B		5	291337	MEG	EET PHX	12/22/22 00:38
Total/NA	Analysis	314.0		100	290875	RDC	EET PHX	12/15/22 17:03
Total/NA	Prep	3005A			290891	ABA	EET PHX	12/15/22 15:02
Total/NA	Analysis	6010B		1	291111	CHS	EET PHX	12/19/22 18:21
Total/NA	Analysis	SM 5310B		1	290973	RDC	EET PHX	12/17/22 02:28

Client Sample ID: SWFTS-MW06A-EM40
Lab Sample ID: 550-195015-6
Date Collected: 12/14/22 10:28
Matrix: Water
Date Received: 12/15/22 10:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Dissolved	Prep	3005A			290891	ABA	EET PHX	12/15/22 15:02
Dissolved	Analysis	6010B		1	291111	CHS	EET PHX	12/19/22 18:27
Dissolved	Prep	3005A			290897	ABA	EET PHX	12/15/22 15:50
Dissolved	Analysis	6020B		1	291384	ARE	EET PHX	12/22/22 16:18
Dissolved	Prep	3005A			290897	ABA	EET PHX	12/15/22 15:50
Dissolved	Analysis	6020B		1	291501	ARE	EET PHX	12/27/22 13:53

Client Sample ID: SWFTS-MW-06A-EM40-FD
Lab Sample ID: 550-195015-7
Date Collected: 12/14/22 10:28
Matrix: Water
Date Received: 12/15/22 10:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	RSK-175		1	597367	JPH	EET DEN	12/20/22 20:28
Total/NA	Analysis	300.0		1	290912	AS1	EET PHX	12/15/22 20:26
Total/NA	Analysis	300.0		50	290915	AS1	EET PHX	12/15/22 21:00
Total/NA	Analysis	300.1B		5	291337	MEG	EET PHX	12/22/22 01:08
Total/NA	Analysis	314.0		100	290875	RDC	EET PHX	12/15/22 17:26
Total/NA	Prep	3005A			290891	ABA	EET PHX	12/15/22 15:02
Total/NA	Analysis	6010B		1	291111	CHS	EET PHX	12/19/22 18:30
Total/NA	Analysis	SM 5310B		1	290973	RDC	EET PHX	12/17/22 02:40

Client Sample ID: SWFTS-MW-06A-EM40-FD — Lab Sample ID: 550-195015-8

Date Collected: 12/14/22 10:28 **Matrix: Water**
Date Received: 12/15/22 10:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Dissolved	Prep	3005A			290891	ABA	EET PHX	12/15/22 15:02
Dissolved	Analysis	6010B		1	291111	CHS	EET PHX	12/19/22 18:33
Dissolved	Prep	3005A			290897	ABA	EET PHX	12/15/22 15:50
Dissolved	Analysis	6020B		1	291384	ARE	EET PHX	12/22/22 16:21
Dissolved	Prep	3005A			290897	ABA	EET PHX	12/15/22 15:50
Dissolved	Analysis	6020B		1	291501	ARE	EET PHX	12/27/22 13:55

Client Sample ID: SWFTS-MW-06B-EM40 — Lab Sample ID: 550-195015-9

Date Collected: 12/14/22 11:37 **Matrix: Water**
Date Received: 12/15/22 10:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	RSK-175		1	597367	JPH	EET DEN	12/20/22 20:41
Total/NA	Analysis	300.0		1	290912	AS1	EET PHX	12/15/22 20:44
Total/NA	Analysis	300.0		50	290915	AS1	EET PHX	12/15/22 21:27
Total/NA	Analysis	300.1B		2	291337	MEG	EET PHX	12/22/22 01:37
Total/NA	Analysis	314.0		100	290875	RDC	EET PHX	12/15/22 17:48
Total/NA	Prep	3005A			290891	ABA	EET PHX	12/15/22 15:02
Total/NA	Analysis	6010B		1	291111	CHS	EET PHX	12/19/22 18:35
Total/NA	Analysis	SM 5310B		4	290973	RDC	EET PHX	12/17/22 04:48

Client Sample ID: SWFTS-MW-06B-EM40 — Lab Sample ID: 550-195015-10

Date Collected: 12/14/22 11:37 **Matrix: Water**
Date Received: 12/15/22 10:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Dissolved	Prep	3005A			290891	ABA	EET PHX	12/15/22 15:02
Dissolved	Analysis	6010B		1	291111	CHS	EET PHX	12/19/22 18:44
Dissolved	Prep	3005A			290897	ABA	EET PHX	12/15/22 15:50
Dissolved	Analysis	6020B		1	291384	ARE	EET PHX	12/22/22 16:23
Dissolved	Prep	3005A			290897	ABA	EET PHX	12/15/22 15:50
Dissolved	Analysis	6020B		1	291501	ARE	EET PHX	12/27/22 13:57

Client Sample ID: SWFTS-MW-07A-EM40 — Lab Sample ID: 550-195015-11

Date Collected: 12/14/22 12:27 **Matrix: Water**
Date Received: 12/15/22 10:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	RSK-175		1	597367	JPH	EET DEN	12/20/22 20:55
Total/NA	Analysis	300.0		5	290912	AS1	EET PHX	12/15/22 21:02
Total/NA	Analysis	300.0		50	290915	AS1	EET PHX	12/15/22 21:55
Total/NA	Analysis	300.1B		100	291337	MEG	EET PHX	12/22/22 02:07
Total/NA	Analysis	314.0		500	290875	RDC	EET PHX	12/15/22 18:11

Lab Chronicle

Client: Tetra Tech, Inc. Job ID: 550-195015-1
Project/Site: Tetra Tech M11 SWF Treatability Study

Client Sample ID: SWFTS-MW-07A-EM40 Lab Sample ID: 550-195015-11
Date Collected: 12/14/22 12:27 **Matrix: Water**
Date Received: 12/15/22 10:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	3005A			290891	ABA	EET PHX	12/15/22 15:02
Total/NA	Analysis	6010B		1	291111	CHS	EET PHX	12/19/22 18:47
Total/NA	Analysis	SM 5310B		1	290973	RDC	EET PHX	12/17/22 05:03

Client Sample ID: SWFTS-MW-07A-EM40 Lab Sample ID: 550-195015-12
Date Collected: 12/14/22 12:27 **Matrix: Water**
Date Received: 12/15/22 10:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Dissolved	Prep	3005A			290891	ABA	EET PHX	12/15/22 15:02
Dissolved	Analysis	6010B		1	291111	CHS	EET PHX	12/19/22 18:50
Dissolved	Prep	3005A			290897	ABA	EET PHX	12/15/22 15:50
Dissolved	Analysis	6020B		1	291384	ARE	EET PHX	12/22/22 16:25
Dissolved	Prep	3005A			290897	ABA	EET PHX	12/15/22 15:50
Dissolved	Analysis	6020B		1	291501	ARE	EET PHX	12/27/22 13:59

Client Sample ID: SWFTS-MW-07B-EM40 Lab Sample ID: 550-195015-13
Date Collected: 12/14/22 13:18 **Matrix: Water**
Date Received: 12/15/22 10:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	RSK-175		1	597367	JPH	EET DEN	12/20/22 21:09
Total/NA	Analysis	300.0		5	290912	AS1	EET PHX	12/15/22 21:21
Total/NA	Analysis	300.0		50	290915	AS1	EET PHX	12/15/22 22:23
Total/NA	Analysis	300.1B		100	291337	MEG	EET PHX	12/22/22 02:36
Total/NA	Analysis	314.0		500	290875	RDC	EET PHX	12/15/22 18:33
Total/NA	Prep	3005A			290891	ABA	EET PHX	12/15/22 15:02
Total/NA	Analysis	6010B		1	291111	CHS	EET PHX	12/19/22 18:52
Total/NA	Analysis	SM 5310B		1	290973	RDC	EET PHX	12/17/22 05:18

Client Sample ID: SWFTS-MW-07B-EM40 Lab Sample ID: 550-195015-14
Date Collected: 12/14/22 13:18 **Matrix: Water**
Date Received: 12/15/22 10:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Dissolved	Prep	3005A			290891	ABA	EET PHX	12/15/22 15:02
Dissolved	Analysis	6010B		1	291111	CHS	EET PHX	12/19/22 18:55
Dissolved	Prep	3005A			290897	ABA	EET PHX	12/15/22 15:50
Dissolved	Analysis	6020B		1	291384	ARE	EET PHX	12/22/22 16:27
Dissolved	Prep	3005A			290897	ABA	EET PHX	12/15/22 15:50
Dissolved	Analysis	6020B		1	291501	ARE	EET PHX	12/27/22 14:01

Lab Chronicle

Client: Tetra Tech, Inc.
Job ID: 550-195015-1
Project/Site: Tetra Tech M11 SWF Treatability Study

Client Sample ID: SWFTS-MW-08C-EM40
Lab Sample ID: 550-195015-15
Date Collected: 12/14/22 14:13
Matrix: Water
Date Received: 12/15/22 10:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	RSK-175		1	597367	JPH	EET DEN	12/20/22 21:22
Total/NA	Analysis	300.0		2	290913	AS1	EET PHX	12/16/22 01:20
Total/NA	Analysis	300.0		50	290966	AS1	EET PHX	12/16/22 16:46
Total/NA	Analysis	300.1B		200	291337	MEG	EET PHX	12/22/22 03:06
Total/NA	Analysis	314.0		500	290875	RDC	EET PHX	12/15/22 18:55
Total/NA	Prep	3005A			290891	ABA	EET PHX	12/15/22 15:02
Total/NA	Analysis	6010B		1	291111	CHS	EET PHX	12/19/22 18:58
Total/NA	Analysis	SM 5310B		4	290973	RDC	EET PHX	12/17/22 05:29

Client Sample ID: SWFTS-MW-08C-EM40
Lab Sample ID: 550-195015-16
Date Collected: 12/14/22 14:13
Matrix: Water
Date Received: 12/15/22 10:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Dissolved	Prep	3005A			290891	ABA	EET PHX	12/15/22 15:02
Dissolved	Analysis	6010B		1	291111	CHS	EET PHX	12/19/22 19:01
Dissolved	Prep	3005A			290891	ABA	EET PHX	12/15/22 15:02
Dissolved	Analysis	6010B		4	291145	CHS	EET PHX	12/20/22 11:36
Dissolved	Prep	3005A			290897	ABA	EET PHX	12/15/22 15:50
Dissolved	Analysis	6020B		1	291384	ARE	EET PHX	12/22/22 16:29
Dissolved	Prep	3005A			290897	ABA	EET PHX	12/15/22 15:50
Dissolved	Analysis	6020B		1	291501	ARE	EET PHX	12/27/22 14:03

Laboratory References:

EET DEN = Eurofins Denver, 4955 Yarrow Street, Arvada, CO 80002, TEL (303)736-0100

EET PHX = Eurofins Phoenix, 4625 East Cotton Center Boulevard, Suite #189, Phoenix, AZ 85040, TEL (602)437-3340

Accreditation/Certification Summary

Client: Tetra Tech, Inc.
Job ID: 550-195015-1
Project/Site: Tetra Tech M11 SWF Treatability Study

Laboratory: Eurofins Phoenix

All accreditations/certifications held by this laboratory are listed. Not all accreditations/certifications are applicable to this report.

Authority	Program	Identification Number	Expiration Date
Arizona	State	AZ0728	06-10-23
California	State	2941	03-09-23
Nevada	State	AZ1030	07-31-23
Oregon	NELAP	AZ100001	03-09-23
USDA	US Federal Programs	P330-19-00227	08-27-22 *

Laboratory: Eurofins Denver

All accreditations/certifications held by this laboratory are listed. Not all accreditations/certifications are applicable to this report.

Authority	Program	Identification Number	Expiration Date
A2LA	Dept. of Defense ELAP	2907.01	10-31-23
A2LA	ISO/IEC 17025	2907.01	10-31-23
Alabama	State Program	40730	09-30-12 *
Alaska (UST)	State	18-001	02-08-23
Arizona	State	AZ0713	12-20-22
Arkansas DEQ	State	19-047-0	05-31-23
California	State	2513	01-08-23
Connecticut	State	PH-0686	09-30-22 *
Florida	NELAP	E87667-57	06-30-23
Georgia	State	4025-011	01-08-23
Illinois	NELAP	2000172019-1	04-30-23
Iowa	State	IA#370	12-01-24
Kansas	NELAP	E-10166	04-30-23
Kentucky (WW)	State	KY98047	12-31-22
Louisiana	NELAP	30785	06-30-14 *
Louisiana	NELAP	30785	06-30-23
Louisiana (All)	NELAP	30785	06-30-23
Minnesota	NELAP	1788752	12-31-22
Nevada	State	CO000262020-1	07-31-23
New Hampshire	NELAP	205319	04-28-23
New Jersey	NELAP	190002	06-30-23
New York	NELAP	59923	04-01-23
North Carolina (WW/SW)	State	358	12-31-22
North Dakota	State	R-034	01-08-23
Oklahoma	NELAP	8614	08-31-23
Oregon	NELAP	4025-011	01-09-23
Pennsylvania	NELAP	013	07-31-23
South Carolina	State	72002001	01-08-23
Texas	NELAP	TX104704183-08-TX	09-30-09 *
Texas	NELAP	T104704183-21-19	09-30-23
US Fish & Wildlife	US Federal Programs	058448	07-31-23
USDA	US Federal Programs	P330-20-00065	03-06-23
Utah	NELAP	QUAN5	06-30-13 *
Utah	NELAP	CO000262019-11	07-31-23
Virginia	NELAP	10490	06-14-23
Washington	State	C583-19	08-03-23
Wisconsin	State	999615430	08-31-23

* Accreditation/Certification renewal pending - accreditation/certification considered valid.

Method Summary

Client: Tetra Tech, Inc.
Job ID: 550-195015-1
Project/Site: Tetra Tech M11 SWF Treatability Study

Method	Method Description	Protocol	Laboratory
RSK-175	Dissolved Gases (GC)	RSK	EET DEN
300.0	Anions, Ion Chromatography	MCAWW	EET PHX
300.1B	Disinfection By-Products, (IC)	EPA	EET PHX
314.0	Perchlorate (IC)	EPA	EET PHX
6010B	Metals (ICP)	SW846	EET PHX
6020B	Metals (ICP/MS)	SW846	EET PHX
SM 5310B	Organic Carbon, Total (TOC)	SM	EET PHX
3005A	Preparation, Total Metals	SW846	EET PHX

Protocol References:

EPA = US Environmental Protection Agency

MCAWW = "Methods For Chemical Analysis Of Water And Wastes", EPA-600/4-79-020, March 1983 And Subsequent Revisions.

RSK = Sample Prep And Calculations For Dissolved Gas Analysis In Water Samples Using A GC Headspace Equilibration Technique, RSKSOP-175, Rev. 0, 8/11/94, USEPA Research Lab

SM = "Standard Methods For The Examination Of Water And Wastewater"

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

Laboratory References:

EET DEN = Eurofins Denver, 4955 Yarrow Street, Arvada, CO 80002, TEL (303)736-0100

EET PHX = Eurofins Phoenix, 4625 East Cotton Center Boulevard, Suite #189, Phoenix, AZ 85040, TEL (602)437-3340

TestAmerica
Las Vegas
219

195015

NERT-M11
Groundwater Sampling

Tetra Tech
1093 Commerce Park Drive
Oak Ridge, TN37830
(865)483-9900

CHAIN-OF-CUSTODY

Laboratory Name: Eurofins TestAmerica, Phoenix (602) 437-3340 | Address: 4625 East Cotton Ctr Blvd, Suite 189, Phoenix, AZ 85040 | Contact: Mary Charlson 602-659-7627 | Page 1 of 1

Project Name: Tetra Tech M11 SWF Treatability Study
Project No. M11-CWP-04
NERT - Seep Well Field Area Bioremediation Treatability Study
Report to: Maureen McMyler, 1093 Commerce Park Dr. (865)220-4762
Bill to: Sunshine Pryor, 350 Indiana St., Golden, CO 80401 (303) 217-5700

Sampler: Dylan Begley
Sampler Phone: 623-271-0886
Project Contact: Maureen McMyler
Site Telephone No.: (702) 966-8340
Project Manager/Supervisor: Dana Grady

Analysis and Method Requested

Remarks
Preservation Codes:
A- HCL
D-Nitric Acid
L-EDA
N-None
S-H2SO4
Other:

Item No.	Sample Number	Date	Time	G=Grab C=Comp	Matrix	Sample Description, Location	Number of Containers	Perchlorate E314.0	TOC SM5310B	Chlorate E300.1	Sulfate/Nitrate E300.0 SHORT HOLD NITRATE!	Dissolved Metals	Total Mn	Methane	Notes
						Preservation Code:	-	N	A	L	N				
1	SWFTS-MW-04-EM40	12/14/2022	0810	G	W		12	✓	✓	✓	✓	✓	✓	✓	-1+2
2	SWFTS-MW-02-EM40		0917												-3+4
3	SWFTS-MW06A-EM40		1028												-5+6
4	SWFTS-MW-06A-EM40-FD		1028												-7+8
5	SWFTS-MW-06B-EM40		1137												-9+10
6	SWFTS-MW-07A-EM40		1227												-11+12
7	SWFTS-MW-07B-EM40		1318												-13+14
8	SWFTS-MW-08C-EM40		1413												-15+16
9															
10															

550-195015 Chain of Custody

Transfers Relinquished By (Signature)	Date/Time	Transfers Accepted By (Signature)	Date/Time
Dyl Begley	12/14/22	THM TALUS	12/14/22 1500
THM TALUS	12/14/22 1600		

Special Instructions:

FedEx Airbill No.:
Sampler's Signature: (REQUIRED) Dyl Begley

Laboratory

TAT: ___Standard ___ Rush Due _____
Received Good Condition ___ Y ___ N ___ Cold

EETSW 12-15-22 10:00
Temp 2.6°C

12/30/2022

Eurofins Phoenix
4625 East Cotton Center Boulevard Suite #189
Phoenix, AZ 85040
Phone. 602-437-3340

Chain of Custody Record

eurofins

Client Information (Sub Contract Lab)	Sampler	Lab PM: Sester, Rachel E	Carrier Tracking No(s)	COC No.: 550-35636.1
Client Contact: Shipping/Receiving	Phone	E-Mail: Rachel.Sester@et.eurofinsus.com	State of Origin: Nevada	Page: Page 1 of 1
Company: TestAmerica Laboratories, Inc.		Accreditations Required (See note): State Program - Nevada		Job #: 550-195015-1
Address: 4955 Yarrow Street, ,	Due Date Requested: 1/1/2023			
City: Arvada	TAT Requested (days):			
State, Zip: CO, 80002				
Phone: 303-736-0100(Tel) 303-431-7171(Fax)	PO #			
Email:	WO #			
Project Name: Tetra Tech M11 SWF Treatability Study	Project # 55015433			
Site:	SSOW#:			

Analysis Requested

Preservation Codes:
A - HCL, B - NaOH, C - Zn Acetate, D - Nitric Acid, E - NaHSO4, F - MeOH, G - Amchlor, H - Ascorbic Acid, I - Ice, J - DI Water, K - EDTA, L - EDA, M - Hexane, N - None, O - AsNaO2, P - Na2O4S, Q - Na2SO3, R - Na2S2O3, S - H2SO4, T - TSP Dodecahydrate, U - Acetone, V - MCAA, W - pH 4-5, Y - Trizma, Z - other (specify)
Other:

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	RSK_175/ (MOD) Local Method	Total Number of containers	Special Instructions/Note:
			Preservation Code:						
SWFTS-MW-04-EM40 (550-195015-1)	12/14/22	08:10 Pacific		Water			X	3	
SWFTS-MW-02-EM40 (550-195015-3)	12/14/22	09:17 Pacific		Water			X	3	
SWFTS-MW06A-EM40 (550-195015-5)	12/14/22	10:28 Pacific		Water			X	3	
SWFTS-MW-06A-EM40-FD (550-195015-7)	12/14/22	10:28 Pacific		Water			X	3	
SWFTS-MW-06B-EM40 (550-195015-9)	12/14/22	11:37 Pacific		Water			X	3	
SWFTS-MW-07A-EM40 (550-195015-11)	12/14/22	12:27 Pacific		Water			X	3	
SWFTS-MW-07B-EM40 (550-195015-13)	12/14/22	13:18 Pacific		Water			X	3	
SWFTS-MW-08C-EM40 (550-195015-15)	12/14/22	14:13 Pacific		Water			X	3	

Note. Since laboratory accreditations are subject to change, Eurofins Environment Testing Southwest, LLC places the ownership of method, analyte & accreditation compliance upon our subcontract laboratories. This sample shipment is forwarded under chain-of-custody. If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed, the samples must be shipped back to the Eurofins Environment Testing Southwest, LLC laboratory or other instructions will be provided. Any changes to accreditation status should be brought to Eurofins Environment Testing Southwest, LLC attention immediately. If all requested accreditations are current to date, return the signed Chain of Custody attesting to said compliance to Eurofins Environment Testing Southwest, LLC.

Possible Hazard Identification	Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
Unconfirmed	☐ Return To Client ☐ Disposal By Lab ☐ Archive For _____ Months
Deliverable Requested: I, II, III, IV, Other (specify) Primary Deliverable Rank: 2	Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:

	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
1	[illegible] 12-15-22 15:00		ECSW	Fedex		
2	Fedex				12/16/22 9:15	ECA/NFW
3						

Custody Seals Intact:	Custody Seal No.:	Cooler Temperature(s) °C and Other Remarks:
☑ Yes ☐ No	19/9599	1.5 IR12 CF 0.0

Ver: 06/08/2021

Login Sample Receipt Checklist

Client: Tetra Tech, Inc.

Job Number: 550-195015-1

Login Number: 195015
List Number: 1
Creator: Maycock, Lisa

List Source: Eurofins Phoenix

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	True	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	False	Check done at department level as required.

Login Sample Receipt Checklist

Client: Tetra Tech, Inc.

Job Number: 550-195015-1

Login Number: 195015
List Number: 2
Creator: Lee, Jerry

List Source: Eurofins Denver
List Creation: 12/16/22 02:54 PM

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	True	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	N/A	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	N/A	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

eurofins | Environment Testing

ANALYTICAL REPORT

PREPARED FOR

Attn: Dana Grady
Tetra Tech, Inc.
1093 Commerce Park Drive
Suite 100
Oak Ridge, Tennessee 37830

Generated 12/30/2022 2:00:37 PM

JOB DESCRIPTION

Tetra Tech M11 SWF Treatability Study

JOB NUMBER

550-195103-1

Eurofins Phoenix
4625 East Cotton Center Boulevard
Suite #189
Phoenix AZ 85040

See page two for job notes and contact information.

myEOL

Job Notes

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The data in the report relate to the field sample(s) as received by the laboratory and associated QC. All results have been reviewed and have been found to be compliant with laboratory and accreditation requirements, with the exception of the noted deviation(s). For questions, please contact the Project Manager.

The test results in this report relate only to the samples as received by the laboratory and will meet all requirements of the methodology, with any exceptions noted. This report shall not be reproduced except in full, without the express written approval of the laboratory. All questions should be directed to the Eurofins Environment Testing Southwest, LLC Project Manager.

Authorization

Generated
12/30/2022 2:00:37 PM

Authorized for release by
Rachel Sester, Project Manager I
Rachel.Sester@et.eurofinsus.com
(602)659-7615

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Definitions/Glossary

Client: Tetra Tech, Inc. Job ID: 550-195103-1
Project/Site: Tetra Tech M11 SWF Treatability Study

Qualifiers

GC VOA

Qualifier	Qualifier Description
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

HPLC/IC

Qualifier	Qualifier Description
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

Metals

Qualifier	Qualifier Description
4	MS, MSD: The analyte present in the original sample is greater than 4 times the matrix spike concentration; therefore, control limits are not applicable.
B	Compound was found in the blank and sample.
cn	Refer to Case Narrative for further detail
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

General Chemistry

Qualifier	Qualifier Description
F1	MS and/or MSD recovery exceeds control limits.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CFU	Colony Forming Unit
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MCL	EPA recommended "Maximum Contaminant Level"
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
MPN	Most Probable Number
MQL	Method Quantitation Limit
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
NEG	Negative / Absent
POS	Positive / Present
PQL	Practical Quantitation Limit
PRES	Presumptive
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)
TNTC	Too Numerous To Count

Job ID: 550-195103-1

Laboratory: Eurofins Phoenix

Narrative

Job Narrative
550-195103-1

Receipt
The samples were received on 12/16/2022 10:00 AM. Unless otherwise noted below, the samples arrived in good condition, and, where required, properly preserved and on ice. The temperature of the cooler at receipt time was 1.0°C

Receipt Exceptions
please check charges on MS/MSD SAMPLES

SWFTS-MW-10A-EM40 (550-195103-1), SWFTS-MW-10A-EM40 (550-195103-1[MS]), SWFTS-MW-10A-EM40 (550-195103-1[MSD]), SWFTS-MW-10A-EM40 (550-195103-2), SWFTS-MW-10A-EM40 (550-195103-2[MS]), SWFTS-MW-10A-EM40 (550-195103-2[MSD]), SWFTS-MW-10C-EM40 (550-195103-3), SWFTS-MW-10C-EM40 (550-195103-4), SWFTS-MW-11-EM40 (550-195103-5), SWFTS-MW-11-EM40 (550-195103-6), SWFTS-MW-11-EM40-FD (550-195103-7), SWFTS-MW-11-EM40-FD (550-195103-8), SWFTS-MW-12-EM40 (550-195103-9) and SWFTS-MW-12-EM40 (550-195103-10)

GC VOA
No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

HPLC/IC
No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

Metals
Method 6010B: The spiking solution used during the extraction process for the laboratory control sample/ laboratory control sample duplicate (LCS/LCSD) and matrix spike/matrix spike duplicate (MS/MSD) and post digestion spike (PDS) associated with preparation batch 550-291029 did not contain Phosphorus; therefore, percent recoveries are unavailable. The affected samples could not be re-prepared and / or re-analyzed with a spike containing these analytes. The instrument QC was within acceptance criteria and may be used to evaluate these analytes for this method. The results have been reported with cn qualifiers. Affected samples: SWFTS-MW-10A-EM40 (550-195103-2), SWFTS-MW-10A-EM40 (550-195103-2[MS]), SWFTS-MW-10A-EM40 (550-195103-2[MSD]), SWFTS-MW-10C-EM40 (550-195103-4), SWFTS-MW-11-EM40 (550-195103-6), SWFTS-MW-11-EM40-FD (550-195103-8), SWFTS-MW-12-EM40 (550-195103-10), (LCS 550-291029/2-A), (LCSD 550-291029/3-A) and (550-195103-B-2-G PDS).

Method 6010B: The following samples were diluted to bring the concentration of target analytes within the calibration range: SWFTS-MW-10A-EM40 (550-195103-2), SWFTS-MW-10A-EM40 (550-195103-2[MS]), SWFTS-MW-10A-EM40 (550-195103-2[MSD]) and SWFTS-MW-10C-EM40 (550-195103-4). Elevated reporting limits (RLs) are provided.

Method 6010B: The spiking solution used during the extraction process for the laboratory control sample/ laboratory control sample duplicate (LCS/LCSD) and matrix spike/matrix spike duplicate (MS/MSD) and post digestion spike (PDS) associated with preparation batch 550-291029 did not contain Phosphorus; therefore, percent recoveries are unavailable. The affected samples could not be re-prepared and / or re-analyzed with a spike containing these analytes. The instrument QC was within acceptance criteria and may be used to evaluate these analytes for this method. The results have been reported with cn qualifiers. Affected samples: SWFTS-MW-10A-EM40 (550-195103-2), SWFTS-MW-10A-EM40 (550-195103-2[MS]), SWFTS-MW-10A-EM40 (550-195103-2[MSD]), SWFTS-MW-10C-EM40 (550-195103-4), SWFTS-MW-11-EM40 (550-195103-6), SWFTS-MW-11-EM40-FD (550-195103-8), SWFTS-MW-12-EM40 (550-195103-10), (LCS 550-291029/2-A), (LCSD 550-291029/3-A) and (550-195103-B-2-G PDS).

Method 6010B: The following samples were diluted to bring the concentration of target analytes within the calibration range: SWFTS-MW-10A-EM40 (550-195103-2), SWFTS-MW-10A-EM40 (550-195103-2[MS]), SWFTS-MW-10A-EM40 (550-195103-2[MSD]) and SWFTS-MW-10C-EM40 (550-195103-4). Elevated reporting limits (RLs) are provided.

Method 6020B: The method blank for preparation batch 550-291028 and analytical batch 550-291385 contained Antimony above the method detection limit. This target analyte concentration was less than the reporting limit (RL); therefore, re-extraction and/or re-analysis of samples was not performed.

Job ID: 550-195103-1 (Continued)

Laboratory: Eurofins Phoenix (Continued)

No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

General Chemistry

No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

Sample Summary

Client: Tetra Tech, Inc.
Job ID: 550-195103-1
Project/Site: Tetra Tech M11 SWF Treatability Study

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
550-195103-1	SWFTS-MW-10A-EM40	Water	12/15/22 08:14	12/16/22 10:00
550-195103-2	SWFTS-MW-10A-EM40	Water	12/15/22 08:14	12/16/22 10:00
550-195103-3	SWFTS-MW-10C-EM40	Water	12/15/22 09:32	12/16/22 10:00
550-195103-4	SWFTS-MW-10C-EM40	Water	12/15/22 09:32	12/16/22 10:00
550-195103-5	SWFTS-MW-11-EM40	Water	12/15/22 10:30	12/16/22 10:00
550-195103-6	SWFTS-MW-11-EM40	Water	12/15/22 10:30	12/16/22 10:00
550-195103-7	SWFTS-MW-11-EM40-FD	Water	12/15/22 10:30	12/16/22 10:00
550-195103-8	SWFTS-MW-11-EM40-FD	Water	12/15/22 10:30	12/16/22 10:00
550-195103-9	SWFTS-MW-12-EM40	Water	12/15/22 11:49	12/16/22 10:00
550-195103-10	SWFTS-MW-12-EM40	Water	12/15/22 11:49	12/16/22 10:00

Detection Summary

Client: Tetra Tech, Inc.
Job ID: 550-195103-1
Project/Site: Tetra Tech M11 SWF Treatability Study

Client Sample ID: SWFTS-MW-10A-EM40 — Lab Sample ID: 550-195103-1

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Methane	13		5.0	0.63	ug/L	1		RSK-175	Total/NA
Nitrate as N	14		0.25	0.070	mg/L	5		300.0	Total/NA
Sulfate	1900		100	21	mg/L	50		300.0	Total/NA
Chlorate	25000		2000	490	ug/L	100		300.1B	Total/NA
Perchlorate	12000		1000	310	ug/L	1000		314.0	Total/NA
Manganese	1.7		0.020	0.0083	mg/L	1		6010B	Total/NA
Total Organic Carbon	2.0	F1	0.50	0.26	mg/L	1		SM 5310B	Total/NA

Client Sample ID: SWFTS-MW-10A-EM40 — Lab Sample ID: 550-195103-2

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Aluminum	0.28		0.20	0.080	mg/L	1		6010B	Dissolved
Barium	0.016		0.0050	0.00057	mg/L	1		6010B	Dissolved
Boron	2.5	B	0.050	0.0024	mg/L	1		6010B	Dissolved
Calcium	360		0.40	0.015	mg/L	1		6010B	Dissolved
Cobalt	0.0032	J	0.0050	0.00054	mg/L	1		6010B	Dissolved
Iron	0.027	J	0.40	0.019	mg/L	1		6010B	Dissolved
Magnesium	190		0.40	0.054	mg/L	1		6010B	Dissolved
Manganese	1.7		0.020	0.0083	mg/L	1		6010B	Dissolved
Molybdenum	0.097		0.010	0.00052	mg/L	1		6010B	Dissolved
Nickel	0.011		0.0050	0.0028	mg/L	1		6010B	Dissolved
Potassium	39		1.0	0.081	mg/L	1		6010B	Dissolved
Silicon	37		0.10	0.016	mg/L	1		6010B	Dissolved
Sodium	940		1.6	0.16	mg/L	4		6010B	Dissolved
Strontium	9.6		0.010	0.00032	mg/L	1		6010B	Dissolved
Tungsten	0.0098	J	0.10	0.0021	mg/L	1		6010B	Dissolved
Vanadium	0.043		0.0050	0.00069	mg/L	1		6010B	Dissolved
Antimony	0.31	J B	1.0	0.043	ug/L	1		6020B	Dissolved
Arsenic	72	B	1.0	0.25	ug/L	1		6020B	Dissolved
Selenium	100		0.50	0.074	ug/L	1		6020B	Dissolved
Thallium	0.50		0.10	0.013	ug/L	1		6020B	Dissolved

Client Sample ID: SWFTS-MW-10C-EM40 — Lab Sample ID: 550-195103-3

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Methane	3.0	J	5.0	0.63	ug/L	1		RSK-175	Total/NA
Nitrate as N	10		0.25	0.070	mg/L	5		300.0	Total/NA
Sulfate	2200		100	21	mg/L	50		300.0	Total/NA
Chlorate	49000		20000	4900	ug/L	1000		300.1B	Total/NA
Perchlorate	11000		500	160	ug/L	500		314.0	Total/NA
Manganese	0.34		0.020	0.0083	mg/L	1		6010B	Total/NA
Total Organic Carbon	1.6		0.50	0.26	mg/L	1		SM 5310B	Total/NA

Client Sample ID: SWFTS-MW-10C-EM40 — Lab Sample ID: 550-195103-4

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Aluminum	0.30		0.20	0.080	mg/L	1		6010B	Dissolved
Barium	0.020		0.0050	0.00057	mg/L	1		6010B	Dissolved
Beryllium	0.00064	J	0.0010	0.00019	mg/L	1		6010B	Dissolved
Boron	3.2	B	0.050	0.0024	mg/L	1		6010B	Dissolved
Calcium	500		0.40	0.015	mg/L	1		6010B	Dissolved
Iron	0.041	J	0.40	0.019	mg/L	1		6010B	Dissolved

This Detection Summary does not include radiochemical test results.

Eurofins Phoenix

Detection Summary

Client: Tetra Tech, Inc.
Job ID: 550-195103-1
Project/Site: Tetra Tech M11 SWF Treatability Study

Client Sample ID: SWFTS-MW-10C-EM40 (Continued) — Lab Sample ID: 550-195103-4

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Magnesium	310		0.40	0.054	mg/L	1		6010B	Dissolved
Manganese	0.017	J	0.020	0.0083	mg/L	1		6010B	Dissolved
Molybdenum	0.037		0.010	0.00052	mg/L	1		6010B	Dissolved
Potassium	55		1.0	0.081	mg/L	1		6010B	Dissolved
Silicon	29		0.10	0.016	mg/L	1		6010B	Dissolved
Sodium	930		1.6	0.16	mg/L	4		6010B	Dissolved
Strontium	13		0.010	0.00032	mg/L	1		6010B	Dissolved
Tungsten	0.0043	J	0.10	0.0021	mg/L	1		6010B	Dissolved
Vanadium	0.022		0.0050	0.00069	mg/L	1		6010B	Dissolved
Antimony	0.13	J B	1.0	0.043	ug/L	1		6020B	Dissolved
Arsenic	44	B	1.0	0.25	ug/L	1		6020B	Dissolved
Selenium	44		0.50	0.074	ug/L	1		6020B	Dissolved
Thallium	0.24		0.10	0.013	ug/L	1		6020B	Dissolved

Client Sample ID: SWFTS-MW-11-EM40 — Lab Sample ID: 550-195103-5

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Nitrate as N	18		0.25	0.070	mg/L	5		300.0	Total/NA
Sulfate	1600		100	21	mg/L	50		300.0	Total/NA
Chlorate	17000		2000	490	ug/L	100		300.1B	Total/NA
Perchlorate	5100		500	160	ug/L	500		314.0	Total/NA
Total Organic Carbon	1.7		0.50	0.26	mg/L	1		SM 5310B	Total/NA

Client Sample ID: SWFTS-MW-11-EM40 — Lab Sample ID: 550-195103-6

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Aluminum	0.21		0.20	0.080	mg/L	1		6010B	Dissolved
Barium	0.012		0.0050	0.00057	mg/L	1		6010B	Dissolved
Boron	2.1	B	0.050	0.0024	mg/L	1		6010B	Dissolved
Calcium	330		0.40	0.015	mg/L	1		6010B	Dissolved
Chromium	0.016		0.0050	0.0011	mg/L	1		6010B	Dissolved
Iron	0.022	J	0.40	0.019	mg/L	1		6010B	Dissolved
Magnesium	140		0.40	0.054	mg/L	1		6010B	Dissolved
Molybdenum	0.11		0.010	0.00052	mg/L	1		6010B	Dissolved
Potassium	40		1.0	0.081	mg/L	1		6010B	Dissolved
Silicon	40		0.10	0.016	mg/L	1		6010B	Dissolved
Sodium	620		0.40	0.039	mg/L	1		6010B	Dissolved
Strontium	7.8		0.010	0.00032	mg/L	1		6010B	Dissolved
Vanadium	0.052		0.0050	0.00069	mg/L	1		6010B	Dissolved
Antimony	0.16	J B	1.0	0.043	ug/L	1		6020B	Dissolved
Arsenic	100	B	1.0	0.25	ug/L	1		6020B	Dissolved
Selenium	49		0.50	0.074	ug/L	1		6020B	Dissolved
Thallium	0.048	J	0.10	0.013	ug/L	1		6020B	Dissolved

Client Sample ID: SWFTS-MW-11-EM40-FD — Lab Sample ID: 550-195103-7

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Nitrate as N	18		0.25	0.070	mg/L	5		300.0	Total/NA
Sulfate	1600		100	21	mg/L	50		300.0	Total/NA
Chlorate	15000		2000	490	ug/L	100		300.1B	Total/NA
Perchlorate	5200		500	160	ug/L	500		314.0	Total/NA
Total Organic Carbon	1.8		0.50	0.26	mg/L	1		SM 5310B	Total/NA

This Detection Summary does not include radiochemical test results.

Eurofins Phoenix

Detection Summary

Client: Tetra Tech, Inc.
Job ID: 550-195103-1
Project/Site: Tetra Tech M11 SWF Treatability Study

Client Sample ID: SWFTS-MW-11-EM40-FD
Lab Sample ID: 550-195103-8

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Aluminum	0.24		0.20	0.080	mg/L	1		6010B	Dissolved
Barium	0.012		0.0050	0.00057	mg/L	1		6010B	Dissolved
Boron	2.1	B	0.050	0.0024	mg/L	1		6010B	Dissolved
Calcium	320		0.40	0.015	mg/L	1		6010B	Dissolved
Chromium	0.017		0.0050	0.0011	mg/L	1		6010B	Dissolved
Iron	0.019	J	0.40	0.019	mg/L	1		6010B	Dissolved
Magnesium	130		0.40	0.054	mg/L	1		6010B	Dissolved
Molybdenum	0.11		0.010	0.00052	mg/L	1		6010B	Dissolved
Potassium	40		1.0	0.081	mg/L	1		6010B	Dissolved
Silicon	39		0.10	0.016	mg/L	1		6010B	Dissolved
Sodium	620		0.40	0.039	mg/L	1		6010B	Dissolved
Strontium	7.7		0.010	0.00032	mg/L	1		6010B	Dissolved
Tungsten	0.0021	J	0.10	0.0021	mg/L	1		6010B	Dissolved
Vanadium	0.052		0.0050	0.00069	mg/L	1		6010B	Dissolved
Antimony	0.18	J B	1.0	0.043	ug/L	1		6020B	Dissolved
Arsenic	100	B	1.0	0.25	ug/L	1		6020B	Dissolved
Selenium	49		0.50	0.074	ug/L	1		6020B	Dissolved
Thallium	0.045	J	0.10	0.013	ug/L	1		6020B	Dissolved

Client Sample ID: SWFTS-MW-12-EM40
Lab Sample ID: 550-195103-9

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Methane	2600		5.0	0.63	ug/L	1		RSK-175	Total/NA
Nitrate as N	7.3		0.050	0.014	mg/L	1		300.0	Total/NA
Sulfate	1600		100	21	mg/L	50		300.0	Total/NA
Chlorate	5500		1000	240	ug/L	50		300.1B	Total/NA
Perchlorate	1600		100	31	ug/L	100		314.0	Total/NA
Manganese	0.57		0.020	0.0083	mg/L	1		6010B	Total/NA
Total Organic Carbon	2.6		0.50	0.26	mg/L	1		SM 5310B	Total/NA

Client Sample ID: SWFTS-MW-12-EM40
Lab Sample ID: 550-195103-10

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Aluminum	0.20		0.20	0.080	mg/L	1		6010B	Dissolved
Barium	0.037		0.0050	0.00057	mg/L	1		6010B	Dissolved
Boron	2.1	B	0.050	0.0024	mg/L	1		6010B	Dissolved
Calcium	340		0.40	0.015	mg/L	1		6010B	Dissolved
Iron	0.24	J	0.40	0.019	mg/L	1		6010B	Dissolved
Magnesium	160		0.40	0.054	mg/L	1		6010B	Dissolved
Manganese	0.56		0.020	0.0083	mg/L	1		6010B	Dissolved
Molybdenum	0.16		0.010	0.00052	mg/L	1		6010B	Dissolved
Potassium	42		1.0	0.081	mg/L	1		6010B	Dissolved
Silicon	32		0.10	0.016	mg/L	1		6010B	Dissolved
Sodium	560		0.40	0.039	mg/L	1		6010B	Dissolved
Strontium	7.7		0.010	0.00032	mg/L	1		6010B	Dissolved
Vanadium	0.028		0.0050	0.00069	mg/L	1		6010B	Dissolved
Antimony	0.16	J B	1.0	0.043	ug/L	1		6020B	Dissolved
Arsenic	27	B	1.0	0.25	ug/L	1		6020B	Dissolved
Selenium	45		0.50	0.074	ug/L	1		6020B	Dissolved

This Detection Summary does not include radiochemical test results.

Client Sample ID: SWFTS-MW-10A-EM40
Lab Sample ID: 550-195103-1
Date Collected: 12/15/22 08:14
Matrix: Water
Date Received: 12/16/22 10:00

Method: RSK-175 - Dissolved Gases (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Methane	13		5.0	0.63	ug/L			12/21/22 23:48	1

Method: MCAWW 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Nitrate as N	14		0.25	0.070	mg/L			12/16/22 13:35	5
Sulfate	1900		100	21	mg/L			12/16/22 14:31	50

Method: EPA 300.1B - Disinfection By-Products, (IC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chlorate	25000		2000	490	ug/L			12/22/22 04:34	100

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Dichloroacetic acid(Surr)	*110*		*90 - 115*		*12/22/22 04:34*	*100*

Method: EPA 314.0 - Perchlorate (IC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perchlorate	12000		1000	310	ug/L			12/20/22 10:57	1000

Method: SW846 6010B - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Manganese	1.7		0.020	0.0083	mg/L		12/20/22 11:37	12/21/22 11:55	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon (SM 5310B)	2.0	F1	0.50	0.26	mg/L			12/21/22 12:11	1

Client Sample ID: SWFTS-MW-10A-EM40
Lab Sample ID: 550-195103-2
Date Collected: 12/15/22 08:14
Matrix: Water
Date Received: 12/16/22 10:00

Method: SW846 6010B - Metals (ICP) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	0.28		0.20	0.080	mg/L		12/19/22 09:51	12/20/22 12:13	1
Barium	0.016		0.0050	0.00057	mg/L		12/19/22 09:51	12/20/22 12:13	1
Beryllium	ND		0.0010	0.00019	mg/L		12/19/22 09:51	12/20/22 12:13	1
Boron	2.5	B	0.050	0.0024	mg/L		12/19/22 09:51	12/20/22 12:13	1
Cadmium	ND		0.0010	0.00072	mg/L		12/19/22 09:51	12/20/22 12:13	1
Calcium	360		0.40	0.015	mg/L		12/19/22 09:51	12/20/22 12:13	1
Chromium	ND		0.0050	0.0011	mg/L		12/19/22 09:51	12/20/22 12:13	1
Cobalt	0.0032	J	0.0050	0.00054	mg/L		12/19/22 09:51	12/20/22 12:13	1
Copper	ND		0.0050	0.0012	mg/L		12/19/22 09:51	12/20/22 12:13	1
Iron	0.027	J	0.40	0.019	mg/L		12/19/22 09:51	12/20/22 12:13	1
Lead	ND		0.010	0.0025	mg/L		12/19/22 09:51	12/20/22 12:13	1
Magnesium	190		0.40	0.054	mg/L		12/19/22 09:51	12/20/22 12:13	1
Manganese	1.7		0.020	0.0083	mg/L		12/19/22 09:51	12/20/22 12:13	1
Molybdenum	0.097		0.010	0.00052	mg/L		12/19/22 09:51	12/20/22 12:13	1
Nickel	0.011		0.0050	0.0028	mg/L		12/19/22 09:51	12/20/22 12:13	1
Phosphorus	ND	cn	0.40	0.011	mg/L		12/19/22 09:51	12/20/22 12:13	1
Potassium	39		1.0	0.081	mg/L		12/19/22 09:51	12/20/22 12:13	1
Silicon	37		0.10	0.016	mg/L		12/19/22 09:51	12/20/22 12:13	1
Silver	ND		0.0080	0.00049	mg/L		12/19/22 09:51	12/20/22 12:13	1

Client Sample ID: SWFTS-MW-10A-EM40 — Lab Sample ID: 550-195103-2

Date Collected: 12/15/22 08:14 — **Matrix: Water**
Date Received: 12/16/22 10:00

Method: SW846 6010B - Metals (ICP) - Dissolved (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sodium	940		1.6	0.16	mg/L		12/19/22 09:51	12/21/22 12:53	4
Strontium	9.6		0.010	0.00032	mg/L		12/19/22 09:51	12/20/22 12:13	1
Tin	ND		0.010	0.0034	mg/L		12/19/22 09:51	12/20/22 12:13	1
Titanium	ND		0.0050	0.00028	mg/L		12/19/22 09:51	12/20/22 12:13	1
Tungsten	0.0098	J	0.10	0.0021	mg/L		12/19/22 09:51	12/20/22 12:13	1
Vanadium	0.043		0.0050	0.00069	mg/L		12/19/22 09:51	12/20/22 12:13	1
Zinc	ND		0.040	0.0023	mg/L		12/19/22 09:51	12/20/22 12:13	1

Method: SW846 6020B - Metals (ICP/MS) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	0.31	J B	1.0	0.043	ug/L		12/19/22 09:45	12/22/22 16:48	1
Arsenic	72	B	1.0	0.25	ug/L		12/19/22 09:45	12/27/22 14:22	1
Selenium	100		0.50	0.074	ug/L		12/19/22 09:45	12/27/22 14:22	1
Thallium	0.50		0.10	0.013	ug/L		12/19/22 09:45	12/22/22 16:48	1

Client Sample ID: SWFTS-MW-10C-EM40 — Lab Sample ID: 550-195103-3

Date Collected: 12/15/22 09:32 — **Matrix: Water**
Date Received: 12/16/22 10:00

Method: RSK-175 - Dissolved Gases (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Methane	3.0	J	5.0	0.63	ug/L			12/22/22 00:42	1

Method: MCAWW 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Nitrate as N	10		0.25	0.070	mg/L			12/16/22 17:35	5
Sulfate	2200		100	21	mg/L			12/16/22 19:06	50

Method: EPA 300.1B - Disinfection By-Products, (IC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chlorate	49000		20000	4900	ug/L			12/22/22 20:46	1000

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Dichloroacetic acid(Surr)	*111*		*90 - 115*		*12/22/22 20:46*	*1000*

Method: EPA 314.0 - Perchlorate (IC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perchlorate	11000		500	160	ug/L			12/16/22 13:52	500

Method: SW846 6010B - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Manganese	0.34		0.020	0.0083	mg/L		12/20/22 11:37	12/21/22 12:04	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon (SM 5310B)	1.6		0.50	0.26	mg/L			12/22/22 13:11	1

Client Sample ID: SWFTS-MW-10C-EM40 Lab Sample ID: 550-195103-4

Date Collected: 12/15/22 09:32 **Matrix: Water**
Date Received: 12/16/22 10:00

Method: SW846 6010B - Metals (ICP) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	**0.30**		0.20	0.080	mg/L		12/19/22 09:51	12/20/22 12:16	1
Barium	**0.020**		0.0050	0.00057	mg/L		12/19/22 09:51	12/20/22 12:16	1
Beryllium	**0.00064**	**J**	0.0010	0.00019	mg/L		12/19/22 09:51	12/20/22 12:16	1
Boron	**3.2**	**B**	0.050	0.0024	mg/L		12/19/22 09:51	12/20/22 12:16	1
Cadmium	ND		0.0010	0.00072	mg/L		12/19/22 09:51	12/20/22 12:16	1
Calcium	**500**		0.40	0.015	mg/L		12/19/22 09:51	12/20/22 12:16	1
Chromium	ND		0.0050	0.0011	mg/L		12/19/22 09:51	12/20/22 12:16	1
Cobalt	ND		0.0050	0.00054	mg/L		12/19/22 09:51	12/20/22 12:16	1
Copper	ND		0.0050	0.0012	mg/L		12/19/22 09:51	12/20/22 12:16	1
Iron	**0.041**	**J**	0.40	0.019	mg/L		12/19/22 09:51	12/20/22 12:16	1
Lead	ND		0.010	0.0025	mg/L		12/19/22 09:51	12/20/22 12:16	1
Magnesium	**310**		0.40	0.054	mg/L		12/19/22 09:51	12/20/22 12:16	1
Manganese	**0.017**	**J**	0.020	0.0083	mg/L		12/19/22 09:51	12/20/22 12:16	1
Molybdenum	**0.037**		0.010	0.00052	mg/L		12/19/22 09:51	12/20/22 12:16	1
Nickel	ND		0.0050	0.0028	mg/L		12/19/22 09:51	12/20/22 12:16	1
Phosphorus	ND	cn	0.40	0.011	mg/L		12/19/22 09:51	12/20/22 12:16	1
Potassium	**55**		1.0	0.081	mg/L		12/19/22 09:51	12/20/22 12:16	1
Silicon	**29**		0.10	0.016	mg/L		12/19/22 09:51	12/20/22 12:16	1
Silver	ND		0.0080	0.00049	mg/L		12/19/22 09:51	12/20/22 12:16	1
Sodium	**930**		1.6	0.16	mg/L		12/19/22 09:51	12/21/22 12:56	4
Strontium	**13**		0.010	0.00032	mg/L		12/19/22 09:51	12/20/22 12:16	1
Tin	ND		0.010	0.0034	mg/L		12/19/22 09:51	12/20/22 12:16	1
Titanium	ND		0.0050	0.00028	mg/L		12/19/22 09:51	12/20/22 12:16	1
Tungsten	**0.0043**	**J**	0.10	0.0021	mg/L		12/19/22 09:51	12/20/22 12:16	1
Vanadium	**0.022**		0.0050	0.00069	mg/L		12/19/22 09:51	12/20/22 12:16	1
Zinc	ND		0.040	0.0023	mg/L		12/19/22 09:51	12/20/22 12:16	1

Method: SW846 6020B - Metals (ICP/MS) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	**0.13**	**J B**	1.0	0.043	ug/L		12/19/22 09:45	12/22/22 16:50	1
Arsenic	**44**	**B**	1.0	0.25	ug/L		12/19/22 09:45	12/27/22 14:24	1
Selenium	**44**		0.50	0.074	ug/L		12/19/22 09:45	12/27/22 14:24	1
Thallium	**0.24**		0.10	0.013	ug/L		12/19/22 09:45	12/22/22 16:50	1

Client Sample ID: SWFTS-MW-11-EM40 Lab Sample ID: 550-195103-5

Date Collected: 12/15/22 10:30 **Matrix: Water**
Date Received: 12/16/22 10:00

Method: RSK-175 - Dissolved Gases (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Methane	ND		5.0	0.63	ug/L			12/22/22 00:55	1

Method: MCAWW 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Nitrate as N	**18**		0.25	0.070	mg/L			12/16/22 17:53	5
Sulfate	**1600**		100	21	mg/L			12/16/22 19:34	50

Method: EPA 300.1B - Disinfection By-Products, (IC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chlorate	**17000**		2000	490	ug/L			12/22/22 21:16	100

Client Sample ID: SWFTS-MW-11-EM40 — Lab Sample ID: 550-195103-5

Date Collected: 12/15/22 10:30 — **Matrix: Water**
Date Received: 12/16/22 10:00

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Dichloroacetic acid(Surr)	*113*		*90 - 115*		*12/22/22 21:16*	*100*

Method: EPA 314.0 - Perchlorate (IC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perchlorate	**5100**		500	160	ug/L			12/16/22 14:15	500

Method: SW846 6010B - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Manganese	ND		0.020	0.0083	mg/L		12/20/22 11:37	12/21/22 12:07	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon (SM 5310B)	**1.7**		0.50	0.26	mg/L			12/17/22 06:36	1

Client Sample ID: SWFTS-MW-11-EM40 — Lab Sample ID: 550-195103-6

Date Collected: 12/15/22 10:30 — **Matrix: Water**
Date Received: 12/16/22 10:00

Method: SW846 6010B - Metals (ICP) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	**0.21**		0.20	0.080	mg/L		12/19/22 09:51	12/20/22 12:19	1
Barium	**0.012**		0.0050	0.00057	mg/L		12/19/22 09:51	12/20/22 12:19	1
Beryllium	ND		0.0010	0.00019	mg/L		12/19/22 09:51	12/20/22 12:19	1
Boron	**2.1**	**B**	0.050	0.0024	mg/L		12/19/22 09:51	12/20/22 12:19	1
Cadmium	ND		0.0010	0.00072	mg/L		12/19/22 09:51	12/20/22 12:19	1
Calcium	**330**		0.40	0.015	mg/L		12/19/22 09:51	12/20/22 12:19	1
Chromium	**0.016**		0.0050	0.0011	mg/L		12/19/22 09:51	12/20/22 12:19	1
Cobalt	ND		0.0050	0.00054	mg/L		12/19/22 09:51	12/20/22 12:19	1
Copper	ND		0.0050	0.0012	mg/L		12/19/22 09:51	12/20/22 12:19	1
Iron	**0.022**	**J**	0.40	0.019	mg/L		12/19/22 09:51	12/20/22 12:19	1
Lead	ND		0.010	0.0025	mg/L		12/19/22 09:51	12/20/22 12:19	1
Magnesium	**140**		0.40	0.054	mg/L		12/19/22 09:51	12/20/22 12:19	1
Manganese	ND		0.020	0.0083	mg/L		12/19/22 09:51	12/20/22 12:19	1
Molybdenum	**0.11**		0.010	0.00052	mg/L		12/19/22 09:51	12/20/22 12:19	1
Nickel	ND		0.0050	0.0028	mg/L		12/19/22 09:51	12/20/22 12:19	1
Phosphorus	ND	cn	0.40	0.011	mg/L		12/19/22 09:51	12/20/22 12:19	1
Potassium	**40**		1.0	0.081	mg/L		12/19/22 09:51	12/20/22 12:19	1
Silicon	**40**		0.10	0.016	mg/L		12/19/22 09:51	12/20/22 12:19	1
Silver	ND		0.0080	0.00049	mg/L		12/19/22 09:51	12/20/22 12:19	1
Sodium	**620**		0.40	0.039	mg/L		12/19/22 09:51	12/20/22 12:19	1
Strontium	**7.8**		0.010	0.00032	mg/L		12/19/22 09:51	12/20/22 12:19	1
Tin	ND		0.010	0.0034	mg/L		12/19/22 09:51	12/20/22 12:19	1
Titanium	ND		0.0050	0.00028	mg/L		12/19/22 09:51	12/20/22 12:19	1
Tungsten	ND		0.10	0.0021	mg/L		12/19/22 09:51	12/20/22 12:19	1
Vanadium	**0.052**		0.0050	0.00069	mg/L		12/19/22 09:51	12/20/22 12:19	1
Zinc	ND		0.040	0.0023	mg/L		12/19/22 09:51	12/20/22 12:19	1

Method: SW846 6020B - Metals (ICP/MS) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	**0.16**	**J B**	1.0	0.043	ug/L		12/19/22 09:45	12/22/22 16:52	1
Arsenic	**100**	**B**	1.0	0.25	ug/L		12/19/22 09:45	12/27/22 14:26	1

Client Sample ID: SWFTS-MW-11-EM40 — Lab Sample ID: 550-195103-6

Date Collected: 12/15/22 10:30 — **Matrix: Water**
Date Received: 12/16/22 10:00

Method: SW846 6020B - Metals (ICP/MS) - Dissolved (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Selenium	49		0.50	0.074	ug/L		12/19/22 09:45	12/27/22 14:26	1
Thallium	0.048	J	0.10	0.013	ug/L		12/19/22 09:45	12/22/22 16:52	1

Client Sample ID: SWFTS-MW-11-EM40-FD — Lab Sample ID: 550-195103-7

Date Collected: 12/15/22 10:30 — **Matrix: Water**
Date Received: 12/16/22 10:00

Method: RSK-175 - Dissolved Gases (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Methane	ND		5.0	0.63	ug/L			12/22/22 01:08	1

Method: MCAWW 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Nitrate as N	18		0.25	0.070	mg/L			12/16/22 18:11	5
Sulfate	1600		100	21	mg/L			12/16/22 20:02	50

Method: EPA 300.1B - Disinfection By-Products, (IC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chlorate	15000		2000	490	ug/L			12/22/22 21:45	100

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Dichloroacetic acid(Surr)	*102*		*90 - 115*		*12/22/22 21:45*	*100*

Method: EPA 314.0 - Perchlorate (IC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perchlorate	5200		500	160	ug/L			12/16/22 14:37	500

Method: SW846 6010B - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Manganese	ND		0.020	0.0083	mg/L		12/20/22 11:37	12/21/22 12:09	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon (SM 5310B)	1.8		0.50	0.26	mg/L			12/22/22 13:26	1

Client Sample ID: SWFTS-MW-11-EM40-FD — Lab Sample ID: 550-195103-8

Date Collected: 12/15/22 10:30 — **Matrix: Water**
Date Received: 12/16/22 10:00

Method: SW846 6010B - Metals (ICP) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	0.24		0.20	0.080	mg/L		12/19/22 09:51	12/20/22 12:22	1
Barium	0.012		0.0050	0.00057	mg/L		12/19/22 09:51	12/20/22 12:22	1
Beryllium	ND		0.0010	0.00019	mg/L		12/19/22 09:51	12/20/22 12:22	1
Boron	2.1	B	0.050	0.0024	mg/L		12/19/22 09:51	12/20/22 12:22	1
Cadmium	ND		0.0010	0.00072	mg/L		12/19/22 09:51	12/20/22 12:22	1
Calcium	320		0.40	0.015	mg/L		12/19/22 09:51	12/20/22 12:22	1
Chromium	0.017		0.0050	0.0011	mg/L		12/19/22 09:51	12/20/22 12:22	1
Cobalt	ND		0.0050	0.00054	mg/L		12/19/22 09:51	12/20/22 12:22	1
Copper	ND		0.0050	0.0012	mg/L		12/19/22 09:51	12/20/22 12:22	1
Iron	0.019	J	0.40	0.019	mg/L		12/19/22 09:51	12/20/22 12:22	1
Lead	ND		0.010	0.0025	mg/L		12/19/22 09:51	12/20/22 12:22	1

Client Sample ID: SWFTS-MW-11-EM40-FD
Lab Sample ID: 550-195103-8
Date Collected: 12/15/22 10:30 **Matrix: Water**
Date Received: 12/16/22 10:00

Method: SW846 6010B - Metals (ICP) - Dissolved (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Magnesium	**130**		0.40	0.054	mg/L		12/19/22 09:51	12/20/22 12:22	1
Manganese	ND		0.020	0.0083	mg/L		12/19/22 09:51	12/20/22 12:22	1
Molybdenum	**0.11**		0.010	0.00052	mg/L		12/19/22 09:51	12/20/22 12:22	1
Nickel	ND		0.0050	0.0028	mg/L		12/19/22 09:51	12/20/22 12:22	1
Phosphorus	ND	cn	0.40	0.011	mg/L		12/19/22 09:51	12/20/22 12:22	1
Potassium	**40**		1.0	0.081	mg/L		12/19/22 09:51	12/20/22 12:22	1
Silicon	**39**		0.10	0.016	mg/L		12/19/22 09:51	12/20/22 12:22	1
Silver	ND		0.0080	0.00049	mg/L		12/19/22 09:51	12/20/22 12:22	1
Sodium	**620**		0.40	0.039	mg/L		12/19/22 09:51	12/20/22 12:22	1
Strontium	**7.7**		0.010	0.00032	mg/L		12/19/22 09:51	12/20/22 12:22	1
Tin	ND		0.010	0.0034	mg/L		12/19/22 09:51	12/20/22 12:22	1
Titanium	ND		0.0050	0.00028	mg/L		12/19/22 09:51	12/20/22 12:22	1
Tungsten	**0.0021**	**J**	0.10	0.0021	mg/L		12/19/22 09:51	12/20/22 12:22	1
Vanadium	**0.052**		0.0050	0.00069	mg/L		12/19/22 09:51	12/20/22 12:22	1
Zinc	ND		0.040	0.0023	mg/L		12/19/22 09:51	12/20/22 12:22	1

Method: SW846 6020B - Metals (ICP/MS) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	**0.18**	**J B**	1.0	0.043	ug/L		12/19/22 09:45	12/22/22 16:54	1
Arsenic	**100**	**B**	1.0	0.25	ug/L		12/19/22 09:45	12/27/22 14:28	1
Selenium	**49**		0.50	0.074	ug/L		12/19/22 09:45	12/27/22 14:28	1
Thallium	**0.045**	**J**	0.10	0.013	ug/L		12/19/22 09:45	12/22/22 16:54	1

Client Sample ID: SWFTS-MW-12-EM40
Lab Sample ID: 550-195103-9
Date Collected: 12/15/22 11:49 **Matrix: Water**
Date Received: 12/16/22 10:00

Method: RSK-175 - Dissolved Gases (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Methane	**2600**		5.0	0.63	ug/L			12/22/22 01:22	1

Method: MCAWW 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Nitrate as N	**7.3**		0.050	0.014	mg/L			12/16/22 18:30	1
Sulfate	**1600**		100	21	mg/L			12/16/22 20:30	50

Method: EPA 300.1B - Disinfection By-Products, (IC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chlorate	**5500**		1000	240	ug/L			12/22/22 22:15	50

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Dichloroacetic acid(Surr)	*111*		*90 - 115*		*12/22/22 22:15*	*50*

Method: EPA 314.0 - Perchlorate (IC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perchlorate	**1600**		100	31	ug/L			12/20/22 12:27	100

Method: SW846 6010B - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Manganese	**0.57**		0.020	0.0083	mg/L		12/20/22 11:37	12/21/22 12:12	1

Client Sample ID: SWFTS-MW-12-EM40 Lab Sample ID: 550-195103-9

Date Collected: 12/15/22 11:49 **Matrix: Water**
Date Received: 12/16/22 10:00

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon (SM 5310B)	2.6		0.50	0.26	mg/L			12/22/22 13:41	1

Client Sample ID: SWFTS-MW-12-EM40 Lab Sample ID: 550-195103-10

Date Collected: 12/15/22 11:49 **Matrix: Water**
Date Received: 12/16/22 10:00

Method: SW846 6010B - Metals (ICP) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	0.20		0.20	0.080	mg/L		12/19/22 09:51	12/20/22 12:24	1
Barium	0.037		0.0050	0.00057	mg/L		12/19/22 09:51	12/20/22 12:24	1
Beryllium	ND		0.0010	0.00019	mg/L		12/19/22 09:51	12/20/22 12:24	1
Boron	2.1	B	0.050	0.0024	mg/L		12/19/22 09:51	12/20/22 12:24	1
Cadmium	ND		0.0010	0.00072	mg/L		12/19/22 09:51	12/20/22 12:24	1
Calcium	340		0.40	0.015	mg/L		12/19/22 09:51	12/20/22 12:24	1
Chromium	ND		0.0050	0.0011	mg/L		12/19/22 09:51	12/20/22 12:24	1
Cobalt	ND		0.0050	0.00054	mg/L		12/19/22 09:51	12/20/22 12:24	1
Copper	ND		0.0050	0.0012	mg/L		12/19/22 09:51	12/20/22 12:24	1
Iron	0.24	J	0.40	0.019	mg/L		12/19/22 09:51	12/20/22 12:24	1
Lead	ND		0.010	0.0025	mg/L		12/19/22 09:51	12/20/22 12:24	1
Magnesium	160		0.40	0.054	mg/L		12/19/22 09:51	12/20/22 12:24	1
Manganese	0.56		0.020	0.0083	mg/L		12/19/22 09:51	12/20/22 12:24	1
Molybdenum	0.16		0.010	0.00052	mg/L		12/19/22 09:51	12/20/22 12:24	1
Nickel	ND		0.0050	0.0028	mg/L		12/19/22 09:51	12/20/22 12:24	1
Phosphorus	ND	cn	0.40	0.011	mg/L		12/19/22 09:51	12/20/22 12:24	1
Potassium	42		1.0	0.081	mg/L		12/19/22 09:51	12/20/22 12:24	1
Silicon	32		0.10	0.016	mg/L		12/19/22 09:51	12/20/22 12:24	1
Silver	ND		0.0080	0.00049	mg/L		12/19/22 09:51	12/20/22 12:24	1
Sodium	560		0.40	0.039	mg/L		12/19/22 09:51	12/20/22 12:24	1
Strontium	7.7		0.010	0.00032	mg/L		12/19/22 09:51	12/20/22 12:24	1
Tin	ND		0.010	0.0034	mg/L		12/19/22 09:51	12/20/22 12:24	1
Titanium	ND		0.0050	0.00028	mg/L		12/19/22 09:51	12/20/22 12:24	1
Tungsten	ND		0.10	0.0021	mg/L		12/19/22 09:51	12/20/22 12:24	1
Vanadium	0.028		0.0050	0.00069	mg/L		12/19/22 09:51	12/20/22 12:24	1
Zinc	ND		0.040	0.0023	mg/L		12/19/22 09:51	12/20/22 12:24	1

Method: SW846 6020B - Metals (ICP/MS) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	0.16	J B	1.0	0.043	ug/L		12/19/22 09:45	12/22/22 16:56	1
Arsenic	27	B	1.0	0.25	ug/L		12/19/22 09:45	12/27/22 14:30	1
Selenium	45		0.50	0.074	ug/L		12/19/22 09:45	12/27/22 14:30	1
Thallium	ND		0.10	0.013	ug/L		12/19/22 09:45	12/22/22 16:56	1

Surrogate Summary

Client: Tetra Tech, Inc.
Job ID: 550-195103-1
Project/Site: Tetra Tech M11 SWF Treatability Study

Method: 300.1B - Disinfection By-Products, (IC)

Matrix: Water **Prep Type: Total/NA**

		Percent Surrogate Recovery (Acceptance Limits)
Lab Sample ID	Client Sample ID	DCAA (90-115)
550-195094-A-2 MS ^5	Matrix Spike	114
550-195094-A-2 MSD ^5	Matrix Spike Duplicate	112
550-195103-1	SWFTS-MW-10A-EM40	110
550-195103-1 MS	SWFTS-MW-10A-EM40	110
550-195103-1 MSD	SWFTS-MW-10A-EM40	105
550-195103-3	SWFTS-MW-10C-EM40	111
550-195103-5	SWFTS-MW-11-EM40	113
550-195103-7	SWFTS-MW-11-EM40-FD	102
550-195103-9	SWFTS-MW-12-EM40	111
LCS 550-291337/5	Lab Control Sample	114
LCS 550-291340/5	Lab Control Sample	114
LCSD 550-291337/6	Lab Control Sample Dup	114
LCSD 550-291340/6	Lab Control Sample Dup	112
MB 550-291337/4	Method Blank	111
MB 550-291340/4	Method Blank	107

Surrogate Legend

DCAA = Dichloroacetic acid(Surr)

Method: 300.1B - Disinfection By-Products, (IC)

Matrix: Water **Prep Type: Total/NA**

		Percent Surrogate Recovery (Acceptance Limits)
Lab Sample ID	Client Sample ID	DCAA (50-150)
MRL 550-291337/1002	Lab Control Sample	114
MRL 550-291340/1002	Lab Control Sample	108

Surrogate Legend

DCAA = Dichloroacetic acid(Surr)

Method: RSK-175 - Dissolved Gases (GC)

Lab Sample ID: MB 280-597521/33
Matrix: Water
Analysis Batch: 597521

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Methane	ND		5.0	0.63	ug/L			12/21/22 23:08	1

Lab Sample ID: LCS 280-597521/31
Matrix: Water
Analysis Batch: 597521

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Methane			65.7	64.5		ug/L		98	75 - 125		

Lab Sample ID: LCSD 280-597521/32
Matrix: Water
Analysis Batch: 597521

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Methane			65.7	65.4		ug/L		99	75 - 125	1	20

Lab Sample ID: 550-195103-1 MS
Matrix: Water
Analysis Batch: 597521

Client Sample ID: SWFTS-MW-10A-EM40
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits		
Methane	13		65.7	78.0		ug/L		98	52 - 145		

Lab Sample ID: 550-195103-1 MSD
Matrix: Water
Analysis Batch: 597521

Client Sample ID: SWFTS-MW-10A-EM40
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Methane	13		65.7	78.2		ug/L		99	52 - 145	0	20

Lab Sample ID: 550-195103-1 DU
Matrix: Water
Analysis Batch: 597521

Client Sample ID: SWFTS-MW-10A-EM40
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier		DU Result	DU Qualifier	Unit	D			RPD	RPD Limit
Methane	13			14.1		ug/L				5	20

Method: 300.0 - Anions, Ion Chromatography

Lab Sample ID: MB 550-290964/2
Matrix: Water
Analysis Batch: 290964

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Nitrate as N	ND		0.050	0.014	mg/L			12/16/22 11:45	1
Sulfate	ND		2.0	0.43	mg/L			12/16/22 11:45	1

Method: 300.0 - Anions, Ion Chromatography (Continued)

Lab Sample ID: LCS 550-290964/5
Matrix: Water
Analysis Batch: 290964

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Nitrate as N	4.00	4.13		mg/L		103	90 - 110
Sulfate	20.0	21.2		mg/L		106	90 - 110

Lab Sample ID: LCSD 550-290964/7
Matrix: Water
Analysis Batch: 290964

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Nitrate as N	4.00	4.13		mg/L		103	90 - 110	0	20
Sulfate	20.0	20.8		mg/L		104	90 - 110	2	20

Lab Sample ID: 550-195103-1 MS
Matrix: Water
Analysis Batch: 290964

Client Sample ID: SWFTS-MW-10A-EM40
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Nitrate as N	14		20.0	34.4		mg/L		103	80 - 120

Lab Sample ID: 550-195103-1 MS
Matrix: Water
Analysis Batch: 290964

Client Sample ID: SWFTS-MW-10A-EM40
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Sulfate	1900		1000	2910		mg/L		104	80 - 120

Lab Sample ID: 550-195103-1 MSD
Matrix: Water
Analysis Batch: 290964

Client Sample ID: SWFTS-MW-10A-EM40
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Nitrate as N	14		20.0	34.5		mg/L		104	80 - 120	0	20

Lab Sample ID: 550-195103-1 MSD
Matrix: Water
Analysis Batch: 290964

Client Sample ID: SWFTS-MW-10A-EM40
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Sulfate	1900		1000	2920		mg/L		105	80 - 120	0	20

Lab Sample ID: MB 550-290966/2
Matrix: Water
Analysis Batch: 290966

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Nitrate as N	ND		0.050	0.014	mg/L			12/16/22 10:41	1
Sulfate	ND		2.0	0.43	mg/L			12/16/22 10:41	1

Method: 300.0 - Anions, Ion Chromatography (Continued)

Lab Sample ID: LCS 550-290966/5
Matrix: Water
Analysis Batch: 290966

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Nitrate as N			4.00	4.05		mg/L		101	90 - 110		
Sulfate			20.0	20.6		mg/L		103	90 - 110		

Lab Sample ID: LCSD 550-290966/6
Matrix: Water
Analysis Batch: 290966

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Nitrate as N			4.00	4.06		mg/L		102	90 - 110	0	20
Sulfate			20.0	21.3		mg/L		107	90 - 110	3	20

Lab Sample ID: 550-195033-A-1 MS
Matrix: Water
Analysis Batch: 290966

Client Sample ID: Matrix Spike
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits		
Nitrate as N	3.1		40.0	43.4		mg/L		101	80 - 120		
Sulfate	62		200	263		mg/L		101	80 - 120		

Lab Sample ID: 550-195033-A-1 MSD
Matrix: Water
Analysis Batch: 290966

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Nitrate as N	3.1		40.0	43.3		mg/L		100	80 - 120	0	20
Sulfate	62		200	262		mg/L		100	80 - 120	0	20

Method: 300.1B - Disinfection By-Products, (IC)

Lab Sample ID: MB 550-291337/4
Matrix: Water
Analysis Batch: 291337

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chlorate	ND		20	4.9	ug/L			12/21/22 21:12	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Dichloroacetic acid(Surr)	*111*		*90 - 115*		*12/21/22 21:12*	*1*

Lab Sample ID: LCS 550-291337/5
Matrix: Water
Analysis Batch: 291337

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Chlorate			100	110		ug/L		110	75 - 125		

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
Dichloroacetic acid(Surr)	*114*		*90 - 115*

Method: 300.1B - Disinfection By-Products, (IC) (Continued)

Lab Sample ID: LCSD 550-291337/6
Matrix: Water
Analysis Batch: 291337

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Chlorate			100	109		ug/L		109	75 - 125	1	25

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
Dichloroacetic acid(Surr)	*114*		*90 - 115*

Lab Sample ID: MRL 550-291337/1002
Matrix: Water
Analysis Batch: 291337

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte			Spike Added	MRL Result	MRL Qualifier	Unit	D	%Rec	%Rec Limits		
Chlorate			20.0	24.0		ug/L		120	50 - 150		

Surrogate	*MRL %Recovery*	*MRL Qualifier*	*Limits*
Dichloroacetic acid(Surr)	*114*		*50 - 150*

Lab Sample ID: 550-195103-1 MS
Matrix: Water
Analysis Batch: 291337

Client Sample ID: SWFTS-MW-10A-EM40
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits		
Chlorate	25000		10000	37000		ug/L		116	75 - 125		

Surrogate	*MS %Recovery*	*MS Qualifier*	*Limits*
Dichloroacetic acid(Surr)	*110*		*90 - 115*

Lab Sample ID: 550-195103-1 MSD
Matrix: Water
Analysis Batch: 291337

Client Sample ID: SWFTS-MW-10A-EM40
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Chlorate	25000		10000	36700		ug/L		113	75 - 125	1	25

Surrogate	*MSD %Recovery*	*MSD Qualifier*	*Limits*
Dichloroacetic acid(Surr)	*105*		*90 - 115*

Lab Sample ID: MB 550-291340/4
Matrix: Water
Analysis Batch: 291340

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chlorate	ND		20	4.9	ug/L			12/22/22 11:55	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Dichloroacetic acid(Surr)	*107*		*90 - 115*		*12/22/22 11:55*	*1*

Method: 300.1B - Disinfection By-Products, (IC) (Continued)

Lab Sample ID: LCS 550-291340/5
Matrix: Water
Analysis Batch: 291340

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Chlorate			100	115		ug/L		115	75 - 125		

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
Dichloroacetic acid(Surr)	*114*		*90 - 115*

Lab Sample ID: LCSD 550-291340/6
Matrix: Water
Analysis Batch: 291340

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Chlorate			100	112		ug/L		112	75 - 125	3	25

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
Dichloroacetic acid(Surr)	*112*		*90 - 115*

Lab Sample ID: MRL 550-291340/1002
Matrix: Water
Analysis Batch: 291340

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte			Spike Added	MRL Result	MRL Qualifier	Unit	D	%Rec	%Rec Limits		
Chlorate			20.0	23.8		ug/L		119	50 - 150		

Surrogate	*MRL %Recovery*	*MRL Qualifier*	*Limits*
Dichloroacetic acid(Surr)	*108*		*50 - 150*

Lab Sample ID: 550-195094-A-2 MS ^5
Matrix: Water
Analysis Batch: 291340

Client Sample ID: Matrix Spike
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits		
Chlorate	550		500	1110		ug/L		112	75 - 125		

Surrogate	*MS %Recovery*	*MS Qualifier*	*Limits*
Dichloroacetic acid(Surr)	*114*		*90 - 115*

Lab Sample ID: 550-195094-A-2 MSD ^5
Matrix: Water
Analysis Batch: 291340

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Chlorate	550		500	1090		ug/L		108	75 - 125	2	25

Surrogate	*MSD %Recovery*	*MSD Qualifier*	*Limits*
Dichloroacetic acid(Surr)	*112*		*90 - 115*

Method: 314.0 - Perchlorate (IC)

Lab Sample ID: MB 550-290947/1002
Matrix: Water
Analysis Batch: 290947

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perchlorate	ND		1.0	0.31	ug/L			12/16/22 10:31	1

Lab Sample ID: LCS 550-290947/4
Matrix: Water
Analysis Batch: 290947

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Perchlorate	25.0	22.8		ug/L		91	85 - 115

Lab Sample ID: LCSD 550-290947/5
Matrix: Water
Analysis Batch: 290947

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Perchlorate	25.0	22.6		ug/L		90	85 - 115	1	15

Lab Sample ID: MRL 550-290947/1003
Matrix: Water
Analysis Batch: 290947

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	MRL Result	MRL Qualifier	Unit	D	%Rec	%Rec Limits
Perchlorate	1.00	0.996	J	ug/L		100	75 - 125

Lab Sample ID: 550-195013-H-3 MS
Matrix: Water
Analysis Batch: 290947

Client Sample ID: Matrix Spike
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Perchlorate	5200		5000	9680		ug/L		89	80 - 120

Lab Sample ID: 550-195013-H-3 MSD
Matrix: Water
Analysis Batch: 290947

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Perchlorate	5200		5000	9700		ug/L		89	80 - 120	0	15

Lab Sample ID: MB 550-291132/1002
Matrix: Water
Analysis Batch: 291132

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perchlorate	ND		1.0	0.31	ug/L			12/20/22 09:27	1

Lab Sample ID: LCS 550-291132/4
Matrix: Water
Analysis Batch: 291132

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Perchlorate	25.0	23.2		ug/L		93	85 - 115

Method: 314.0 - Perchlorate (IC)

Lab Sample ID: LCSD 550-291132/5
Matrix: Water
Analysis Batch: 291132

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Perchlorate			25.0	22.4		ug/L		90	85 - 115	4	15

Lab Sample ID: MRL 550-291132/1003
Matrix: Water
Analysis Batch: 291132

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte			Spike Added	MRL Result	MRL Qualifier	Unit	D	%Rec	%Rec Limits		
Perchlorate			1.00	0.945	J	ug/L		94	75 - 125		

Lab Sample ID: 550-195103-1 MS
Matrix: Water
Analysis Batch: 291132

Client Sample ID: SWFTS-MW-10A-EM40
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits		
Perchlorate	12000		25000	34500		ug/L		91	80 - 120		

Lab Sample ID: 550-195103-1 MSD
Matrix: Water
Analysis Batch: 291132

Client Sample ID: SWFTS-MW-10A-EM40
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Perchlorate	12000		25000	34700		ug/L		92	80 - 120	1	15

Method: 6010B - Metals (ICP)

Lab Sample ID: MB 550-291029/1-A
Matrix: Water
Analysis Batch: 291197

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 291029

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	ND		0.20	0.080	mg/L		12/19/22 09:51	12/20/22 11:56	1
Barium	ND		0.0050	0.00057	mg/L		12/19/22 09:51	12/20/22 11:56	1
Beryllium	ND		0.0010	0.00019	mg/L		12/19/22 09:51	12/20/22 11:56	1
Boron	0.00334	J	0.050	0.0024	mg/L		12/19/22 09:51	12/20/22 11:56	1
Cadmium	ND		0.0010	0.00072	mg/L		12/19/22 09:51	12/20/22 11:56	1
Calcium	ND		0.40	0.015	mg/L		12/19/22 09:51	12/20/22 11:56	1
Chromium	ND		0.0050	0.0011	mg/L		12/19/22 09:51	12/20/22 11:56	1
Cobalt	ND		0.0050	0.00054	mg/L		12/19/22 09:51	12/20/22 11:56	1
Copper	ND		0.0050	0.0012	mg/L		12/19/22 09:51	12/20/22 11:56	1
Iron	ND		0.40	0.019	mg/L		12/19/22 09:51	12/20/22 11:56	1
Lead	ND		0.010	0.0025	mg/L		12/19/22 09:51	12/20/22 11:56	1
Magnesium	ND		0.40	0.054	mg/L		12/19/22 09:51	12/20/22 11:56	1
Manganese	ND		0.020	0.0083	mg/L		12/19/22 09:51	12/20/22 11:56	1
Molybdenum	ND		0.010	0.00052	mg/L		12/19/22 09:51	12/20/22 11:56	1
Nickel	ND		0.0050	0.0028	mg/L		12/19/22 09:51	12/20/22 11:56	1
Phosphorus	ND		0.40	0.011	mg/L		12/19/22 09:51	12/20/22 11:56	1
Potassium	ND		1.0	0.081	mg/L		12/19/22 09:51	12/20/22 11:56	1
Silicon	ND		0.10	0.016	mg/L		12/19/22 09:51	12/20/22 11:56	1
Silver	0.00127	J	0.0080	0.00049	mg/L		12/19/22 09:51	12/20/22 11:56	1
Sodium	ND		0.40	0.039	mg/L		12/19/22 09:51	12/20/22 11:56	1

Method: 6010B - Metals (ICP) (Continued)

Lab Sample ID: MB 550-291029/1-A
Matrix: Water
Analysis Batch: 291197

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 291029

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Strontium	ND		0.010	0.00032	mg/L		12/19/22 09:51	12/20/22 11:56	1
Tin	ND		0.010	0.0034	mg/L		12/19/22 09:51	12/20/22 11:56	1
Titanium	ND		0.0050	0.00028	mg/L		12/19/22 09:51	12/20/22 11:56	1
Tungsten	ND		0.10	0.0021	mg/L		12/19/22 09:51	12/20/22 11:56	1
Vanadium	ND		0.0050	0.00069	mg/L		12/19/22 09:51	12/20/22 11:56	1
Zinc	ND		0.040	0.0023	mg/L		12/19/22 09:51	12/20/22 11:56	1

Lab Sample ID: LCS 550-291029/2-A
Matrix: Water
Analysis Batch: 291197

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 291029

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Aluminum	20.0	19.8		mg/L		99	88 - 110
Barium	1.00	0.995		mg/L		100	90 - 110
Beryllium	1.00	1.02		mg/L		102	90 - 111
Boron	1.00	1.02		mg/L		102	88 - 110
Cadmium	1.00	0.992		mg/L		99	90 - 110
Calcium	21.0	21.3		mg/L		102	88 - 112
Chromium	1.00	0.983		mg/L		98	90 - 110
Cobalt	1.00	0.965		mg/L		97	90 - 112
Copper	1.00	1.01		mg/L		101	87 - 110
Iron	1.00	0.972		mg/L		97	85 - 112
Lead	1.00	1.01		mg/L		101	90 - 113
Magnesium	21.0	21.0		mg/L		100	89 - 110
Manganese	1.00	0.972		mg/L		97	90 - 110
Molybdenum	1.00	0.991		mg/L		99	89 - 110
Nickel	1.00	1.01		mg/L		101	88 - 114
Potassium	20.0	19.4		mg/L		97	87 - 114
Silicon	5.00	4.83		mg/L		97	88 - 110
Silver	0.0750	0.0724		mg/L		97	84 - 111
Sodium	20.0	19.6		mg/L		98	84 - 110
Strontium	1.00	0.957		mg/L		96	88 - 110
Tin	1.00	0.980		mg/L		98	90 - 112
Titanium	1.00	0.999		mg/L		100	90 - 110
Tungsten	1.00	0.976		mg/L		98	80 - 120
Vanadium	1.00	0.983		mg/L		98	90 - 110
Zinc	1.00	1.02		mg/L		102	90 - 114

Lab Sample ID: LCSD 550-291029/3-A
Matrix: Water
Analysis Batch: 291197

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 291029

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Aluminum	20.0	20.0		mg/L		100	88 - 110	1	20
Barium	1.00	1.01		mg/L		101	90 - 110	1	20
Beryllium	1.00	1.03		mg/L		103	90 - 111	1	20
Boron	1.00	1.03		mg/L		103	88 - 110	0	20
Cadmium	1.00	1.00		mg/L		100	90 - 110	1	20
Calcium	21.0	21.4		mg/L		102	88 - 112	0	20

Method: 6010B - Metals (ICP) (Continued)

Lab Sample ID: LCSD 550-291029/3-A
Client Sample ID: Lab Control Sample Dup
Matrix: Water
Prep Type: Total/NA
Analysis Batch: 291197
Prep Batch: 291029

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Chromium			1.00	0.983		mg/L		98	90 - 110	0	20
Cobalt			1.00	0.979		mg/L		98	90 - 112	1	20
Copper			1.00	1.01		mg/L		101	87 - 110	0	20
Iron			1.00	0.973		mg/L		97	85 - 112	0	20
Lead			1.00	1.01		mg/L		101	90 - 113	0	20
Magnesium			21.0	21.0		mg/L		100	89 - 110	0	20
Manganese			1.00	0.974		mg/L		97	90 - 110	0	20
Molybdenum			1.00	0.999		mg/L		100	89 - 110	1	20
Nickel			1.00	1.03		mg/L		103	88 - 114	2	20
Potassium			20.0	19.6		mg/L		98	87 - 114	1	20
Silicon			5.00	4.87		mg/L		97	88 - 110	1	20
Silver			0.0750	0.0731		mg/L		97	84 - 111	1	20
Sodium			20.0	19.8		mg/L		99	84 - 110	1	20
Strontium			1.00	0.995		mg/L		100	88 - 110	4	20
Tin			1.00	0.979		mg/L		98	90 - 112	0	20
Titanium			1.00	1.00		mg/L		100	90 - 110	1	20
Tungsten			1.00	0.984		mg/L		98	80 - 120	1	20
Vanadium			1.00	0.988		mg/L		99	90 - 110	1	20
Zinc			1.00	1.02		mg/L		102	90 - 114	0	20

Lab Sample ID: MB 550-291133/1-A
Client Sample ID: Method Blank
Matrix: Water
Prep Type: Total/NA
Analysis Batch: 291386
Prep Batch: 291133

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Manganese	ND		0.020	0.0083	mg/L		12/20/22 11:37	12/21/22 11:29	1

Lab Sample ID: LCS 550-291133/2-A
Client Sample ID: Lab Control Sample
Matrix: Water
Prep Type: Total/NA
Analysis Batch: 291386
Prep Batch: 291133

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Manganese			1.00	0.981		mg/L		98	90 - 110		

Lab Sample ID: LCSD 550-291133/3-A
Client Sample ID: Lab Control Sample Dup
Matrix: Water
Prep Type: Total/NA
Analysis Batch: 291386
Prep Batch: 291133

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Manganese			1.00	0.978		mg/L		98	90 - 110	0	20

Lab Sample ID: 550-195103-1 MS
Client Sample ID: SWFTS-MW-10A-EM40
Matrix: Water
Prep Type: Total/NA
Analysis Batch: 291386
Prep Batch: 291133

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits		
Manganese	1.7		1.00	2.55		mg/L		83	75 - 125		

Method: 6010B - Metals (ICP) (Continued)

Lab Sample ID: 550-195103-1 MSD
Matrix: Water
Analysis Batch: 291386

Client Sample ID: SWFTS-MW-10A-EM40
Prep Type: Total/NA
Prep Batch: 291133

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Manganese	1.7		1.00	2.60		mg/L		88	75 - 125	2	20

Lab Sample ID: 550-195103-2 MS
Matrix: Water
Analysis Batch: 291197

Client Sample ID: SWFTS-MW-10A-EM40
Prep Type: Dissolved
Prep Batch: 291029

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Aluminum	0.28		20.0	21.1		mg/L		104	75 - 125
Barium	0.016		1.00	1.05		mg/L		104	75 - 125
Beryllium	ND		1.00	1.06		mg/L		106	75 - 125
Boron	2.5	B	1.00	3.28		mg/L		82	75 - 125
Cadmium	ND		1.00	1.01		mg/L		101	75 - 125
Calcium	360		21.0	347	4	mg/L		-72	75 - 125
Chromium	ND		1.00	0.950		mg/L		95	75 - 125
Cobalt	0.0032	J	1.00	0.951		mg/L		95	75 - 125
Copper	ND		1.00	1.04		mg/L		104	75 - 125
Iron	0.027	J	1.00	1.03		mg/L		101	75 - 125
Lead	ND		1.00	0.850		mg/L		85	75 - 125
Magnesium	190		21.0	188	4	mg/L		14	75 - 125
Manganese	1.7		1.00	2.48		mg/L		79	75 - 125
Molybdenum	0.097		1.00	1.08		mg/L		98	75 - 125
Nickel	0.011		1.00	1.00		mg/L		99	75 - 125
Potassium	39		20.0	55.9		mg/L		83	75 - 125
Silicon	37		5.00	36.8	4	mg/L		-2	75 - 125
Silver	ND		0.0750	0.0742		mg/L		99	75 - 125
Strontium	9.6		1.00	9.56	4	mg/L		0.7	75 - 125
Tin	ND		1.00	0.969		mg/L		97	75 - 125
Titanium	ND		1.00	1.00		mg/L		100	75 - 125
Tungsten	0.0098	J	1.00	0.990		mg/L		98	75 - 125
Vanadium	0.043		1.00	1.03		mg/L		99	75 - 125
Zinc	ND		1.00	0.967		mg/L		97	75 - 125

Lab Sample ID: 550-195103-2 MS
Matrix: Water
Analysis Batch: 291388

Client Sample ID: SWFTS-MW-10A-EM40
Prep Type: Dissolved
Prep Batch: 291029

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Sodium	940		20.0	878	4	mg/L		-323	75 - 125

Lab Sample ID: 550-195103-2 MSD
Matrix: Water
Analysis Batch: 291197

Client Sample ID: SWFTS-MW-10A-EM40
Prep Type: Dissolved
Prep Batch: 291029

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Aluminum	0.28		20.0	21.6		mg/L		107	75 - 125	2	20
Barium	0.016		1.00	1.07		mg/L		106	75 - 125	2	20
Beryllium	ND		1.00	1.08		mg/L		108	75 - 125	2	20
Boron	2.5	B	1.00	3.28		mg/L		82	75 - 125	0	20
Cadmium	ND		1.00	1.01		mg/L		101	75 - 125	0	20

Method: 6010B - Metals (ICP) (Continued)

Lab Sample ID: 550-195103-2 MSD
Matrix: Water
Analysis Batch: 291197

Client Sample ID: SWFTS-MW-10A-EM40
Prep Type: Dissolved
Prep Batch: 291029

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Calcium	360		21.0	351	4	mg/L		-55	75 - 125	1	20
Chromium	ND		1.00	0.959		mg/L		96	75 - 125	1	20
Cobalt	0.0032	J	1.00	0.951		mg/L		95	75 - 125	0	20
Copper	ND		1.00	1.05		mg/L		105	75 - 125	1	20
Iron	0.027	J	1.00	1.05		mg/L		103	75 - 125	2	20
Lead	ND		1.00	0.857		mg/L		86	75 - 125	1	20
Magnesium	190		21.0	191	4	mg/L		26	75 - 125	1	20
Manganese	1.7		1.00	2.48		mg/L		80	75 - 125	0	20
Molybdenum	0.097		1.00	1.09		mg/L		99	75 - 125	1	20
Nickel	0.011		1.00	1.01		mg/L		100	75 - 125	1	20
Potassium	39		20.0	56.6		mg/L		87	75 - 125	1	20
Silicon	37		5.00	37.4	4	mg/L		9	75 - 125	2	20
Silver	ND		0.0750	0.0750		mg/L		100	75 - 125	1	20
Strontium	9.6		1.00	9.58	4	mg/L		3	75 - 125	0	20
Tin	ND		1.00	0.985		mg/L		99	75 - 125	2	20
Titanium	ND		1.00	1.01		mg/L		101	75 - 125	1	20
Tungsten	0.0098	J	1.00	1.00		mg/L		99	75 - 125	1	20
Vanadium	0.043		1.00	1.04		mg/L		99	75 - 125	1	20
Zinc	ND		1.00	0.972		mg/L		97	75 - 125	1	20

Lab Sample ID: 550-195103-2 MSD
Matrix: Water
Analysis Batch: 291388

Client Sample ID: SWFTS-MW-10A-EM40
Prep Type: Dissolved
Prep Batch: 291029

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Sodium	940		20.0	929	4	mg/L		-68	75 - 125	6	20

Method: 6020B - Metals (ICP/MS)

Lab Sample ID: MB 550-291028/1-A
Matrix: Water
Analysis Batch: 291385

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 291028

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	0.0430	J	1.0	0.043	ug/L		12/19/22 09:45	12/22/22 16:35	1
Thallium	ND		0.10	0.013	ug/L		12/19/22 09:45	12/22/22 16:35	1

Lab Sample ID: MB 550-291028/1-A
Matrix: Water
Analysis Batch: 291502

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 291028

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	0.445	J	1.0	0.25	ug/L		12/19/22 09:45	12/27/22 14:09	1
Selenium	ND		0.50	0.074	ug/L		12/19/22 09:45	12/27/22 14:09	1

Method: 6020B - Metals (ICP/MS) (Continued)

Lab Sample ID: LCS 550-291028/2-A
Matrix: Water
Analysis Batch: 291385

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 291028

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Antimony			100	101		ug/L		101	80 - 120		
Thallium			100	105		ug/L		105	80 - 120		

Lab Sample ID: LCS 550-291028/2-A
Matrix: Water
Analysis Batch: 291502

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 291028

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Arsenic			100	99.2		ug/L		99	80 - 120		
Selenium			100	100		ug/L		100	80 - 120		

Lab Sample ID: LCSD 550-291028/3-A
Matrix: Water
Analysis Batch: 291385

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 291028

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Antimony			100	104		ug/L		104	80 - 120	3	20
Thallium			100	106		ug/L		106	80 - 120	0	20

Lab Sample ID: LCSD 550-291028/3-A
Matrix: Water
Analysis Batch: 291502

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 291028

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Arsenic			100	112		ug/L		112	80 - 120	12	20
Selenium			100	111		ug/L		111	80 - 120	10	20

Lab Sample ID: 550-195103-2 MS
Matrix: Water
Analysis Batch: 291385

Client Sample ID: SWFTS-MW-10A-EM40
Prep Type: Dissolved
Prep Batch: 291028

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits		
Antimony	0.31	J B	100	107		ug/L		107	75 - 125		
Thallium	0.50		100	96.9		ug/L		96	75 - 125		

Lab Sample ID: 550-195103-2 MS
Matrix: Water
Analysis Batch: 291502

Client Sample ID: SWFTS-MW-10A-EM40
Prep Type: Dissolved
Prep Batch: 291028

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits		
Arsenic	72	B	100	177		ug/L		105	75 - 125		
Selenium	100		100	214		ug/L		113	75 - 125		

Lab Sample ID: 550-195103-2 MSD
Matrix: Water
Analysis Batch: 291385

Client Sample ID: SWFTS-MW-10A-EM40
Prep Type: Dissolved
Prep Batch: 291028

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Antimony	0.31	J B	100	108		ug/L		107	75 - 125	0	20
Thallium	0.50		100	96.7		ug/L		96	75 - 125	0	20

Method: 6020B - Metals (ICP/MS)

Lab Sample ID: 550-195103-2 MSD
Client Sample ID: SWFTS-MW-10A-EM40
Matrix: Water
Prep Type: Dissolved
Analysis Batch: 291502
Prep Batch: 291028

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Arsenic	72	B	100	179		ug/L		106	75 - 125	1	20
Selenium	100		100	217		ug/L		116	75 - 125	1	20

Method: SM 5310B - Organic Carbon, Total (TOC)

Lab Sample ID: MB 550-290973/63
Client Sample ID: Method Blank
Matrix: Water
Prep Type: Total/NA
Analysis Batch: 290973

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon	ND		0.50	0.26	mg/L			12/17/22 03:21	1

Lab Sample ID: LCS 550-290973/64
Client Sample ID: Lab Control Sample
Matrix: Water
Prep Type: Total/NA
Analysis Batch: 290973

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Total Organic Carbon	20.0	19.5		mg/L		97	90 - 110

Lab Sample ID: LCSD 550-290973/65
Client Sample ID: Lab Control Sample Dup
Matrix: Water
Prep Type: Total/NA
Analysis Batch: 290973

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Total Organic Carbon	20.0	19.5		mg/L		98	90 - 110	0	20

Lab Sample ID: 550-194997-C-7 MSD ^10
Client Sample ID: Matrix Spike Duplicate
Matrix: Water
Prep Type: Total/NA
Analysis Batch: 290973

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Total Organic Carbon	82	F1	200	250	F1	mg/L		84	90 - 110	2	20

Lab Sample ID: 550-194997-D-7 MS ^10
Client Sample ID: Matrix Spike
Matrix: Water
Prep Type: Total/NA
Analysis Batch: 290973

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Total Organic Carbon	82	F1	200	255	F1	mg/L		86	90 - 110

Lab Sample ID: MB 550-291306/5
Client Sample ID: Method Blank
Matrix: Water
Prep Type: Total/NA
Analysis Batch: 291306

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon	ND		0.50	0.26	mg/L			12/21/22 11:33	1

Method: SM 5310B - Organic Carbon, Total (TOC) (Continued)

Lab Sample ID: LCS 550-291306/6
Matrix: Water
Analysis Batch: 291306

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Total Organic Carbon	20.0	18.8		mg/L		94	90 - 110

Lab Sample ID: LCSD 550-291306/7
Matrix: Water
Analysis Batch: 291306

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Total Organic Carbon	20.0	19.0		mg/L		95	90 - 110	1	20

Lab Sample ID: 550-195103-1 MS
Matrix: Water
Analysis Batch: 291306

Client Sample ID: SWFTS-MW-10A-EM40
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Total Organic Carbon	2.0	F1	20.0	20.3		mg/L		91	90 - 110

Lab Sample ID: 550-195103-1 MSD
Matrix: Water
Analysis Batch: 291306

Client Sample ID: SWFTS-MW-10A-EM40
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Total Organic Carbon	2.0	F1	20.0	19.6	F1	mg/L		88	90 - 110	4	20

Lab Sample ID: MB 550-291458/5
Matrix: Water
Analysis Batch: 291458

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon	ND		0.50	0.26	mg/L			12/22/22 11:39	1

Lab Sample ID: LCS 550-291458/6
Matrix: Water
Analysis Batch: 291458

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Total Organic Carbon	20.0	20.4		mg/L		102	90 - 110

Lab Sample ID: LCSD 550-291458/7
Matrix: Water
Analysis Batch: 291458

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Total Organic Carbon	20.0	20.8		mg/L		104	90 - 110	2	20

Lab Sample ID: 550-195210-C-1 MSD
Matrix: Water
Analysis Batch: 291458

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Total Organic Carbon	5.1		20.0	23.6		mg/L		92	90 - 110	0	20

Client: Tetra Tech, Inc.
Job ID: 550-195103-1
Project/Site: Tetra Tech M11 SWF Treatability Study

Method: SM 5310B - Organic Carbon, Total (TOC)

Lab Sample ID: 550-195210-D-1 MS
Matrix: Water
Analysis Batch: 291458

Client Sample ID: Matrix Spike
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Total Organic Carbon	5.1		20.0	23.7		mg/L		93	90 - 110

GC VOA

Analysis Batch: 597521

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
550-195103-1	SWFTS-MW-10A-EM40	Total/NA	Water	RSK-175	
550-195103-3	SWFTS-MW-10C-EM40	Total/NA	Water	RSK-175	
550-195103-5	SWFTS-MW-11-EM40	Total/NA	Water	RSK-175	
550-195103-7	SWFTS-MW-11-EM40-FD	Total/NA	Water	RSK-175	
550-195103-9	SWFTS-MW-12-EM40	Total/NA	Water	RSK-175	
MB 280-597521/33	Method Blank	Total/NA	Water	RSK-175	
LCS 280-597521/31	Lab Control Sample	Total/NA	Water	RSK-175	
LCSD 280-597521/32	Lab Control Sample Dup	Total/NA	Water	RSK-175	
550-195103-1 MS	SWFTS-MW-10A-EM40	Total/NA	Water	RSK-175	
550-195103-1 MSD	SWFTS-MW-10A-EM40	Total/NA	Water	RSK-175	
550-195103-1 DU	SWFTS-MW-10A-EM40	Total/NA	Water	RSK-175	

HPLC/IC

Analysis Batch: 290947

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
550-195103-3	SWFTS-MW-10C-EM40	Total/NA	Water	314.0	
550-195103-5	SWFTS-MW-11-EM40	Total/NA	Water	314.0	
550-195103-7	SWFTS-MW-11-EM40-FD	Total/NA	Water	314.0	
MB 550-290947/1002	Method Blank	Total/NA	Water	314.0	
LCS 550-290947/4	Lab Control Sample	Total/NA	Water	314.0	
LCSD 550-290947/5	Lab Control Sample Dup	Total/NA	Water	314.0	
MRL 550-290947/1003	Lab Control Sample	Total/NA	Water	314.0	
550-195013-H-3 MS	Matrix Spike	Total/NA	Water	314.0	
550-195013-H-3 MSD	Matrix Spike Duplicate	Total/NA	Water	314.0	

Analysis Batch: 290964

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
550-195103-1	SWFTS-MW-10A-EM40	Total/NA	Water	300.0	
550-195103-1	SWFTS-MW-10A-EM40	Total/NA	Water	300.0	
550-195103-3	SWFTS-MW-10C-EM40	Total/NA	Water	300.0	
550-195103-5	SWFTS-MW-11-EM40	Total/NA	Water	300.0	
550-195103-7	SWFTS-MW-11-EM40-FD	Total/NA	Water	300.0	
550-195103-9	SWFTS-MW-12-EM40	Total/NA	Water	300.0	
MB 550-290964/2	Method Blank	Total/NA	Water	300.0	
LCS 550-290964/5	Lab Control Sample	Total/NA	Water	300.0	
LCSD 550-290964/7	Lab Control Sample Dup	Total/NA	Water	300.0	
550-195103-1 MS	SWFTS-MW-10A-EM40	Total/NA	Water	300.0	
550-195103-1 MS	SWFTS-MW-10A-EM40	Total/NA	Water	300.0	
550-195103-1 MSD	SWFTS-MW-10A-EM40	Total/NA	Water	300.0	
550-195103-1 MSD	SWFTS-MW-10A-EM40	Total/NA	Water	300.0	

Analysis Batch: 290966

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
550-195103-3	SWFTS-MW-10C-EM40	Total/NA	Water	300.0	
550-195103-5	SWFTS-MW-11-EM40	Total/NA	Water	300.0	
550-195103-7	SWFTS-MW-11-EM40-FD	Total/NA	Water	300.0	
550-195103-9	SWFTS-MW-12-EM40	Total/NA	Water	300.0	
MB 550-290966/2	Method Blank	Total/NA	Water	300.0	
LCS 550-290966/5	Lab Control Sample	Total/NA	Water	300.0	
LCSD 550-290966/6	Lab Control Sample Dup	Total/NA	Water	300.0	

HPLC/IC (Continued)

Analysis Batch: 290966 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
550-195033-A-1 MS	Matrix Spike	Total/NA	Water	300.0	
550-195033-A-1 MSD	Matrix Spike Duplicate	Total/NA	Water	300.0	

Analysis Batch: 291132

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
550-195103-1	SWFTS-MW-10A-EM40	Total/NA	Water	314.0	
550-195103-9	SWFTS-MW-12-EM40	Total/NA	Water	314.0	
MB 550-291132/1002	Method Blank	Total/NA	Water	314.0	
LCS 550-291132/4	Lab Control Sample	Total/NA	Water	314.0	
LCSD 550-291132/5	Lab Control Sample Dup	Total/NA	Water	314.0	
MRL 550-291132/1003	Lab Control Sample	Total/NA	Water	314.0	
550-195103-1 MS	SWFTS-MW-10A-EM40	Total/NA	Water	314.0	
550-195103-1 MSD	SWFTS-MW-10A-EM40	Total/NA	Water	314.0	

Analysis Batch: 291337

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
550-195103-1	SWFTS-MW-10A-EM40	Total/NA	Water	300.1B	
MB 550-291337/4	Method Blank	Total/NA	Water	300.1B	
LCS 550-291337/5	Lab Control Sample	Total/NA	Water	300.1B	
LCSD 550-291337/6	Lab Control Sample Dup	Total/NA	Water	300.1B	
MRL 550-291337/1002	Lab Control Sample	Total/NA	Water	300.1B	
550-195103-1 MS	SWFTS-MW-10A-EM40	Total/NA	Water	300.1B	
550-195103-1 MSD	SWFTS-MW-10A-EM40	Total/NA	Water	300.1B	

Analysis Batch: 291340

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
550-195103-3	SWFTS-MW-10C-EM40	Total/NA	Water	300.1B	
550-195103-5	SWFTS-MW-11-EM40	Total/NA	Water	300.1B	
550-195103-7	SWFTS-MW-11-EM40-FD	Total/NA	Water	300.1B	
550-195103-9	SWFTS-MW-12-EM40	Total/NA	Water	300.1B	
MB 550-291340/4	Method Blank	Total/NA	Water	300.1B	
LCS 550-291340/5	Lab Control Sample	Total/NA	Water	300.1B	
LCSD 550-291340/6	Lab Control Sample Dup	Total/NA	Water	300.1B	
MRL 550-291340/1002	Lab Control Sample	Total/NA	Water	300.1B	
550-195094-A-2 MS ^5	Matrix Spike	Total/NA	Water	300.1B	
550-195094-A-2 MSD ^5	Matrix Spike Duplicate	Total/NA	Water	300.1B	

Metals

Prep Batch: 291028

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
550-195103-2	SWFTS-MW-10A-EM40	Dissolved	Water	3005A	
550-195103-4	SWFTS-MW-10C-EM40	Dissolved	Water	3005A	
550-195103-6	SWFTS-MW-11-EM40	Dissolved	Water	3005A	
550-195103-8	SWFTS-MW-11-EM40-FD	Dissolved	Water	3005A	
550-195103-10	SWFTS-MW-12-EM40	Dissolved	Water	3005A	
MB 550-291028/1-A	Method Blank	Total/NA	Water	3005A	
LCS 550-291028/2-A	Lab Control Sample	Total/NA	Water	3005A	
LCSD 550-291028/3-A	Lab Control Sample Dup	Total/NA	Water	3005A	
550-195103-2 MS	SWFTS-MW-10A-EM40	Dissolved	Water	3005A	
550-195103-2 MSD	SWFTS-MW-10A-EM40	Dissolved	Water	3005A	

Metals

Prep Batch: 291029

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
550-195103-2	SWFTS-MW-10A-EM40	Dissolved	Water	3005A	
550-195103-4	SWFTS-MW-10C-EM40	Dissolved	Water	3005A	
550-195103-6	SWFTS-MW-11-EM40	Dissolved	Water	3005A	
550-195103-8	SWFTS-MW-11-EM40-FD	Dissolved	Water	3005A	
550-195103-10	SWFTS-MW-12-EM40	Dissolved	Water	3005A	
MB 550-291029/1-A	Method Blank	Total/NA	Water	3005A	
LCS 550-291029/2-A	Lab Control Sample	Total/NA	Water	3005A	
LCSD 550-291029/3-A	Lab Control Sample Dup	Total/NA	Water	3005A	
550-195103-2 MS	SWFTS-MW-10A-EM40	Dissolved	Water	3005A	
550-195103-2 MSD	SWFTS-MW-10A-EM40	Dissolved	Water	3005A	

Prep Batch: 291133

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
550-195103-1	SWFTS-MW-10A-EM40	Total/NA	Water	3005A	
550-195103-3	SWFTS-MW-10C-EM40	Total/NA	Water	3005A	
550-195103-5	SWFTS-MW-11-EM40	Total/NA	Water	3005A	
550-195103-7	SWFTS-MW-11-EM40-FD	Total/NA	Water	3005A	
550-195103-9	SWFTS-MW-12-EM40	Total/NA	Water	3005A	
MB 550-291133/1-A	Method Blank	Total/NA	Water	3005A	
LCS 550-291133/2-A	Lab Control Sample	Total/NA	Water	3005A	
LCSD 550-291133/3-A	Lab Control Sample Dup	Total/NA	Water	3005A	
550-195103-1 MS	SWFTS-MW-10A-EM40	Total/NA	Water	3005A	
550-195103-1 MSD	SWFTS-MW-10A-EM40	Total/NA	Water	3005A	

Analysis Batch: 291197

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
550-195103-2	SWFTS-MW-10A-EM40	Dissolved	Water	6010B	291029
550-195103-4	SWFTS-MW-10C-EM40	Dissolved	Water	6010B	291029
550-195103-6	SWFTS-MW-11-EM40	Dissolved	Water	6010B	291029
550-195103-8	SWFTS-MW-11-EM40-FD	Dissolved	Water	6010B	291029
550-195103-10	SWFTS-MW-12-EM40	Dissolved	Water	6010B	291029
MB 550-291029/1-A	Method Blank	Total/NA	Water	6010B	291029
LCS 550-291029/2-A	Lab Control Sample	Total/NA	Water	6010B	291029
LCSD 550-291029/3-A	Lab Control Sample Dup	Total/NA	Water	6010B	291029
550-195103-2 MS	SWFTS-MW-10A-EM40	Dissolved	Water	6010B	291029
550-195103-2 MSD	SWFTS-MW-10A-EM40	Dissolved	Water	6010B	291029

Analysis Batch: 291385

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
550-195103-2	SWFTS-MW-10A-EM40	Dissolved	Water	6020B	291028
550-195103-4	SWFTS-MW-10C-EM40	Dissolved	Water	6020B	291028
550-195103-6	SWFTS-MW-11-EM40	Dissolved	Water	6020B	291028
550-195103-8	SWFTS-MW-11-EM40-FD	Dissolved	Water	6020B	291028
550-195103-10	SWFTS-MW-12-EM40	Dissolved	Water	6020B	291028
MB 550-291028/1-A	Method Blank	Total/NA	Water	6020B	291028
LCS 550-291028/2-A	Lab Control Sample	Total/NA	Water	6020B	291028
LCSD 550-291028/3-A	Lab Control Sample Dup	Total/NA	Water	6020B	291028
550-195103-2 MS	SWFTS-MW-10A-EM40	Dissolved	Water	6020B	291028
550-195103-2 MSD	SWFTS-MW-10A-EM40	Dissolved	Water	6020B	291028

Metals

Analysis Batch: 291386

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
550-195103-1	SWFTS-MW-10A-EM40	Total/NA	Water	6010B	291133
550-195103-3	SWFTS-MW-10C-EM40	Total/NA	Water	6010B	291133
550-195103-5	SWFTS-MW-11-EM40	Total/NA	Water	6010B	291133
550-195103-7	SWFTS-MW-11-EM40-FD	Total/NA	Water	6010B	291133
550-195103-9	SWFTS-MW-12-EM40	Total/NA	Water	6010B	291133
MB 550-291133/1-A	Method Blank	Total/NA	Water	6010B	291133
LCS 550-291133/2-A	Lab Control Sample	Total/NA	Water	6010B	291133
LCSD 550-291133/3-A	Lab Control Sample Dup	Total/NA	Water	6010B	291133
550-195103-1 MS	SWFTS-MW-10A-EM40	Total/NA	Water	6010B	291133
550-195103-1 MSD	SWFTS-MW-10A-EM40	Total/NA	Water	6010B	291133

Analysis Batch: 291388

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
550-195103-2	SWFTS-MW-10A-EM40	Dissolved	Water	6010B	291029
550-195103-4	SWFTS-MW-10C-EM40	Dissolved	Water	6010B	291029
550-195103-2 MS	SWFTS-MW-10A-EM40	Dissolved	Water	6010B	291029
550-195103-2 MSD	SWFTS-MW-10A-EM40	Dissolved	Water	6010B	291029

Analysis Batch: 291502

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
550-195103-2	SWFTS-MW-10A-EM40	Dissolved	Water	6020B	291028
550-195103-4	SWFTS-MW-10C-EM40	Dissolved	Water	6020B	291028
550-195103-6	SWFTS-MW-11-EM40	Dissolved	Water	6020B	291028
550-195103-8	SWFTS-MW-11-EM40-FD	Dissolved	Water	6020B	291028
550-195103-10	SWFTS-MW-12-EM40	Dissolved	Water	6020B	291028
MB 550-291028/1-A	Method Blank	Total/NA	Water	6020B	291028
LCS 550-291028/2-A	Lab Control Sample	Total/NA	Water	6020B	291028
LCSD 550-291028/3-A	Lab Control Sample Dup	Total/NA	Water	6020B	291028
550-195103-2 MS	SWFTS-MW-10A-EM40	Dissolved	Water	6020B	291028
550-195103-2 MSD	SWFTS-MW-10A-EM40	Dissolved	Water	6020B	291028

General Chemistry

Analysis Batch: 290973

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
550-195103-5	SWFTS-MW-11-EM40	Total/NA	Water	SM 5310B	
MB 550-290973/63	Method Blank	Total/NA	Water	SM 5310B	
LCS 550-290973/64	Lab Control Sample	Total/NA	Water	SM 5310B	
LCSD 550-290973/65	Lab Control Sample Dup	Total/NA	Water	SM 5310B	
550-194997-C-7 MSD ^10	Matrix Spike Duplicate	Total/NA	Water	SM 5310B	
550-194997-D-7 MS ^10	Matrix Spike	Total/NA	Water	SM 5310B	

Analysis Batch: 291306

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
550-195103-1	SWFTS-MW-10A-EM40	Total/NA	Water	SM 5310B	
MB 550-291306/5	Method Blank	Total/NA	Water	SM 5310B	
LCS 550-291306/6	Lab Control Sample	Total/NA	Water	SM 5310B	
LCSD 550-291306/7	Lab Control Sample Dup	Total/NA	Water	SM 5310B	
550-195103-1 MS	SWFTS-MW-10A-EM40	Total/NA	Water	SM 5310B	
550-195103-1 MSD	SWFTS-MW-10A-EM40	Total/NA	Water	SM 5310B	

QC Association Summary

Client: Tetra Tech, Inc.
Job ID: 550-195103-1
Project/Site: Tetra Tech M11 SWF Treatability Study

General Chemistry

Analysis Batch: 291458

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
550-195103-3	SWFTS-MW-10C-EM40	Total/NA	Water	SM 5310B	
550-195103-7	SWFTS-MW-11-EM40-FD	Total/NA	Water	SM 5310B	
550-195103-9	SWFTS-MW-12-EM40	Total/NA	Water	SM 5310B	
MB 550-291458/5	Method Blank	Total/NA	Water	SM 5310B	
LCS 550-291458/6	Lab Control Sample	Total/NA	Water	SM 5310B	
LCSD 550-291458/7	Lab Control Sample Dup	Total/NA	Water	SM 5310B	
550-195210-C-1 MSD	Matrix Spike Duplicate	Total/NA	Water	SM 5310B	
550-195210-D-1 MS	Matrix Spike	Total/NA	Water	SM 5310B	

Lab Chronicle

Client: Tetra Tech, Inc.
Job ID: 550-195103-1
Project/Site: Tetra Tech M11 SWF Treatability Study

Client Sample ID: SWFTS-MW-10A-EM40
Lab Sample ID: 550-195103-1
Date Collected: 12/15/22 08:14
Matrix: Water
Date Received: 12/16/22 10:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	RSK-175		1	597521	JPH	EET DEN	12/21/22 23:48
Total/NA	Analysis	300.0		5	290964	AS1	EET PHX	12/16/22 13:35
Total/NA	Analysis	300.0		50	290964	AS1	EET PHX	12/16/22 14:31
Total/NA	Analysis	300.1B		100	291337	MEG	EET PHX	12/22/22 04:34
Total/NA	Analysis	314.0		1000	291132	RDC	EET PHX	12/20/22 10:57
Total/NA	Prep	3005A			291133	GLW	EET PHX	12/20/22 11:37
Total/NA	Analysis	6010B		1	291386	CHS	EET PHX	12/21/22 11:55
Total/NA	Analysis	SM 5310B		1	291306	RDC	EET PHX	12/21/22 12:11

Client Sample ID: SWFTS-MW-10A-EM40
Lab Sample ID: 550-195103-2
Date Collected: 12/15/22 08:14
Matrix: Water
Date Received: 12/16/22 10:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Dissolved	Prep	3005A			291029	SGO	EET PHX	12/19/22 09:51
Dissolved	Analysis	6010B		1	291197	CHS	EET PHX	12/20/22 12:13
Dissolved	Prep	3005A			291029	SGO	EET PHX	12/19/22 09:51
Dissolved	Analysis	6010B		4	291388	CHS	EET PHX	12/21/22 12:53
Dissolved	Prep	3005A			291028	SGO	EET PHX	12/19/22 09:45
Dissolved	Analysis	6020B		1	291385	ARE	EET PHX	12/22/22 16:48
Dissolved	Prep	3005A			291028	SGO	EET PHX	12/19/22 09:45
Dissolved	Analysis	6020B		1	291502	ARE	EET PHX	12/27/22 14:22

Client Sample ID: SWFTS-MW-10C-EM40
Lab Sample ID: 550-195103-3
Date Collected: 12/15/22 09:32
Matrix: Water
Date Received: 12/16/22 10:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	RSK-175		1	597521	JPH	EET DEN	12/22/22 00:42
Total/NA	Analysis	300.0		5	290964	AS1	EET PHX	12/16/22 17:35
Total/NA	Analysis	300.0		50	290966	AS1	EET PHX	12/16/22 19:06
Total/NA	Analysis	300.1B		1000	291340	MEG	EET PHX	12/22/22 20:46
Total/NA	Analysis	314.0		500	290947	RDC	EET PHX	12/16/22 13:52
Total/NA	Prep	3005A			291133	GLW	EET PHX	12/20/22 11:37
Total/NA	Analysis	6010B		1	291386	CHS	EET PHX	12/21/22 12:04
Total/NA	Analysis	SM 5310B		1	291458	RDC	EET PHX	12/22/22 13:11

Client Sample ID: SWFTS-MW-10C-EM40
Lab Sample ID: 550-195103-4
Date Collected: 12/15/22 09:32
Matrix: Water
Date Received: 12/16/22 10:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Dissolved	Prep	3005A			291029	SGO	EET PHX	12/19/22 09:51
Dissolved	Analysis	6010B		1	291197	CHS	EET PHX	12/20/22 12:16

Lab Chronicle

Client: Tetra Tech, Inc. Job ID: 550-195103-1
Project/Site: Tetra Tech M11 SWF Treatability Study

Client Sample ID: SWFTS-MW-10C-EM40 Lab Sample ID: 550-195103-4

Date Collected: 12/15/22 09:32 **Matrix: Water**
Date Received: 12/16/22 10:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Dissolved	Prep	3005A			291029	SGO	EET PHX	12/19/22 09:51
Dissolved	Analysis	6010B		4	291388	CHS	EET PHX	12/21/22 12:56
Dissolved	Prep	3005A			291028	SGO	EET PHX	12/19/22 09:45
Dissolved	Analysis	6020B		1	291385	ARE	EET PHX	12/22/22 16:50
Dissolved	Prep	3005A			291028	SGO	EET PHX	12/19/22 09:45
Dissolved	Analysis	6020B		1	291502	ARE	EET PHX	12/27/22 14:24

Client Sample ID: SWFTS-MW-11-EM40 Lab Sample ID: 550-195103-5

Date Collected: 12/15/22 10:30 **Matrix: Water**
Date Received: 12/16/22 10:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	RSK-175		1	597521	JPH	EET DEN	12/22/22 00:55
Total/NA	Analysis	300.0		5	290964	AS1	EET PHX	12/16/22 17:53
Total/NA	Analysis	300.0		50	290966	AS1	EET PHX	12/16/22 19:34
Total/NA	Analysis	300.1B		100	291340	MEG	EET PHX	12/22/22 21:16
Total/NA	Analysis	314.0		500	290947	RDC	EET PHX	12/16/22 14:15
Total/NA	Prep	3005A			291133	GLW	EET PHX	12/20/22 11:37
Total/NA	Analysis	6010B		1	291386	CHS	EET PHX	12/21/22 12:07
Total/NA	Analysis	SM 5310B		1	290973	RDC	EET PHX	12/17/22 06:36

Client Sample ID: SWFTS-MW-11-EM40 Lab Sample ID: 550-195103-6

Date Collected: 12/15/22 10:30 **Matrix: Water**
Date Received: 12/16/22 10:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Dissolved	Prep	3005A			291029	SGO	EET PHX	12/19/22 09:51
Dissolved	Analysis	6010B		1	291197	CHS	EET PHX	12/20/22 12:19
Dissolved	Prep	3005A			291028	SGO	EET PHX	12/19/22 09:45
Dissolved	Analysis	6020B		1	291385	ARE	EET PHX	12/22/22 16:52
Dissolved	Prep	3005A			291028	SGO	EET PHX	12/19/22 09:45
Dissolved	Analysis	6020B		1	291502	ARE	EET PHX	12/27/22 14:26

Client Sample ID: SWFTS-MW-11-EM40-FD Lab Sample ID: 550-195103-7

Date Collected: 12/15/22 10:30 **Matrix: Water**
Date Received: 12/16/22 10:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	RSK-175		1	597521	JPH	EET DEN	12/22/22 01:08
Total/NA	Analysis	300.0		5	290964	AS1	EET PHX	12/16/22 18:11
Total/NA	Analysis	300.0		50	290966	AS1	EET PHX	12/16/22 20:02
Total/NA	Analysis	300.1B		100	291340	MEG	EET PHX	12/22/22 21:45
Total/NA	Analysis	314.0		500	290947	RDC	EET PHX	12/16/22 14:37

Lab Chronicle

Client: Tetra Tech, Inc.
Job ID: 550-195103-1
Project/Site: Tetra Tech M11 SWF Treatability Study

Client Sample ID: SWFTS-MW-11-EM40-FD
Lab Sample ID: 550-195103-7
Date Collected: 12/15/22 10:30
Matrix: Water
Date Received: 12/16/22 10:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	3005A			291133	GLW	EET PHX	12/20/22 11:37
Total/NA	Analysis	6010B		1	291386	CHS	EET PHX	12/21/22 12:09
Total/NA	Analysis	SM 5310B		1	291458	RDC	EET PHX	12/22/22 13:26

Client Sample ID: SWFTS-MW-11-EM40-FD
Lab Sample ID: 550-195103-8
Date Collected: 12/15/22 10:30
Matrix: Water
Date Received: 12/16/22 10:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Dissolved	Prep	3005A			291029	SGO	EET PHX	12/19/22 09:51
Dissolved	Analysis	6010B		1	291197	CHS	EET PHX	12/20/22 12:22
Dissolved	Prep	3005A			291028	SGO	EET PHX	12/19/22 09:45
Dissolved	Analysis	6020B		1	291385	ARE	EET PHX	12/22/22 16:54
Dissolved	Prep	3005A			291028	SGO	EET PHX	12/19/22 09:45
Dissolved	Analysis	6020B		1	291502	ARE	EET PHX	12/27/22 14:28

Client Sample ID: SWFTS-MW-12-EM40
Lab Sample ID: 550-195103-9
Date Collected: 12/15/22 11:49
Matrix: Water
Date Received: 12/16/22 10:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	RSK-175		1	597521	JPH	EET DEN	12/22/22 01:22
Total/NA	Analysis	300.0		1	290964	AS1	EET PHX	12/16/22 18:30
Total/NA	Analysis	300.0		50	290966	AS1	EET PHX	12/16/22 20:30
Total/NA	Analysis	300.1B		50	291340	MEG	EET PHX	12/22/22 22:15
Total/NA	Analysis	314.0		100	291132	RDC	EET PHX	12/20/22 12:27
Total/NA	Prep	3005A			291133	GLW	EET PHX	12/20/22 11:37
Total/NA	Analysis	6010B		1	291386	CHS	EET PHX	12/21/22 12:12
Total/NA	Analysis	SM 5310B		1	291458	RDC	EET PHX	12/22/22 13:41

Client Sample ID: SWFTS-MW-12-EM40
Lab Sample ID: 550-195103-10
Date Collected: 12/15/22 11:49
Matrix: Water
Date Received: 12/16/22 10:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Dissolved	Prep	3005A			291029	SGO	EET PHX	12/19/22 09:51
Dissolved	Analysis	6010B		1	291197	CHS	EET PHX	12/20/22 12:24
Dissolved	Prep	3005A			291028	SGO	EET PHX	12/19/22 09:45
Dissolved	Analysis	6020B		1	291385	ARE	EET PHX	12/22/22 16:56
Dissolved	Prep	3005A			291028	SGO	EET PHX	12/19/22 09:45
Dissolved	Analysis	6020B		1	291502	ARE	EET PHX	12/27/22 14:30

Laboratory References:

EET DEN = Eurofins Denver, 4955 Yarrow Street, Arvada, CO 80002, TEL (303)736-0100

EET PHX = Eurofins Phoenix, 4625 East Cotton Center Boulevard, Suite #189, Phoenix, AZ 85040, TEL (602)437-3340

Accreditation/Certification Summary

Client: Tetra Tech, Inc.
Job ID: 550-195103-1
Project/Site: Tetra Tech M11 SWF Treatability Study

Laboratory: Eurofins Phoenix

All accreditations/certifications held by this laboratory are listed. Not all accreditations/certifications are applicable to this report.

Authority	Program	Identification Number	Expiration Date
Arizona	State	AZ0728	06-10-23
California	State	2941	03-09-23
Nevada	State	AZ1030	07-31-23
Oregon	NELAP	AZ100001	03-09-23
USDA	US Federal Programs	P330-19-00227	08-27-22 *

Laboratory: Eurofins Denver

All accreditations/certifications held by this laboratory are listed. Not all accreditations/certifications are applicable to this report.

Authority	Program	Identification Number	Expiration Date
A2LA	Dept. of Defense ELAP	2907.01	10-31-23
A2LA	ISO/IEC 17025	2907.01	10-31-23
Alabama	State Program	40730	09-30-12 *
Alaska (UST)	State	18-001	02-08-23
Arkansas DEQ	State	19-047-0	05-31-23
California	State	2513	01-08-23
Connecticut	State	PH-0686	09-30-22 *
Florida	NELAP	E87667-57	06-30-23
Georgia	State	4025-011	01-08-23
Illinois	NELAP	2000172019-1	04-30-23
Iowa	State	IA#370	12-01-24
Kansas	NELAP	E-10166	04-30-23
Kentucky (WW)	State	KY98047	12-31-22
Louisiana	NELAP	30785	06-30-14 *
Louisiana	NELAP	30785	06-30-23
Louisiana (All)	NELAP	30785	06-30-23
Minnesota	NELAP	1788752	12-31-22
Nevada	State	CO000262020-1	07-31-23
New Hampshire	NELAP	205319	04-28-23
New Jersey	NELAP	190002	06-30-23
New York	NELAP	59923	04-01-23
North Carolina (WW/SW)	State	358	12-31-22
North Dakota	State	R-034	01-08-23
Oklahoma	NELAP	8614	08-31-23
Oregon	NELAP	4025-011	01-09-23
Pennsylvania	NELAP	013	07-31-23
South Carolina	State	72002001	01-08-23
Texas	NELAP	TX104704183-08-TX	09-30-09 *
Texas	NELAP	T104704183-21-19	09-30-23
US Fish & Wildlife	US Federal Programs	058448	07-31-23
USDA	US Federal Programs	P330-20-00065	03-06-23
Utah	NELAP	QUAN5	06-30-13 *
Utah	NELAP	CO000262019-11	07-31-23
Virginia	NELAP	10490	06-14-23
Washington	State	C583-19	08-03-23
Wisconsin	State	999615430	08-31-23

* Accreditation/Certification renewal pending - accreditation/certification considered valid.

Method Summary

Client: Tetra Tech, Inc.
Job ID: 550-195103-1
Project/Site: Tetra Tech M11 SWF Treatability Study

Method	Method Description	Protocol	Laboratory
RSK-175	Dissolved Gases (GC)	RSK	EET DEN
300.0	Anions, Ion Chromatography	MCAWW	EET PHX
300.1B	Disinfection By-Products, (IC)	EPA	EET PHX
314.0	Perchlorate (IC)	EPA	EET PHX
6010B	Metals (ICP)	SW846	EET PHX
6020B	Metals (ICP/MS)	SW846	EET PHX
SM 5310B	Organic Carbon, Total (TOC)	SM	EET PHX
3005A	Preparation, Total Metals	SW846	EET PHX

Protocol References:

EPA = US Environmental Protection Agency

MCAWW = "Methods For Chemical Analysis Of Water And Wastes", EPA-600/4-79-020, March 1983 And Subsequent Revisions.

RSK = Sample Prep And Calculations For Dissolved Gas Analysis In Water Samples Using A GC Headspace Equilibration Technique, RSKSOP-175, Rev. 0, 8/11/94, USEPA Research Lab

SM = "Standard Methods For The Examination Of Water And Wastewater"

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

Laboratory References:

EET DEN = Eurofins Denver, 4955 Yarrow Street, Arvada, CO 80002, TEL (303)736-0100

EET PHX = Eurofins Phoenix, 4625 East Cotton Center Boulevard, Suite #189, Phoenix, AZ 85040, TEL (602)437-3340

TestAmerica
Las Vegas
219

195103

NERT-M11
Groundwater Sampling

12/30/2022

Tetra Tech
1093 Commerce Park Drive
Oak Ridge, TN37830
(865)483-9900

CHAIN-OF-CUSTODY

Laboratory Name:Eurofins TestAmerica, Phoenix (602) 437-3340 | Address: 4625 East Cotton Ctr Blvd Suite 189 Phoenix, AZ 85040 | Contact: Mary Charlson 602-659-7627 | Page 1 of 1

Project Name: Tetra Tech M11 SWF Treatability Study
Project No. M11-CWP-04
NERT - Seep Well Field Area Bioremediation Treatability Study

Sampler: Dylan Begley
Sampler Phone: 623-271-4886
Project Contact: **Maureen McMyler**
Site Telephone No.: (702) 966-8340

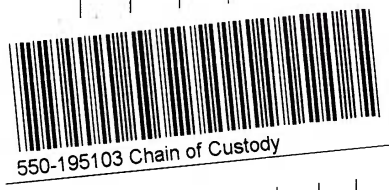
Report to: Maureen McMyler, 1093 Commerce Park Dr. (865)220-4762
Bill to: Sunshine Pryor, 350 Indiana St., Golden, CO 80401 (303) 217-5700
Project Manager/Supervisor: **Dana Grady**

Analysis and Method Requested

Remarks
Preservation Codes:
A- HCL
D-Nitric Acid
L-EDA
N-None
S-H2SO4
Other:

Item No.	Sample Number	Date	Time	G=Grab C=Comp	Matrix	Sample Description, Location	Number of Containers	Perchlorate E314.0	TOC SM5310B	Chlorate E300.1	Sulfate/Nitrate E300.0 SHORT HOLD NITRATE!	Dissolved metals	Total Mn	Methane	Notes
	Preservation Code:						-	N	A	L	N				
1	SWFTS-MW-10A-EM40	12/15/22	0814	G	W		12	✓	✓	✓	✓	✓	✓	✓	-1+2
2	SWFTS-MW-10AE-EM40-MS/MSD		0814												~~-3+4~~
3	SWFTS-MW-10C-EM40		0937												~~-5+6~~
4	SWFTS-MW-11-EM40		1030												~~-7+8~~
5	SWFTS-MW-11-EM40+FD		1030												~~-9+10~~
6	SWFTS-MW-12-EM40		1149												~~-11+12~~
7															
8															
9															
10															

-1+2 -3+4 -5+6 -7+8 -9+10 -11+12



Transfers Relinquished By (Signature)	Date/Time	Transfers Accepted By (Signature)	Date/Time	Special Instructions:
Dylan Begley	12/15/22	TAM TALVS	12/15/22 1400	
TAM TALVS	12/15/22 1600			FED EX 1.0°C IR CS
			FedEx Airbill No.:	FedEx Airbill No.:
	12/16/22 1000	Laboratory: EETA-PHX	Sampler's Signature: (REQUIRED)	Sampler's Signature: Dylan Begley

TAT ___Standard ___Rush Due: _____ Received Good Condition ____Y ____N ____Cold

TH240 15.4/13.7

Page 44 of 122

Eurofins Phoenix
4625 East Cotton Center Boulevard Suite #189
Phoenix, AZ 85040
Phone. 602-437-3340

Chain of Custody Record

eurofins

Client Information (Sub Contract Lab)	Sampler	Lab PM.	Carrier Tracking No(s).	COC No:
		Sester, Rachel E		550-35656.1
Client Contact	Phone	E-Mail:	State of Origin	Page:
Shipping/Receiving		Rachel.Sester@et.eurofinsus.com	Nevada	Page 1 of 1
Company.		Accreditations Required (See note)		Job #:
TestAmerica Laboratories, Inc		State Program - Nevada		550-195103-1
Address	Due Date Requested:	Analysis Requested		Preservation Codes:
4955 Yarrow Street, ,	1/2/2023			A - HCL, B - NaOH, C - Zn Acetate, D - Nitric Acid, E - NaHSO4, F - MeOH, G - Amchlor, H - Ascorbic Acid, I - Ice, J - DI Water, K - EDTA, L - EDA, M - Hexane, N - None, O - AsNaO2, P - Na2O4S, Q - Na2SO3, R - Na2S2O3, S - H2SO4, T - TSP Dodecahydrate, U - Acetone, V - MCAA, W - pH 4-5, Y - Trizma, Z - other (specify)
City	TAT Requested (days):			
Arvada				
State, Zip.				
CO, 80002				
Phone	PO #:			Other:
303-736-0100(Tel) 303-431-7171(Fax)				
Email:	WO #:			
Project Name:	Project #:			
Tetra Tech M11 SWF Treatability Study	55015433			
Site:	SSOW#:			

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	RSK_175/ (MOD) Local Method	Total Number of containers	Special Instructions/Note:
			Preservation Code:						
SWFTS-MW-10A-EM40 (550-195103-1)	12/15/22	08:14 Pacific		Water			X	2	
SWFTS-MW-10A-EM40 (550-195103-1MS)	12/15/22	08:14 Pacific	MS	Water			X		
SWFTS-MW-10A-EM40 (550-195103-1MSD)	12/15/22	08:14 Pacific	MSD	Water			X		
SWFTS-MW-10C-EM40 (550-195103-3)	12/15/22	09:32 Pacific		Water			X		
SWFTS-MW-11-EM40 (550-195103-5)	12/15/22	10:30 Pacific		Water			X		
SWFTS-MW-11-EM40-FD (550-195103-7)	12/15/22	10:30 Pacific		Water			X		
SWFTS-MW-12-EM40 (550-195103-9)	12/15/22	11:49 Pacific		Water			X	3	

550-195103 Chain of Custody

Note: Since laboratory accreditations are subject to change, Eurofins Environment Testing Southwest, LLC places the ownership of method, analyte & accreditation compliance upon our subcontract laboratories This sample shipment is forwarded under chain-of-custody. If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed, the samples must be shipped back to the Eurofins Environment Testing Southwest, LLC laboratory or other instructions will be provided. Any changes to accreditation status should be brought to Eurofins Environment Testing Southwest, LLC attention immediately. If all requested accreditations are current to date, return the signed Chain of Custody attesting to said compliance to Eurofins Environment Testing Southwest, LLC.

Possible Hazard Identification	***Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)***
Unconfirmed	☐ *Return To Client* ☐ *Disposal By Lab* ☐ *Archive For* _____ *Months*
Deliverable Requested: I, II, III, IV, Other (specify) Primary Deliverable Rank: 2	Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:

Relinquished by	Date/Time:	Company	Received by:	Date/Time:	Company
[signature]	12-19-22	14:40 EETSW	Fedex		
Relinquished by	Date/Time:	Company	Received by:	Date/Time:	Company
			[signature]	12-20-22 0900	ETA DEN
Relinquished by	Date/Time:	Company	Received by:	Date/Time:	Company

Custody Seals Intact: Δ Yes Δ No	Custody Seal No.:	Cooler Temperature(s) °C and Other Remarks:
	1919621	3.7°C IR12 CF 2.0

Ver: 06/08/2021

Login Sample Receipt Checklist

Client: Tetra Tech, Inc.

Job Number: 550-195103-1

Login Number: 195103
List Number: 1
Creator: Maycock, Lisa

List Source: Eurofins Phoenix

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	True	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	False	Check done at department level as required.

Login Sample Receipt Checklist

Client: Tetra Tech, Inc.

Job Number: 550-195103-1

Login Number: 195103
List Number: 2
Creator: Held, Wesley

List Source: Eurofins Denver
List Creation: 12/20/22 11:38 AM

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	N/A	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	N/A	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

ANALYTICAL REPORT

PREPARED FOR

Attn: Dana Grady
Tetra Tech, Inc.
1093 Commerce Park Drive
Suite 100
Oak Ridge, Tennessee 37830

Generated 12/30/2022 2:09:57 PM

JOB DESCRIPTION

Tetra Tech M11 SWF Treatability Study

JOB NUMBER

550-195106-1

Eurofins Phoenix
4625 East Cotton Center Boulevard
Suite #189
Phoenix AZ 85040

See page two for job notes and contact information.

my EOL

Job Notes

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The data in the report relate to the field sample(s) as received by the laboratory and associated QC. All results have been reviewed and have been found to be compliant with laboratory and accreditation requirements, with the exception of the noted deviation(s). For questions, please contact the Project Manager.

The test results in this report relate only to the samples as received by the laboratory and will meet all requirements of the methodology, with any exceptions noted. This report shall not be reproduced except in full, without the express written approval of the laboratory. All questions should be directed to the Eurofins Environment Testing Southwest, LLC Project Manager.

Authorization

Generated
12/30/2022 2:09:57 PM

Authorized for release by
Rachel Sester, Project Manager I
Rachel.Sester@et.eurofinsus.com
(602)659-7615

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Qualifiers

GC VOA

Qualifier	Qualifier Description
4	MS, MSD: The analyte present in the original sample is greater than 4 times the matrix spike concentration; therefore, control limits are not applicable.
F2	MS/MSD RPD exceeds control limits

HPLC/IC

Qualifier	Qualifier Description
D	Sample results are obtained from a dilution; the surrogate or matrix spike recoveries reported are calculated from diluted samples.
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

Metals

Qualifier	Qualifier Description
4	MS, MSD: The analyte present in the original sample is greater than 4 times the matrix spike concentration; therefore, control limits are not applicable.
B	Compound was found in the blank and sample.
cn	Refer to Case Narrative for further detail
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

General Chemistry

Qualifier	Qualifier Description
F1	MS and/or MSD recovery exceeds control limits.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CFU	Colony Forming Unit
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MCL	EPA recommended "Maximum Contaminant Level"
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
MPN	Most Probable Number
MQL	Method Quantitation Limit
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
NEG	Negative / Absent
POS	Positive / Present
PQL	Practical Quantitation Limit
PRES	Presumptive
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)

Glossary (Continued)

Abbreviation	These commonly used abbreviations may or may not be present in this report.
TNTC	Too Numerous To Count

Job ID: 550-195106-1

Laboratory: Eurofins Phoenix

Narrative

Job Narrative
550-195106-1

Receipt
The samples were received on 12/16/2022 10:00 AM. Unless otherwise noted below, the samples arrived in good condition, and, where required, properly preserved and on ice. The temperature of the cooler at receipt time was 1.1°C

GC VOA
Method RSK_175: The method requirement for no headspace was not met. The following volatile sample was analyzed with headspace in the sample container: SWFTS-MW14-EM40 (550-195106-3).

No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

HPLC/IC
Method 300.1B_28D: The following sample for Chlorate was diluted by method EPA 300.1B due to an abundance of non-target analytes present within the sample matrix: SWFTS-MW21-EM40 (550-195106-5). In the diluted sample this analyte was not detected or was beneath the lowest calibration limit. As such, an elevated reporting limit (RL) has been provided.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

Metals
Method 6010B: The spiking solution used during the extraction process for the laboratory control sample/ laboratory control sample duplicate (LCS/LCSD) and matrix spike/matrix spike duplicate (MS/MSD) and post digestion spike (PDS) associated with preparation batch 550-291029 did not contain Phosphorus; therefore, percent recoveries are unavailable. The affected samples could not be re-prepared and / or re-analyzed with a spike containing these analytes. The instrument QC was within acceptance criteria and may be used to evaluate these analytes for this method. The results have been reported with cn qualifiers. Affected samples: SWFTS-MW15-EM40 (550-195106-2), SWFTS-MW14-EM40 (550-195106-4), SWFTS-MW21-EM40 (550-195106-6), SWFTS-MW13-EM40 (550-195106-8), (LCS 550-291029/2-A), (LCSD 550-291029/3-A), (550-195103-B-2-H), (550-195103-B-2-E MS), (550-195103-B-2-F MSD) and (550-195103-B-2-G PDS).

Method 6010B: The following sample was diluted to bring the concentration of target analytes within the calibration range: SWFTS-MW14-EM40 (550-195106-4). Elevated reporting limits (RLs) are provided.

Method 6010B: The spiking solution used during the extraction process for the laboratory control sample/ laboratory control sample duplicate (LCS/LCSD) and matrix spike/matrix spike duplicate (MS/MSD) and post digestion spike (PDS) associated with preparation batch 550-291029 did not contain Phosphorus; therefore, percent recoveries are unavailable. The affected samples could not be re-prepared and / or re-analyzed with a spike containing these analytes. The instrument QC was within acceptance criteria and may be used to evaluate these analytes for this method. The results have been reported with cn qualifiers. Affected samples: SWFTS-MW15-EM40 (550-195106-2), SWFTS-MW14-EM40 (550-195106-4), SWFTS-MW21-EM40 (550-195106-6), SWFTS-MW13-EM40 (550-195106-8), (LCS 550-291029/2-A), (LCSD 550-291029/3-A), (550-195103-B-2-H), (550-195103-B-2-E MS), (550-195103-B-2-F MSD) and (550-195103-B-2-G PDS).

Method 6010B: The following sample was diluted to bring the concentration of target analytes within the calibration range: SWFTS-MW14-EM40 (550-195106-4). Elevated reporting limits (RLs) are provided.

Method 6020B: The method blank for preparation batch 550-291028 and analytical batch 550-291385 contained Antimony above the method detection limit. This target analyte concentration was less than the reporting limit (RL); therefore, re-extraction and/or re-analysis of samples was not performed.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

General Chemistry
No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

Job ID: 550-195106-1 (Continued)

Laboratory: Eurofins Phoenix (Continued)

Sample Summary

Client: Tetra Tech, Inc.
Job ID: 550-195106-1
Project/Site: Tetra Tech M11 SWF Treatability Study

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
550-195106-1	SWFTS-MW15-EM40	Water	12/15/22 08:20	12/16/22 10:00
550-195106-2	SWFTS-MW15-EM40	Water	12/15/22 08:20	12/16/22 10:00
550-195106-3	SWFTS-MW14-EM40	Water	12/15/22 10:25	12/16/22 10:00
550-195106-4	SWFTS-MW14-EM40	Water	12/15/22 10:25	12/16/22 10:00
550-195106-5	SWFTS-MW21-EM40	Water	12/15/22 11:35	12/16/22 10:00
550-195106-6	SWFTS-MW21-EM40	Water	12/15/22 11:35	12/16/22 10:00
550-195106-7	SWFTS-MW13-EM40	Water	12/15/22 13:00	12/16/22 10:00
550-195106-8	SWFTS-MW13-EM40	Water	12/15/22 13:00	12/16/22 10:00

Detection Summary

Client: Tetra Tech, Inc.
Job ID: 550-195106-1
Project/Site: Tetra Tech M11 SWF Treatability Study

Client Sample ID: SWFTS-MW15-EM40 — Lab Sample ID: 550-195106-1

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Methane	5.3		5.0	0.63	ug/L	1		RSK-175	Total/NA
Nitrate as N	5.9		0.050	0.014	mg/L	1		300.0	Total/NA
Sulfate	1200		100	21	mg/L	50		300.0	Total/NA
Chlorate	2600		2000	490	ug/L	100		300.1B	Total/NA
Perchlorate	2700		500	160	ug/L	500		314.0	Total/NA
Manganese	2.2		0.020	0.0083	mg/L	1		6010B	Total/NA
Total Organic Carbon	1.9		0.50	0.26	mg/L	1		SM 5310B	Total/NA

Client Sample ID: SWFTS-MW15-EM40 — Lab Sample ID: 550-195106-2

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Aluminum	0.18	J	0.20	0.080	mg/L	1		6010B	Dissolved
Barium	0.051		0.0050	0.00057	mg/L	1		6010B	Dissolved
Boron	1.8	B	0.050	0.0024	mg/L	1		6010B	Dissolved
Calcium	240		0.40	0.015	mg/L	1		6010B	Dissolved
Cobalt	0.0059		0.0050	0.00054	mg/L	1		6010B	Dissolved
Iron	0.030	J	0.40	0.019	mg/L	1		6010B	Dissolved
Magnesium	120		0.40	0.054	mg/L	1		6010B	Dissolved
Manganese	2.1		0.020	0.0083	mg/L	1		6010B	Dissolved
Molybdenum	0.081		0.010	0.00052	mg/L	1		6010B	Dissolved
Nickel	0.0052		0.0050	0.0028	mg/L	1		6010B	Dissolved
Potassium	39		1.0	0.081	mg/L	1		6010B	Dissolved
Silicon	34		0.10	0.016	mg/L	1		6010B	Dissolved
Sodium	570		0.40	0.039	mg/L	1		6010B	Dissolved
Strontium	6.1		0.010	0.00032	mg/L	1		6010B	Dissolved
Vanadium	0.018		0.0050	0.00069	mg/L	1		6010B	Dissolved
Antimony	0.21	J B	1.0	0.043	ug/L	1		6020B	Dissolved
Arsenic	22	B	1.0	0.25	ug/L	1		6020B	Dissolved
Selenium	16		0.50	0.074	ug/L	1		6020B	Dissolved
Thallium	0.046	J	0.10	0.013	ug/L	1		6020B	Dissolved

Client Sample ID: SWFTS-MW14-EM40 — Lab Sample ID: 550-195106-3

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Methane	95		5.0	0.63	ug/L	1		RSK-175	Total/NA
Nitrate as N	6.3		0.050	0.014	mg/L	1		300.0	Total/NA
Sulfate	1900		100	21	mg/L	50		300.0	Total/NA
Chlorate	7800		1000	240	ug/L	50		300.1B	Total/NA
Perchlorate	8200		500	160	ug/L	500		314.0	Total/NA
Manganese	2.5		0.020	0.0083	mg/L	1		6010B	Total/NA
Total Organic Carbon	2.7		0.50	0.26	mg/L	1		SM 5310B	Total/NA

Client Sample ID: SWFTS-MW14-EM40 — Lab Sample ID: 550-195106-4

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Aluminum	0.22		0.20	0.080	mg/L	1		6010B	Dissolved
Barium	0.037		0.0050	0.00057	mg/L	1		6010B	Dissolved
Boron	2.2	B	0.050	0.0024	mg/L	1		6010B	Dissolved
Calcium	370		0.40	0.015	mg/L	1		6010B	Dissolved
Iron	0.036	J	0.40	0.019	mg/L	1		6010B	Dissolved
Magnesium	190		0.40	0.054	mg/L	1		6010B	Dissolved
Manganese	2.4		0.020	0.0083	mg/L	1		6010B	Dissolved

This Detection Summary does not include radiochemical test results.

Eurofins Phoenix

Client Sample ID: SWFTS-MW14-EM40 (Continued) Lab Sample ID: 550-195106-4

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Molybdenum	0.095		0.010	0.00052	mg/L	1		6010B	Dissolved
Potassium	39		1.0	0.081	mg/L	1		6010B	Dissolved
Silicon	29		0.10	0.016	mg/L	1		6010B	Dissolved
Sodium	840		1.6	0.16	mg/L	4		6010B	Dissolved
Strontium	9.6		0.010	0.00032	mg/L	1		6010B	Dissolved
Tungsten	0.0052	J	0.10	0.0021	mg/L	1		6010B	Dissolved
Vanadium	0.013		0.0050	0.00069	mg/L	1		6010B	Dissolved
Antimony	0.32	J B	1.0	0.043	ug/L	1		6020B	Dissolved
Arsenic	7.7	B	1.0	0.25	ug/L	1		6020B	Dissolved
Selenium	52		0.50	0.074	ug/L	1		6020B	Dissolved

Client Sample ID: SWFTS-MW21-EM40 Lab Sample ID: 550-195106-5

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Methane	170		5.0	0.63	ug/L	1		RSK-175	Total/NA
Nitrate as N	3.1		0.050	0.014	mg/L	1		300.0	Total/NA
Sulfate	2400		100	21	mg/L	50		300.0	Total/NA
Perchlorate	1800		100	31	ug/L	100		314.0	Total/NA
Manganese	3.6		0.020	0.0083	mg/L	1		6010B	Total/NA
Total Organic Carbon	1.9		0.50	0.26	mg/L	1		SM 5310B	Total/NA

Client Sample ID: SWFTS-MW21-EM40 Lab Sample ID: 550-195106-6

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Aluminum	0.31		0.20	0.080	mg/L	1		6010B	Dissolved
Barium	0.028		0.0050	0.00057	mg/L	1		6010B	Dissolved
Boron	3.0	B	0.050	0.0024	mg/L	1		6010B	Dissolved
Calcium	490		0.40	0.015	mg/L	1		6010B	Dissolved
Cobalt	0.0026	J	0.0050	0.00054	mg/L	1		6010B	Dissolved
Iron	0.036	J	0.40	0.019	mg/L	1		6010B	Dissolved
Magnesium	250		0.40	0.054	mg/L	1		6010B	Dissolved
Manganese	3.9		0.020	0.0083	mg/L	1		6010B	Dissolved
Molybdenum	0.27		0.010	0.00052	mg/L	1		6010B	Dissolved
Potassium	52		1.0	0.081	mg/L	1		6010B	Dissolved
Silicon	33		0.10	0.016	mg/L	1		6010B	Dissolved
Sodium	740		0.40	0.039	mg/L	1		6010B	Dissolved
Strontium	11		0.010	0.00032	mg/L	1		6010B	Dissolved
Tungsten	0.0039	J	0.10	0.0021	mg/L	1		6010B	Dissolved
Vanadium	0.023		0.0050	0.00069	mg/L	1		6010B	Dissolved
Antimony	0.14	J B	1.0	0.043	ug/L	1		6020B	Dissolved
Arsenic	45	B	1.0	0.25	ug/L	1		6020B	Dissolved
Selenium	12		0.50	0.074	ug/L	1		6020B	Dissolved
Thallium	0.097	J	0.10	0.013	ug/L	1		6020B	Dissolved

Client Sample ID: SWFTS-MW13-EM40 Lab Sample ID: 550-195106-7

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Nitrate as N	17		0.25	0.070	mg/L	5		300.0	Total/NA
Sulfate	2400		100	21	mg/L	50		300.0	Total/NA
Chlorate	39000		4000	980	ug/L	200		300.1B	Total/NA
Perchlorate	3700		200	63	ug/L	200		314.0	Total/NA
Total Organic Carbon	1.0		0.50	0.26	mg/L	1		SM 5310B	Total/NA

This Detection Summary does not include radiochemical test results.

Detection Summary

Client: Tetra Tech, Inc.
Job ID: 550-195106-1
Project/Site: Tetra Tech M11 SWF Treatability Study

Client Sample ID: SWFTS-MW13-EM40
Lab Sample ID: 550-195106-8

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Aluminum	0.31		0.20	0.080	mg/L	1		6010B	Dissolved
Barium	0.020		0.0050	0.00057	mg/L	1		6010B	Dissolved
Boron	2.4	B	0.050	0.0024	mg/L	1		6010B	Dissolved
Calcium	580		0.40	0.015	mg/L	1		6010B	Dissolved
Chromium	0.039		0.0050	0.0011	mg/L	1		6010B	Dissolved
Iron	0.034	J	0.40	0.019	mg/L	1		6010B	Dissolved
Magnesium	230		0.40	0.054	mg/L	1		6010B	Dissolved
Molybdenum	0.30		0.010	0.00052	mg/L	1		6010B	Dissolved
Potassium	65		1.0	0.081	mg/L	1		6010B	Dissolved
Silicon	36		0.10	0.016	mg/L	1		6010B	Dissolved
Sodium	670		0.40	0.039	mg/L	1		6010B	Dissolved
Strontium	13		0.010	0.00032	mg/L	1		6010B	Dissolved
Tungsten	0.0035	J	0.10	0.0021	mg/L	1		6010B	Dissolved
Vanadium	0.025		0.0050	0.00069	mg/L	1		6010B	Dissolved
Antimony	0.11	J B	1.0	0.043	ug/L	1		6020B	Dissolved
Arsenic	49	B	1.0	0.25	ug/L	1		6020B	Dissolved
Selenium	47		0.50	0.074	ug/L	1		6020B	Dissolved
Thallium	0.077	J	0.10	0.013	ug/L	1		6020B	Dissolved

This Detection Summary does not include radiochemical test results.

Client Sample ID: SWFTS-MW15-EM40 — Lab Sample ID: 550-195106-1

Date Collected: 12/15/22 08:20 — **Matrix: Water**
Date Received: 12/16/22 10:00

Method: RSK-175 - Dissolved Gases (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Methane	**5.3**		5.0	0.63	ug/L			12/23/22 21:42	1

Method: MCAWW 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Nitrate as N	**5.9**		0.050	0.014	mg/L			12/16/22 18:48	1
Sulfate	**1200**		100	21	mg/L			12/16/22 20:58	50

Method: EPA 300.1B - Disinfection By-Products, (IC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chlorate	**2600**		2000	490	ug/L			12/22/22 08:29	100

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Dichloroacetic acid(Surr)	*110*		*90 - 115*		*12/22/22 08:29*	*100*

Method: EPA 314.0 - Perchlorate (IC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perchlorate	**2700**		500	160	ug/L			12/16/22 15:22	500

Method: SW846 6010B - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Manganese	**2.2**		0.020	0.0083	mg/L		12/20/22 11:37	12/21/22 12:21	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon (SM 5310B)	**1.9**		0.50	0.26	mg/L			12/21/22 14:53	1

Client Sample ID: SWFTS-MW15-EM40 — Lab Sample ID: 550-195106-2

Date Collected: 12/15/22 08:20 — **Matrix: Water**
Date Received: 12/16/22 10:00

Method: SW846 6010B - Metals (ICP) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	**0.18**	**J**	0.20	0.080	mg/L		12/19/22 09:51	12/20/22 12:27	1
Barium	**0.051**		0.0050	0.00057	mg/L		12/19/22 09:51	12/20/22 12:27	1
Beryllium	ND		0.0010	0.00019	mg/L		12/19/22 09:51	12/20/22 12:27	1
Boron	**1.8**	**B**	0.050	0.0024	mg/L		12/19/22 09:51	12/20/22 12:27	1
Cadmium	ND		0.0010	0.00072	mg/L		12/19/22 09:51	12/20/22 12:27	1
Calcium	**240**		0.40	0.015	mg/L		12/19/22 09:51	12/20/22 12:27	1
Chromium	ND		0.0050	0.0011	mg/L		12/19/22 09:51	12/20/22 12:27	1
Cobalt	**0.0059**		0.0050	0.00054	mg/L		12/19/22 09:51	12/20/22 12:27	1
Copper	ND		0.0050	0.0012	mg/L		12/19/22 09:51	12/20/22 12:27	1
Iron	**0.030**	**J**	0.40	0.019	mg/L		12/19/22 09:51	12/20/22 12:27	1
Lead	ND		0.010	0.0025	mg/L		12/19/22 09:51	12/20/22 12:27	1
Magnesium	**120**		0.40	0.054	mg/L		12/19/22 09:51	12/20/22 12:27	1
Manganese	**2.1**		0.020	0.0083	mg/L		12/19/22 09:51	12/20/22 12:27	1
Molybdenum	**0.081**		0.010	0.00052	mg/L		12/19/22 09:51	12/20/22 12:27	1
Nickel	**0.0052**		0.0050	0.0028	mg/L		12/19/22 09:51	12/20/22 12:27	1
Phosphorus	ND	cn	0.40	0.011	mg/L		12/19/22 09:51	12/20/22 12:27	1
Potassium	**39**		1.0	0.081	mg/L		12/19/22 09:51	12/20/22 12:27	1
Silicon	**34**		0.10	0.016	mg/L		12/19/22 09:51	12/20/22 12:27	1
Silver	ND		0.0080	0.00049	mg/L		12/19/22 09:51	12/20/22 12:27	1

Client Sample ID: SWFTS-MW15-EM40 — Lab Sample ID: 550-195106-2

Date Collected: 12/15/22 08:20 — **Matrix: Water**
Date Received: 12/16/22 10:00

Method: SW846 6010B - Metals (ICP) - Dissolved (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sodium	570		0.40	0.039	mg/L		12/19/22 09:51	12/20/22 12:27	1
Strontium	6.1		0.010	0.00032	mg/L		12/19/22 09:51	12/20/22 12:27	1
Tin	ND		0.010	0.0034	mg/L		12/19/22 09:51	12/20/22 12:27	1
Titanium	ND		0.0050	0.00028	mg/L		12/19/22 09:51	12/20/22 12:27	1
Tungsten	ND		0.10	0.0021	mg/L		12/19/22 09:51	12/20/22 12:27	1
Vanadium	0.018		0.0050	0.00069	mg/L		12/19/22 09:51	12/20/22 12:27	1
Zinc	ND		0.040	0.0023	mg/L		12/19/22 09:51	12/20/22 12:27	1

Method: SW846 6020B - Metals (ICP/MS) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	0.21	J B	1.0	0.043	ug/L		12/19/22 09:45	12/22/22 16:58	1
Arsenic	22	B	1.0	0.25	ug/L		12/19/22 09:45	12/27/22 14:33	1
Selenium	16		0.50	0.074	ug/L		12/19/22 09:45	12/27/22 14:33	1
Thallium	0.046	J	0.10	0.013	ug/L		12/19/22 09:45	12/22/22 16:58	1

Client Sample ID: SWFTS-MW14-EM40 — Lab Sample ID: 550-195106-3

Date Collected: 12/15/22 10:25 — **Matrix: Water**
Date Received: 12/16/22 10:00

Method: RSK-175 - Dissolved Gases (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Methane	95		5.0	0.63	ug/L			12/23/22 22:09	1

Method: MCAWW 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Nitrate as N	6.3		0.050	0.014	mg/L			12/16/22 19:07	1
Sulfate	1900		100	21	mg/L			12/16/22 21:26	50

Method: EPA 300.1B - Disinfection By-Products, (IC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chlorate	7800		1000	240	ug/L			12/22/22 22:44	50

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Dichloroacetic acid(Surr)	*109*		*90 - 115*		*12/22/22 22:44*	*50*

Method: EPA 314.0 - Perchlorate (IC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perchlorate	8200		500	160	ug/L			12/20/22 12:49	500

Method: SW846 6010B - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Manganese	2.5		0.020	0.0083	mg/L		12/20/22 11:37	12/21/22 12:24	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon (SM 5310B)	2.7		0.50	0.26	mg/L			12/21/22 15:32	1

Client Sample ID: SWFTS-MW14-EM40 — Lab Sample ID: 550-195106-4

Date Collected: 12/15/22 10:25 — **Matrix: Water**
Date Received: 12/16/22 10:00

Method: SW846 6010B - Metals (ICP) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	**0.22**		0.20	0.080	mg/L		12/19/22 09:51	12/20/22 12:30	1
Barium	**0.037**		0.0050	0.00057	mg/L		12/19/22 09:51	12/20/22 12:30	1
Beryllium	ND		0.0010	0.00019	mg/L		12/19/22 09:51	12/20/22 12:30	1
Boron	**2.2**	**B**	0.050	0.0024	mg/L		12/19/22 09:51	12/20/22 12:30	1
Cadmium	ND		0.0010	0.00072	mg/L		12/19/22 09:51	12/20/22 12:30	1
Calcium	**370**		0.40	0.015	mg/L		12/19/22 09:51	12/20/22 12:30	1
Chromium	ND		0.0050	0.0011	mg/L		12/19/22 09:51	12/20/22 12:30	1
Cobalt	ND		0.0050	0.00054	mg/L		12/19/22 09:51	12/20/22 12:30	1
Copper	ND		0.0050	0.0012	mg/L		12/19/22 09:51	12/20/22 12:30	1
Iron	**0.036**	**J**	0.40	0.019	mg/L		12/19/22 09:51	12/20/22 12:30	1
Lead	ND		0.010	0.0025	mg/L		12/19/22 09:51	12/20/22 12:30	1
Magnesium	**190**		0.40	0.054	mg/L		12/19/22 09:51	12/20/22 12:30	1
Manganese	**2.4**		0.020	0.0083	mg/L		12/19/22 09:51	12/20/22 12:30	1
Molybdenum	**0.095**		0.010	0.00052	mg/L		12/19/22 09:51	12/20/22 12:30	1
Nickel	ND		0.0050	0.0028	mg/L		12/19/22 09:51	12/20/22 12:30	1
Phosphorus	ND	cn	0.40	0.011	mg/L		12/19/22 09:51	12/20/22 12:30	1
Potassium	**39**		1.0	0.081	mg/L		12/19/22 09:51	12/20/22 12:30	1
Silicon	**29**		0.10	0.016	mg/L		12/19/22 09:51	12/20/22 12:30	1
Silver	ND		0.0080	0.00049	mg/L		12/19/22 09:51	12/20/22 12:30	1
Sodium	**840**		1.6	0.16	mg/L		12/19/22 09:51	12/21/22 12:59	4
Strontium	**9.6**		0.010	0.00032	mg/L		12/19/22 09:51	12/20/22 12:30	1
Tin	ND		0.010	0.0034	mg/L		12/19/22 09:51	12/20/22 12:30	1
Titanium	ND		0.0050	0.00028	mg/L		12/19/22 09:51	12/20/22 12:30	1
Tungsten	**0.0052**	**J**	0.10	0.0021	mg/L		12/19/22 09:51	12/20/22 12:30	1
Vanadium	**0.013**		0.0050	0.00069	mg/L		12/19/22 09:51	12/20/22 12:30	1
Zinc	ND		0.040	0.0023	mg/L		12/19/22 09:51	12/20/22 12:30	1

Method: SW846 6020B - Metals (ICP/MS) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	**0.32**	**J B**	1.0	0.043	ug/L		12/19/22 09:45	12/22/22 17:00	1
Arsenic	**7.7**	**B**	1.0	0.25	ug/L		12/19/22 09:45	12/27/22 14:35	1
Selenium	**52**		0.50	0.074	ug/L		12/19/22 09:45	12/27/22 14:35	1
Thallium	ND		0.10	0.013	ug/L		12/19/22 09:45	12/22/22 17:00	1

Client Sample ID: SWFTS-MW21-EM40 — Lab Sample ID: 550-195106-5

Date Collected: 12/15/22 11:35 — **Matrix: Water**
Date Received: 12/16/22 10:00

Method: RSK-175 - Dissolved Gases (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Methane	**170**		5.0	0.63	ug/L			12/23/22 22:22	1

Method: MCAWW 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Nitrate as N	**3.1**		0.050	0.014	mg/L			12/16/22 19:25	1
Sulfate	**2400**		100	21	mg/L			12/16/22 21:54	50

Method: EPA 300.1B - Disinfection By-Products, (IC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chlorate	ND	D	40	9.8	ug/L			12/22/22 13:24	2

Client Sample ID: SWFTS-MW21-EM40 — Lab Sample ID: 550-195106-5

Date Collected: 12/15/22 11:35 — **Matrix: Water**
Date Received: 12/16/22 10:00

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Dichloroacetic acid(Surr)	*115*		*90 - 115*		*12/22/22 13:24*	*2*

Method: EPA 314.0 - Perchlorate (IC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perchlorate	**1800**		100	31	ug/L			12/16/22 16:52	100

Method: SW846 6010B - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Manganese	**3.6**		0.020	0.0083	mg/L		12/20/22 11:37	12/21/22 12:26	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon (SM 5310B)	**1.9**		0.50	0.26	mg/L			12/21/22 15:47	1

Client Sample ID: SWFTS-MW21-EM40 — Lab Sample ID: 550-195106-6

Date Collected: 12/15/22 11:35 — **Matrix: Water**
Date Received: 12/16/22 10:00

Method: SW846 6010B - Metals (ICP) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	**0.31**		0.20	0.080	mg/L		12/19/22 09:51	12/20/22 12:33	1
Barium	**0.028**		0.0050	0.00057	mg/L		12/19/22 09:51	12/20/22 12:33	1
Beryllium	ND		0.0010	0.00019	mg/L		12/19/22 09:51	12/20/22 12:33	1
Boron	**3.0**	**B**	0.050	0.0024	mg/L		12/19/22 09:51	12/20/22 12:33	1
Cadmium	ND		0.0010	0.00072	mg/L		12/19/22 09:51	12/20/22 12:33	1
Calcium	**490**		0.40	0.015	mg/L		12/19/22 09:51	12/20/22 12:33	1
Chromium	ND		0.0050	0.0011	mg/L		12/19/22 09:51	12/20/22 12:33	1
Cobalt	**0.0026**	**J**	0.0050	0.00054	mg/L		12/19/22 09:51	12/20/22 12:33	1
Copper	ND		0.0050	0.0012	mg/L		12/19/22 09:51	12/20/22 12:33	1
Iron	**0.036**	**J**	0.40	0.019	mg/L		12/19/22 09:51	12/20/22 12:33	1
Lead	ND		0.010	0.0025	mg/L		12/19/22 09:51	12/20/22 12:33	1
Magnesium	**250**		0.40	0.054	mg/L		12/19/22 09:51	12/20/22 12:33	1
Manganese	**3.9**		0.020	0.0083	mg/L		12/19/22 09:51	12/20/22 12:33	1
Molybdenum	**0.27**		0.010	0.00052	mg/L		12/19/22 09:51	12/20/22 12:33	1
Nickel	ND		0.0050	0.0028	mg/L		12/19/22 09:51	12/20/22 12:33	1
Phosphorus	ND	cn	0.40	0.011	mg/L		12/19/22 09:51	12/20/22 12:33	1
Potassium	**52**		1.0	0.081	mg/L		12/19/22 09:51	12/20/22 12:33	1
Silicon	**33**		0.10	0.016	mg/L		12/19/22 09:51	12/20/22 12:33	1
Silver	ND		0.0080	0.00049	mg/L		12/19/22 09:51	12/20/22 12:33	1
Sodium	**740**		0.40	0.039	mg/L		12/19/22 09:51	12/20/22 12:33	1
Strontium	**11**		0.010	0.00032	mg/L		12/19/22 09:51	12/20/22 12:33	1
Tin	ND		0.010	0.0034	mg/L		12/19/22 09:51	12/20/22 12:33	1
Titanium	ND		0.0050	0.00028	mg/L		12/19/22 09:51	12/20/22 12:33	1
Tungsten	**0.0039**	**J**	0.10	0.0021	mg/L		12/19/22 09:51	12/20/22 12:33	1
Vanadium	**0.023**		0.0050	0.00069	mg/L		12/19/22 09:51	12/20/22 12:33	1
Zinc	ND		0.040	0.0023	mg/L		12/19/22 09:51	12/20/22 12:33	1

Method: SW846 6020B - Metals (ICP/MS) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	**0.14**	**J B**	1.0	0.043	ug/L		12/19/22 09:45	12/22/22 17:02	1
Arsenic	**45**	**B**	1.0	0.25	ug/L		12/19/22 09:45	12/27/22 14:37	1

Client Sample ID: SWFTS-MW21-EM40 — Lab Sample ID: 550-195106-6

Date Collected: 12/15/22 11:35 — **Matrix: Water**
Date Received: 12/16/22 10:00

Method: SW846 6020B - Metals (ICP/MS) - Dissolved (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Selenium	12		0.50	0.074	ug/L		12/19/22 09:45	12/27/22 14:37	1
Thallium	0.097	J	0.10	0.013	ug/L		12/19/22 09:45	12/22/22 17:02	1

Client Sample ID: SWFTS-MW13-EM40 — Lab Sample ID: 550-195106-7

Date Collected: 12/15/22 13:00 — **Matrix: Water**
Date Received: 12/16/22 10:00

Method: RSK-175 - Dissolved Gases (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Methane	ND		5.0	0.63	ug/L			12/23/22 22:36	1

Method: MCAWW 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Nitrate as N	17		0.25	0.070	mg/L			12/16/22 19:43	5
Sulfate	2400		100	21	mg/L			12/16/22 20:02	50

Method: EPA 300.1B - Disinfection By-Products, (IC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chlorate	39000		4000	980	ug/L			12/22/22 14:52	200

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Dichloroacetic acid(Surr)	*114*		*90 - 115*		*12/22/22 14:52*	*200*

Method: EPA 314.0 - Perchlorate (IC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perchlorate	3700		200	63	ug/L			12/16/22 17:14	200

Method: SW846 6010B - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Manganese	ND		0.020	0.0083	mg/L		12/20/22 11:37	12/21/22 12:29	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon (SM 5310B)	1.0		0.50	0.26	mg/L			12/21/22 16:01	1

Client Sample ID: SWFTS-MW13-EM40 — Lab Sample ID: 550-195106-8

Date Collected: 12/15/22 13:00 — **Matrix: Water**
Date Received: 12/16/22 10:00

Method: SW846 6010B - Metals (ICP) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	0.31		0.20	0.080	mg/L		12/19/22 09:51	12/20/22 12:36	1
Barium	0.020		0.0050	0.00057	mg/L		12/19/22 09:51	12/20/22 12:36	1
Beryllium	ND		0.0010	0.00019	mg/L		12/19/22 09:51	12/20/22 12:36	1
Boron	2.4	B	0.050	0.0024	mg/L		12/19/22 09:51	12/20/22 12:36	1
Cadmium	ND		0.0010	0.00072	mg/L		12/19/22 09:51	12/20/22 12:36	1
Calcium	580		0.40	0.015	mg/L		12/19/22 09:51	12/20/22 12:36	1
Chromium	0.039		0.0050	0.0011	mg/L		12/19/22 09:51	12/20/22 12:36	1
Cobalt	ND		0.0050	0.00054	mg/L		12/19/22 09:51	12/20/22 12:36	1
Copper	ND		0.0050	0.0012	mg/L		12/19/22 09:51	12/20/22 12:36	1
Iron	0.034	J	0.40	0.019	mg/L		12/19/22 09:51	12/20/22 12:36	1
Lead	ND		0.010	0.0025	mg/L		12/19/22 09:51	12/20/22 12:36	1

Client: Tetra Tech, Inc.
Job ID: 550-195106-1
Project/Site: Tetra Tech M11 SWF Treatability Study

Client Sample ID: SWFTS-MW13-EM40
Lab Sample ID: 550-195106-8
Date Collected: 12/15/22 13:00
Matrix: Water
Date Received: 12/16/22 10:00

Method: SW846 6010B - Metals (ICP) - Dissolved (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Magnesium	**230**		0.40	0.054	mg/L		12/19/22 09:51	12/20/22 12:36	1
Manganese	ND		0.020	0.0083	mg/L		12/19/22 09:51	12/20/22 12:36	1
Molybdenum	**0.30**		0.010	0.00052	mg/L		12/19/22 09:51	12/20/22 12:36	1
Nickel	ND		0.0050	0.0028	mg/L		12/19/22 09:51	12/20/22 12:36	1
Phosphorus	ND	cn	0.40	0.011	mg/L		12/19/22 09:51	12/20/22 12:36	1
Potassium	**65**		1.0	0.081	mg/L		12/19/22 09:51	12/20/22 12:36	1
Silicon	**36**		0.10	0.016	mg/L		12/19/22 09:51	12/20/22 12:36	1
Silver	ND		0.0080	0.00049	mg/L		12/19/22 09:51	12/20/22 12:36	1
Sodium	**670**		0.40	0.039	mg/L		12/19/22 09:51	12/20/22 12:36	1
Strontium	**13**		0.010	0.00032	mg/L		12/19/22 09:51	12/20/22 12:36	1
Tin	ND		0.010	0.0034	mg/L		12/19/22 09:51	12/20/22 12:36	1
Titanium	ND		0.0050	0.00028	mg/L		12/19/22 09:51	12/20/22 12:36	1
Tungsten	**0.0035**	**J**	0.10	0.0021	mg/L		12/19/22 09:51	12/20/22 12:36	1
Vanadium	**0.025**		0.0050	0.00069	mg/L		12/19/22 09:51	12/20/22 12:36	1
Zinc	ND		0.040	0.0023	mg/L		12/19/22 09:51	12/20/22 12:36	1

Method: SW846 6020B - Metals (ICP/MS) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	**0.11**	**J B**	1.0	0.043	ug/L		12/19/22 09:45	12/22/22 17:04	1
Arsenic	**49**	**B**	1.0	0.25	ug/L		12/19/22 09:45	12/27/22 14:39	1
Selenium	**47**		0.50	0.074	ug/L		12/19/22 09:45	12/27/22 14:39	1
Thallium	**0.077**	**J**	0.10	0.013	ug/L		12/19/22 09:45	12/22/22 17:04	1

Surrogate Summary

Client: Tetra Tech, Inc.
Job ID: 550-195106-1
Project/Site: Tetra Tech M11 SWF Treatability Study

Method: 300.1B - Disinfection By-Products, (IC)

Matrix: Water **Prep Type: Total/NA**

		Percent Surrogate Recovery (Acceptance Limits)
Lab Sample ID	Client Sample ID	DCAA (90-115)
550-195103-N-1 MS ^100	Matrix Spike	110
550-195103-N-1 MSD ^100	Matrix Spike Duplicate	105
550-195106-1	SWFTS-MW15-EM40	110
550-195106-3	SWFTS-MW14-EM40	109
550-195106-5	SWFTS-MW21-EM40	115
550-195106-5 MS	SWFTS-MW21-EM40	109
550-195106-5 MSD	SWFTS-MW21-EM40	110
550-195106-7	SWFTS-MW13-EM40	114
LCS 550-291337/5	Lab Control Sample	114
LCS 550-291340/5	Lab Control Sample	114
LCSD 550-291337/6	Lab Control Sample Dup	114
LCSD 550-291340/6	Lab Control Sample Dup	112
MB 550-291337/4	Method Blank	111
MB 550-291340/4	Method Blank	107

Surrogate Legend

DCAA = Dichloroacetic acid(Surr)

Method: 300.1B - Disinfection By-Products, (IC)

Matrix: Water **Prep Type: Total/NA**

		Percent Surrogate Recovery (Acceptance Limits)
Lab Sample ID	Client Sample ID	DCAA (50-150)
MRL 550-291337/1002	Lab Control Sample	114
MRL 550-291340/1002	Lab Control Sample	108

Surrogate Legend

DCAA = Dichloroacetic acid(Surr)

Method: RSK-175 - Dissolved Gases (GC)

Lab Sample ID: MB 280-597679/6
Matrix: Water
Analysis Batch: 597679

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Methane	ND		5.0	0.63	ug/L			12/23/22 17:22	1

Lab Sample ID: LCS 280-597679/4
Matrix: Water
Analysis Batch: 597679

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Methane			65.7	66.2		ug/L		101	75 - 125		

Lab Sample ID: LCSD 280-597679/5
Matrix: Water
Analysis Batch: 597679

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Methane			65.7	66.9		ug/L		102	75 - 125	1	20

Lab Sample ID: 280-170693-F-2 MSD
Matrix: Water
Analysis Batch: 597679

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Methane	3800	F2	65.7	3410	4 F2	ug/L		-512	52 - 145	21	20

Lab Sample ID: 280-170693-G-2 MS
Matrix: Water
Analysis Batch: 597679

Client Sample ID: Matrix Spike
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits		
Methane	3800	F2	65.7	4200	4	ug/L		684	52 - 145		

Lab Sample ID: 550-195106-1 DU
Matrix: Water
Analysis Batch: 597679

Client Sample ID: SWFTS-MW15-EM40
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier		DU Result	DU Qualifier	Unit	D			RPD	RPD Limit
Methane	5.3			5.66		ug/L				6	20

Method: 300.0 - Anions, Ion Chromatography

Lab Sample ID: MB 550-290964/2
Matrix: Water
Analysis Batch: 290964

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Nitrate as N	ND		0.050	0.014	mg/L			12/16/22 11:45	1
Sulfate	ND		2.0	0.43	mg/L			12/16/22 11:45	1

Method: 300.0 - Anions, Ion Chromatography (Continued)

Lab Sample ID: LCS 550-290964/5
Matrix: Water
Analysis Batch: 290964

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Nitrate as N			4.00	4.13		mg/L		103	90 - 110		
Sulfate			20.0	21.2		mg/L		106	90 - 110		

Lab Sample ID: LCSD 550-290964/7
Matrix: Water
Analysis Batch: 290964

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Nitrate as N			4.00	4.13		mg/L		103	90 - 110	0	20
Sulfate			20.0	20.8		mg/L		104	90 - 110	2	20

Lab Sample ID: 550-195103-J-1 MS
Matrix: Water
Analysis Batch: 290964

Client Sample ID: Matrix Spike
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits		
Nitrate as N	14		20.0	34.4		mg/L		103	80 - 120		

Lab Sample ID: 550-195103-J-1 MS
Matrix: Water
Analysis Batch: 290964

Client Sample ID: Matrix Spike
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits		
Sulfate	1900		1000	2910		mg/L		104	80 - 120		

Lab Sample ID: 550-195103-J-1 MSD
Matrix: Water
Analysis Batch: 290964

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Nitrate as N	14		20.0	34.5		mg/L		104	80 - 120	0	20

Lab Sample ID: 550-195103-J-1 MSD
Matrix: Water
Analysis Batch: 290964

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Sulfate	1900		1000	2920		mg/L		105	80 - 120	0	20

Lab Sample ID: MB 550-290966/2
Matrix: Water
Analysis Batch: 290966

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Nitrate as N	ND		0.050	0.014	mg/L			12/16/22 10:41	1
Sulfate	ND		2.0	0.43	mg/L			12/16/22 10:41	1

Method: 300.0 - Anions, Ion Chromatography (Continued)

Lab Sample ID: LCS 550-290966/5
Matrix: Water
Analysis Batch: 290966

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Nitrate as N			4.00	4.05		mg/L		101	90 - 110		
Sulfate			20.0	20.6		mg/L		103	90 - 110		

Lab Sample ID: LCSD 550-290966/6
Matrix: Water
Analysis Batch: 290966

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Nitrate as N			4.00	4.06		mg/L		102	90 - 110	0	20
Sulfate			20.0	21.3		mg/L		107	90 - 110	3	20

Lab Sample ID: 550-195033-A-1 MS
Matrix: Water
Analysis Batch: 290966

Client Sample ID: Matrix Spike
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits		
Nitrate as N	3.1		40.0	43.4		mg/L		101	80 - 120		
Sulfate	62		200	263		mg/L		101	80 - 120		

Lab Sample ID: 550-195033-A-1 MSD
Matrix: Water
Analysis Batch: 290966

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Nitrate as N	3.1		40.0	43.3		mg/L		100	80 - 120	0	20
Sulfate	62		200	262		mg/L		100	80 - 120	0	20

Method: 300.1B - Disinfection By-Products, (IC)

Lab Sample ID: MB 550-291337/4
Matrix: Water
Analysis Batch: 291337

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chlorate	ND		20	4.9	ug/L			12/21/22 21:12	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Dichloroacetic acid(Surr)	*111*		*90 - 115*		*12/21/22 21:12*	*1*

Lab Sample ID: LCS 550-291337/5
Matrix: Water
Analysis Batch: 291337

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Chlorate			100	110		ug/L		110	75 - 125		

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
Dichloroacetic acid(Surr)	*114*		*90 - 115*

Method: 300.1B - Disinfection By-Products, (IC) (Continued)

Lab Sample ID: LCSD 550-291337/6
Matrix: Water
Analysis Batch: 291337

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Chlorate			100	109		ug/L		109	75 - 125	1	25

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
Dichloroacetic acid(Surr)	*114*		*90 - 115*

Lab Sample ID: MRL 550-291337/1002
Matrix: Water
Analysis Batch: 291337

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte			Spike Added	MRL Result	MRL Qualifier	Unit	D	%Rec	%Rec Limits		
Chlorate			20.0	24.0		ug/L		120	50 - 150		

Surrogate	*MRL %Recovery*	*MRL Qualifier*	*Limits*
Dichloroacetic acid(Surr)	*114*		*50 - 150*

Lab Sample ID: 550-195103-N-1 MS ^100
Matrix: Water
Analysis Batch: 291337

Client Sample ID: Matrix Spike
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits		
Chlorate	25000		10000	37000		ug/L		116	75 - 125		

Surrogate	*MS %Recovery*	*MS Qualifier*	*Limits*
Dichloroacetic acid(Surr)	*110*		*90 - 115*

Lab Sample ID: 550-195103-N-1 MSD ^100
Matrix: Water
Analysis Batch: 291337

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Chlorate	25000		10000	36700		ug/L		113	75 - 125	1	25

Surrogate	*MSD %Recovery*	*MSD Qualifier*	*Limits*
Dichloroacetic acid(Surr)	*105*		*90 - 115*

Lab Sample ID: MB 550-291340/4
Matrix: Water
Analysis Batch: 291340

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chlorate	ND		20	4.9	ug/L			12/22/22 11:55	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Dichloroacetic acid(Surr)	*107*		*90 - 115*		*12/22/22 11:55*	*1*

Method: 300.1B - Disinfection By-Products, (IC) (Continued)

Lab Sample ID: LCS 550-291340/5
Matrix: Water
Analysis Batch: 291340

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Chlorate			100	115		ug/L		115	75 - 125		

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
Dichloroacetic acid(Surr)	*114*		*90 - 115*

Lab Sample ID: LCSD 550-291340/6
Matrix: Water
Analysis Batch: 291340

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Chlorate			100	112		ug/L		112	75 - 125	3	25

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
Dichloroacetic acid(Surr)	*112*		*90 - 115*

Lab Sample ID: MRL 550-291340/1002
Matrix: Water
Analysis Batch: 291340

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte			Spike Added	MRL Result	MRL Qualifier	Unit	D	%Rec	%Rec Limits		
Chlorate			20.0	23.8		ug/L		119	50 - 150		

Surrogate	*MRL %Recovery*	*MRL Qualifier*	*Limits*
Dichloroacetic acid(Surr)	*108*		*50 - 150*

Lab Sample ID: 550-195106-5 MS
Matrix: Water
Analysis Batch: 291340

Client Sample ID: SWFTS-MW21-EM40
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits		
Chlorate	ND	D	200	234		ug/L		117	75 - 125		

Surrogate	*MS %Recovery*	*MS Qualifier*	*Limits*
Dichloroacetic acid(Surr)	*109*		*90 - 115*

Lab Sample ID: 550-195106-5 MSD
Matrix: Water
Analysis Batch: 291340

Client Sample ID: SWFTS-MW21-EM40
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Chlorate	ND	D	200	236		ug/L		118	75 - 125	1	25

Surrogate	*MSD %Recovery*	*MSD Qualifier*	*Limits*
Dichloroacetic acid(Surr)	*110*		*90 - 115*

Method: 314.0 - Perchlorate (IC)

Lab Sample ID: MB 550-290947/1002
Matrix: Water
Analysis Batch: 290947

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perchlorate	ND		1.0	0.31	ug/L			12/16/22 10:31	1

Lab Sample ID: LCS 550-290947/4
Matrix: Water
Analysis Batch: 290947

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Perchlorate	25.0	22.8		ug/L		91	85 - 115

Lab Sample ID: LCSD 550-290947/5
Matrix: Water
Analysis Batch: 290947

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Perchlorate	25.0	22.6		ug/L		90	85 - 115	1	15

Lab Sample ID: MRL 550-290947/1003
Matrix: Water
Analysis Batch: 290947

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	MRL Result	MRL Qualifier	Unit	D	%Rec	%Rec Limits
Perchlorate	1.00	0.996	J	ug/L		100	75 - 125

Lab Sample ID: 550-195013-H-3 MS
Matrix: Water
Analysis Batch: 290947

Client Sample ID: Matrix Spike
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Perchlorate	5200		5000	9680		ug/L		89	80 - 120

Lab Sample ID: 550-195013-H-3 MSD
Matrix: Water
Analysis Batch: 290947

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Perchlorate	5200		5000	9700		ug/L		89	80 - 120	0	15

Lab Sample ID: MB 550-291132/1002
Matrix: Water
Analysis Batch: 291132

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perchlorate	ND		1.0	0.31	ug/L			12/20/22 09:27	1

Lab Sample ID: LCS 550-291132/4
Matrix: Water
Analysis Batch: 291132

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Perchlorate	25.0	23.2		ug/L		93	85 - 115

Method: 314.0 - Perchlorate (IC)

Lab Sample ID: LCSD 550-291132/5
Matrix: Water
Analysis Batch: 291132

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Perchlorate			25.0	22.4		ug/L		90	85 - 115	4	15

Lab Sample ID: MRL 550-291132/1003
Matrix: Water
Analysis Batch: 291132

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte			Spike Added	MRL Result	MRL Qualifier	Unit	D	%Rec	%Rec Limits		
Perchlorate			1.00	0.945	J	ug/L		94	75 - 125		

Lab Sample ID: 550-195103-G-1 MS
Matrix: Water
Analysis Batch: 291132

Client Sample ID: Matrix Spike
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits		
Perchlorate	12000		25000	34500		ug/L		91	80 - 120		

Lab Sample ID: 550-195103-G-1 MSD
Matrix: Water
Analysis Batch: 291132

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Perchlorate	12000		25000	34700		ug/L		92	80 - 120	1	15

Method: 6010B - Metals (ICP)

Lab Sample ID: MB 550-291029/1-A
Matrix: Water
Analysis Batch: 291197

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 291029

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	ND		0.20	0.080	mg/L		12/19/22 09:51	12/20/22 11:56	1
Barium	ND		0.0050	0.00057	mg/L		12/19/22 09:51	12/20/22 11:56	1
Beryllium	ND		0.0010	0.00019	mg/L		12/19/22 09:51	12/20/22 11:56	1
Boron	0.00334	J	0.050	0.0024	mg/L		12/19/22 09:51	12/20/22 11:56	1
Cadmium	ND		0.0010	0.00072	mg/L		12/19/22 09:51	12/20/22 11:56	1
Calcium	ND		0.40	0.015	mg/L		12/19/22 09:51	12/20/22 11:56	1
Chromium	ND		0.0050	0.0011	mg/L		12/19/22 09:51	12/20/22 11:56	1
Cobalt	ND		0.0050	0.00054	mg/L		12/19/22 09:51	12/20/22 11:56	1
Copper	ND		0.0050	0.0012	mg/L		12/19/22 09:51	12/20/22 11:56	1
Iron	ND		0.40	0.019	mg/L		12/19/22 09:51	12/20/22 11:56	1
Lead	ND		0.010	0.0025	mg/L		12/19/22 09:51	12/20/22 11:56	1
Magnesium	ND		0.40	0.054	mg/L		12/19/22 09:51	12/20/22 11:56	1
Manganese	ND		0.020	0.0083	mg/L		12/19/22 09:51	12/20/22 11:56	1
Molybdenum	ND		0.010	0.00052	mg/L		12/19/22 09:51	12/20/22 11:56	1
Nickel	ND		0.0050	0.0028	mg/L		12/19/22 09:51	12/20/22 11:56	1
Phosphorus	ND		0.40	0.011	mg/L		12/19/22 09:51	12/20/22 11:56	1
Potassium	ND		1.0	0.081	mg/L		12/19/22 09:51	12/20/22 11:56	1
Silicon	ND		0.10	0.016	mg/L		12/19/22 09:51	12/20/22 11:56	1
Silver	0.00127	J	0.0080	0.00049	mg/L		12/19/22 09:51	12/20/22 11:56	1
Sodium	ND		0.40	0.039	mg/L		12/19/22 09:51	12/20/22 11:56	1

Method: 6010B - Metals (ICP) (Continued)

Lab Sample ID: MB 550-291029/1-A
Matrix: Water
Analysis Batch: 291197

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 291029

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Strontium	ND		0.010	0.00032	mg/L		12/19/22 09:51	12/20/22 11:56	1
Tin	ND		0.010	0.0034	mg/L		12/19/22 09:51	12/20/22 11:56	1
Titanium	ND		0.0050	0.00028	mg/L		12/19/22 09:51	12/20/22 11:56	1
Tungsten	ND		0.10	0.0021	mg/L		12/19/22 09:51	12/20/22 11:56	1
Vanadium	ND		0.0050	0.00069	mg/L		12/19/22 09:51	12/20/22 11:56	1
Zinc	ND		0.040	0.0023	mg/L		12/19/22 09:51	12/20/22 11:56	1

Lab Sample ID: LCS 550-291029/2-A
Matrix: Water
Analysis Batch: 291197

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 291029

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Aluminum	20.0	19.8		mg/L		99	88 - 110
Barium	1.00	0.995		mg/L		100	90 - 110
Beryllium	1.00	1.02		mg/L		102	90 - 111
Boron	1.00	1.02		mg/L		102	88 - 110
Cadmium	1.00	0.992		mg/L		99	90 - 110
Calcium	21.0	21.3		mg/L		102	88 - 112
Chromium	1.00	0.983		mg/L		98	90 - 110
Cobalt	1.00	0.965		mg/L		97	90 - 112
Copper	1.00	1.01		mg/L		101	87 - 110
Iron	1.00	0.972		mg/L		97	85 - 112
Lead	1.00	1.01		mg/L		101	90 - 113
Magnesium	21.0	21.0		mg/L		100	89 - 110
Manganese	1.00	0.972		mg/L		97	90 - 110
Molybdenum	1.00	0.991		mg/L		99	89 - 110
Nickel	1.00	1.01		mg/L		101	88 - 114
Potassium	20.0	19.4		mg/L		97	87 - 114
Silicon	5.00	4.83		mg/L		97	88 - 110
Silver	0.0750	0.0724		mg/L		97	84 - 111
Sodium	20.0	19.6		mg/L		98	84 - 110
Strontium	1.00	0.957		mg/L		96	88 - 110
Tin	1.00	0.980		mg/L		98	90 - 112
Titanium	1.00	0.999		mg/L		100	90 - 110
Tungsten	1.00	0.976		mg/L		98	80 - 120
Vanadium	1.00	0.983		mg/L		98	90 - 110
Zinc	1.00	1.02		mg/L		102	90 - 114

Lab Sample ID: LCSD 550-291029/3-A
Matrix: Water
Analysis Batch: 291197

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 291029

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Aluminum	20.0	20.0		mg/L		100	88 - 110	1	20
Barium	1.00	1.01		mg/L		101	90 - 110	1	20
Beryllium	1.00	1.03		mg/L		103	90 - 111	1	20
Boron	1.00	1.03		mg/L		103	88 - 110	0	20
Cadmium	1.00	1.00		mg/L		100	90 - 110	1	20
Calcium	21.0	21.4		mg/L		102	88 - 112	0	20

Method: 6010B - Metals (ICP) (Continued)

Lab Sample ID: LCSD 550-291029/3-A
Matrix: Water
Analysis Batch: 291197

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 291029

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Chromium			1.00	0.983		mg/L		98	90 - 110	0	20
Cobalt			1.00	0.979		mg/L		98	90 - 112	1	20
Copper			1.00	1.01		mg/L		101	87 - 110	0	20
Iron			1.00	0.973		mg/L		97	85 - 112	0	20
Lead			1.00	1.01		mg/L		101	90 - 113	0	20
Magnesium			21.0	21.0		mg/L		100	89 - 110	0	20
Manganese			1.00	0.974		mg/L		97	90 - 110	0	20
Molybdenum			1.00	0.999		mg/L		100	89 - 110	1	20
Nickel			1.00	1.03		mg/L		103	88 - 114	2	20
Potassium			20.0	19.6		mg/L		98	87 - 114	1	20
Silicon			5.00	4.87		mg/L		97	88 - 110	1	20
Silver			0.0750	0.0731		mg/L		97	84 - 111	1	20
Sodium			20.0	19.8		mg/L		99	84 - 110	1	20
Strontium			1.00	0.995		mg/L		100	88 - 110	4	20
Tin			1.00	0.979		mg/L		98	90 - 112	0	20
Titanium			1.00	1.00		mg/L		100	90 - 110	1	20
Tungsten			1.00	0.984		mg/L		98	80 - 120	1	20
Vanadium			1.00	0.988		mg/L		99	90 - 110	1	20
Zinc			1.00	1.02		mg/L		102	90 - 114	0	20

Lab Sample ID: MB 550-291133/1-A
Matrix: Water
Analysis Batch: 291386

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 291133

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Manganese	ND		0.020	0.0083	mg/L		12/20/22 11:37	12/21/22 11:29	1

Lab Sample ID: LCS 550-291133/2-A
Matrix: Water
Analysis Batch: 291386

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 291133

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Manganese			1.00	0.981		mg/L		98	90 - 110		

Lab Sample ID: LCSD 550-291133/3-A
Matrix: Water
Analysis Batch: 291386

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 291133

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Manganese			1.00	0.978		mg/L		98	90 - 110	0	20

Lab Sample ID: 550-195103-L-1-A MS
Matrix: Water
Analysis Batch: 291386

Client Sample ID: Matrix Spike
Prep Type: Total/NA
Prep Batch: 291133

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits		
Manganese	1.7		1.00	2.55		mg/L		83	75 - 125		

Method: 6010B - Metals (ICP) (Continued)

Lab Sample ID: 550-195103-L-1-B MSD
Matrix: Water
Analysis Batch: 291386

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total/NA
Prep Batch: 291133

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Manganese	1.7		1.00	2.60		mg/L		88	75 - 125	2	20

Lab Sample ID: 550-195103-B-2-E MS
Matrix: Water
Analysis Batch: 291197

Client Sample ID: Matrix Spike
Prep Type: Dissolved
Prep Batch: 291029

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Aluminum	0.28		20.0	21.1		mg/L		104	75 - 125
Barium	0.016		1.00	1.05		mg/L		104	75 - 125
Beryllium	ND		1.00	1.06		mg/L		106	75 - 125
Boron	2.5	B	1.00	3.28		mg/L		82	75 - 125
Cadmium	ND		1.00	1.01		mg/L		101	75 - 125
Calcium	360		21.0	347	4	mg/L		-72	75 - 125
Chromium	ND		1.00	0.950		mg/L		95	75 - 125
Cobalt	0.0032	J	1.00	0.951		mg/L		95	75 - 125
Copper	ND		1.00	1.04		mg/L		104	75 - 125
Iron	0.027	J	1.00	1.03		mg/L		101	75 - 125
Lead	ND		1.00	0.850		mg/L		85	75 - 125
Magnesium	190		21.0	188	4	mg/L		14	75 - 125
Manganese	1.7		1.00	2.48		mg/L		79	75 - 125
Molybdenum	0.097		1.00	1.08		mg/L		98	75 - 125
Nickel	0.011		1.00	1.00		mg/L		99	75 - 125
Potassium	39		20.0	55.9		mg/L		83	75 - 125
Silicon	37		5.00	36.8	4	mg/L		-2	75 - 125
Silver	ND		0.0750	0.0742		mg/L		99	75 - 125
Strontium	9.6		1.00	9.56	4	mg/L		0.7	75 - 125
Tin	ND		1.00	0.969		mg/L		97	75 - 125
Titanium	ND		1.00	1.00		mg/L		100	75 - 125
Tungsten	0.0098	J	1.00	0.990		mg/L		98	75 - 125
Vanadium	0.043		1.00	1.03		mg/L		99	75 - 125
Zinc	ND		1.00	0.967		mg/L		97	75 - 125

Lab Sample ID: 550-195103-B-2-E MS ^4
Matrix: Water
Analysis Batch: 291388

Client Sample ID: Matrix Spike
Prep Type: Dissolved
Prep Batch: 291029

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Sodium	940		20.0	878	4	mg/L		-323	75 - 125

Lab Sample ID: 550-195103-B-2-F MSD
Matrix: Water
Analysis Batch: 291197

Client Sample ID: Matrix Spike Duplicate
Prep Type: Dissolved
Prep Batch: 291029

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Aluminum	0.28		20.0	21.6		mg/L		107	75 - 125	2	20
Barium	0.016		1.00	1.07		mg/L		106	75 - 125	2	20
Beryllium	ND		1.00	1.08		mg/L		108	75 - 125	2	20
Boron	2.5	B	1.00	3.28		mg/L		82	75 - 125	0	20
Cadmium	ND		1.00	1.01		mg/L		101	75 - 125	0	20

Method: 6010B - Metals (ICP) (Continued)

Lab Sample ID: 550-195103-B-2-F MSD
Matrix: Water
Analysis Batch: 291197

Client Sample ID: Matrix Spike Duplicate
Prep Type: Dissolved
Prep Batch: 291029

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Calcium	360		21.0	351	4	mg/L		-55	75 - 125	1	20
Chromium	ND		1.00	0.959		mg/L		96	75 - 125	1	20
Cobalt	0.0032	J	1.00	0.951		mg/L		95	75 - 125	0	20
Copper	ND		1.00	1.05		mg/L		105	75 - 125	1	20
Iron	0.027	J	1.00	1.05		mg/L		103	75 - 125	2	20
Lead	ND		1.00	0.857		mg/L		86	75 - 125	1	20
Magnesium	190		21.0	191	4	mg/L		26	75 - 125	1	20
Manganese	1.7		1.00	2.48		mg/L		80	75 - 125	0	20
Molybdenum	0.097		1.00	1.09		mg/L		99	75 - 125	1	20
Nickel	0.011		1.00	1.01		mg/L		100	75 - 125	1	20
Potassium	39		20.0	56.6		mg/L		87	75 - 125	1	20
Silicon	37		5.00	37.4	4	mg/L		9	75 - 125	2	20
Silver	ND		0.0750	0.0750		mg/L		100	75 - 125	1	20
Strontium	9.6		1.00	9.58	4	mg/L		3	75 - 125	0	20
Tin	ND		1.00	0.985		mg/L		99	75 - 125	2	20
Titanium	ND		1.00	1.01		mg/L		101	75 - 125	1	20
Tungsten	0.0098	J	1.00	1.00		mg/L		99	75 - 125	1	20
Vanadium	0.043		1.00	1.04		mg/L		99	75 - 125	1	20
Zinc	ND		1.00	0.972		mg/L		97	75 - 125	1	20

Lab Sample ID: 550-195103-B-2-F MSD ^4
Matrix: Water
Analysis Batch: 291388

Client Sample ID: Matrix Spike Duplicate
Prep Type: Dissolved
Prep Batch: 291029

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Sodium	940		20.0	929	4	mg/L		-68	75 - 125	6	20

Method: 6020B - Metals (ICP/MS)

Lab Sample ID: MB 550-291028/1-A
Matrix: Water
Analysis Batch: 291385

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 291028

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	0.0430	J	1.0	0.043	ug/L		12/19/22 09:45	12/22/22 16:35	1
Thallium	ND		0.10	0.013	ug/L		12/19/22 09:45	12/22/22 16:35	1

Lab Sample ID: MB 550-291028/1-A
Matrix: Water
Analysis Batch: 291502

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 291028

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	0.445	J	1.0	0.25	ug/L		12/19/22 09:45	12/27/22 14:09	1
Selenium	ND		0.50	0.074	ug/L		12/19/22 09:45	12/27/22 14:09	1

Method: 6020B - Metals (ICP/MS) (Continued)

Lab Sample ID: LCS 550-291028/2-A
Matrix: Water
Analysis Batch: 291385

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 291028

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Antimony	100	101		ug/L		101	80 - 120
Thallium	100	105		ug/L		105	80 - 120

Lab Sample ID: LCS 550-291028/2-A
Matrix: Water
Analysis Batch: 291502

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 291028

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Arsenic	100	99.2		ug/L		99	80 - 120
Selenium	100	100		ug/L		100	80 - 120

Lab Sample ID: LCSD 550-291028/3-A
Matrix: Water
Analysis Batch: 291385

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 291028

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Antimony	100	104		ug/L		104	80 - 120	3	20
Thallium	100	106		ug/L		106	80 - 120	0	20

Lab Sample ID: LCSD 550-291028/3-A
Matrix: Water
Analysis Batch: 291502

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 291028

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Arsenic	100	112		ug/L		112	80 - 120	12	20
Selenium	100	111		ug/L		111	80 - 120	10	20

Lab Sample ID: 550-195103-B-2-A MS
Matrix: Water
Analysis Batch: 291385

Client Sample ID: Matrix Spike
Prep Type: Dissolved
Prep Batch: 291028

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Antimony	0.31	J B	100	107		ug/L		107	75 - 125
Thallium	0.50		100	96.9		ug/L		96	75 - 125

Lab Sample ID: 550-195103-B-2-A MS
Matrix: Water
Analysis Batch: 291502

Client Sample ID: Matrix Spike
Prep Type: Dissolved
Prep Batch: 291028

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Arsenic	72	B	100	177		ug/L		105	75 - 125
Selenium	100		100	214		ug/L		113	75 - 125

Lab Sample ID: 550-195103-B-2-B MSD
Matrix: Water
Analysis Batch: 291385

Client Sample ID: Matrix Spike Duplicate
Prep Type: Dissolved
Prep Batch: 291028

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Antimony	0.31	J B	100	108		ug/L		107	75 - 125	0	20
Thallium	0.50		100	96.7		ug/L		96	75 - 125	0	20

Method: 6020B - Metals (ICP/MS)

Lab Sample ID: 550-195103-B-2-B MSD
Matrix: Water
Analysis Batch: 291502

Client Sample ID: Matrix Spike Duplicate
Prep Type: Dissolved
Prep Batch: 291028

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Arsenic	72	B	100	179		ug/L		106	75 - 125	1	20
Selenium	100		100	217		ug/L		116	75 - 125	1	20

Method: SM 5310B - Organic Carbon, Total (TOC)

Lab Sample ID: MB 550-291306/5
Matrix: Water
Analysis Batch: 291306

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon	ND		0.50	0.26	mg/L			12/21/22 11:33	1

Lab Sample ID: LCS 550-291306/6
Matrix: Water
Analysis Batch: 291306

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Total Organic Carbon	20.0	18.8		mg/L		94	90 - 110

Lab Sample ID: LCSD 550-291306/7
Matrix: Water
Analysis Batch: 291306

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Total Organic Carbon	20.0	19.0		mg/L		95	90 - 110	1	20

Lab Sample ID: 550-195103-C-1 MS
Matrix: Water
Analysis Batch: 291306

Client Sample ID: Matrix Spike
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Total Organic Carbon	2.0	F1	20.0	20.3		mg/L		91	90 - 110

Lab Sample ID: 550-195103-D-1 MSD
Matrix: Water
Analysis Batch: 291306

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Total Organic Carbon	2.0	F1	20.0	19.6	F1	mg/L		88	90 - 110	4	20

GC VOA

Analysis Batch: 597679

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
550-195106-1	SWFTS-MW15-EM40	Total/NA	Water	RSK-175	
550-195106-3	SWFTS-MW14-EM40	Total/NA	Water	RSK-175	
550-195106-5	SWFTS-MW21-EM40	Total/NA	Water	RSK-175	
550-195106-7	SWFTS-MW13-EM40	Total/NA	Water	RSK-175	
MB 280-597679/6	Method Blank	Total/NA	Water	RSK-175	
LCS 280-597679/4	Lab Control Sample	Total/NA	Water	RSK-175	
LCSD 280-597679/5	Lab Control Sample Dup	Total/NA	Water	RSK-175	
280-170693-F-2 MSD	Matrix Spike Duplicate	Total/NA	Water	RSK-175	
280-170693-G-2 MS	Matrix Spike	Total/NA	Water	RSK-175	
550-195106-1 DU	SWFTS-MW15-EM40	Total/NA	Water	RSK-175	

HPLC/IC

Analysis Batch: 290947

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
550-195106-1	SWFTS-MW15-EM40	Total/NA	Water	314.0	
550-195106-5	SWFTS-MW21-EM40	Total/NA	Water	314.0	
550-195106-7	SWFTS-MW13-EM40	Total/NA	Water	314.0	
MB 550-290947/1002	Method Blank	Total/NA	Water	314.0	
LCS 550-290947/4	Lab Control Sample	Total/NA	Water	314.0	
LCSD 550-290947/5	Lab Control Sample Dup	Total/NA	Water	314.0	
MRL 550-290947/1003	Lab Control Sample	Total/NA	Water	314.0	
550-195013-H-3 MS	Matrix Spike	Total/NA	Water	314.0	
550-195013-H-3 MSD	Matrix Spike Duplicate	Total/NA	Water	314.0	

Analysis Batch: 290964

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
550-195106-1	SWFTS-MW15-EM40	Total/NA	Water	300.0	
550-195106-3	SWFTS-MW14-EM40	Total/NA	Water	300.0	
550-195106-5	SWFTS-MW21-EM40	Total/NA	Water	300.0	
550-195106-7	SWFTS-MW13-EM40	Total/NA	Water	300.0	
550-195106-7	SWFTS-MW13-EM40	Total/NA	Water	300.0	
MB 550-290964/2	Method Blank	Total/NA	Water	300.0	
LCS 550-290964/5	Lab Control Sample	Total/NA	Water	300.0	
LCSD 550-290964/7	Lab Control Sample Dup	Total/NA	Water	300.0	
550-195103-J-1 MS	Matrix Spike	Total/NA	Water	300.0	
550-195103-J-1 MS	Matrix Spike	Total/NA	Water	300.0	
550-195103-J-1 MSD	Matrix Spike Duplicate	Total/NA	Water	300.0	
550-195103-J-1 MSD	Matrix Spike Duplicate	Total/NA	Water	300.0	

Analysis Batch: 290966

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
550-195106-1	SWFTS-MW15-EM40	Total/NA	Water	300.0	
550-195106-3	SWFTS-MW14-EM40	Total/NA	Water	300.0	
550-195106-5	SWFTS-MW21-EM40	Total/NA	Water	300.0	
MB 550-290966/2	Method Blank	Total/NA	Water	300.0	
LCS 550-290966/5	Lab Control Sample	Total/NA	Water	300.0	
LCSD 550-290966/6	Lab Control Sample Dup	Total/NA	Water	300.0	
550-195033-A-1 MS	Matrix Spike	Total/NA	Water	300.0	
550-195033-A-1 MSD	Matrix Spike Duplicate	Total/NA	Water	300.0	

HPLC/IC

Analysis Batch: 291132

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
550-195106-3	SWFTS-MW14-EM40	Total/NA	Water	314.0	
MB 550-291132/1002	Method Blank	Total/NA	Water	314.0	
LCS 550-291132/4	Lab Control Sample	Total/NA	Water	314.0	
LCSD 550-291132/5	Lab Control Sample Dup	Total/NA	Water	314.0	
MRL 550-291132/1003	Lab Control Sample	Total/NA	Water	314.0	
550-195103-G-1 MS	Matrix Spike	Total/NA	Water	314.0	
550-195103-G-1 MSD	Matrix Spike Duplicate	Total/NA	Water	314.0	

Analysis Batch: 291337

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
550-195106-1	SWFTS-MW15-EM40	Total/NA	Water	300.1B	
MB 550-291337/4	Method Blank	Total/NA	Water	300.1B	
LCS 550-291337/5	Lab Control Sample	Total/NA	Water	300.1B	
LCSD 550-291337/6	Lab Control Sample Dup	Total/NA	Water	300.1B	
MRL 550-291337/1002	Lab Control Sample	Total/NA	Water	300.1B	
550-195103-N-1 MS ^100	Matrix Spike	Total/NA	Water	300.1B	
550-195103-N-1 MSD ^100	Matrix Spike Duplicate	Total/NA	Water	300.1B	

Analysis Batch: 291340

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
550-195106-3	SWFTS-MW14-EM40	Total/NA	Water	300.1B	
550-195106-5	SWFTS-MW21-EM40	Total/NA	Water	300.1B	
550-195106-7	SWFTS-MW13-EM40	Total/NA	Water	300.1B	
MB 550-291340/4	Method Blank	Total/NA	Water	300.1B	
LCS 550-291340/5	Lab Control Sample	Total/NA	Water	300.1B	
LCSD 550-291340/6	Lab Control Sample Dup	Total/NA	Water	300.1B	
MRL 550-291340/1002	Lab Control Sample	Total/NA	Water	300.1B	
550-195106-5 MS	SWFTS-MW21-EM40	Total/NA	Water	300.1B	
550-195106-5 MSD	SWFTS-MW21-EM40	Total/NA	Water	300.1B	

Metals

Prep Batch: 291028

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
550-195106-2	SWFTS-MW15-EM40	Dissolved	Water	3005A	
550-195106-4	SWFTS-MW14-EM40	Dissolved	Water	3005A	
550-195106-6	SWFTS-MW21-EM40	Dissolved	Water	3005A	
550-195106-8	SWFTS-MW13-EM40	Dissolved	Water	3005A	
MB 550-291028/1-A	Method Blank	Total/NA	Water	3005A	
LCS 550-291028/2-A	Lab Control Sample	Total/NA	Water	3005A	
LCSD 550-291028/3-A	Lab Control Sample Dup	Total/NA	Water	3005A	
550-195103-B-2-A MS	Matrix Spike	Dissolved	Water	3005A	
550-195103-B-2-B MSD	Matrix Spike Duplicate	Dissolved	Water	3005A	

Prep Batch: 291029

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
550-195106-2	SWFTS-MW15-EM40	Dissolved	Water	3005A	
550-195106-4	SWFTS-MW14-EM40	Dissolved	Water	3005A	
550-195106-6	SWFTS-MW21-EM40	Dissolved	Water	3005A	
550-195106-8	SWFTS-MW13-EM40	Dissolved	Water	3005A	
MB 550-291029/1-A	Method Blank	Total/NA	Water	3005A	

Metals (Continued)

Prep Batch: 291029 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
LCS 550-291029/2-A	Lab Control Sample	Total/NA	Water	3005A	
LCSD 550-291029/3-A	Lab Control Sample Dup	Total/NA	Water	3005A	
550-195103-B-2-E MS	Matrix Spike	Dissolved	Water	3005A	
550-195103-B-2-E MS ^4	Matrix Spike	Dissolved	Water	3005A	
550-195103-B-2-F MSD	Matrix Spike Duplicate	Dissolved	Water	3005A	
550-195103-B-2-F MSD ^4	Matrix Spike Duplicate	Dissolved	Water	3005A	

Prep Batch: 291133

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
550-195106-1	SWFTS-MW15-EM40	Total/NA	Water	3005A	
550-195106-3	SWFTS-MW14-EM40	Total/NA	Water	3005A	
550-195106-5	SWFTS-MW21-EM40	Total/NA	Water	3005A	
550-195106-7	SWFTS-MW13-EM40	Total/NA	Water	3005A	
MB 550-291133/1-A	Method Blank	Total/NA	Water	3005A	
LCS 550-291133/2-A	Lab Control Sample	Total/NA	Water	3005A	
LCSD 550-291133/3-A	Lab Control Sample Dup	Total/NA	Water	3005A	
550-195103-L-1-A MS	Matrix Spike	Total/NA	Water	3005A	
550-195103-L-1-B MSD	Matrix Spike Duplicate	Total/NA	Water	3005A	

Analysis Batch: 291197

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
550-195106-2	SWFTS-MW15-EM40	Dissolved	Water	6010B	291029
550-195106-4	SWFTS-MW14-EM40	Dissolved	Water	6010B	291029
550-195106-6	SWFTS-MW21-EM40	Dissolved	Water	6010B	291029
550-195106-8	SWFTS-MW13-EM40	Dissolved	Water	6010B	291029
MB 550-291029/1-A	Method Blank	Total/NA	Water	6010B	291029
LCS 550-291029/2-A	Lab Control Sample	Total/NA	Water	6010B	291029
LCSD 550-291029/3-A	Lab Control Sample Dup	Total/NA	Water	6010B	291029
550-195103-B-2-E MS	Matrix Spike	Dissolved	Water	6010B	291029
550-195103-B-2-F MSD	Matrix Spike Duplicate	Dissolved	Water	6010B	291029

Analysis Batch: 291385

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
550-195106-2	SWFTS-MW15-EM40	Dissolved	Water	6020B	291028
550-195106-4	SWFTS-MW14-EM40	Dissolved	Water	6020B	291028
550-195106-6	SWFTS-MW21-EM40	Dissolved	Water	6020B	291028
550-195106-8	SWFTS-MW13-EM40	Dissolved	Water	6020B	291028
MB 550-291028/1-A	Method Blank	Total/NA	Water	6020B	291028
LCS 550-291028/2-A	Lab Control Sample	Total/NA	Water	6020B	291028
LCSD 550-291028/3-A	Lab Control Sample Dup	Total/NA	Water	6020B	291028
550-195103-B-2-A MS	Matrix Spike	Dissolved	Water	6020B	291028
550-195103-B-2-B MSD	Matrix Spike Duplicate	Dissolved	Water	6020B	291028

Analysis Batch: 291386

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
550-195106-1	SWFTS-MW15-EM40	Total/NA	Water	6010B	291133
550-195106-3	SWFTS-MW14-EM40	Total/NA	Water	6010B	291133
550-195106-5	SWFTS-MW21-EM40	Total/NA	Water	6010B	291133
550-195106-7	SWFTS-MW13-EM40	Total/NA	Water	6010B	291133
MB 550-291133/1-A	Method Blank	Total/NA	Water	6010B	291133
LCS 550-291133/2-A	Lab Control Sample	Total/NA	Water	6010B	291133

Metals (Continued)

Analysis Batch: 291386 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
LCSD 550-291133/3-A	Lab Control Sample Dup	Total/NA	Water	6010B	291133
550-195103-L-1-A MS	Matrix Spike	Total/NA	Water	6010B	291133
550-195103-L-1-B MSD	Matrix Spike Duplicate	Total/NA	Water	6010B	291133

Analysis Batch: 291388

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
550-195106-4	SWFTS-MW14-EM40	Dissolved	Water	6010B	291029
550-195103-B-2-E MS ^4	Matrix Spike	Dissolved	Water	6010B	291029
550-195103-B-2-F MSD ^4	Matrix Spike Duplicate	Dissolved	Water	6010B	291029

Analysis Batch: 291502

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
550-195106-2	SWFTS-MW15-EM40	Dissolved	Water	6020B	291028
550-195106-4	SWFTS-MW14-EM40	Dissolved	Water	6020B	291028
550-195106-6	SWFTS-MW21-EM40	Dissolved	Water	6020B	291028
550-195106-8	SWFTS-MW13-EM40	Dissolved	Water	6020B	291028
MB 550-291028/1-A	Method Blank	Total/NA	Water	6020B	291028
LCS 550-291028/2-A	Lab Control Sample	Total/NA	Water	6020B	291028
LCSD 550-291028/3-A	Lab Control Sample Dup	Total/NA	Water	6020B	291028
550-195103-B-2-A MS	Matrix Spike	Dissolved	Water	6020B	291028
550-195103-B-2-B MSD	Matrix Spike Duplicate	Dissolved	Water	6020B	291028

General Chemistry

Analysis Batch: 291306

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
550-195106-1	SWFTS-MW15-EM40	Total/NA	Water	SM 5310B	
550-195106-3	SWFTS-MW14-EM40	Total/NA	Water	SM 5310B	
550-195106-5	SWFTS-MW21-EM40	Total/NA	Water	SM 5310B	
550-195106-7	SWFTS-MW13-EM40	Total/NA	Water	SM 5310B	
MB 550-291306/5	Method Blank	Total/NA	Water	SM 5310B	
LCS 550-291306/6	Lab Control Sample	Total/NA	Water	SM 5310B	
LCSD 550-291306/7	Lab Control Sample Dup	Total/NA	Water	SM 5310B	
550-195103-C-1 MS	Matrix Spike	Total/NA	Water	SM 5310B	
550-195103-D-1 MSD	Matrix Spike Duplicate	Total/NA	Water	SM 5310B	

Lab Chronicle

Client: Tetra Tech, Inc.
Job ID: 550-195106-1
Project/Site: Tetra Tech M11 SWF Treatability Study

Client Sample ID: SWFTS-MW15-EM40
Lab Sample ID: 550-195106-1
Date Collected: 12/15/22 08:20
Matrix: Water
Date Received: 12/16/22 10:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	RSK-175		1	597679	JPH	EET DEN	12/23/22 21:42
Total/NA	Analysis	300.0		1	290964	AS1	EET PHX	12/16/22 18:48
Total/NA	Analysis	300.0		50	290966	AS1	EET PHX	12/16/22 20:58
Total/NA	Analysis	300.1B		100	291337	MEG	EET PHX	12/22/22 08:29
Total/NA	Analysis	314.0		500	290947	RDC	EET PHX	12/16/22 15:22
Total/NA	Prep	3005A			291133	GLW	EET PHX	12/20/22 11:37
Total/NA	Analysis	6010B		1	291386	CHS	EET PHX	12/21/22 12:21
Total/NA	Analysis	SM 5310B		1	291306	RDC	EET PHX	12/21/22 14:53

Client Sample ID: SWFTS-MW15-EM40
Lab Sample ID: 550-195106-2
Date Collected: 12/15/22 08:20
Matrix: Water
Date Received: 12/16/22 10:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Dissolved	Prep	3005A			291029	SGO	EET PHX	12/19/22 09:51
Dissolved	Analysis	6010B		1	291197	CHS	EET PHX	12/20/22 12:27
Dissolved	Prep	3005A			291028	SGO	EET PHX	12/19/22 09:45
Dissolved	Analysis	6020B		1	291385	ARE	EET PHX	12/22/22 16:58
Dissolved	Prep	3005A			291028	SGO	EET PHX	12/19/22 09:45
Dissolved	Analysis	6020B		1	291502	ARE	EET PHX	12/27/22 14:33

Client Sample ID: SWFTS-MW14-EM40
Lab Sample ID: 550-195106-3
Date Collected: 12/15/22 10:25
Matrix: Water
Date Received: 12/16/22 10:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	RSK-175		1	597679	JPH	EET DEN	12/23/22 22:09
Total/NA	Analysis	300.0		1	290964	AS1	EET PHX	12/16/22 19:07
Total/NA	Analysis	300.0		50	290966	AS1	EET PHX	12/16/22 21:26
Total/NA	Analysis	300.1B		50	291340	MEG	EET PHX	12/22/22 22:44
Total/NA	Analysis	314.0		500	291132	RDC	EET PHX	12/20/22 12:49
Total/NA	Prep	3005A			291133	GLW	EET PHX	12/20/22 11:37
Total/NA	Analysis	6010B		1	291386	CHS	EET PHX	12/21/22 12:24
Total/NA	Analysis	SM 5310B		1	291306	RDC	EET PHX	12/21/22 15:32

Client Sample ID: SWFTS-MW14-EM40
Lab Sample ID: 550-195106-4
Date Collected: 12/15/22 10:25
Matrix: Water
Date Received: 12/16/22 10:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Dissolved	Prep	3005A			291029	SGO	EET PHX	12/19/22 09:51
Dissolved	Analysis	6010B		1	291197	CHS	EET PHX	12/20/22 12:30
Dissolved	Prep	3005A			291029	SGO	EET PHX	12/19/22 09:51
Dissolved	Analysis	6010B		4	291388	CHS	EET PHX	12/21/22 12:59

Lab Chronicle

Client: Tetra Tech, Inc. Job ID: 550-195106-1
Project/Site: Tetra Tech M11 SWF Treatability Study

Client Sample ID: SWFTS-MW14-EM40 Lab Sample ID: 550-195106-4

Date Collected: 12/15/22 10:25 **Matrix: Water**
Date Received: 12/16/22 10:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Dissolved	Prep	3005A			291028	SGO	EET PHX	12/19/22 09:45
Dissolved	Analysis	6020B		1	291385	ARE	EET PHX	12/22/22 17:00
Dissolved	Prep	3005A			291028	SGO	EET PHX	12/19/22 09:45
Dissolved	Analysis	6020B		1	291502	ARE	EET PHX	12/27/22 14:35

Client Sample ID: SWFTS-MW21-EM40 Lab Sample ID: 550-195106-5

Date Collected: 12/15/22 11:35 **Matrix: Water**
Date Received: 12/16/22 10:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	RSK-175		1	597679	JPH	EET DEN	12/23/22 22:22
Total/NA	Analysis	300.0		1	290964	AS1	EET PHX	12/16/22 19:25
Total/NA	Analysis	300.0		50	290966	AS1	EET PHX	12/16/22 21:54
Total/NA	Analysis	300.1B		2	291340	MEG	EET PHX	12/22/22 13:24
Total/NA	Analysis	314.0		100	290947	RDC	EET PHX	12/16/22 16:52
Total/NA	Prep	3005A			291133	GLW	EET PHX	12/20/22 11:37
Total/NA	Analysis	6010B		1	291386	CHS	EET PHX	12/21/22 12:26
Total/NA	Analysis	SM 5310B		1	291306	RDC	EET PHX	12/21/22 15:47

Client Sample ID: SWFTS-MW21-EM40 Lab Sample ID: 550-195106-6

Date Collected: 12/15/22 11:35 **Matrix: Water**
Date Received: 12/16/22 10:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Dissolved	Prep	3005A			291029	SGO	EET PHX	12/19/22 09:51
Dissolved	Analysis	6010B		1	291197	CHS	EET PHX	12/20/22 12:33
Dissolved	Prep	3005A			291028	SGO	EET PHX	12/19/22 09:45
Dissolved	Analysis	6020B		1	291385	ARE	EET PHX	12/22/22 17:02
Dissolved	Prep	3005A			291028	SGO	EET PHX	12/19/22 09:45
Dissolved	Analysis	6020B		1	291502	ARE	EET PHX	12/27/22 14:37

Client Sample ID: SWFTS-MW13-EM40 Lab Sample ID: 550-195106-7

Date Collected: 12/15/22 13:00 **Matrix: Water**
Date Received: 12/16/22 10:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	RSK-175		1	597679	JPH	EET DEN	12/23/22 22:36
Total/NA	Analysis	300.0		5	290964	AS1	EET PHX	12/16/22 19:43
Total/NA	Analysis	300.0		50	290964	AS1	EET PHX	12/16/22 20:02
Total/NA	Analysis	300.1B		200	291340	MEG	EET PHX	12/22/22 14:52
Total/NA	Analysis	314.0		200	290947	RDC	EET PHX	12/16/22 17:14
Total/NA	Prep	3005A			291133	GLW	EET PHX	12/20/22 11:37
Total/NA	Analysis	6010B		1	291386	CHS	EET PHX	12/21/22 12:29
Total/NA	Analysis	SM 5310B		1	291306	RDC	EET PHX	12/21/22 16:01

Lab Chronicle

Client: Tetra Tech, Inc.
Job ID: 550-195106-1
Project/Site: Tetra Tech M11 SWF Treatability Study

Client Sample ID: SWFTS-MW13-EM40
Lab Sample ID: 550-195106-8

Date Collected: 12/15/22 13:00
Matrix: Water
Date Received: 12/16/22 10:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Dissolved	Prep	3005A			291029	SGO	EET PHX	12/19/22 09:51
Dissolved	Analysis	6010B		1	291197	CHS	EET PHX	12/20/22 12:36
Dissolved	Prep	3005A			291028	SGO	EET PHX	12/19/22 09:45
Dissolved	Analysis	6020B		1	291385	ARE	EET PHX	12/22/22 17:04
Dissolved	Prep	3005A			291028	SGO	EET PHX	12/19/22 09:45
Dissolved	Analysis	6020B		1	291502	ARE	EET PHX	12/27/22 14:39

Laboratory References:

EET DEN = Eurofins Denver, 4955 Yarrow Street, Arvada, CO 80002, TEL (303)736-0100

EET PHX = Eurofins Phoenix, 4625 East Cotton Center Boulevard, Suite #189, Phoenix, AZ 85040, TEL (602)437-3340

Accreditation/Certification Summary

Client: Tetra Tech, Inc.
Job ID: 550-195106-1
Project/Site: Tetra Tech M11 SWF Treatability Study

Laboratory: Eurofins Phoenix

All accreditations/certifications held by this laboratory are listed. Not all accreditations/certifications are applicable to this report.

Authority	Program	Identification Number	Expiration Date
Arizona	State	AZ0728	06-10-23
California	State	2941	03-09-23
Nevada	State	AZ1030	07-31-23
Oregon	NELAP	AZ100001	03-09-23
USDA	US Federal Programs	P330-19-00227	08-27-22 *

Laboratory: Eurofins Denver

All accreditations/certifications held by this laboratory are listed. Not all accreditations/certifications are applicable to this report.

Authority	Program	Identification Number	Expiration Date
A2LA	Dept. of Defense ELAP	2907.01	10-31-23
A2LA	ISO/IEC 17025	2907.01	10-31-23
Alabama	State Program	40730	09-30-12 *
Alaska (UST)	State	18-001	02-08-23
Arkansas DEQ	State	19-047-0	05-31-23
California	State	2513	01-08-23
Connecticut	State	PH-0686	09-30-22 *
Florida	NELAP	E87667-57	06-30-23
Georgia	State	4025-011	01-08-23
Illinois	NELAP	2000172019-1	04-30-23
Iowa	State	IA#370	12-01-24
Kansas	NELAP	E-10166	04-30-23
Kentucky (WW)	State	KY98047	12-31-22
Louisiana	NELAP	30785	06-30-14 *
Louisiana	NELAP	30785	06-30-23
Louisiana (All)	NELAP	30785	06-30-23
Minnesota	NELAP	1788752	12-31-22
Nevada	State	CO000262020-1	07-31-23
New Hampshire	NELAP	205319	04-28-23
New Jersey	NELAP	190002	06-30-23
New York	NELAP	59923	04-01-23
North Carolina (WW/SW)	State	358	12-31-22
North Dakota	State	R-034	01-08-23
Oklahoma	NELAP	8614	08-31-23
Oregon	NELAP	4025-011	01-09-23
Pennsylvania	NELAP	013	07-31-23
South Carolina	State	72002001	01-08-23
Texas	NELAP	TX104704183-08-TX	09-30-09 *
Texas	NELAP	T104704183-21-19	09-30-23
US Fish & Wildlife	US Federal Programs	058448	07-31-23
USDA	US Federal Programs	P330-20-00065	03-06-23
Utah	NELAP	QUAN5	06-30-13 *
Utah	NELAP	CO000262019-11	07-31-23
Virginia	NELAP	10490	06-14-23
Washington	State	C583-19	08-03-23
Wisconsin	State	999615430	08-31-23

* Accreditation/Certification renewal pending - accreditation/certification considered valid.

Method Summary

Client: Tetra Tech, Inc.
Job ID: 550-195106-1
Project/Site: Tetra Tech M11 SWF Treatability Study

Method	Method Description	Protocol	Laboratory
RSK-175	Dissolved Gases (GC)	RSK	EET DEN
300.0	Anions, Ion Chromatography	MCAWW	EET PHX
300.1B	Disinfection By-Products, (IC)	EPA	EET PHX
314.0	Perchlorate (IC)	EPA	EET PHX
6010B	Metals (ICP)	SW846	EET PHX
6020B	Metals (ICP/MS)	SW846	EET PHX
SM 5310B	Organic Carbon, Total (TOC)	SM	EET PHX
3005A	Preparation, Total Metals	SW846	EET PHX

Protocol References:

EPA = US Environmental Protection Agency

MCAWW = "Methods For Chemical Analysis Of Water And Wastes", EPA-600/4-79-020, March 1983 And Subsequent Revisions.

RSK = Sample Prep And Calculations For Dissolved Gas Analysis In Water Samples Using A GC Headspace Equilibration Technique, RSKSOP-175, Rev. 0, 8/11/94, USEPA Research Lab

SM = "Standard Methods For The Examination Of Water And Wastewater"

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

Laboratory References:

EET DEN = Eurofins Denver, 4955 Yarrow Street, Arvada, CO 80002, TEL (303)736-0100

EET PHX = Eurofins Phoenix, 4625 East Cotton Center Boulevard, Suite #189, Phoenix, AZ 85040, TEL (602)437-3340

TestAmerica Las Vegas 219

195106

12/30/2022

Tetra Tech

1093 Commerce Park Drive
Oak Ridge, TN37830
(865)483-9900

CHAIN-OF-CUSTODY

NERT-M11
Groundwater Sampling

Laboratory Name:Eurofins TestAmerica, Phoenix (602) 437-3340 | Address: 4625 East Cotton Ctr Blvd Suite 189 Phoenix, AZ 85040 | Contact: Mary Charlson 602-659-7627 | Page ___ of ___

Project Name: Tetra Tech M11 SWF Treatability Study | Sampler: J. Bunhers | Sampler Phone: 7027672053

Project No. M11-CWP-18-WA5 | Project Contact: **Maureen McMyler** | Site Telephone No.: (702) 966-8340

NERT - Seep Well Field Area Bioremediation Treatability Study

Report to: Maureen McMyler, 1093 Commerce Park Dr. (865)220-4762 | Project Manager/Supervisor: **Dana Grady**

Bill to: Sunshine Pryor, 350 Indiana St., Golden, CO 80401 (303) 217-5700

Analysis and Method Requested

Remarks

Preservation Codes:
A- HCL
D-Nitric Acid
L-EDA
N-None
S-H2SO4

Other:

Item No.	Sample Number	Date	Time	G=Grab C=Comp	Matrix	Sample Description, Location	Number of Containers	Perchlorate E314.0	TOC SM5310B	Chlorate E300.1	Sulfate/Nitrate E300.0 SHORT HOLD NITRATE!	Dissolved Metals (field filtered)	Total Mn by 6010B	Methane by RSK175 (no headspace)	Notes
						Preservation Code:	-	N	A	L	N	D	D	A	
1	SWFTS-MW15-EM40	12/15/22	0820	G	W		12	X	X	X	X	X	X	X	-1+2
2	SWFTS-MW14-EM40	12/15/22	1025	G	W		12	X	X	X	X	X	X	X	-3+4
3	SWFTS-MW21-EM40	12/15/22	1135	G	W		12	X	X	X	X	X	X	X	-5+6
4	SWFTS-MW13-EM40	12/15/22	1300	G	W		12	X	X	X	X	X	X	X	-7+8
5															
6															
7															
8															
9															
10															

550-195106 Chain of Custody

Transfers Relinquished By (Signature)	Date/Time	Transfers Accepted By (Signature)	Date/Time	Special Instructions:
	12/15/22	TAM TALVS	12/15/22 1400	
TAM TALVS	12/15/22 1600			
			FedEx Airbill No.:	FedEx Airbill No.
		Laboratory: Mary CA 12-16-22 10:00	Sampler's Signature: (REQUIRED)	Sampler's Signature:

TAT ___Standard ___ Rush Due _____ | Received Good Condition ____ Y ____N ____ Cold

EETA-PHX

TH 340 15.1/15.4

1.1°C-FE-ice

Eurofins Phoenix
4625 East Cotton Center Boulevard Suite #189
Phoenix, AZ 85040
Phone: 602-437-3340

Chain of Custody Record

eurofins

Client Information (Sub Contract Lab)	Sampler:	Lab PM: Sester, Rachel E	Carrier Tracking No(s):	COC No: 550-35656.1
Client Contact: Shipping/Receiving	Phone	E-Mail: Rachel.Sester@et.eurofinsus.com	State of Origin: Nevada	Page: Page 1 of 1
Company: TestAmerica Laboratories, Inc.		Accreditations Required (See note): State Program - Nevada		Job #: 550-195106-1
Address: 4955 Yarrow Street, ,	Due Date Requested: 1/2/2023			
City: Arvada	TAT Requested (days):			
State, Zip: CO, 80002				
Phone: 303-736-0100(Tel) 303-431-7171(Fax)	PO #:			
Email:	WO #			
Project Name: Tetra Tech M11 SWF Treatability Study	Project #: 55015433			
Site:	SSOW#:			

Analysis Requested

Preservation Codes:

A - HCL, B - NaOH, C - Zn Acetate, D - Nitric Acid, E - NaHSO4, F - MeOH, G - Amchlor, H - Ascorbic Acid, I - Ice, J - DI Water, K - EDTA, L - EDA, M - Hexane, N - None, O - AsNaO2, P - Na2O4S, Q - Na2SO3, R - Na2S2O3, S - H2SO4, T - TSP Dodecahydrate, U - Acetone, V - MCAA, W - pH 4-5, Y - Trizma, Z - other (specify)

Other:

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	RSK_175/ (MOD) Local Method	Total Number of containers	Special Instructions/Note:
			Preservation Code:						
SWFTS-MW15-EM40 (550-195106-1)	12/15/22	08:20 Pacific		Water			X	3	
SWFTS-MW14-EM40 (550-195106-3)	12/15/22	10:25 Pacific		Water			X	3	
SWFTS-MW21-EM40 (550-195106-5)	12/15/22	11:35 Pacific		Water			X	3	
SWFTS-MW13-EM40 (550-195106-7)	12/15/22	13:00 Pacific		Water			X	3	

550-195106 Chain of Custody

Note: Since laboratory accreditations are subject to change, Eurofins Environment Testing Southwest, LLC places the ownership of method, analyte & accreditation compliance upon our subcontract laboratories. This sample shipment is forwarded under chain-of-custody. If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed, the samples must be shipped back to the Eurofins Environment Testing Southwest, LLC laboratory or other instructions will be provided. Any changes to accreditation status should be brought to Eurofins Environment Testing Southwest, LLC attention immediately. If all requested accreditations are current to date, return the signed Chain of Custody attesting to said compliance to Eurofins Environment Testing Southwest, LLC.

Possible Hazard Identification	***Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)***
Unconfirmed	☐ *Return To Client* ☐ *Disposal By Lab* ☐ *Archive For* _____ *Months*
Deliverable Requested: I, II, III, IV, Other (specify) Primary Deliverable Rank: 2	Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:

	Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
1	[illegible] 12-19-22	14:40	ETAS	Fedex		
2					12-20-22 0900	ETADEN
3						

Custody Seals Intact: Δ Yes Δ No	Custody Seal No.: 19196221	Cooler Temperature(s) °C and Other Remarks: 3.7°C IR12 CF0.0

Ver: 06/08/2021

Login Sample Receipt Checklist

Client: Tetra Tech, Inc.

Job Number: 550-195106-1

Login Number: 195106
List Number: 1
Creator: Maycock, Lisa

List Source: Eurofins Phoenix

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	True	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	False	Check done at department level as required.

Login Sample Receipt Checklist

Client: Tetra Tech, Inc.

Job Number: 550-195106-1

Login Number: 195106
List Number: 2
Creator: Held, Wesley

List Source: Eurofins Denver
List Creation: 12/20/22 11:38 AM

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	N/A	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	N/A	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

Appendix 3
DVSR Electronic Data Deliverable

Per the requirements provided by NDEP for Unified Chemical Electronic Data Deliverable Format (July 18, 2018), a database is provided in Microsoft Access format and includes sample, location and analytical data supporting the DVSR and for upload of the Companies' electronic data into the regional database maintained by NDEP. Associated data in the NDEP Water Level Electronic Data Deliverable Format (February 28, 2010) have also been provided in a second Microsoft Access file. These databases are being sent in a separate file for electronic download.

Appendix C
Long-Term Water Level Monitoring Technical Memorandum

TETRA TECH

TECHNICAL MEMORANDUM

To:	**Dana Grady and Ronnie Britto, Tetra Tech**
From:	Katelyn Goen and Jenny Dabbs, Tetra Tech
Date:	August 9, 2024
Subject:	Long-Term Water Level Monitoring – Seep Well Field Area Bioremediation Treatability Study

1.0 INTRODUCTION

This technical memorandum describes the implementation of long-term water level monitoring as part of the hydrogeological evaluation for the Seep Well Field Area Bioremediation Treatability Study (SWFTS) conducted by Tetra Tech, Inc. on behalf of the Nevada Environmental Response Trust. Initial data and results from the long-term water level monitoring were reported in the *Seep Well Field Area Bioremediation Treatability Study Results Report* (Tetra Tech, 2019), the *Seep Well Field Area Bioremediation Treatability Study 2019 Annual Progress Report* (Tetra Tech, 2020), the *Seep Well Field Area Bioremediation Treatability Study 2020 Annual Progress Report* (Tetra Tech, 2021), and the *Seep Well Field Area Bioremediation Treatability Study 2021 Annual Progress Report* (Tetra Tech, 2022). The current reporting period is January through December 2022. Due to the ongoing developments within the treatability study area associated with the Cadence Sports Park, this treatability study was concluded in December 2022.

The locations of the wells instrumented in the treatability study area and the Pond 13 area are shown in **Figure C.1** and **Figure C.2**, respectively. The objectives of long-term water level monitoring are to characterize seasonal and long-term trends in water levels, to monitor the hydraulic effects of injection into the injection well transects, and to characterize potential changes in vertical gradients over time.

2.0 LONG-TERM WATER LEVEL MONITORING

A total of 10 water-level monitoring transducers (In-Situ Rugged TROLL 100) were placed in monitoring wells during implementation of the treatability study. The instrumented locations were chosen to provide coverage across the treatability study area. In some locations, multiple wells in a cluster were instrumented to provide data for characterization of vertical gradients. Transducers were installed in treatability study area monitoring wells in August 2017, in accordance with the *Seep Well Field Area Bioremediation Treatability Study Work Plan* (Tetra Tech, 2016). The transducer data continued to be downloaded regularly as part of the study extension detailed in *Treatability/Pilot Study Modification No. 6 - Seep Well Field Area Bioremediation Treatability Study* (Tetra Tech, 2018). Transducers installed at three monitoring wells (SWFTS-MW05B, SWFTS-MW09B, and SWFTS-MW14) were relocated to three alternate monitoring wells (SWFTS-MW03, SWFTS-MW06B, and SWFTS-MW23) in

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150 S. 4th Street, Unit A, Henderson, NV 89015
Tel 702.854.2293 tetratech.com

December 2017. One barometric pressure transducer (In-Situ Rugged BaroTROLL) was also deployed for the duration of the treatability study to facilitate the compensation of water-level monitoring data for changes in barometric pressure. Instruments were installed prior to the first injection event in August 2017 so that hydraulic responses to injection activities could be measured. The instruments have continued to monitor water levels during the seven subsequent injection events in 2018 through 2021.

Transducers were also installed in August 2017 in two wells (MW-K5 and PC-98R) in the vicinity of the City of Henderson (COH) Pond 13, which is located upgradient (south) of the treatability study area (see ***Figure C.2***). A second barometric pressure transducer was installed in the Pond 13 area to facilitate the compensation of water-level monitoring data for changes in barometric pressure because Pond 13 is significantly south of the treatability study area. These transducers are used to monitor the periodic releases of water to Pond 13, located upgradient of the study area.

Table 1 summarizes the locations and initial deployment dates of transducers. Long-term water level monitoring data have been downloaded periodically. Downloaded transducer data are imported into a database, corrected for barometric pressure, and converted into groundwater elevations for further analysis. At the conclusion of the treatability study, all transducers were removed from the monitoring wells during the final effectiveness monitoring sampling event for the treatability study the week of December 12, 2022. Transducers installed at SWFTS-MW06B, SWFTS-MW15, and MW-K5 were replaced during this reporting period. In addition, the transducer installed at SWFTS-MW10C became corrupted during the last quarter of the treatability study and the data from November to December 2022 were not able to be downloaded. Data from these wells immediately prior to transducer replacement were not able to be downloaded. Data gaps are expected during this reporting period because the transducers were originally installed in 2017, and they typically have a battery life of 4 years.

Table 1. Locations and Deployment Details of Long-Term Water Level Monitoring Transducers

Well	Screened Unit	Transducer Type	Date Installed	Study Area
SWFTS-MW02	Alluvium	In-Situ Rugged TROLL	8/22/2017	SWFTS
SWFTS-MW03	Alluvium	In-Situ Rugged TROLL	12/22/2017	SWFTS
SWFTS-MW06B[1]	Alluvium	In-Situ Rugged TROLL	12/22/2017	SWFTS
SWFTS-MW07B	Alluvium	In-Situ Rugged TROLL	8/14/2017	SWFTS
SWFTS-MW09A	Alluvium	In-Situ Rugged TROLL	8/14/2017	SWFTS
SWFTS-MW10A	Alluvium	In-Situ Rugged TROLL	8/14/2017	SWFTS
SWFTS-MW10C[2]	UMCf	In-Situ Rugged TROLL	8/14/2017	SWFTS
SWFTS-MW15[1]	Alluvium	In-Situ Rugged TROLL and BaroTROLL	8/14/2017	SWFTS
SWFTS-MW23	Alluvium	In-Situ Rugged TROLL	12/22/2017	SWFTS
SWFTS-MW25	Alluvium	In-Situ Rugged TROLL	8/14/2017	SWFTS
PC-98R	Alluvium	In-Situ Rugged TROLL and BaroTroll	8/14/2017	Pond 13
MW-K5[3]	Alluvium	In-Situ Rugged TROLL	8/14/2017	Pond 13

Notes

UMCf-– Upper Muddy Creek formation
SWFTS – Seep Well Field Treatability Study Area
1. The batteries in the transducers installed in SWFTS-MW15 and SWFTS-MW06B died and the data from the first and second quarter of 2022 were not able to be downloaded. A new transducer was installed at these locations in July 2022.
2. The transducer installed at SWFTS-MW10C was corrupted and the data from November to December 2022 were not able to be downloaded.
3. Transducer data were unavailable from MW-K5 between November and July 2022 when a new transducer was installed at this location.

3.0 TREATABILITY STUDY AREA RESULTS

Data from the treatability study area monitoring wells were downloaded in December 2021 and March, June, October, and December 2022 to cover the current reporting period. The data were corrected for barometric pressure and compared to the precipitation data from the nearby C-1 Channel gaging station (United States Geological Survey [USGS] 09419745 C-1 Channel Abv Mouth Nr Henderson, NV), located east of the study area. ***Figure C.3*** provides hydrographs for the treatability study area monitoring wells.

The hydrographs show that all wells were visibly influenced by precipitation. The wells instrumented in the treatability study area are located over 1,000 feet from the Las Vegas Wash, and they appear to be too far away to respond to daily changes in the surface water elevation and flow in the Las Vegas Wash. The data also indicate that the vertical gradients between the alluvium and Upper Muddy Creek formation (UMCf) in the treatability study area remained relatively stable during the reporting period. Precipitation appears to have the largest influence on water levels at monitoring well SWFTS-MW06B, but a water level rise correlated to precipitation events is observed at all the wells, including monitoring well SWFTS-MW10C, which is screened in the UMCf. During this reporting period, these impacts were most noticeable after the largest precipitation events on July 27-28, 2022, of 1.92 inches and September 13-14, 2022, of 0.36 inches.

Data collected from all transducers in the study area indicated a large rise in water levels beginning in early December 2021 and peaking in early February 2022 (**Figure C.3**). The largest rises of more than 5 feet were evident in wells SWFTS-MW02, SWFTS-MW07B, SWFTS-MW10A, and SWFTS-MW10C. The other wells monitored observed a significant but lesser response of approximately 1.5 to 2.5 feet. Water levels continued to decline, recovering from this event through July 2022. The water level rise beginning in December 2021 appears to correspond to a pressure increase transmitted from the Pond 13 area releases of COH treated effluent discussed in Section 4.0. Pressure responses travel significantly faster than the actual water, so the increased pressure from the hydraulic head increases at Pond 13 would be expected to transmit fairly rapidly to the study area.

4.0 POND 13 AREA RESULTS

Data from the transducers installed in monitoring well PC-98R in the vicinity of Pond 13 were downloaded quarterly in November 2021, February 2022, May 2022, August 2022, November 2022, and February 2023 to cover the current reporting period. A new transducer was installed in monitoring well MW-K5 in the vicinity of Pond 13 in July 2022 to provide data for the 2022 reporting period. The Pond 13 area data were corrected for barometric pressure and compared to the precipitation data from the nearby C-1 Channel gaging station (USGS 09419745), located east of the treatability study area. ***Figure C.4*** provides hydrographs for the Pond 13 area monitoring wells.

The hydrographs indicate that the Pond 13 area monitoring wells were significantly influenced due to a sizeable release of treated effluent by COH Pond 13 in December 2021. A second, larger release of effluent by COH is indicated by the water level peak on February 1, 2022, at PC-98R, which represents a change in groundwater elevation of approximately feet 17 feet (***Figure C.4***). The water level response to treated effluent during 2022 was larger in scale than those observed in previous years, indicating that the amount of treated effluent released in late 2021 and early 2022 was likely larger as well. Monitoring of such releases is important because the treated effluent can significantly dilute perchlorate concentrations that reach the Seep Well Field and treatability study area via groundwater in the paleochannel and via adjacent groundwater outside the paleochannel. A water level rise of this magnitude (i.e., 17 feet), also has the potential to flush contamination trapped within vadose zone soils into groundwater, which may result in an increased flux of perchlorate and chlorate into the treatability study area. Precipitation also appears to have a visible influence on water levels in the Pond 13 area monitoring wells, though not as significant an influence as the treated effluent releases to the nearby Pond 13 area. Precipitation responses are visible as increases in monitoring well water levels shortly after the precipitation events.

5.0 REFERENCES

Tetra Tech. (2016). *Seep Well Field Area Bioremediation Treatability Study Work Plan, Nevada Environmental Response Trust Site, Henderson, Nevada.* May 31.

Tetra Tech. (2018). *Treatability/Pilot Study Modification No. 6 - Seep Well Field Area Bioremediation Treatability Study, Nevada Environmental Response Trust, Henderson, Nevada*. December 11.

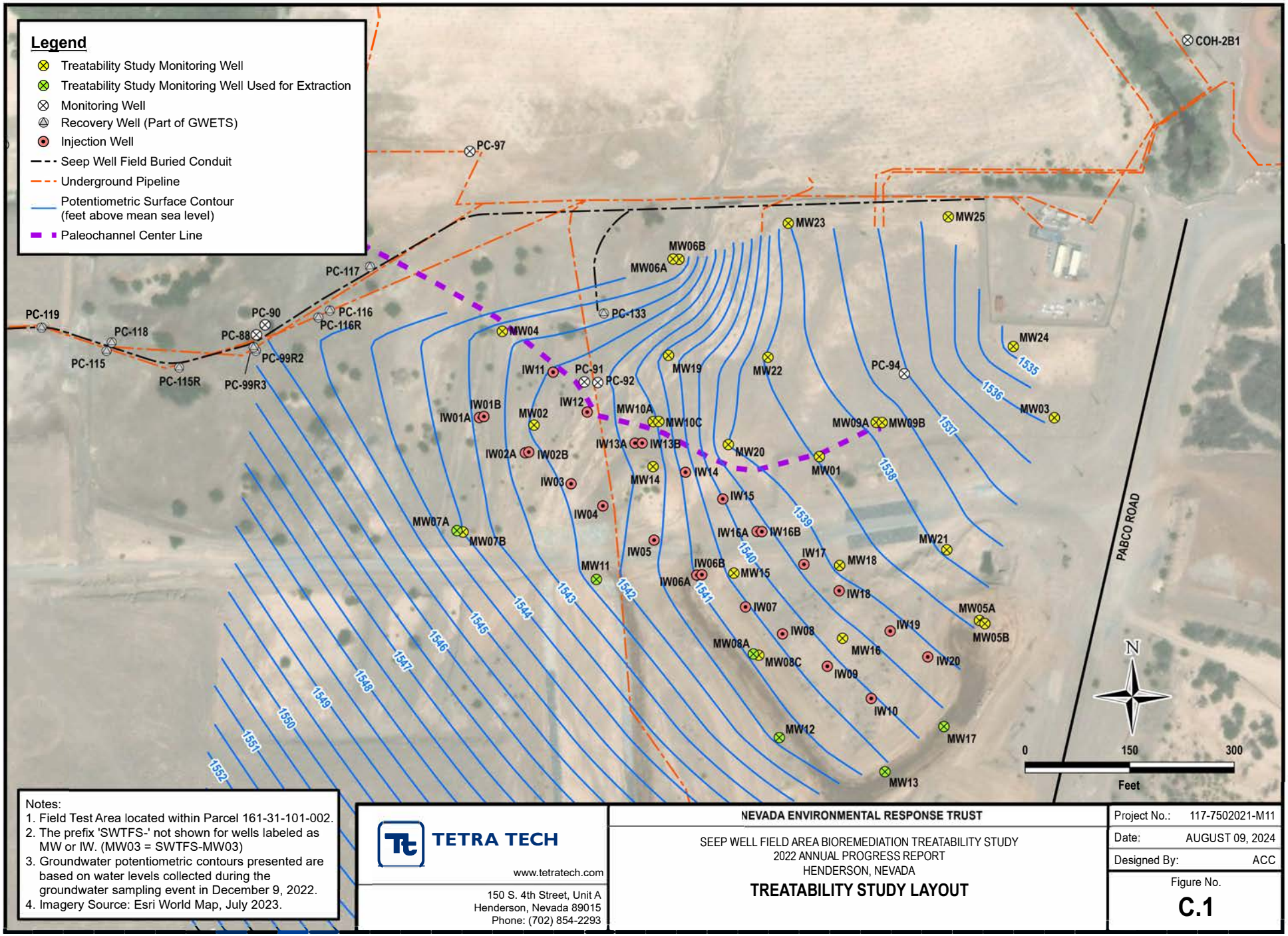
Tetra Tech. (2019). *Seep Well Field Area Bioremediation Treatability Study Results Report, Nevada Environmental Response Trust Site, Henderson, Nevada.* August 13.

Tetra Tech. (2020). *Seep Well Field Area Bioremediation Treatability Study 2019 Annual Progress Report, Nevada Environmental Response Trust, Henderson, Nevada.* September 4.

Tetra Tech. (2021). *Seep Well Field Area Bioremediation Treatability Study 2020 Annual Progress Report, Nevada Environmental Response Trust, Henderson, Nevada.* September 29.

Tetra Tech. (2022). *Seep Well Field Area Bioremediation Treatability Study 2021 Annual Progress Report, Nevada Environmental Response Trust, Henderson, Nevada.* August 22.

Figures



Notes:
1. Field Test Area located within Parcel 161-31-101-002.
2. The prefix 'SWTFS-' not shown for wells labeled as MW or IW. (MW03 = SWTFS-MW03)
3. Groundwater potentiometric contours presented are based on water levels collected during the groundwater sampling event in December 9, 2022.
4. Imagery Source: Esri World Map, July 2023.

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Phone: (702) 854-2293

NEVADA ENVIRONMENTAL RESPONSE TRUST

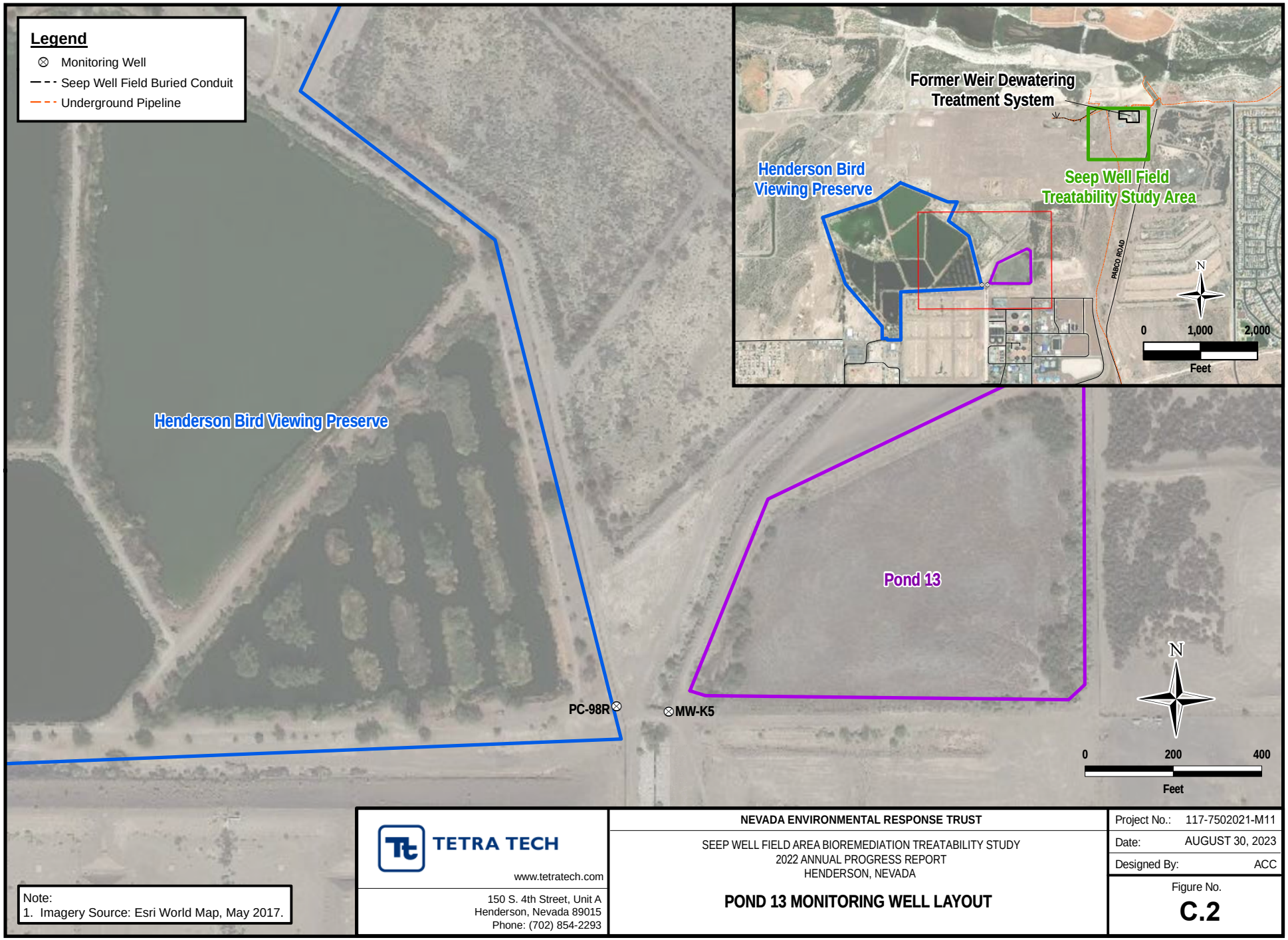
SEEP WELL FIELD AREA BIOREMEDIATION TREATABILITY STUDY
2022 ANNUAL PROGRESS REPORT
HENDERSON, NEVADA

TREATABILITY STUDY LAYOUT

Project No.:	117-7502021-M11
Date:	AUGUST 09, 2024
Designed By:	ACC

Figure No.
C.1

\\ETSS706GISFS1\CORPARCGISSHARE\ECA\PROJECTS\N-S\NERT\M11\M11_2022PROGRESSRPT



Note:
1. Imagery Source: Esri World Map, May 2017.

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NEVADA ENVIRONMENTAL RESPONSE TRUST

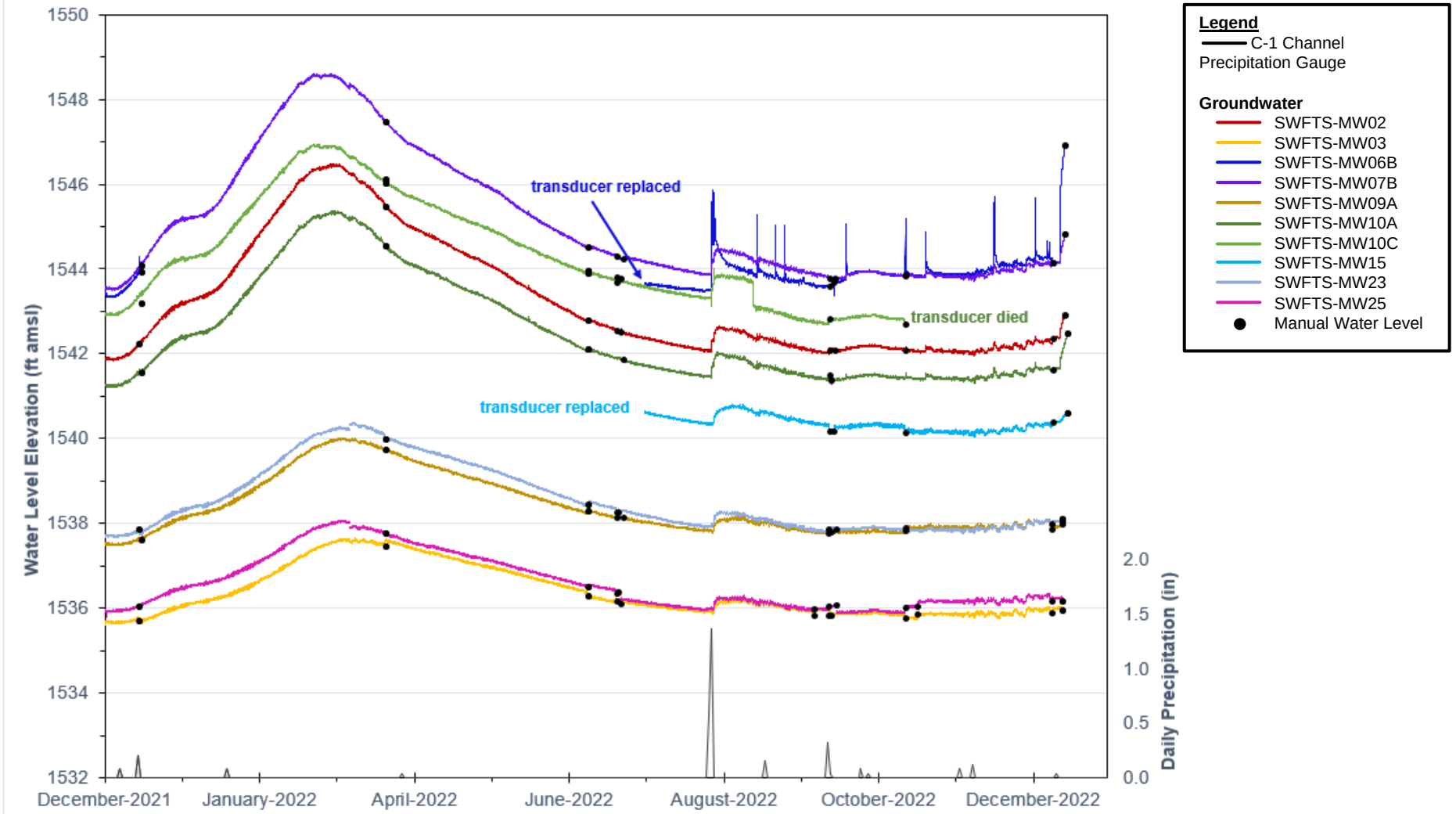
SEEP WELL FIELD AREA BIOREMEDIATION TREATABILITY STUDY
2022 ANNUAL PROGRESS REPORT
HENDERSON, NEVADA

POND 13 MONITORING WELL LAYOUT

Project No.:	117-7502021-M11
Date:	AUGUST 30, 2023
Designed By:	ACC

Figure No.
C.2

T:\NERT\M11\NERT_G\S\RESULTS FIGURES\POND13_LOCATION_V2.MXD



Notes:
ft amsl – feet above mean sea level
in - inches

1. Precipitation data were obtained from waterdata.usgs.gov, United States Geological Survey gauging station 09419745 C-1 CHANNEL ABV MOUTH NR Henderson, NV.
2. Data gaps are expected during this reporting period because the transducers were originally installed in 2017, and they typically have a battery life of 4 years. Transducers were replaced as necessary when failure was observed during quarterly downloads.

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NEVADA ENVIRONMENTAL RESPONSE TRUST SITE

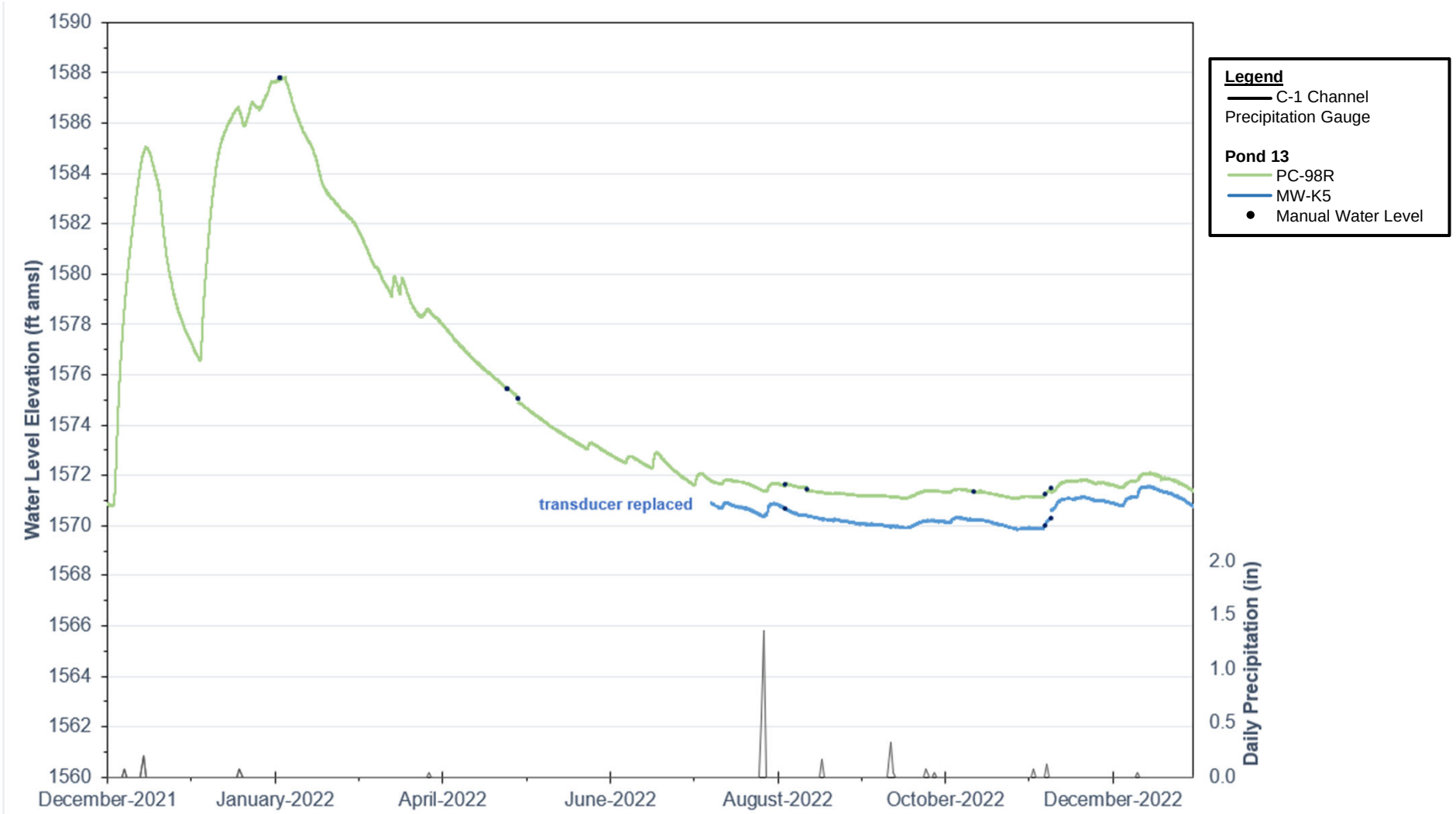
SEEP WELL FIELD AREA BIOREMEDIATION TREATABILITY STUDY
2022 ANNUAL PROGRESS REPORT
HENDERSON, NEVADA

HYDROGRAPH FOR SWFTS MONITORING WELLS

Project No.:	117-7502021-M11
Date:	AUGUST 30, 2023
Designed By:	JDJ

Figure No.
C.3

\\tts134fs1\GEOSUPVOL1\PROJECTS\NERTM11\reporting\2023\LTWLM\LTWLM_hydrographs.pptx



Notes:
ft amsl – feet above mean sea level
in - inches

1. Precipitation data were obtained from waterdata.usgs.gov, United States Geological Survey gauging station 09419745 C-1 CHANNEL ABV MOUTH NR Henderson, NV.
2. Data gaps are expected during this reporting period because the transducers were originally installed in 2017, and they typically have a battery life of 4 years. Transducers were replaced as necessary when failure was observed during quarterly downloads.

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NEVADA ENVIRONMENTAL RESPONSE TRUST SITE

SEEP WELL FIELD AREA BIOREMEDIATION TREATABILITY STUDY
2022 ANNUAL PROGRESS REPORT
HENDERSON, NEVADA

HYDROGRAPH FOR POND 13 MONITORING WELLS

Project No.:	117-7502021-M11
Date:	AUGUST 30, 2023
Designed By:	JD

Figure No.
C.4

\\ttsi34fs1\GEOSUPVOL1\PROJECTS\NERTM\M11\reporting\2021\LTWLMLTWLM_hydrographs.pptx

Appendix D
Comprehensive Data Tables

Table D.1
Groundwater Analytical Results Summary
Seep Well Field Area Bioremediation Treatability Study

Well	Event	Sample Date	QC Type	Lab Sample ID	Lithology	Screened Interval (ft bgs)	EPA 314.0	EPA 300.1B	Anions by EPA 300.0		SM5310B/ SW9060
							Perchlorate	Chlorate	Nitrate (as N)	Sulfate	Total Organic Carbon
							µg/L	µg/L	mg/L	mg/L	mg/L
COH-2B1	BL02	8/9/2017	N	440-189933-1	Alluvium/UMCf	36.0 - 66.0	1,700	1,800	0.71	970	2.3
COH-2B1	EM01	9/22/2017	N	440-192818-16	Alluvium/UMCf	36.0 - 66.0	1,700	1,600	0.53 J	990	2.7
COH-2B1	EM03	10/5/2017	N	440-193712-10	Alluvium/UMCf	36.0 - 66.0	1,800	1,400	0.60	940	2.6
COH-2B1	EM04	10/12/2017	N	440-194204-2	Alluvium/UMCf	36.0 - 66.0	1,800	1,600	0.58	1,000	2.3
COH-2B1	EM05	10/26/2017	N	440-195136-4	Alluvium/UMCf	36.0 - 66.0	1,900	1,400	0.42 J	1,000	2.6
COH-2B1	EM07	12/14/2017	N	440-198571-5	Alluvium/UMCf	36.0 - 66.0	1,700	5,000	0.40	950	2.6
COH-2B1	EM08	2/22/2018	N	440-204033-6	Alluvium/UMCf	36.0 - 66.0	1,500	1,400	0.57 J	1,100	2.9
COH-2B1	EM09	3/29/2018	N	440-207586-2	Alluvium/UMCf	36.0 - 66.0	1,800	1,200	<0.55	940	2.3
COH-2B1	EM10	5/2/2018	N	440-210430-11	Alluvium/UMCf	36.0 - 66.0	1,700	1,200	0.45	910	11
COH-2B1	EM11	7/10/2018	N	440-215437-6	Alluvium/UMCf	36.0 - 66.0	3,000	2,400	1.4	1,100	1.9
COH-2B1	EM13	8/16/2018	N	440-218296-11	Alluvium/UMCf	36.0 - 66.0	1,500	980	0.53 J	940	2.6
COH-2B1	EM14	9/11/2018	N	440-219886-10	Alluvium/UMCf	36.0 - 66.0	2,800	3,800	1.5	1,300	1.9
COH-2B1	EM15	10/11/2018	N	440-222092-1	Alluvium/UMCf	36.0 - 66.0	1,700	1,000	0.54 J	960	2.7
COH-2B1	EM16	1/3/2019	N	440-229111-4	Alluvium/UMCf	36.0 - 66.0	3,200	3,800	2.5	1,300	2.0
COH-2B1	EM17	2/25/2019	N	440-234705-2	Alluvium/UMCf	36.0 - 66.0	3,300	4,100	2.1	1,300	2.2
COH-2B1	EM18	4/9/2019	N	440-238618-6	Alluvium/UMCf	36.0 - 66.0	1,800	570	0.65 J-	930	2.5
COH-2B1	EM19	5/22/2019	N	440-242201-5	Alluvium/UMCf	36.0 - 66.0	1,700	520	0.57	960	2.4
COH-2B1	EM20	7/1/2019	N	440-245068-4	Alluvium/UMCf	36.0 - 66.0	1,800	680	0.59	920	2.7
COH-2B1	EM21	8/15/2019	N	440-248187-7	Alluvium/UMCf	36.0 - 66.0	1,900	660	0.68	980	2.7
COH-2B1	EM22	11/4/2019	N	440-253773-1	Alluvium/UMCf	36.0 - 66.0	2,600	3,200	1.6	1,300	1.9
COH-2B1	EM23	12/18/2019	N	440-257733-1	Alluvium/UMCf	36.0 - 66.0	1,800	610 J-	0.45	900	2.2
COH-2B1	EM24	1/28/2020	N	440-259890-1	Alluvium/UMCf	36.0 - 66.0	3,200	9,200	4.4	2,100 J+	2.2
COH-2B1	EM25	3/9/2020	N	440-262455-1	Alluvium/UMCf	36.0 - 66.0	5,500	11,000	2.4	1,400	2.1 J+
COH-2B1	EM26	4/27/2020	N	440-265243-1	Alluvium/UMCf	36.0 - 66.0	2,000	810	0.68	870	2.1
COH-2B1	EM27	7/7/2020	N	440-268480-1	Alluvium/UMCf	36.0 - 66.0	2,100	900	0.79	900	3.0
COH-2B1	EM29	10/13/2020	N	440-273236-9	Alluvium/UMCf	36.0 - 66.0	3,900	7,100	2.2	1,600	1.9
LVWPS-MW101A	EM11	7/12/2018	N	440-215795-1	Alluvium	23.3 - 33.0	6,300	25,000	15	--	0.82 J
LVWPS-MW104	EM11	7/12/2018	N	440-215795-2	Alluvium	23.8 - 33.5	4,900	35,000	10	--	1.1
LVWPS-MW104	EM13	8/15/2018	N	440-218208-8	Alluvium	23.8 - 33.5	4,600	36,000	10	2,200	1.5
LVWPS-MW104	EM14	9/13/2018	N	440-220125-8	Alluvium	23.8 - 33.5	4,200	36,000	11	2,300	1.4
LVWPS-MW104	EM15	10/10/2018	N	440-221975-5	Alluvium	23.8 - 33.5	4,800	37,000	11	--	1.8
LVWPS-MW107A	EM11	7/12/2018	N	440-215795-7	Alluvium	24.8 - 34.5	4,700	9,000	6.1	--	0.90 J
LVWPS-MW108A	EM11	7/12/2018	N	440-215795-5	Alluvium	20.8 - 40.7	7,200	17,000	7.2	--	1.3
LVWPS-MW108A	EM11	7/12/2018	FD	440-215795-6	Alluvium	20.8 - 40.7	7,300	17,000	7.2	--	1.3
LVWPS-MW108A	EM13	8/15/2018	N	440-218208-6	Alluvium	20.8 - 40.7	5,700	11,000	6.2	1,500	1.9
LVWPS-MW108A	EM14	9/13/2018	N	440-220125-4	Alluvium	20.8 - 40.7	4,800	9,200	6.1 J+	1,500	1.6
LVWPS-MW108A	EM15	10/10/2018	N	440-221975-1	Alluvium	20.8 - 40.7	5,300	9,800	5.5	--	1.9
LVWPS-MW109	EM11	7/12/2018	N	440-215795-3	Alluvium	36.8 - 51.5	6,100	25,000	8.9	--	1.2
LVWPS-MW109	EM13	8/15/2018	N	440-218208-7	Alluvium	36.8 - 51.5	4,800	16,000	7.9	1,900	1.9
LVWPS-MW109	EM14	9/13/2018	N	440-220125-1	Alluvium	36.8 - 51.5	4,500	9,200	6.7 J+	1,900	1.3
LVWPS-MW109	EM15	10/10/2018	N	440-221975-6	Alluvium	36.8 - 51.5	4,400	7,300	6.9	--	1.9
LVWPS-MW111A	EM11	7/12/2018	N	440-215795-8	Alluvium	20.8 - 40.5	9,100	28,000	7.2	--	1.8
LVWPS-MW111A	EM13	8/15/2018	N	440-218208-9	Alluvium	20.8 - 40.5	7,800	30,000	7.9	1,800	2.0
LVWPS-MW111A	EM14	9/13/2018	N	440-220125-2	Alluvium	20.8 - 40.5	6,500	30,000	8.1 J+	1,900	1.4
LVWPS-MW111A	EM15	10/10/2018	N	440-221975-2	Alluvium	20.8 - 40.5	7,100	28,000	8.4	--	1.8
LVWPS-MW112A	EM11	7/12/2018	N	440-215795-4	Alluvium	28.8 - 48.0	5,200	28,000	10	--	1.5
LVWPS-MW112A	EM15	10/10/2018	N	440-221975-4	Alluvium	28.8 - 48.0	4,700	24,000	10	--	1.7
PC-58	BL01	3/28/2017	N	440-180820-1	Alluvium	7.8 - 32.8	2,600	19,000	9.9	1,200	3.4
PC-58	BL02	7/13/2017	N	440-188324-3	Alluvium	7.8 - 32.8	2,600	17,000	9.5	1,500	2.8

Table D.1
Groundwater Analytical Results Summary
Seep Well Field Area Bioremediation Treatability Study

Well	Event	Sample Date	QC Type	Lab Sample ID	Lithology	Screened Interval (ft bgs)	EPA 314.0	EPA 300.1B	Anions by EPA 300.0		SM5310B/ SW9060
							Perchlorate	Chlorate	Nitrate (as N)	Sulfate	Total Organic Carbon
							µg/L	µg/L	mg/L	mg/L	mg/L
PC-58	EM04	10/11/2017	N	440-194094-6	Alluvium	7.8 - 32.8	1,800	11,000	9.0	1,100	3.2
PC-58	EM06	11/16/2017	N	440-196786-11	Alluvium	7.8 - 32.8	2,100	16,000	10	1,100	2.9
PC-58	EM07	12/14/2017	N	440-198571-9	Alluvium	7.8 - 32.8	3,100	24,000	12	1,200	2.9
PC-58	EM08	2/21/2018	N	440-203937-13	Alluvium	7.8 - 32.8	3,700	35,000	12	1,300	5.4
PC-58	EM09	3/28/2018	N	440-207497-6	Alluvium	7.8 - 32.8	1,400	12,000	9.8	1,300	2.7
PC-58	EM10	5/2/2018	N	440-210430-10	Alluvium	7.8 - 32.8	1,200	10,000	9.9	1,400	2.7
PC-58	EM11	7/11/2018	N	440-215717-7	Alluvium	7.8 - 32.8	1,100	9,800	10	1,500	2.6
PC-58	EM13	8/15/2018	N	440-218208-5	Alluvium	7.8 - 32.8	1,300	13,000	10	1,500	3.1
PC-58	EM14	9/13/2018	N	440-220125-5	Alluvium	7.8 - 32.8	1,500	22,000	14	1,100	2.5
PC-58	EM15	10/11/2018	N	440-222092-19	Alluvium	7.8 - 32.8	1,300	13,000	12	930	3.5
PC-58	EM16	1/3/2019	N	440-229111-7	Alluvium	7.8 - 32.8	980	8,000	10	1,100	3.5
PC-58	EM17	3/1/2019	N	440-235133-2	Alluvium	7.8 - 32.8	1,700 J+	13,000	12	1,400	2.8
PC-58	EM18	4/9/2019	N	440-238618-10	Alluvium	7.8 - 32.8	1,400	11,000	9.1 J-	1,500	2.6
PC-58	EM19	5/22/2019	N	440-242200-7	Alluvium	7.8 - 32.8	1,600	12,000	11	1,400	2.9
PC-58	EM20	7/5/2019	N	440-245261-5	Alluvium	7.8 - 32.8	1,600	13,000	11	1,200	3.9
PC-58	EM21	8/15/2019	N	440-248187-8	Alluvium	7.8 - 32.8	1,500	10,000	12	1,100	3.7
PC-58	EM22	11/7/2019	N	440-254148-1	Alluvium	7.8 - 32.8	1,000	8,700	10	940	3.1
PC-58	EM23	12/20/2019	N	440-257938-9	Alluvium	7.8 - 32.8	4,000	30,000	13	980	2.4
PC-58	EM24	1/30/2020	N	440-260036-1	Alluvium	7.8 - 32.8	3,200	36,000	14	980	2.7
PC-58	EM25	3/11/2020	N	440-262720-1	Alluvium	7.8 - 32.8	2,800	33,000	12	1,000	2.7
PC-58	EM26	5/1/2020	N	440-265414-3	Alluvium	7.8 - 32.8	840	8,500	7.7	1,300	2.3
PC-58	EM27	7/9/2020	N	440-268680-6	Alluvium	7.8 - 32.8	850	6,400	9.1	1,800	2.5
PC-58	EM28	8/19/2020	N	440-270632-9	Alluvium	7.8 - 32.8	830	10,000	8.8	900	3.7
PC-58	EM29	10/16/2020	N	440-273433-5	Alluvium	7.8 - 32.8	700	7,400	7.7	670	3.5
PC-58	EM30	12/10/2020	N	550-154531-1	Alluvium	7.8 - 32.8	560	5,700	7.6	660	2.6
PC-58	EM31	2/1/2021	N	550-157577-6	Alluvium	7.8 - 32.8	730	61,000	7.5	690	2.5
PC-58	EM32	4/1/2021	N	550-161146-9	Alluvium	7.8 - 32.8	730	5,700	9.4 J	650	2.5
PC-58	EM33	6/2/2021	N	550-164872-23	Alluvium	7.8 - 32.8	680 J-	6,900 J-	8.9 J-	810 J-	2.6 J-
PC-58	EM34	7/22/2021	N	550-167639-6	Alluvium	7.8 - 32.8	810	7,700	8.7	790	2.6
PC-58	EM35	9/16/2021	N	550-170815-23	Alluvium	7.8 - 32.8	790	5,600	9.9 J	1,200	2.8
PC-58	EM36	12/3/2021	N	550-175222-11	Alluvium	7.8 - 32.8	820	6,300	9.1	940	2.7
PC-58	EM37	3/7/2022	N	550-180322-1	Alluvium	7.8 - 32.8	4,500	27,000	14	1,300	2.3
PC-58	EM38	6/21/2022	N	550-186012-1	Alluvium	7.8 - 32.8	980	6,000	13	1,300	3.2 J
PC-58	EM39	9/15/2022	N	550-190606-7	Alluvium	7.8 - 32.8	740	3,900	13	1,400	2.7
PC-58	EM40	12/12/2022	N	550-194841-5	Alluvium	7.8 - 32.8	790	6,100	11	1,200	2.7
PC-88	EM01	9/22/2017	N	440-192818-10	Alluvium	40.0 - 50.0	15,000	6,900	4.8	1,000	2.7
PC-88	EM02	9/28/2017	N	440-193167-7	Alluvium	40.0 - 50.0	14,000 J+	6,300	5.8	1,100	2.8
PC-88	EM03	10/4/2017	N	440-193622-6	Alluvium	40.0 - 50.0	15,000	6,100	5.1	1,000	2.6
PC-88	EM04	10/11/2017	N	440-194090-2	Alluvium	40.0 - 50.0	15,000	6,200	4.6	1,000	2.5
PC-88	EM04	10/11/2017	FD	440-194090-3	Alluvium	40.0 - 50.0	15,000	6,000	4.6	1,000	2.6
PC-88	EM05	10/25/2017	N	440-195026-9	Alluvium	40.0 - 50.0	15,000	5,400	5.0	1,000	2.8
PC-88	EM06	11/15/2017	N	440-196690-9	Alluvium	40.0 - 50.0	15,000	5,700	4.5	990	2.8
PC-88	EM06	11/15/2017	FD	440-196690-10	Alluvium	40.0 - 50.0	16,000	5,700	4.6	1,000	2.9
PC-88	EM07	12/14/2017	N	440-198571-11	Alluvium	40.0 - 50.0	19,000	20,000	9.9	1,200	2.7
PC-88	EM08	2/22/2018	N	440-204033-10	Alluvium	40.0 - 50.0	6,700	14,000	12	720	3.0
PC-88	EM09	3/29/2018	N	440-207586-3	Alluvium	40.0 - 50.0	9,100	20,000	13	870	2.2
PC-88	EM10	5/2/2018	N	440-210430-8	Alluvium	40.0 - 50.0	7,100	11,000	11	710	2.3
PC-88	EM10	5/2/2018	FD	440-210430-9	Alluvium	40.0 - 50.0	6,600	11,000	12	700	2.5
PC-88	EM11	7/12/2018	N	440-215717-11	Alluvium	40.0 - 50.0	16,000	12,000	7.8	910	2.4

Table D.1
Groundwater Analytical Results Summary
Seep Well Field Area Bioremediation Treatability Study

Well	Event	Sample Date	QC Type	Lab Sample ID	Lithology	Screened Interval (ft bgs)	EPA 314.0	EPA 300.1B	Anions by EPA 300.0		SM5310B/ SW9060
							Perchlorate	Chlorate	Nitrate (as N)	Sulfate	Total Organic Carbon
							µg/L	µg/L	mg/L	mg/L	mg/L
PC-88	EM11	7/12/2018	FD	440-215717-12	Alluvium	40.0 - 50.0	16,000	12,000	7.6	910	2.3
PC-88	EM13	8/16/2018	N	440-218296-9	Alluvium	40.0 - 50.0	10,000	6,700	6.0	930	2.9
PC-88	EM13	8/16/2018	FD	440-218296-10	Alluvium	40.0 - 50.0	11,000	6,800	6.0	940	2.9
PC-88	EM14	9/12/2018	N	440-220031-15	Alluvium	40.0 - 50.0	19,000	13,000	6.7	1,000	2.6
PC-88	EM14	9/12/2018	FD	440-220031-16	Alluvium	40.0 - 50.0	19,000	13,000	6.7	1,000	2.4
PC-88	EM15	10/11/2018	N	440-222092-15	Alluvium	40.0 - 50.0	15,000	15,000	6.3 J-	1,000	2.7
PC-88	EM15	10/11/2018	FD	440-222092-16	Alluvium	40.0 - 50.0	15,000	15,000	7.5	1,000	2.7
PC-88	EM16	1/3/2019	N	440-229111-5	Alluvium	40.0 - 50.0	12,000	9,900	7.5	850	2.7
PC-88	EM16	1/3/2019	FD	440-229111-6	Alluvium	40.0 - 50.0	12,000	9,900	7.5	860	2.8
PC-88	EM17	2/28/2019	N	440-235000-8	Alluvium	40.0 - 50.0	9,300	5,700	4.4	770	2.9
PC-88	EM17	2/28/2019	FD	440-235000-9	Alluvium	40.0 - 50.0	9,100	5,700	4.4	770	3.1
PC-88	EM18	4/9/2019	N	440-238618-7	Alluvium	40.0 - 50.0	12,000	11,000	5.1 J-	910	2.6
PC-88	EM18	4/9/2019	FD	440-238618-8	Alluvium	40.0 - 50.0	13,000	10,000	5.0 J-	900	2.7
PC-88	EM19	5/22/2019	N	440-242201-2	Alluvium	40.0 - 50.0	10,000	6,200	4.9	850	2.6
PC-88	EM19	5/22/2019	FD	440-242201-3	Alluvium	40.0 - 50.0	10,000	6,400	5.0	850	2.5
PC-88	EM20	7/5/2019	N	440-245261-3	Alluvium	40.0 - 50.0	8,800	5,100	3.4	710	3.2
PC-88	EM20	7/5/2019	FD	440-245261-4	Alluvium	40.0 - 50.0	10,000	5,000	3.4	720	3.2
PC-88	EM21	8/15/2019	N	440-248187-9	Alluvium	40.0 - 50.0	9,700	3,300	2.8	740	3.0
PC-88	EM21	8/15/2019	FD	440-248187-10	Alluvium	40.0 - 50.0	9,900	3,300	3.1	730	3.0
PC-88	EM22	11/7/2019	N	440-254148-2	Alluvium	40.0 - 50.0	11,000	14,000	5.6	850	2.5
PC-88	EM22	11/7/2019	FD	440-254148-3	Alluvium	40.0 - 50.0	11,000	15,000	5.5	830	2.4
PC-88	EM23	12/20/2019	N	440-257938-7	Alluvium	40.0 - 50.0	11,000	9,200	5.4	860	2.2
PC-88	EM23	12/20/2019	FD	440-257938-8	Alluvium	40.0 - 50.0	12,000	9,100	5.1	850	2.2
PC-88	EM24	1/30/2020	N	440-260036-2	Alluvium	40.0 - 50.0	9,900	13,000	7.9	840	2.7
PC-88	EM24	1/30/2020	FD	440-260036-3	Alluvium	40.0 - 50.0	9,900	13,000	7.9	820	2.7
PC-88	EM25	3/12/2020	N	440-262905-2	Alluvium	40.0 - 50.0	7,900	7,000	5.3	660	2.5
PC-88	EM25	3/12/2020	FD	440-262905-3	Alluvium	40.0 - 50.0	7,700	6,900	5.5	660	2.4
PC-88	EM26	5/1/2020	N	440-265412-2	Alluvium	40.0 - 50.0	15,000	16,000	8.2	820	2.1
PC-88	EM26	5/1/2020	FD	440-265412-3	Alluvium	40.0 - 50.0	15,000	16,000	8.7	840	2.1
PC-88	EM27	7/9/2020	N	440-268680-2	Alluvium	40.0 - 50.0	14,000	8,400	7.6	890	2.7 J-
PC-88	EM27	7/9/2020	FD	440-268680-3	Alluvium	40.0 - 50.0	13,000	8,600	7.3	900	3.0
PC-88	EM28	8/19/2020	N	440-270632-7	Alluvium	40.0 - 50.0	11,000	6,000	4.8	790	2.9
PC-88	EM28	8/19/2020	FD	440-270632-8	Alluvium	40.0 - 50.0	12,000	5,800	4.7	770	2.7
PC-88	EM29	10/15/2020	N	550-151259-10	Alluvium	40.0 - 50.0	15,000	12,000	6.6	920	2.3
PC-88	EM29	10/15/2020	FD	550-151259-11	Alluvium	40.0 - 50.0	15,000	12,000	6.7	920	2.2
PC-88	EM30	12/10/2020	N	550-154531-2	Alluvium	40.0 - 50.0	7,200	3,800	2.7	680	2.6
PC-88	EM30	12/10/2020	FD	550-154531-3	Alluvium	40.0 - 50.0	7,400	3,800	2.7	680	3.3
PC-88	EM31	2/2/2021	N	550-157679-1	Alluvium	40.0 - 50.0	3,700	1,500	1.0	500	2.6 J+
PC-88	EM31	2/2/2021	FD	550-157679-2	Alluvium	40.0 - 50.0	3,500	1,500	1.1	510	2.7 J+
PC-88	EM32	3/30/2021	N	550-160995-10	Alluvium	40.0 - 50.0	2,500	900 J	0.60	480	2.8
PC-88	EM32	3/30/2021	FD	550-160995-11	Alluvium	40.0 - 50.0	2,400	830	0.59	480	2.8
PC-88	EM33	6/3/2021	N	550-164869-25	Alluvium	40.0 - 50.0	2,300	1,100	0.87	460	2.5
PC-88	EM33	6/3/2021	FD	550-164869-27	Alluvium	40.0 - 50.0	2,400	1,100	0.87	460	2.7
PC-88	EM34	7/22/2021	N	550-167639-1	Alluvium	40.0 - 50.0	5,300	1,400	1.5	500	2.7
PC-88	EM34	7/22/2021	FD	550-167639-2	Alluvium	40.0 - 50.0	5,200	1,500	1.5	500	2.9
PC-88	EM35	9/16/2021	N	550-170815-21	Alluvium	40.0 - 50.0	10,000	4,600	3.8 J	720	2.5
PC-88	EM35	9/16/2021	FD	550-170815-22	Alluvium	40.0 - 50.0	9,800	4,700	3.8 J	710	2.6
PC-88	EM36	12/2/2021	N	550-175153-5	Alluvium	40.0 - 50.0	4,200	1,400	1.4	590	2.9 J+
PC-88	EM36	12/2/2021	FD	550-175153-7	Alluvium	40.0 - 50.0	4,300	1,500	1.4	560	2.9 J+

Table D.1
Groundwater Analytical Results Summary
Seep Well Field Area Bioremediation Treatability Study

Well	Event	Sample Date	QC Type	Lab Sample ID	Lithology	Screened Interval (ft bgs)	EPA 314.0	EPA 300.1B	Anions by EPA 300.0		SM5310B/ SW9060
							Perchlorate	Chlorate	Nitrate (as N)	Sulfate	Total Organic Carbon
							µg/L	µg/L	mg/L	mg/L	mg/L
PC-88	EM37	3/8/2022	N	550-180407-1	Alluvium	40.0 - 50.0	3,300	5,200	22	690	3.0 J+
PC-88	EM37	3/8/2022	FD	550-180407-2	Alluvium	40.0 - 50.0	3,400	5,300	22	700	2.8 J+
PC-88	EM38	6/21/2022	N	550-186012-4	Alluvium	40.0 - 50.0	9,100	7,000	10	690	2.8 J
PC-88	EM38	6/21/2022	FD	550-186012-5	Alluvium	40.0 - 50.0	9,100	7,100	10	700	3.0 J
PC-88	EM39	9/15/2022	N	550-190606-5	Alluvium	40.0 - 50.0	22,000	14,000	11	1,200	2.5
PC-88	EM39	9/15/2022	FD	550-190606-6	Alluvium	40.0 - 50.0	22,000	15,000	11	1,200	2.5
PC-88	EM40	12/12/2022	N	550-194841-1	Alluvium	40.0 - 50.0	14,000	6,600	6.5	940	2.4
PC-88	EM40	12/12/2022	FD	550-194841-3	Alluvium	40.0 - 50.0	15,000	6,600	6.5	940	2.4
PC-91	BL01	3/29/2017	N	440-180937-1	Alluvium	11.5 - 21.5	2,400	1,700	1.4	1,100	2.7
PC-91	BL02	7/12/2017	N	440-188247-5	Alluvium	11.5 - 21.5	2,500	1,600	1.2	840	2.4
PC-91	BL02	7/12/2017	FD	440-188244-4	Alluvium	11.5 - 21.5	2,400	1,500	1.1	790	2.3
PC-91	EM01	9/21/2017	N	440-192728-6	Alluvium	11.5 - 21.5	1,600	820	0.50 J	730	2.3
PC-91	EM02	9/27/2017	N	440-193062-16	Alluvium	11.5 - 21.5	1,700	810	0.57	770	2.8
PC-91	EM03	10/4/2017	N	440-193625-2	Alluvium	11.5 - 21.5	1,300	590	0.58	700	2.9
PC-91	EM04	10/12/2017	N	440-194204-3	Alluvium	11.5 - 21.5	960	440	0.35	770	2.5
PC-91	EM05	10/25/2017	N	440-195026-4	Alluvium	11.5 - 21.5	750	370	0.62	740	2.7
PC-91	EM06	11/16/2017	N	440-196786-8	Alluvium	11.5 - 21.5	700	610	0.65 J-	670	2.8
PC-91	EM07	12/13/2017	N	440-198508-9	Alluvium	11.5 - 21.5	770	520	0.38	650	2.5
PC-91	EM08	2/20/2018	N	440-203841-1	Alluvium	11.5 - 21.5	900	1,100	0.88 J	770	2.8
PC-91	EM09	3/26/2018	N	440-207137-1	Alluvium	11.5 - 21.5	930	1,200	0.78	700	2.5
PC-91	EM10	5/1/2018	N	440-210284-3	Alluvium	11.5 - 21.5	860	260	0.56	650	2.4
PC-91	EM11	7/11/2018	N	440-215585-6	Alluvium	11.5 - 21.5	190	<5.0	<0.28	480	2.7
PC-91	EM12	7/27/2018	N	440-216872-16	Alluvium	11.5 - 21.5	160	<2.0	--	--	--
PC-91	EM13	8/14/2018	N	440-218109-1	Alluvium	11.5 - 21.5	310	12 J	<0.28	--	3.0
PC-91	EM14	9/12/2018	N	440-220031-12	Alluvium	11.5 - 21.5	440	21	<0.28	560	2.6
PC-91	EM15	10/10/2018	N	440-221975-16	Alluvium	11.5 - 21.5	460	80	<0.55	570	3.1
PC-91	EM16	12/20/2018	N	440-228491-4	Alluvium	11.5 - 21.5	220	47 J	<0.11	540	3.2
PC-91	EM17	2/26/2019	N	440-234812-3	Alluvium	11.5 - 21.5	67	<10	<0.55	520	3.8
PC-91	EM18	4/10/2019	N	440-238544-6	Alluvium	11.5 - 21.5	190	38 J	<0.55	480	4.5
PC-91	EM19	5/21/2019	N	440-242084-9	Alluvium	11.5 - 21.5	120	56	0.81	500	3.6
PC-91	EM20	7/1/2019	N	440-245046-1	Alluvium	11.5 - 21.5	120	52	<0.28	460	3.8
PC-91	EM21	8/12/2019	N	440-247878-1	Alluvium	11.5 - 21.5	39 J+	14 J	<0.28	450	3.6
PC-91	EM22	11/6/2019	N	440-254027-3	Alluvium	11.5 - 21.5	1.5 J	<10	<0.55	460	5.9
PC-91	EM23	12/17/2019	N	440-257635-9	Alluvium	11.5 - 21.5	6.9	<10	<0.55	440	4.3
PC-91	EM24	1/28/2020	N	440-259890-2	Alluvium	11.5 - 21.5	230	100	<0.28	490 J+	4.2
PC-91	EM25	3/12/2020	N	440-262905-6	Alluvium	11.5 - 21.5	310	170	<0.28	560	3.6
PC-91	EM26	4/30/2020	N	440-265382-2	Alluvium	11.5 - 21.5	460	500	<0.28	610	3.9
PC-91	EM27	7/7/2020	N	440-268480-7	Alluvium	11.5 - 21.5	<0.95	<10	<0.28	280	12
PC-91	EM28	8/17/2020	N	440-270515-3	Alluvium	11.5 - 21.5	<0.95	750	<0.55	500	8.2
PC-91	EM29	10/14/2020	N	440-273303-11	Alluvium	11.5 - 21.5	<1.9	36 J	<0.28	510	5.6
PC-91	EM30	12/9/2020	N	550-154431-5	Alluvium	11.5 - 21.5	<0.31	<10	<0.014	580	4.4
PC-91	EM31	2/1/2021	N	550-157577-1	Alluvium	11.5 - 21.5	50	14 J	<0.014	650	5.1
PC-91	EM32	3/29/2021	N	550-160937-1	Alluvium	11.5 - 21.5	<0.31	<24 UJ	<0.014	2.3	530 J-
PC-91	EM33	6/2/2021	N	550-164872-17	Alluvium	11.5 - 21.5	<0.31 UJ	200 J-	<0.014 UJ	65 J-	110 J-
PC-91	EM34	7/20/2021	N	550-167449-8	Alluvium	11.5 - 21.5	<0.31	170	0.044 J	78	25
PC-91	EM35	9/16/2021	N	550-170815-20	Alluvium	11.5 - 21.5	2.3	73 J	<0.014 UJ	98	13
PC-91	EM36	11/30/2021	N	550-174968-1	Alluvium	11.5 - 21.5	0.64 J	170	0.028 J	1.8 J	210
PC-91	EM37	3/7/2022	N	550-180322-2	Alluvium	11.5 - 21.5	2.3	<24	0.021 J	150	11
PC-91	EM38	6/21/2022	N	550-186012-6	Alluvium	11.5 - 21.5	0.82 J	<24	<0.14	360	5.4

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Groundwater Analytical Results Summary
Seep Well Field Area Bioremediation Treatability Study

Well	Event	Sample Date	QC Type	Lab Sample ID	Lithology	Screened Interval (ft bgs)	EPA 314.0	EPA 300.1B	Anions by EPA 300.0		SM5310B/ SW9060
							Perchlorate	Chlorate	Nitrate (as N)	Sulfate	Total Organic Carbon
							µg/L	µg/L	mg/L	mg/L	mg/L
PC-91	EM39	9/14/2022	N	550-190504-11	Alluvium	11.5 - 21.5	10 J+	<4.9	<0.28	540	5.0
PC-91	EM40	12/12/2022	N	550-194841-7	Alluvium	11.5 - 21.5	<0.63	<4.9	<0.014	540	4.9
PC-92	BL01	3/29/2017	N	440-180937-2	Alluvium	26.5 - 36.5	9,600	17,000	4.2	1,200	2.8
PC-92	BL02	7/12/2017	N	440-188247-6	Alluvium	26.5 - 36.5	4,400	10,000	2.6	1,100	2.8
PC-92	EM01	9/21/2017	N	440-192728-7	Alluvium	26.5 - 36.5	3,100	7,700	1.7	960	2.6
PC-92	EM02	9/27/2017	N	440-193062-8	Alluvium	26.5 - 36.5	3,500	6,800	1.7	950	2.8
PC-92	EM03	10/4/2017	N	440-193625-3	Alluvium	26.5 - 36.5	3,700	7,100	2.6	950	2.8
PC-92	EM04	10/12/2017	N	440-194204-4	Alluvium	26.5 - 36.5	3,700	7,300	2.1	1,100	2.8
PC-92	EM04	10/12/2017	FD	440-194204-5	Alluvium	26.5 - 36.5	3,700	6,700	2.0	1,100	2.6
PC-92	EM05	10/25/2017	N	440-195026-3	Alluvium	26.5 - 36.5	4,000	6,900	2.3	1,100	2.9
PC-92	EM06	11/16/2017	N	440-196786-9	Alluvium	26.5 - 36.5	2,100	1,300	1.6	790	3.2
PC-92	EM06	11/16/2017	FD	440-196786-10	Alluvium	26.5 - 36.5	2,100	1,300	1.1	930	3.3
PC-92	EM07	12/14/2017	N	440-198571-7	Alluvium	26.5 - 36.5	3,300	4,600	2.1	980	3.0
PC-92	EM07	12/14/2017	FD	440-198571-8	Alluvium	26.5 - 36.5	3,300	4,800	1.8	1,100	3.0
PC-92	EM08	2/20/2018	N	440-203841-2	Alluvium	26.5 - 36.5	4,900	7,700	2.7	950	3.2
PC-92	EM08	2/20/2018	FD	440-203841-3	Alluvium	26.5 - 36.5	5,000	7,400	2.7	960	3.2
PC-92	EM09	3/26/2018	N	440-207137-2	Alluvium	26.5 - 36.5	7,900	19,000	4.5	1,100	2.5
PC-92	EM09	3/26/2018	FD	440-207137-3	Alluvium	26.5 - 36.5	8,000	18,000	4.5	1,200	2.5
PC-92	EM10	5/1/2018	N	440-210284-4	Alluvium	26.5 - 36.5	9,200	22,000	5.6	1,200	2.4
PC-92	EM11	7/11/2018	N	440-215585-5	Alluvium	26.5 - 36.5	7,300	17,000	4.2	1,000	2.3
PC-92	EM12	7/27/2018	N	440-216872-15	Alluvium	26.5 - 36.5	5,200	15,000	--	--	--
PC-92	EM13	8/15/2018	N	440-218208-1	Alluvium	26.5 - 36.5	4,700	13,000	3.1	910	3.0
PC-92	EM14	9/12/2018	N	440-220031-13	Alluvium	26.5 - 36.5	4,100	12,000	2.6	950	2.6
PC-92	EM15	10/11/2018	N	440-222092-17	Alluvium	26.5 - 36.5	4,200	12,000	3.4	980	2.9
PC-92	EM16	12/20/2018	N	440-228491-5	Alluvium	26.5 - 36.5	3,500	13,000	2.6	820	3.1
PC-92	EM17	2/26/2019	N	440-234812-2	Alluvium	26.5 - 36.5	2,700	13,000	1.5	880	2.7
PC-92	EM18	4/10/2019	N	440-238544-7	Alluvium	26.5 - 36.5	3,100	8,200	2.2	870	2.7
PC-92	EM19	5/21/2019	N	440-242084-10	Alluvium	26.5 - 36.5	2,500	6,000	1.5	750	2.3
PC-92	EM20	7/1/2019	N	440-245046-2	Alluvium	26.5 - 36.5	3,100	7,000	1.8	840	3.4
PC-92	EM21	8/12/2019	N	440-247878-2	Alluvium	26.5 - 36.5	2,800	3,500	1.1	630	3.3
PC-92	EM22	11/6/2019	N	440-254027-2	Alluvium	26.5 - 36.5	4,000	11,000	2.0	970	2.8
PC-92	EM23	12/17/2019	N	440-257635-10	Alluvium	26.5 - 36.5	3,100	7,700	2.0	810	2.8
PC-92	EM24	1/28/2020	N	440-259890-3	Alluvium	26.5 - 36.5	6,700	20,000	4.7	840 J+	3.0
PC-92	EM25	3/12/2020	N	440-262905-5	Alluvium	26.5 - 36.5	8,800	26,000	6.4	1,100	2.5
PC-92	EM26	4/30/2020	N	440-265382-1	Alluvium	26.5 - 36.5	3,400	5,300	1.8	830	4.0
PC-92	EM27	7/7/2020	N	440-268480-8	Alluvium	26.5 - 36.5	8,600	23,000	5.9	970	3.5
PC-92	EM28	8/17/2020	N	440-270515-4	Alluvium	26.5 - 36.5	6,500	20,000	5.0	920	2.9
PC-92	EM29	10/14/2020	N	440-273303-10	Alluvium	26.5 - 36.5	6,300	19,000	4.1	1,000	2.5
PC-92	EM30	12/9/2020	N	550-154431-4	Alluvium	26.5 - 36.5	5,100	14,000	3.9	1,000	2.5
PC-92	EM31	2/1/2021	N	550-157577-2	Alluvium	26.5 - 36.5	7,900	33,000 J	4.2	1,100	2.7
PC-92	EM32	3/29/2021	N	550-160937-2	Alluvium	26.5 - 36.5	5,500	11,000	2.7	930	2.5
PC-92	EM33	6/2/2021	N	550-164872-19	Alluvium	26.5 - 36.5	6,400 J-	21,000 J-	4.8 J-	1,100 J-	2.5 J-
PC-92	EM34	7/20/2021	N	550-167449-9	Alluvium	26.5 - 36.5	4,000	7,800	2.5	780	3.2
PC-92	EM35	9/16/2021	N	550-170815-19	Alluvium	26.5 - 36.5	10,000	22,000 J+	6.4 J	1,200	2.2
PC-92	EM36	11/30/2021	N	550-174968-3	Alluvium	26.5 - 36.5	4,200	7,400	1.8	1,200	3.2 J+
PC-92	EM37	3/7/2022	N	550-180322-3	Alluvium	26.5 - 36.5	15,000	37,000	9.4	1,300	1.9
PC-92	EM38	6/21/2022	N	550-186012-7	Alluvium	26.5 - 36.5	15,000	36,000	10	1,500	1.8 J
PC-92	EM39	9/14/2022	N	550-190504-12	Alluvium	26.5 - 36.5	12,000	25,000	8.4	1,200	4.5
PC-92	EM40	12/13/2022	N	550-194920-1	Alluvium	26.5 - 36.5	5,900	11,000	4.0	870 J+	2.5

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Seep Well Field Area Bioremediation Treatability Study

Well	Event	Sample Date	QC Type	Lab Sample ID	Lithology	Screened Interval (ft bgs)	EPA 314.0	EPA 300.1B	Anions by EPA 300.0		SM5310B/ SW9060
							Perchlorate	Chlorate	Nitrate (as N)	Sulfate	Total Organic Carbon
							µg/L	µg/L	mg/L	mg/L	mg/L
PC-94	BL01	3/28/2017	N	440-180820-2	Alluvium	9.5 - 19.5	13,000	51,000	12	1,800	1.7
PC-94	BL02	7/13/2017	N	440-188325-1	Alluvium	9.5 - 19.5	14,000	47,000	12	1,800	1.3
PC-94	EM01	9/20/2017	N	440-192728-5	Alluvium	9.5 - 19.5	2,300	3,800	0.58 J	1,800	34
PC-94	EM02	9/26/2017	N	440-193062-14	Alluvium	9.5 - 19.5	2,000	3,700	<1.1	1,800	37
PC-94	EM03	10/5/2017	N	440-193712-18	Alluvium	9.5 - 19.5	1,700	3,600	1.3 J	1,600	5.2
PC-94	EM04	10/11/2017	N	440-194090-6	Alluvium	9.5 - 19.5	970	2,900	0.78 J	1,700	3.9
PC-94	EM05	10/26/2017	N	440-195136-1	Alluvium	9.5 - 19.5	540	1,300	1.4	1,700	3.1
PC-94	EM06	11/16/2017	N	440-196786-17	Alluvium	9.5 - 19.5	1,500	1,300	0.57 J	1,300	2.2
PC-94	EM07	12/12/2017	N	440-198371-14	Alluvium	9.5 - 19.5	4,300	9,300	0.68	1,400	2.1
PC-94	EM08	2/21/2018	N	440-203937-12	Alluvium	9.5 - 19.5	7,200	19,000	4.9	1,500	2.1
PC-94	EM09	3/27/2018	N	440-207268-8	Alluvium	9.5 - 19.5	6,400	16,000	4.8	1,500	1.9
PC-94	EM10	5/1/2018	N	440-210284-14	Alluvium	9.5 - 19.5	6,700	18,000	6.3	1,400	1.5
PC-94	EM11	7/10/2018	N	440-215437-1	Alluvium	9.5 - 19.5	4,200	7,200	5.6	1,600	2.0
PC-94	EM12	7/27/2018	N	440-216872-12	Alluvium	9.5 - 19.5	1,500	1,600	--	--	--
PC-94	EM13	8/15/2018	N	440-218208-2	Alluvium	9.5 - 19.5	2,600	1,800	3.2	1,500	2.2
PC-94	EM14	9/11/2018	N	440-219886-9	Alluvium	9.5 - 19.5	3,500	6,200	5.2	1,500	1.7
PC-94	EM15	10/11/2018	N	440-222092-18	Alluvium	9.5 - 19.5	3,900	10,000	8.2	1,500	1.9
PC-94	EM16	12/28/2018	N	440-228887-2	Alluvium	9.5 - 19.5	3,200	9,000	8.3	1,400	1.7
PC-94	EM17	2/27/2019	N	440-234938-1	Alluvium	9.5 - 19.5	3,100	6,700	6.4	1,400	1.8
PC-94	EM18	4/11/2019	N	440-238688-6	Alluvium	9.5 - 19.5	3,000	5,600	5.2	1,500	1.8
PC-94	EM19	5/22/2019	N	440-242201-4	Alluvium	9.5 - 19.5	3,600	11,000	7.6	1,500	1.7
PC-94	EM20	7/5/2019	N	440-245259-1	Alluvium	9.5 - 19.5	4,100	16,000	8.2	1,400	2.9
PC-94	EM21	8/12/2019	N	440-247878-4	Alluvium	9.5 - 19.5	4,600	16,000	7.8	1,200	2.0
PC-94	EM22	11/6/2019	N	440-254027-1	Alluvium	9.5 - 19.5	4,200	16,000	7.8	1,300	1.6
PC-94	EM23	12/19/2019	N	440-257866-4	Alluvium	9.5 - 19.5	4,000	16,000	6.3	1,200	1.7
PC-94	EM24	1/30/2020	N	440-260036-5	Alluvium	9.5 - 19.5	5,600	44,000	7.8	1,200	1.8
PC-94	EM25	3/10/2020	N	440-262640-4	Alluvium	9.5 - 19.5	7,100	27,000	8.5 J-	1,300	1.8
PC-94	EM26	4/28/2020	N	440-265289-2	Alluvium	9.5 - 19.5	7,400	28,000	8.2	1,300	1.5
PC-94	EM27	7/6/2020	N	440-268415-1	Alluvium	9.5 - 19.5	5,100	14,000	6.7	1,400	2.5
PC-94	EM28	8/18/2020	N	440-270571-6	Alluvium	9.5 - 19.5	5,400	18,000	5.1	1,400	2.4
PC-94	EM29	10/15/2020	N	550-151259-7	Alluvium	9.5 - 19.5	5,900	19,000	7.5	1,300	1.6
PC-94	EM30	12/8/2020	N	550-154358-11	Alluvium	9.5 - 19.5	4,400	19,000	8.0	1,400	1.6
PC-94	EM31	2/1/2021	N	550-157577-3	Alluvium	9.5 - 19.5	6,500	20,000	8.1	1,400	1.4
PC-94	EM32	3/29/2021	N	550-160937-3	Alluvium	9.5 - 19.5	5,300	9,400 J+	6.0	1,200	1.6
PC-94	EM33	6/2/2021	N	550-164872-21	Alluvium	9.5 - 19.5	5,300 J-	13,000 J-	6.4 J-	1,300 J-	1.4 J-
PC-94	EM34	7/20/2021	N	550-167449-1	Alluvium	9.5 - 19.5	7,400	25,000	7.9	1,300	1.6
PC-94	EM35	9/15/2021	N	550-170733-8	Alluvium	9.5 - 19.5	9,100	22,000	8.2	2,000	1.6
PC-94	EM36	11/30/2021	N	550-174968-5	Alluvium	9.5 - 19.5	11,000	31,000	9.1	1,700	2.1 J+
PC-94	EM37	3/8/2022	N	550-180407-3	Alluvium	9.5 - 19.5	15,000	29,000	9.6	1,600	2.2 J+
PC-94	EM38	6/21/2022	N	550-186012-8	Alluvium	9.5 - 19.5	11,000	10,000	9.5	1,700	2.1 J
PC-94	EM39	9/15/2022	N	550-190606-4	Alluvium	9.5 - 19.5	7,900	16,000	10	1,700	1.7
PC-94	EM40	12/13/2022	N	550-194920-7	Alluvium	9.5 - 19.5	5,500	21,000	11	1,700 J+	1.6
PC-97	BL02	7/13/2017	N	440-188325-8	Alluvium	23.0 - 33.0	1,900	180	0.84	800	3.0
PC-97	EM01	9/22/2017	N	440-192818-13	Alluvium	23.0 - 33.0	2,900	360	2.1	1,000	3.0
PC-97	EM01	9/22/2017	FD	440-192818-12	Alluvium	23.0 - 33.0	2,900	340	2.2	1,000	3.0
PC-97	EM02	9/28/2017	N	440-193167-9	Alluvium	23.0 - 33.0	2,600	370	2.1	1,100	3.6
PC-97	EM02	9/28/2017	FD	440-193167-10	Alluvium	23.0 - 33.0	2,700	380	2.0	1,100	3.6
PC-97	EM03	10/4/2017	N	440-193622-8	Alluvium	23.0 - 33.0	2,900	460	2.6	900	2.7
PC-97	EM03	10/4/2017	FD	440-193625-1	Alluvium	23.0 - 33.0	2,900	410	2.3	970	2.8

Table D.1
Groundwater Analytical Results Summary
Seep Well Field Area Bioremediation Treatability Study

Well	Event	Sample Date	QC Type	Lab Sample ID	Lithology	Screened Interval (ft bgs)	EPA 314.0	EPA 300.1B	Anions by EPA 300.0		SM5310B/ SW9060
							Perchlorate	Chlorate	Nitrate (as N)	Sulfate	Total Organic Carbon
							µg/L	µg/L	mg/L	mg/L	mg/L
PC-97	EM04	10/11/2017	N	440-194242-5	Alluvium	23.0 - 33.0	2,500	400	2.5	1,000	2.7
PC-97	EM04	10/11/2017	FD	440-194242-6	Alluvium	23.0 - 33.0	2,700	390	2.3	1,000	2.8
PC-97	EM05	10/25/2017	N	440-195026-6	Alluvium	23.0 - 33.0	3,400	390	2.9	1,100	2.8
PC-97	EM05	10/25/2017	FD	440-195026-7	Alluvium	23.0 - 33.0	3,300	410	2.9	1,100	2.9
PC-97	EM06	11/16/2017	N	440-196786-13	Alluvium	23.0 - 33.0	1,600	190	1.8	1,200	3.2
PC-97	EM07	12/13/2017	N	440-198508-11	Alluvium	23.0 - 33.0	2,600	320	1.6	930	3.0
PC-97	EM07	12/13/2017	FD	440-198508-12	Alluvium	23.0 - 33.0	3,000	320	1.9	930	3.0
PC-97	EM08	2/21/2018	N	440-203937-4	Alluvium	23.0 - 33.0	1,500	77	0.56	750	3.3
PC-97	EM09	3/27/2018	N	440-207268-4	Alluvium	23.0 - 33.0	900	<10	0.19	710	3.3
PC-97	EM10	5/1/2018	N	440-210284-7	Alluvium	23.0 - 33.0	820	<5.0	0.088 J	610	3.2
PC-97	EM11	7/10/2018	N	440-215437-3	Alluvium	23.0 - 33.0	1,700	91	0.32	690	3.0
PC-97	EM13	8/16/2018	N	440-218296-8	Alluvium	23.0 - 33.0	1,100	85	0.38 J+	760	3.4
PC-97	EM14	9/12/2018	N	440-220031-17	Alluvium	23.0 - 33.0	2,400	210	0.82	760	3.0
PC-97	EM15	10/11/2018	N	440-222092-13	Alluvium	23.0 - 33.0	1,700	160	0.71	820	3.4
PC-97	EM16	1/3/2019	N	440-229111-3	Alluvium	23.0 - 33.0	1,500	64	0.33	680	3.2
PC-97	EM17	2/28/2019	N	440-235000-7	Alluvium	23.0 - 33.0	1,300	80	0.71	720	3.5
PC-97	EM18	4/9/2019	N	440-238618-9	Alluvium	23.0 - 33.0	1,600	150	0.71 J-	790	3.0
PC-97	EM19	5/22/2019	N	440-242201-1	Alluvium	23.0 - 33.0	2,300	280	1.8	920	3.1
PC-97	EM20	7/5/2019	N	440-245261-2	Alluvium	23.0 - 33.0	2,800	360	1.9	950	3.7
PC-97	EM21	8/14/2019	N	440-248104-11	Alluvium	23.0 - 33.0	3,100	330	1.7	860	3.3
PC-97	EM22	11/6/2019	N	440-254027-7	Alluvium	23.0 - 33.0	1,800	30	1.3	790	2.8
PC-97	EM23	12/20/2019	N	440-257938-6	Alluvium	23.0 - 33.0	1,100	48 J	0.29	670	3.1
PC-97	EM24	1/30/2020	N	440-260036-4	Alluvium	23.0 - 33.0	640	<4.0	0.12 J	610	3.4
PC-97	EM25	3/12/2020	N	440-262905-1	Alluvium	23.0 - 33.0	400	<2.0	<0.11	540	3.2
PC-97	EM26	4/30/2020	N	440-265383-7	Alluvium	23.0 - 33.0	390	<10	<0.11	550	3.2
PC-97	EM27	7/9/2020	N	440-268680-1	Alluvium	23.0 - 33.0	1,600	45 J	0.36	710	3.6
PC-97	EM29	10/15/2020	N	550-151259-9	Alluvium	23.0 - 33.0	2,100	110	1.1	730	3.2
SWFTS-IW01A	BL02	7/11/2017	N	440-188133-3	Alluvium	15.8 - 25.6	20,000	51,000	12	--	--
SWFTS-IW01A	EM06	11/14/2017	N	440-196558-6	Alluvium	15.8 - 25.6	42	--	<0.55	--	610 J-
SWFTS-IW01A	EM06	11/14/2017	N	440-196558-7	Alluvium	15.8 - 25.6	--	--	--	--	610 J-
SWFTS-IW01B	BL02	7/11/2017	N	440-188133-13	Alluvium	26.9 - 36.7	20,000	48,000	11	--	--
SWFTS-IW01B	EM06	11/14/2017	N	440-196558-8	Alluvium	26.9 - 36.7	--	--	--	--	160 J-
SWFTS-IW01B	EM06	11/15/2017	N	440-196690-5	Alluvium	26.9 - 36.7	170	--	<0.55	--	220
SWFTS-IW02A	BL02	7/11/2017	N	440-188133-14	Alluvium	16.8 - 26.6	22,000	52,000	12	2,100	2.0
SWFTS-IW02A	EM06	11/14/2017	N	440-196558-9	Alluvium	16.8 - 26.6	--	--	--	--	3,900 J-
SWFTS-IW02B	BL02	7/11/2017	N	440-188133-2	Alluvium	26.3 - 36.1	22,000	55,000	12	2,100	2.8
SWFTS-IW02B	EM06	11/14/2017	N	440-196558-10	Alluvium	26.3 - 36.1	--	--	--	--	3,100 J-
SWFTS-IW03	BL02	7/11/2017	N	440-188133-4	Alluvium	16.8 - 36.6	21,000	58,000	13	--	--
SWFTS-IW03	BL02	7/11/2017	FD	440-188133-5	Alluvium	16.8 - 36.6	21,000	53,000	12	--	--
SWFTS-IW03	EM07	12/11/2017	N	440-198276-1	Alluvium	16.8 - 36.6	--	--	--	--	340 J-
SWFTS-IW04	BL02	7/11/2017	N	440-188133-11	Alluvium	19.8 - 34.6	17,000	42,000	11	--	--
SWFTS-IW04	BL02	7/11/2017	FD	440-188133-12	Alluvium	19.8 - 34.6	16,000	42,000	12	--	--
SWFTS-IW04	EM07	12/11/2017	N	440-198276-2	Alluvium	19.8 - 34.6	--	--	--	--	4,600 J-
SWFTS-IW05	BL02	7/11/2017	N	440-188133-16	Alluvium	14.6 - 34.4	15,000	45,000	12	1,800	1.7
SWFTS-IW05	EM07	12/11/2017	N	440-198276-3	Alluvium	14.6 - 34.4	--	--	--	--	3,700 J-
SWFTS-IW06A	BL02	7/11/2017	N	440-188133-10	Alluvium	16.8 - 26.6	15,000	46,000	12	--	--
SWFTS-IW06A	EM06	11/14/2017	N	440-196558-11	Alluvium	16.8 - 26.6	--	--	--	--	440 J-
SWFTS-IW06A	EM06	11/15/2017	N	440-196690-6	Alluvium	16.8 - 26.6	230	--	<0.55	--	630
SWFTS-IW06B	BL02	7/11/2017	N	440-188133-6	Alluvium	28.8 - 33.6	15,000	41,000	12	--	--

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Seep Well Field Area Bioremediation Treatability Study

Well	Event	Sample Date	QC Type	Lab Sample ID	Lithology	Screened Interval (ft bgs)	EPA 314.0	EPA 300.1B	Anions by EPA 300.0		SM5310B/ SW9060
							Perchlorate	Chlorate	Nitrate (as N)	Sulfate	Total Organic Carbon
							µg/L	µg/L	mg/L	mg/L	mg/L
SWFTS-IW06B	EM06	11/14/2017	N	440-196558-12	Alluvium	28.8 - 33.6	--	--	--	--	600 J-
SWFTS-IW06B	EM06	11/15/2017	N	440-196690-7	Alluvium	28.8 - 33.6	20	--	<0.55	--	660
SWFTS-IW07	BL02	7/11/2017	N	440-188133-7	Alluvium	17.3 - 37.1	15,000	45,000	11	--	--
SWFTS-IW07	EM07	12/11/2017	N	440-198276-4	Alluvium	17.3 - 37.1	--	--	--	--	5,600 J-
SWFTS-IW08	BL02	7/12/2017	N	440-188247-7	Alluvium	17.5 - 37.3	14,000	40,000	12	--	--
SWFTS-IW08	EM07	12/11/2017	N	440-198276-5	Alluvium	17.5 - 37.3	--	--	--	--	6,700 J-
SWFTS-IW09	BL02	7/12/2017	N	440-188247-8	Alluvium	26.6 - 46.4	11,000	48,000	12	1,800	1.7
SWFTS-IW09	BL02	7/12/2017	FD	440-188244-3	Alluvium	26.6 - 46.4	11,000	47,000	12	1,800	1.4
SWFTS-IW09	EM07	12/11/2017	N	440-198276-6	Alluvium	26.6 - 46.4	--	--	--	--	290 J-
SWFTS-IW10	BL02	7/12/2017	N	440-188247-9	Alluvium	26.8 - 46.6	7,800	37,000	14	--	--
SWFTS-IW10	EM07	12/11/2017	N	440-198276-8	Alluvium	26.8 - 46.6	--	--	--	--	290 J-
SWFTS-IW11	BL02	7/12/2017	N	440-188247-3	Alluvium	17.3 - 37.1	5,600	6,600	2.0	1,000	2.6
SWFTS-IW11	EM07	12/11/2017	N	440-198276-7	Alluvium	17.3 - 37.1	--	--	--	--	1,000 J-
SWFTS-IW12	BL02	7/12/2017	N	440-188247-4	Alluvium	14.3 - 39.1	6,200	7,800	2.5	--	--
SWFTS-IW12	EM07	12/11/2017	N	440-198276-9	Alluvium	14.3 - 39.1	--	--	--	--	2,700 J-
SWFTS-IW13A	BL02	7/11/2017	N	440-188133-1	Alluvium	15.8 - 25.6	19,000	52,000	14	--	--
SWFTS-IW13A	EM06	11/14/2017	N	440-196558-13	Alluvium	15.8 - 25.6	--	--	--	--	3,700 J-
SWFTS-IW13B	BL02	7/11/2017	N	440-188133-15	Alluvium	27.8 - 37.6	21,000	53,000	12	--	--
SWFTS-IW13B	EM06	11/14/2017	N	440-196558-14	Alluvium	27.8 - 37.6	--	--	--	--	1,100 J-
SWFTS-IW14	BL02	7/12/2017	N	440-188247-1	Alluvium	16.2 - 36.1	21,000	51,000	11	1,800	1.9
SWFTS-IW14	EM06	11/14/2017	N	440-196558-15	Alluvium	16.2 - 36.1	--	--	--	--	4,600
SWFTS-IW14	EM06	11/14/2017	FD	440-196558-16	Alluvium	16.2 - 36.1	--	--	--	--	4,500 J-
SWFTS-IW15	BL02	7/12/2017	N	440-188247-2	Alluvium	16.4 - 36.2	15,000	44,000	13	--	--
SWFTS-IW15	EM07	12/11/2017	N	440-198276-10	Alluvium	16.4 - 36.2	--	--	--	--	1,300 J-
SWFTS-IW15	EM07	12/11/2017	FD	440-198276-11	Alluvium	16.4 - 36.2	--	--	--	--	1,300 J-
SWFTS-IW16A	BL02	7/11/2017	N	440-188133-9	Alluvium	17.3 - 27.1	17,000	45,000	11	--	--
SWFTS-IW16A	EM07	12/11/2017	N	440-198276-12	Alluvium	17.3 - 27.1	--	--	--	--	2,800 J-
SWFTS-IW16B	BL02	7/11/2017	N	440-188133-8	Alluvium	26.5 - 36.3	15,000	44,000	12	--	--
SWFTS-IW16B	EM07	12/11/2017	N	440-198276-13	Alluvium	26.5 - 36.3	--	--	--	--	940 J-
SWFTS-IW17	BL02	7/13/2017	N	440-188325-6	Alluvium	17.3 - 37.1	13,000	47,000	12	1,600	1.4
SWFTS-IW17	EM06	11/14/2017	N	440-196558-17	Alluvium	17.3 - 37.1	--	--	--	--	6,500 J-
SWFTS-IW17	EM06	11/15/2017	N	440-196690-8	Alluvium	17.3 - 37.1	<19	--	<1.1	--	7,500
SWFTS-IW18	BL02	7/13/2017	N	440-188325-4	Alluvium	18.1 - 38.1	14,000	47,000	12	--	--
SWFTS-IW18	EM06	11/14/2017	N	440-196558-18	Alluvium	18.1 - 38.1	--	--	--	--	1.8
SWFTS-IW19	BL02	7/13/2017	N	440-188325-5	Alluvium	24.3 - 44.1	6,400	57,000	16	--	--
SWFTS-IW19	EM07	12/11/2017	N	440-198276-14	Alluvium	24.3 - 44.1	--	--	--	--	4,100 J-
SWFTS-IW20	BL02	7/12/2017	N	440-188247-10	Alluvium	30.8 - 50.6	4,400	31,000	17	2,300	1.0
SWFTS-IW20	EM06	11/14/2017	N	440-196558-19	Alluvium	30.8 - 50.6	--	--	--	--	6,500 J-
SWFTS-MW01	BL01	3/29/2017	N	440-180937-6	Alluvium	24.2 - 38.9	15,000	49,000	12	4,700	1.6
SWFTS-MW01	EM01	9/19/2017	N	440-192627-1	Alluvium	24.2 - 38.9	2,100	39,000	<0.55	1,800	11
SWFTS-MW01	EM02	9/26/2017	N	440-193062-2	Alluvium	24.2 - 38.9	4,300	10,000	1.4 J	1,800	4.3
SWFTS-MW01	EM03	10/4/2017	N	440-193625-6	Alluvium	24.2 - 38.9	5,000	13,000	3.3	1,600	2.5
SWFTS-MW01	EM04	10/10/2017	N	440-194094-2	Alluvium	24.2 - 38.9	5,600	15,000	3.3	1,600	2.2
SWFTS-MW01	EM05	10/25/2017	N	440-195026-8	Alluvium	24.2 - 38.9	15,000	18,000	5.1	1,500	2.1
SWFTS-MW01	EM06	11/15/2017	N	440-196665-4	Alluvium	24.2 - 38.9	7,900	22,000	4.9	1,500	1.9
SWFTS-MW01	EM07	12/14/2017	N	440-198571-10	Alluvium	24.2 - 38.9	8,000	24,000	5.3	1,500	1.9
SWFTS-MW01	EM08	2/20/2018	N	440-203841-12	Alluvium	24.2 - 38.9	3,900	12,000	3.4	1,400	2.7
SWFTS-MW01	EM09	3/27/2018	N	440-207268-10	Alluvium	24.2 - 38.9	6,900	26,000	5.3	1,400	1.9
SWFTS-MW01	EM10	4/30/2018	N	440-210173-1	Alluvium	24.2 - 38.9	9,400	36,000	8.9	1,600	1.4

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Well	Event	Sample Date	QC Type	Lab Sample ID	Lithology	Screened Interval (ft bgs)	EPA 314.0	EPA 300.1B	Anions by EPA 300.0		SM5310B/ SW9060
							Perchlorate	Chlorate	Nitrate (as N)	Sulfate	Total Organic Carbon
							µg/L	µg/L	mg/L	mg/L	mg/L
SWFTS-MW01	EM11	7/10/2018	N	440-215437-2	Alluvium	24.2 - 38.9	3,100	6,900	1.4	1,300	2.4
SWFTS-MW01	EM12	7/27/2018	N	440-216872-13	Alluvium	24.2 - 38.9	5,500	28,000	--	--	--
SWFTS-MW01	EM12	7/27/2018	FD	440-216872-14	Alluvium	24.2 - 38.9	5,500	28,000	--	--	--
SWFTS-MW01	EM13	8/16/2018	N	440-218296-6	Alluvium	24.2 - 38.9	6,100	34,000	6.4	1,300	2.0
SWFTS-MW01	EM14	9/10/2018	N	440-219797-1	Alluvium	24.2 - 38.9	6,300	34,000	8.4	1,400	1.9
SWFTS-MW01	EM15	10/9/2018	N	440-221855-12	Alluvium	24.2 - 38.9	4,700 J	24,000	7.1	1,300	2.1
SWFTS-MW01	EM16	12/27/2018	N	440-228818-1	Alluvium	24.2 - 38.9	4,300	7,400	9.9	1,300	1.8
SWFTS-MW01	EM17	2/26/2019	N	440-234812-11	Alluvium	24.2 - 38.9	1,300	<10	1.7	1,100	2.6
SWFTS-MW01	EM18	4/10/2019	N	440-238531-1	Alluvium	24.2 - 38.9	3,800	<10	5.2	1,200	1.9
SWFTS-MW01	EM19	5/21/2019	N	440-242084-14	Alluvium	24.2 - 38.9	4,100	<10	6.4	1,200	1.6
SWFTS-MW01	EM20	7/1/2019	N	440-245068-5	Alluvium	24.2 - 38.9	4,100	<10	5.4	1,300	2.1
SWFTS-MW01	EM21	8/12/2019	N	440-247878-6	Alluvium	24.2 - 38.9	3,800	<10	3.9	1,100	1.9
SWFTS-MW01	EM22	11/5/2019	N	440-253918-3	Alluvium	24.2 - 38.9	54	<10	<0.55	870	2.7
SWFTS-MW01	EM23	12/18/2019	N	440-257733-3	Alluvium	24.2 - 38.9	3,600	<10	3.7	1,100	1.7
SWFTS-MW01	EM24	1/29/2020	N	440-259985-4	Alluvium	24.2 - 38.9	4,500	<10	5.0	1,200 J+	2.4
SWFTS-MW01	EM25	3/11/2020	N	440-262726-6	Alluvium	24.2 - 38.9	6,400	<20	4.9	1,200	2.2
SWFTS-MW01	EM26	4/28/2020	N	440-265289-5	Alluvium	24.2 - 38.9	7,500	110	6.2	1,300	1.8
SWFTS-MW01	EM27	7/8/2020	N	440-268610-1	Alluvium	24.2 - 38.9	5,300	1,800	2.9	1,400	1.9
SWFTS-MW01	EM28	8/18/2020	N	440-270571-3	Alluvium	24.2 - 38.9	5,500	16 J	3.9	1,300	2.4
SWFTS-MW01	EM29	10/13/2020	N	440-273236-11	Alluvium	24.2 - 38.9	5,200	<10	4.4	1,300	2.1
SWFTS-MW01	EM30	12/9/2020	N	550-154431-2	Alluvium	24.2 - 38.9	4,900	<10	5.2	1,400	1.5
SWFTS-MW01	EM31	2/2/2021	N	550-157679-3	Alluvium	24.2 - 38.9	5,700	<9.8	5.3	1,300	1.6 J+
SWFTS-MW01	EM32	3/30/2021	N	550-160995-12	Alluvium	24.2 - 38.9	5,000	<4.9	3.4	1,100	2.3
SWFTS-MW01	EM33	6/4/2021	N	550-164930-17	Alluvium	24.2 - 38.9	7,000	780	4.0	1,200	1.4 J+
SWFTS-MW01	EM34	7/20/2021	N	550-167449-5	Alluvium	24.2 - 38.9	8,100	1,800	4.8	1,400	1.6
SWFTS-MW01	EM35	9/15/2021	N	550-170733-10	Alluvium	24.2 - 38.9	8,600	3,400	4.1	1,300	1.6
SWFTS-MW01	EM36	11/30/2021	N	550-174968-19	Alluvium	24.2 - 38.9	13,000	11,000	6.9	1,500	2.2 J+
SWFTS-MW01	EM37	3/9/2022	N	550-180516-7	Alluvium	24.2 - 38.9	1,800	<24	0.33	1,400	3.3
SWFTS-MW01	EM38	6/21/2022	N	550-186012-9	Alluvium	24.2 - 38.9	9,800	6,200 J+	6.1	1,700	2.0 J
SWFTS-MW01	EM39	9/13/2022	N	550-190412-10	Alluvium	24.2 - 38.9	9,600	8,900	8.1	1,600	1.8
SWFTS-MW01	EM40	12/13/2022	N	550-194920-3	Alluvium	24.2 - 38.9	4,900	6,700	6.2	1,400 J+	1.8
SWFTS-MW02	BL01	3/29/2017	N	440-180937-7	Alluvium	18.4 - 33.1	25,000	58,000	11	2,200	2.2
SWFTS-MW02	EM01	9/21/2017	N	440-192818-4	Alluvium	18.4 - 33.1	23,000	52,000	8.5	1,800	2.1
SWFTS-MW02	EM02	9/27/2017	N	440-193062-11	Alluvium	18.4 - 33.1	23,000	47,000	9.4	2,000	2.2
SWFTS-MW02	EM03	10/4/2017	N	440-193712-3	Alluvium	18.4 - 33.1	22,000	45,000	8.7	1,900	2.0
SWFTS-MW02	EM04	10/12/2017	N	440-194204-6	Alluvium	18.4 - 33.1	20,000	23,000	6.2	1,900	2.3
SWFTS-MW02	EM05	10/26/2017	N	440-195218-2	Alluvium	18.4 - 33.1	21,000	34,000	4.6 J-	2,000	2.5
SWFTS-MW02	EM06	11/14/2017	N	440-196558-3	Alluvium	18.4 - 33.1	17,000	32,000	6.5	1,900	2.5
SWFTS-MW02	EM07	12/13/2017	N	440-198508-8	Alluvium	18.4 - 33.1	19,000	38,000	6.7	2,800	2.1
SWFTS-MW02	EM08	2/19/2018	N	440-203775-1	Alluvium	18.4 - 33.1	14,000	28,000	4.7	1,700	2.5
SWFTS-MW02	EM09	3/27/2018	N	440-207268-1	Alluvium	18.4 - 33.1	4,400	7,400	0.80	1,300	2.5
SWFTS-MW02	EM10	4/30/2018	N	440-210173-3	Alluvium	18.4 - 33.1	4,600	6,100	0.95 J	1,500	2.3
SWFTS-MW02	EM11	7/11/2018	N	440-215717-13	Alluvium	18.4 - 33.1	3,700	5,100	1.7	1,600	1.9
SWFTS-MW02	EM12	7/27/2018	N	440-216872-11	Alluvium	18.4 - 33.1	2,100	3,900	--	--	--
SWFTS-MW02	EM13	8/15/2018	N	440-218208-3	Alluvium	18.4 - 33.1	1,700	2,600	0.74 J	1,400	2.5
SWFTS-MW02	EM14	9/10/2018	N	440-219797-2	Alluvium	18.4 - 33.1	1,300	2,500	<0.55	1,300	2.5
SWFTS-MW02	EM15	10/10/2018	N	440-221975-15	Alluvium	18.4 - 33.1	1,400	950	<1.1	1,300	3.0
SWFTS-MW02	EM16	12/20/2018	N	440-228491-3	Alluvium	18.4 - 33.1	620	77 J	<0.55	1,400 J+	2.4
SWFTS-MW02	EM17	2/25/2019	N	440-234705-3	Alluvium	18.4 - 33.1	740	32 J	<1.1	1,300	2.5

Table D.1
Groundwater Analytical Results Summary
Seep Well Field Area Bioremediation Treatability Study

Well	Event	Sample Date	QC Type	Lab Sample ID	Lithology	Screened Interval (ft bgs)	EPA 314.0	EPA 300.1B	Anions by EPA 300.0		SM5310B/ SW9060
							Perchlorate	Chlorate	Nitrate (as N)	Sulfate	Total Organic Carbon
							µg/L	µg/L	mg/L	mg/L	mg/L
SWFTS-MW02	EM18	4/9/2019	N	440-238618-3	Alluvium	18.4 - 33.1	1,300	82 J	<1.1 UJ	1,500	2.1
SWFTS-MW02	EM19	5/21/2019	N	440-242084-8	Alluvium	18.4 - 33.1	3,200	50 J	<1.1	1,500	2.3
SWFTS-MW02	EM20	7/2/2019	N	440-245153-8	Alluvium	18.4 - 33.1	4,200	<4.0	<0.55	1,400	2.5
SWFTS-MW02	EM21	8/14/2019	N	440-248104-3	Alluvium	18.4 - 33.1	3,900	<20	<0.28	1,500	2.4
SWFTS-MW02	EM22	11/7/2019	N	440-254148-7	Alluvium	18.4 - 33.1	2,700	<10	<0.28	1,200	2.2
SWFTS-MW02	EM23	12/17/2019	N	440-257635-8	Alluvium	18.4 - 33.1	6,800	2,700	2.6	1,300	1.9
SWFTS-MW02	EM24	1/28/2020	N	440-259890-4	Alluvium	18.4 - 33.1	6,600	11,000	4.3	1,200 J+	2.9
SWFTS-MW02	EM25	3/12/2020	N	440-262905-7	Alluvium	18.4 - 33.1	7,500	13,000	5.6	1,300	3.2
SWFTS-MW02	EM26	4/30/2020	N	440-265382-3	Alluvium	18.4 - 33.1	9,500	17,000	7.1	1,400	2.1
SWFTS-MW02	EM27	7/8/2020	N	440-268610-2	Alluvium	18.4 - 33.1	7,000	7,700	5.1	1,500	3.1
SWFTS-MW02	EM28	8/17/2020	N	440-270515-1	Alluvium	18.4 - 33.1	8,800	16,000	7.2	1,400	2.2
SWFTS-MW02	EM29	10/15/2020	N	550-151259-8	Alluvium	18.4 - 33.1	8,700	16,000	7.1	1,400	1.9
SWFTS-MW02	EM30	12/10/2020	N	550-154531-4	Alluvium	18.4 - 33.1	8,900	16,000	7.1	1,500	1.8
SWFTS-MW02	EM31	2/2/2021	N	550-157679-4	Alluvium	18.4 - 33.1	9,700	11,000 J+	7.2	1,500	2.3 J+
SWFTS-MW02	EM32	3/30/2021	N	550-160995-13	Alluvium	18.4 - 33.1	4,900	2,800	2.5	1,400	2.0
SWFTS-MW02	EM33	6/3/2021	N	550-164869-21	Alluvium	18.4 - 33.1	8,300	10,000	5.7	1,500	1.7
SWFTS-MW02	EM34	7/21/2021	N	550-167523-11	Alluvium	18.4 - 33.1	7,600	10,000	5.1	1,400	2.3 J+
SWFTS-MW02	EM35	9/16/2021	N	550-170815-5	Alluvium	18.4 - 33.1	9,800	18,000	7.0	1,400	2.1
SWFTS-MW02	EM36	11/30/2021	N	550-174968-7	Alluvium	18.4 - 33.1	7,000	7,300	4.1	1,500	2.5 J+
SWFTS-MW02	EM37	3/9/2022	N	550-180516-9	Alluvium	18.4 - 33.1	600 J-	650	0.11 J+	2,700	5.8
SWFTS-MW02	EM38	6/22/2022	N	550-186069-9	Alluvium	18.4 - 33.1	14,000	20,000	10	1,700	1.6 J+
SWFTS-MW02	EM39	9/14/2022	N	550-190504-17	Alluvium	18.4 - 33.1	15,000	14,000	12	1,800	2.1
SWFTS-MW02	EM40	12/14/2022	N	550-195015-3	Alluvium	18.4 - 33.1	8,600	9,700	6.8	1,900	2.8
SWFTS-MW03	BL01	3/30/2017	N	440-181045-5	Alluvium	27.2 - 42.1	9,900	47,000	13	2,200	1.6
SWFTS-MW03	BL01	3/30/2017	FD	440-181045-6	Alluvium	27.2 - 42.1	9,200	47,000	13	2,400	1.7
SWFTS-MW03	EM01	9/21/2017	N	440-192728-12	Alluvium	27.2 - 42.1	<4.8	<100	<0.55	2,300	4.2
SWFTS-MW03	EM02	9/27/2017	N	440-193167-1	Alluvium	27.2 - 42.1	4.8	<100	<0.55	2,200	3.0
SWFTS-MW03	EM03	10/4/2017	N	440-193712-7	Alluvium	27.2 - 42.1	<0.95	<50	<0.55	2,300	2.3
SWFTS-MW03	EM04	10/12/2017	N	440-194204-8	Alluvium	27.2 - 42.1	21	<100	<0.55	2,200	2.0
SWFTS-MW03	EM05	10/26/2017	N	440-195136-5	Alluvium	27.2 - 42.1	990	3,200	0.73 J	2,100	2.1
SWFTS-MW03	EM06	11/16/2017	N	440-196786-16	Alluvium	27.2 - 42.1	3,200	15,000	3.2	2,100	1.7
SWFTS-MW03	EM07	12/12/2017	N	440-198371-13	Alluvium	27.2 - 42.1	3,700	22,000	4.3	1,900	1.8
SWFTS-MW03	EM08	2/21/2018	N	440-203937-5	Alluvium	27.2 - 42.1	3,400	33,000	4.2	1,900	1.7
SWFTS-MW03	EM09	3/27/2018	N	440-207268-15	Alluvium	27.2 - 42.1	4,200	27,000	6.4	2,000	1.5
SWFTS-MW03	EM10	5/2/2018	N	440-210430-6	Alluvium	27.2 - 42.1	4,300	30,000	7.9	2,100	1.4
SWFTS-MW03	EM11	7/10/2018	N	440-215437-5	Alluvium	27.2 - 42.1	1,300	3,000	1.3	2,000	2.3
SWFTS-MW03	EM12	7/27/2018	N	440-216872-10	Alluvium	27.2 - 42.1	1,900 J+	1,800	--	--	--
SWFTS-MW03	EM13	8/15/2018	N	440-218208-4	Alluvium	27.2 - 42.1	1,900	280 J	3.6	1,900	1.9
SWFTS-MW03	EM14	9/11/2018	N	440-219886-11	Alluvium	27.2 - 42.1	2,200	<10	4.9	1,900	1.5
SWFTS-MW03	EM15	10/9/2018	N	440-221855-13	Alluvium	27.2 - 42.1	2,200	<20	5.9	2,000	2.0
SWFTS-MW03	EM16	1/2/2019	N	440-229018-3	Alluvium	27.2 - 42.1	2,500	<10	7.7	2,000	1.8
SWFTS-MW03	EM17	2/27/2019	N	440-234938-3	Alluvium	27.2 - 42.1	2,700	27 J	10	2,000	1.5
SWFTS-MW03	EM18	4/10/2019	N	440-238531-7	Alluvium	27.2 - 42.1	2,700	130	8.4	2,100	1.4
SWFTS-MW03	EM19	5/21/2019	N	440-242084-12	Alluvium	27.2 - 42.1	2,800	150	7.7	2,000	1.4
SWFTS-MW03	EM20	7/1/2019	N	440-245068-10	Alluvium	27.2 - 42.1	2,800	550	8.2	2,000	1.9
SWFTS-MW03	EM21	8/14/2019	N	440-248104-2	Alluvium	27.2 - 42.1	3,000	2,700	8.5	2,000	1.8
SWFTS-MW03	EM22	11/4/2019	N	440-253773-2	Alluvium	27.2 - 42.1	2,100	1,000	6.8	2,000	1.6
SWFTS-MW03	EM23	12/19/2019	N	440-257866-5	Alluvium	27.2 - 42.1	2,600	770	7.7	1,700	1.5
SWFTS-MW03	EM24	1/30/2020	N	440-260036-6	Alluvium	27.2 - 42.1	3,100	1,800	8.0	1,800	1.6

Table D.1
Groundwater Analytical Results Summary
Seep Well Field Area Bioremediation Treatability Study

Well	Event	Sample Date	QC Type	Lab Sample ID	Lithology	Screened Interval (ft bgs)	EPA 314.0	EPA 300.1B	Anions by EPA 300.0		SM5310B/ SW9060
							Perchlorate	Chlorate	Nitrate (as N)	Sulfate	Total Organic Carbon
							µg/L	µg/L	mg/L	mg/L	mg/L
SWFTS-MW03	EM25	3/9/2020	N	440-262455-2	Alluvium	27.2 - 42.1	3,800	4,200	7.6	1,600	1.8
SWFTS-MW03	EM26	4/28/2020	N	440-265289-1	Alluvium	27.2 - 42.1	3,400	5,400	7.1	1,700	1.7
SWFTS-MW03	EM27	7/6/2020	N	440-268415-2	Alluvium	27.2 - 42.1	2,600	610	6.5	1,800	1.9
SWFTS-MW03	EM28	8/18/2020	N	440-270571-7	Alluvium	27.2 - 42.1	2,300	<10	6.7	1,800	2.1
SWFTS-MW03	EM29	10/13/2020	N	440-273236-10	Alluvium	27.2 - 42.1	2,300	<10	7.9	2,000	1.9
SWFTS-MW03	EM30	12/8/2020	N	550-154358-10	Alluvium	27.2 - 42.1	2,500	<10	8.6	2,000	1.4
SWFTS-MW03	EM31	2/2/2021	N	550-157679-5	Alluvium	27.2 - 42.1	2,700	49 J	8.5	1,900	1.5 J+
SWFTS-MW03	EM32	3/30/2021	N	550-160995-14	Alluvium	27.2 - 42.1	2,300	740	5.8	1,800	1.5
SWFTS-MW03	EM33	6/3/2021	N	550-164869-15	Alluvium	27.2 - 42.1	3,200	670	5.9	1,900	1.4
SWFTS-MW03	EM34	7/19/2021	N	550-167353-2	Alluvium	27.2 - 42.1	3,800	4,000	5.8	1,900	1.5
SWFTS-MW03	EM35	9/15/2021	N	550-170733-1	Alluvium	27.2 - 42.1	4,800	8,800	6.7	2,000	1.4
SWFTS-MW03	EM36	12/1/2021	N	550-175045-1	Alluvium	27.2 - 42.1	5,100	7,700	6.4	2,100	1.7
SWFTS-MW03	EM37	3/9/2022	N	550-180516-6	Alluvium	27.2 - 42.1	12,000	1,900	11	1,700	1.5
SWFTS-MW03	EM38	6/22/2022	N	550-186069-12	Alluvium	27.2 - 42.1	6,100	11,000	8.2	1,900	2.2 J+
SWFTS-MW03	EM39	9/13/2022	N	550-190412-8	Alluvium	27.2 - 42.1	4,300	7,500	8.8	2,100	1.4 J-
SWFTS-MW03	EM40	12/13/2022	N	550-194920-15	Alluvium	27.2 - 42.1	3,000	7,900	9.2	2,100 J+	1.4
SWFTS-MW04	BL01	3/31/2017	N	440-181122-1	Alluvium	25.8 - 40.4	14,000	26,000	5.5	1,400	2.3
SWFTS-MW04	EM01	9/20/2017	N	440-192627-5	Alluvium	25.8 - 40.4	3,600	4,900	1.3	750	2.6
SWFTS-MW04	EM01	9/20/2017	FD	440-192627-6	Alluvium	25.8 - 40.4	3,600	4,800	1.3	820	2.6
SWFTS-MW04	EM02	9/27/2017	N	440-193062-3	Alluvium	25.8 - 40.4	3,600	5,400	1.5	780	3.1
SWFTS-MW04	EM02	9/27/2017	FD	440-193062-4	Alluvium	25.8 - 40.4	3,500	5,400	1.5	860	3.1
SWFTS-MW04	EM03	10/4/2017	N	440-193712-1	Alluvium	25.8 - 40.4	4,000	4,700	1.5	840	2.7
SWFTS-MW04	EM03	10/4/2017	FD	440-193712-2	Alluvium	25.8 - 40.4	3,900	4,700	1.9	840	2.6
SWFTS-MW04	EM04	10/11/2017	N	440-194242-7	Alluvium	25.8 - 40.4	2,900	3,900	1.3	810	2.7
SWFTS-MW04	EM05	10/24/2017	N	440-194947-6	Alluvium	25.8 - 40.4	3,600	4,200	1.4	840	2.9
SWFTS-MW04	EM05	10/24/2017	FD	440-194947-7	Alluvium	25.8 - 40.4	3,500	4,200	1.5	880	3.0
SWFTS-MW04	EM06	11/15/2017	N	440-196659-2	Alluvium	25.8 - 40.4	3,500	3,400	1.6	900	3.0
SWFTS-MW04	EM07	12/14/2017	N	440-198571-12	Alluvium	25.8 - 40.4	4,000	4,700	1.8	910	2.9
SWFTS-MW04	EM08	2/21/2018	N	440-203937-2	Alluvium	25.8 - 40.4	5,200	8,000	2.4	900	2.7
SWFTS-MW04	EM09	3/27/2018	N	440-207268-5	Alluvium	25.8 - 40.4	6,100	14,000	3.5	1,100	2.5
SWFTS-MW04	EM10	5/1/2018	N	440-210284-5	Alluvium	25.8 - 40.4	4,100	3,700	1.4	860	2.8
SWFTS-MW04	EM11	7/10/2018	N	440-215437-4	Alluvium	25.8 - 40.4	6,400	15,000	4.5	940	2.5
SWFTS-MW04	EM13	8/16/2018	N	440-218296-1	Alluvium	25.8 - 40.4	3,100	8,700	1.9 J+	730	2.9
SWFTS-MW04	EM14	9/12/2018	N	440-220031-14	Alluvium	25.8 - 40.4	4,000	9,100	2.6	820	2.9
SWFTS-MW04	EM15	10/11/2018	N	440-222092-9	Alluvium	25.8 - 40.4	3,400	8,300	2.0	790	3.0
SWFTS-MW04	EM16	1/3/2019	N	440-229111-2	Alluvium	25.8 - 40.4	3,500	6,900	1.6	630	3.1
SWFTS-MW04	EM17	3/1/2019	N	440-235133-5	Alluvium	25.8 - 40.4	3,500 J+	8,900	2.6	840	2.9
SWFTS-MW04	EM18	4/9/2019	N	440-238618-2	Alluvium	25.8 - 40.4	3,100	7,500	2.3 J-	870	2.8
SWFTS-MW04	EM19	5/21/2019	N	440-242084-11	Alluvium	25.8 - 40.4	2,400	5,300	1.2	690	3.0
SWFTS-MW04	EM20	7/5/2019	N	440-245261-1	Alluvium	25.8 - 40.4	2,100	4,000	1.2	720	3.7
SWFTS-MW04	EM21	8/14/2019	N	440-248104-10	Alluvium	25.8 - 40.4	3,300	5,400	1.7	730	3.4
SWFTS-MW04	EM22	11/7/2019	N	440-254150-6	Alluvium	25.8 - 40.4	2,600	4,900	1.9	770	2.9
SWFTS-MW04	EM23	12/19/2019	N	440-257866-12	Alluvium	25.8 - 40.4	4,200	9,600	2.3	820	2.8
SWFTS-MW04	EM24	1/29/2020	N	440-259985-1	Alluvium	25.8 - 40.4	9,400	26,000	7.1	1,000 J+	2.7
SWFTS-MW04	EM25	3/12/2020	N	440-262905-4	Alluvium	25.8 - 40.4	9,100	24,000	6.6	970	2.5
SWFTS-MW04	EM26	5/1/2020	N	440-265412-1	Alluvium	25.8 - 40.4	12,000	29,000	7.1	1,100	2.2
SWFTS-MW04	EM27	7/7/2020	N	440-268480-5	Alluvium	25.8 - 40.4	7,100	17,000	4.4	910	2.9
SWFTS-MW04	EM28	8/18/2020	N	440-270571-5	Alluvium	25.8 - 40.4	6,000	15,000	3.5	890	3.0
SWFTS-MW04	EM29	10/14/2020	N	440-273303-12	Alluvium	25.8 - 40.4	5,800	15,000	3.4	840	3.0

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Groundwater Analytical Results Summary
Seep Well Field Area Bioremediation Treatability Study

Well	Event	Sample Date	QC Type	Lab Sample ID	Lithology	Screened Interval (ft bgs)	EPA 314.0	EPA 300.1B	Anions by EPA 300.0		SM5310B/ SW9060
							Perchlorate	Chlorate	Nitrate (as N)	Sulfate	Total Organic Carbon
							µg/L	µg/L	mg/L	mg/L	mg/L
SWFTS-MW04	EM30	12/10/2020	N	550-154531-5	Alluvium	25.8 - 40.4	5,300	13,000	3.2	430	2.5
SWFTS-MW04	EM31	2/2/2021	N	550-157679-6	Alluvium	25.8 - 40.4	4,600	11,000	2.5	830	2.7 J+
SWFTS-MW04	EM32	3/30/2021	N	550-160995-15	Alluvium	25.8 - 40.4	4,900	13,000	3.3	840	2.6
SWFTS-MW04	EM33	6/3/2021	N	550-164869-23	Alluvium	25.8 - 40.4	5,300	11,000	2.9	850	2.6
SWFTS-MW04	EM34	7/21/2021	N	550-167523-9	Alluvium	25.8 - 40.4	4,600	8,900	2.2	770	3.1 J+
SWFTS-MW04	EM35	9/16/2021	N	550-170815-4	Alluvium	25.8 - 40.4	10,000	24,000	6.3	1,000	2.5
SWFTS-MW04	EM36	12/2/2021	N	550-175153-3	Alluvium	25.8 - 40.4	7,500	15,000	4.0	990	2.8 J+
SWFTS-MW04	EM37	3/9/2022	N	550-180516-5	Alluvium	25.8 - 40.4	15,000	17,000	9.7	1,200	1.9
SWFTS-MW04	EM38	6/22/2022	N	550-186069-13	Alluvium	25.8 - 40.4	12,000	15,000	10	1,200	2.5 J+
SWFTS-MW04	EM39	9/14/2022	N	550-190504-16	Alluvium	25.8 - 40.4	8,500	17,000	6.3	960	2.6
SWFTS-MW04	EM40	12/14/2022	N	550-195015-1	Alluvium	25.8 - 40.4	4,000	6,800	2.9	790	2.7
SWFTS-MW05A	BL01	3/30/2017	N	440-181045-7	Alluvium	19.3 - 29.3	7,400	67,000	18	3,000	1.4
SWFTS-MW05A	EM01	9/20/2017	N	440-192728-3	Alluvium	19.3 - 29.3	5,700	51,000	17	2,500	1.1
SWFTS-MW05A	EM02	9/27/2017	N	440-193062-9	Alluvium	19.3 - 29.3	5,600	44,000	18	2,500	1.2
SWFTS-MW05A	EM03	10/3/2017	N	440-193472-4	Alluvium	19.3 - 29.3	5,800	46,000	16	2,400	0.80 J
SWFTS-MW05A	EM04	10/10/2017	N	440-193989-2	Alluvium	19.3 - 29.3	5,600	44,000	16	2,700	1.3
SWFTS-MW05A	EM05	10/23/2017	N	440-194846-4	Alluvium	19.3 - 29.3	4,700	43,000	15	2,600	1.3
SWFTS-MW05A	EM06	11/14/2017	N	440-196558-1	Alluvium	19.3 - 29.3	5,500	38,000	16	2,500	1.4
SWFTS-MW05A	EM07	12/13/2017	N	440-198508-3	Alluvium	19.3 - 29.3	5,300	43,000	17	2,500	1.3
SWFTS-MW05A	EM08	2/20/2018	N	440-203841-7	Alluvium	19.3 - 29.3	6,400	53,000	18	2,600	1.4
SWFTS-MW05A	EM09	3/26/2018	N	440-207137-5	Alluvium	19.3 - 29.3	6,600	58,000	16	2,500	1.1
SWFTS-MW05A	EM10	4/30/2018	N	440-210173-8	Alluvium	19.3 - 29.3	6,400 J	55,000	17	2,600	1.0
SWFTS-MW05A	EM11	7/11/2018	N	440-215585-14	Alluvium	19.3 - 29.3	5,200	46,000	15	2,300	0.87 J
SWFTS-MW05A	EM12	7/27/2018	N	440-216872-8	Alluvium	19.3 - 29.3	4,300	41,000	--	--	--
SWFTS-MW05A	EM13	8/14/2018	N	440-218109-2	Alluvium	19.3 - 29.3	3,600	35,000	10 J+	--	1.5
SWFTS-MW05A	EM14	9/11/2018	N	440-219886-7	Alluvium	19.3 - 29.3	3,400	30,000	9.5	2,500	1.2
SWFTS-MW05A	EM15	10/10/2018	N	440-221975-14	Alluvium	19.3 - 29.3	4,200	34,000	12	2,300	1.3
SWFTS-MW05A	EM16	12/20/2018	N	440-228491-11	Alluvium	19.3 - 29.3	5,000	21,000	16	2,600	1.3
SWFTS-MW05A	EM17	2/27/2019	N	440-234938-5	Alluvium	19.3 - 29.3	4,300	10,000	17	2,500	1.5
SWFTS-MW05A	EM18	4/10/2019	N	440-238531-9	Alluvium	19.3 - 29.3	3,100	56 J	13	2,500	1.5
SWFTS-MW05A	EM19	5/21/2019	N	440-242084-17	Alluvium	19.3 - 29.3	2,600	17 J	13	2,500	1.6
SWFTS-MW05A	EM20	7/1/2019	N	440-245068-6	Alluvium	19.3 - 29.3	2,700	<20	14	2,400	1.7
SWFTS-MW05A	EM21	8/13/2019	N	440-247965-7	Alluvium	19.3 - 29.3	3,100	33 J	13	2,500	1.9
SWFTS-MW05A	EM22	11/5/2019	N	440-253918-1	Alluvium	19.3 - 29.3	3,600 J+	30 J	14	2,500	1.8
SWFTS-MW05A	EM23	12/18/2019	N	440-257733-8	Alluvium	19.3 - 29.3	3,400	<10	12	2,400	1.3
SWFTS-MW05A	EM24	1/29/2020	N	440-259985-2	Alluvium	19.3 - 29.3	3,800	110	14	2,600 J+	1.4
SWFTS-MW05A	EM25	3/11/2020	N	440-262726-1	Alluvium	19.3 - 29.3	3,900	28 J	13 J-	2,600	1.8
SWFTS-MW05A	EM26	4/29/2020	N	440-265346-2	Alluvium	19.3 - 29.3	3,700	<20	13	2,600	1.4
SWFTS-MW05A	EM27	7/8/2020	N	440-268610-3	Alluvium	19.3 - 29.3	3,800	49 J	14	2,800	1.8 J-
SWFTS-MW05A	EM28	8/18/2020	N	440-270571-1	Alluvium	19.3 - 29.3	2,900	<10	11	2,700	2.9
SWFTS-MW05A	EM29	10/14/2020	N	440-273303-9	Alluvium	19.3 - 29.3	3,300 J-	<10	10	2,700	1.2
SWFTS-MW05A	EM30	12/8/2020	N	550-154358-15	Alluvium	19.3 - 29.3	3,700	<20	14	2,800	1.1
SWFTS-MW05A	EM31	2/2/2021	N	550-157679-7	Alluvium	19.3 - 29.3	4,300	<24	13	2,600	1.1 J+
SWFTS-MW05A	EM32	3/30/2021	N	550-160995-16	Alluvium	19.3 - 29.3	4,000	<49	14	2,800	1.0 J-
SWFTS-MW05A	EM33	6/3/2021	N	550-164869-17	Alluvium	19.3 - 29.3	4,300	<24	14	2,800	1.1
SWFTS-MW05A	EM34	7/20/2021	N	550-167449-7	Alluvium	19.3 - 29.3	4,000	<24	14 J-	2,700	1.1
SWFTS-MW05A	EM35	9/17/2021	N	550-170881-1	Alluvium	19.3 - 29.3	4,700	<24	13	2,800	1.0
SWFTS-MW05A	EM36	11/29/2021	N	550-174897-3	Alluvium	19.3 - 29.3	3,800	<24	13	3,000	1.2
SWFTS-MW05B	BL01	3/30/2017	N	440-181045-8	Alluvium	32.3 - 42.0	7,200	48,000	13	2,500	1.5

Table D.1
Groundwater Analytical Results Summary
Seep Well Field Area Bioremediation Treatability Study

Well	Event	Sample Date	QC Type	Lab Sample ID	Lithology	Screened Interval (ft bgs)	EPA 314.0	EPA 300.1B	Anions by EPA 300.0		SM5310B/ SW9060
							Perchlorate	Chlorate	Nitrate (as N)	Sulfate	Total Organic Carbon
							µg/L	µg/L	mg/L	mg/L	mg/L
SWFTS-MW05B	EM01	9/22/2017	N	440-192818-8	Alluvium	32.3 - 42.0	190	300	<0.55	2,100	39
SWFTS-MW05B	EM02	9/27/2017	N	440-193062-10	Alluvium	32.3 - 42.0	<0.95	<50	<0.55	2,200	57
SWFTS-MW05B	EM03	10/3/2017	N	440-193472-5	Alluvium	32.3 - 42.0	8.3	<50	<0.55	1,900	90
SWFTS-MW05B	EM04	10/10/2017	N	440-193989-1	Alluvium	32.3 - 42.0	<0.95	<100	<0.55	2,000	100
SWFTS-MW05B	EM05	10/23/2017	N	440-194846-5	Alluvium	32.3 - 42.0	<0.95	<100	<0.55	1,800	68
SWFTS-MW05B	EM06	11/14/2017	N	440-196558-2	Alluvium	32.3 - 42.0	<0.95	16 J	<0.55	1,800	3.2
SWFTS-MW05B	EM07	12/13/2017	N	440-198508-4	Alluvium	32.3 - 42.0	990	5,300	0.36 J	2,000	2.3
SWFTS-MW05B	EM08	2/20/2018	N	440-203841-8	Alluvium	32.3 - 42.0	2,000	11,000	4.2	2,100	2.2
SWFTS-MW05B	EM09	3/26/2018	N	440-207137-6	Alluvium	32.3 - 42.0	2,600	18,000	4.6	1,900	1.7
SWFTS-MW05B	EM10	4/30/2018	N	440-210173-2	Alluvium	32.3 - 42.0	2,600	18,000	5.4	2,100	1.9
SWFTS-MW05B	EM11	7/10/2018	N	440-215585-10	Alluvium	32.3 - 42.0	190	1,500	0.66 J-	1,600	2.4
SWFTS-MW05B	EM12	7/27/2018	N	440-216872-7	Alluvium	32.3 - 42.0	240	1,600	--	--	--
SWFTS-MW05B	EM13	8/14/2018	N	440-218109-3	Alluvium	32.3 - 42.0	420	2,000	<0.55	--	2.5
SWFTS-MW05B	EM14	9/11/2018	N	440-219886-8	Alluvium	32.3 - 42.0	860	4,800	1.3	1,900	1.9
SWFTS-MW05B	EM15	10/9/2018	N	440-221855-14	Alluvium	32.3 - 42.0	1,400	8,700	2.5	1,800	2.3
SWFTS-MW05B	EM16	12/20/2018	N	440-228491-12	Alluvium	32.3 - 42.0	2,100	8,000	4.7	2,100	2.1
SWFTS-MW05B	EM17	2/27/2019	N	440-234938-4	Alluvium	32.3 - 42.0	910	240	3.8	1,900	2.1
SWFTS-MW05B	EM18	4/10/2019	N	440-238531-10	Alluvium	32.3 - 42.0	1,200	19 J	3.3	1,800	2.0
SWFTS-MW05B	EM19	5/21/2019	N	440-242084-18	Alluvium	32.3 - 42.0	1,200	<4.0	4.3	1,700	1.9
SWFTS-MW05B	EM20	7/1/2019	N	440-245068-7	Alluvium	32.3 - 42.0	1,400	<10	4.8	1,900	2.4
SWFTS-MW05B	EM21	8/13/2019	N	440-247965-8	Alluvium	32.3 - 42.0	1,600	<10	4.8	1,900	2.3
SWFTS-MW05B	EM22	11/5/2019	N	440-253918-2	Alluvium	32.3 - 42.0	790	13 J	1.6 J	1,700	2.3
SWFTS-MW05B	EM23	12/18/2019	N	440-257733-9	Alluvium	32.3 - 42.0	1,200	<10	3.4	2,300	1.9
SWFTS-MW05B	EM24	1/29/2020	N	440-259985-3	Alluvium	32.3 - 42.0	1,900	37 J	5.0	1,900 J+	2.0
SWFTS-MW05B	EM25	3/11/2020	N	440-262726-2	Alluvium	32.3 - 42.0	1,800	<20	4.9 J-	2,000	1.7
SWFTS-MW05B	EM26	4/29/2020	N	440-265346-1	Alluvium	32.3 - 42.0	1,800	<10	6.1	2,100	2.0
SWFTS-MW05B	EM27	7/8/2020	N	440-268610-4	Alluvium	32.3 - 42.0	1,100	<10	2.1	1,800	2.5
SWFTS-MW05B	EM28	8/18/2020	N	440-270571-2	Alluvium	32.3 - 42.0	1,100	32 J	4.0	1,800	3.0
SWFTS-MW05B	EM29	10/14/2020	N	440-273303-8	Alluvium	32.3 - 42.0	1,400	32 J	4.0	1,800	2.4
SWFTS-MW05B	EM30	12/8/2020	N	550-154358-16	Alluvium	32.3 - 42.0	1,300	<10	4.9	2,100	1.8
SWFTS-MW05B	EM31	2/2/2021	N	550-157679-8	Alluvium	32.3 - 42.0	1,500	<9.8	4.9	1,900	1.8 J+
SWFTS-MW05B	EM32	3/30/2021	N	550-160995-17	Alluvium	32.3 - 42.0	26	<9.8	0.093	1,700	2.4
SWFTS-MW05B	EM33	6/3/2021	N	550-164869-19	Alluvium	32.3 - 42.0	210	69	0.35	1,800	2.3
SWFTS-MW05B	EM34	7/21/2021	N	550-167523-1	Alluvium	32.3 - 42.0	520	75 J	0.31	1,900	2.2 J+
SWFTS-MW05B	EM35	9/16/2021	N	550-170815-7	Alluvium	32.3 - 42.0	1,200	90	1.5	2,100	1.9
SWFTS-MW05B	EM36	11/30/2021	N	550-174968-15	Alluvium	32.3 - 42.0	650	19 J	1.4	2,300	2.0 J+
SWFTS-MW06A	BL01	3/30/2017	N	440-181045-1	Alluvium	11.8 - 21.4	170	<10	<0.11	570	3.6
SWFTS-MW06A	EM01	9/21/2017	N	440-192818-2	Alluvium	11.8 - 21.4	2,400	220	1.5	890	3.0
SWFTS-MW06A	EM02	9/27/2017	N	440-193167-3	Alluvium	11.8 - 21.4	2,600	320	1.7	930	3.3
SWFTS-MW06A	EM03	10/3/2017	N	440-193622-4	Alluvium	11.8 - 21.4	2,700	300	2.0 J-	920	2.8
SWFTS-MW06A	EM04	10/11/2017	N	440-194090-4	Alluvium	11.8 - 21.4	5,500	1,100	1.9	970	3.0
SWFTS-MW06A	EM05	10/23/2017	N	440-194846-7	Alluvium	11.8 - 21.4	2,300	350	1.9	1,000	3.3
SWFTS-MW06A	EM06	11/16/2017	N	440-196786-19	Alluvium	11.8 - 21.4	3,300	380	2.5	1,500	2.8
SWFTS-MW06A	EM07	12/13/2017	N	440-198508-1	Alluvium	11.8 - 21.4	3,600	520	2.6	1,100	2.7
SWFTS-MW06A	EM08	2/22/2018	N	440-204033-1	Alluvium	11.8 - 21.4	1,800	200	0.88	890	3.4
SWFTS-MW06A	EM09	3/28/2018	N	440-207497-3	Alluvium	11.8 - 21.4	1,500	77	0.36	750	3.1
SWFTS-MW06A	EM10	5/1/2018	N	440-210284-9	Alluvium	11.8 - 21.4	760 J	10 J	0.11	650	3.1
SWFTS-MW06A	EM10	5/1/2018	FD	440-210284-10	Alluvium	11.8 - 21.4	880	13 J	0.11	650	3.1
SWFTS-MW06A	EM11	7/11/2018	N	440-215585-2	Alluvium	11.8 - 21.4	830	21	0.11 J	640	2.9

Table D.1
Groundwater Analytical Results Summary
Seep Well Field Area Bioremediation Treatability Study

Well	Event	Sample Date	QC Type	Lab Sample ID	Lithology	Screened Interval (ft bgs)	EPA 314.0	EPA 300.1B	Anions by EPA 300.0		SM5310B/ SW9060
							Perchlorate	Chlorate	Nitrate (as N)	Sulfate	Total Organic Carbon
							µg/L	µg/L	mg/L	mg/L	mg/L
SWFTS-MW06A	EM11	7/11/2018	FD	440-215585-3	Alluvium	11.8 - 21.4	840	20	<0.11	650	2.9
SWFTS-MW06A	EM13	8/14/2018	N	440-218109-4	Alluvium	11.8 - 21.4	1,500	96	0.28	--	3.4
SWFTS-MW06A	EM13	8/14/2018	FD	440-218109-5	Alluvium	11.8 - 21.4	1,500	95	0.29	--	3.3
SWFTS-MW06A	EM14	9/11/2018	N	440-219886-15	Alluvium	11.8 - 21.4	1,700	150	0.42	750	3.4
SWFTS-MW06A	EM14	9/11/2018	FD	440-219886-16	Alluvium	11.8 - 21.4	1,600	140	0.43	810	3.3
SWFTS-MW06A	EM15	10/10/2018	N	440-221975-8	Alluvium	11.8 - 21.4	2,400	210	0.84	800	3.5
SWFTS-MW06A	EM15	10/10/2018	FD	440-221975-10	Alluvium	11.8 - 21.4	2,100	210	0.79	780	3.6
SWFTS-MW06A	EM16	12/28/2018	N	440-228887-3	Alluvium	11.8 - 21.4	1,700	760	0.41	740	3.6
SWFTS-MW06A	EM16	12/28/2018	FD	440-228887-4	Alluvium	11.8 - 21.4	1,600	760	0.42	730	3.5
SWFTS-MW06A	EM17	2/27/2019	N	440-234933-6	Alluvium	11.8 - 21.4	1,600	93	0.42	760	3.1
SWFTS-MW06A	EM17	2/27/2019	FD	440-234933-7	Alluvium	11.8 - 21.4	1,500	95	0.43	830	3.1
SWFTS-MW06A	EM18	4/10/2019	N	440-238544-2	Alluvium	11.8 - 21.4	1,500	120	0.60	760	3.4
SWFTS-MW06A	EM18	4/10/2019	FD	440-238544-3	Alluvium	11.8 - 21.4	1,500	120	0.59	760	3.3
SWFTS-MW06A	EM19	5/20/2019	N	440-242015-1	Alluvium	11.8 - 21.4	1,800	170	1.0	800	3.0
SWFTS-MW06A	EM19	5/20/2019	FD	440-242015-2	Alluvium	11.8 - 21.4	1,800	160	0.86	800	3.2
SWFTS-MW06A	EM20	7/1/2019	N	440-245046-5	Alluvium	11.8 - 21.4	2,500	350 J	1.3	880	3.6
SWFTS-MW06A	EM20	7/1/2019	FD	440-245046-6	Alluvium	11.8 - 21.4	2,800	310 J	1.2	890	3.7
SWFTS-MW06A	EM21	8/14/2019	N	440-248104-7	Alluvium	11.8 - 21.4	3,200	390	1.7	950	3.7
SWFTS-MW06A	EM21	8/14/2019	FD	440-248104-8	Alluvium	11.8 - 21.4	3,300	380	1.7	970	3.2
SWFTS-MW06A	EM22	11/6/2019	N	440-254027-4	Alluvium	11.8 - 21.4	2,500	330	1.3	910	3.3
SWFTS-MW06A	EM22	11/6/2019	FD	440-254027-5	Alluvium	11.8 - 21.4	2,600	320	1.3	910	3.2
SWFTS-MW06A	EM23	12/19/2019	N	440-257866-9	Alluvium	11.8 - 21.4	1,900	180	0.77	810	3.0
SWFTS-MW06A	EM23	12/19/2019	FD	440-257866-10	Alluvium	11.8 - 21.4	1,900	190	0.77	780	2.8
SWFTS-MW06A	EM24	1/29/2020	N	440-259985-5	Alluvium	11.8 - 21.4	1,100	51 J	0.26	710 J+	3.2
SWFTS-MW06A	EM24	1/29/2020	FD	440-259985-6	Alluvium	11.8 - 21.4	1,100	53 J	0.26	710 J+	3.2
SWFTS-MW06A	EM25	3/11/2020	N	440-262720-2	Alluvium	11.8 - 21.4	580	<4.0	<0.11	600	3.3
SWFTS-MW06A	EM25	3/11/2020	FD	440-262720-3	Alluvium	11.8 - 21.4	600	<4.0	<0.11	600	3.3
SWFTS-MW06A	EM26	4/29/2020	N	440-265346-5	Alluvium	11.8 - 21.4	350	<10	<0.11	550	3.1
SWFTS-MW06A	EM26	4/29/2020	FD	440-265346-6	Alluvium	11.8 - 21.4	360	<10	<0.11	560	3.2
SWFTS-MW06A	EM27	7/7/2020	N	440-268480-2	Alluvium	11.8 - 21.4	840	<2.0	<0.11	600	3.5
SWFTS-MW06A	EM27	7/7/2020	FD	440-268480-3	Alluvium	11.8 - 21.4	850	<2.0	<0.11	610	3.4
SWFTS-MW06A	EM28	8/19/2020	N	440-270632-2	Alluvium	11.8 - 21.4	1,400	63 J	0.48	680	4.3
SWFTS-MW06A	EM28	8/19/2020	FD	440-270632-3	Alluvium	11.8 - 21.4	1,400	70 J	0.57	670	4.6
SWFTS-MW06A	EM29	10/13/2020	N	440-273236-7	Alluvium	11.8 - 21.4	2,100	150	0.54 J	750	3.4
SWFTS-MW06A	EM29	10/13/2020	FD	440-273236-8	Alluvium	11.8 - 21.4	2,100	140	0.54 J	740	3.3
SWFTS-MW06A	EM30	12/8/2020	N	550-154358-12	Alluvium	11.8 - 21.4	2,000 J	140	0.53 J+	810	2.9
SWFTS-MW06A	EM30	12/8/2020	FD	550-154358-13	Alluvium	11.8 - 21.4	2,200 J	140	0.54 J+	810	2.9
SWFTS-MW06A	EM31	2/3/2021	N	550-157817-9	Alluvium	11.8 - 21.4	2,200	71 J	0.36	780	2.9
SWFTS-MW06A	EM31	2/3/2021	FD	550-157817-10	Alluvium	11.8 - 21.4	2,200	78 J	0.37	790	2.9
SWFTS-MW06A	EM32	3/31/2021	N	550-161063-1	Alluvium	11.8 - 21.4	1,700	83 J	0.36	740	3.0
SWFTS-MW06A	EM32	3/31/2021	FD	550-161063-2	Alluvium	11.8 - 21.4	1,800	82 J	0.35	740	3.0
SWFTS-MW06A	EM33	6/4/2021	N	550-164930-19	Alluvium	11.8 - 21.4	1,800	86 J	0.46	760	2.9 J+
SWFTS-MW06A	EM33	6/4/2021	FD	550-164930-21	Alluvium	11.8 - 21.4	1,800	85 J	0.46	760	2.9 J+
SWFTS-MW06A	EM34	7/19/2021	N	550-167353-3	Alluvium	11.8 - 21.4	1,900	170	0.52	770	3.0
SWFTS-MW06A	EM34	7/19/2021	FD	550-167353-4	Alluvium	11.8 - 21.4	1,900	180	0.51	760	3.3
SWFTS-MW06A	EM35	9/16/2021	N	550-170815-1	Alluvium	11.8 - 21.4	1,300	52 J	0.30	720	3.1
SWFTS-MW06A	EM35	9/16/2021	FD	550-170815-2	Alluvium	11.8 - 21.4	1,300	51 J	0.30	720	3.1
SWFTS-MW06A	EM36	12/1/2021	N	550-175045-7	Alluvium	11.8 - 21.4	1,200	<24	0.20	760	3.1
SWFTS-MW06A	EM36	12/1/2021	FD	550-175045-9	Alluvium	11.8 - 21.4	1,200	<24	0.21	760	3.2

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Groundwater Analytical Results Summary
Seep Well Field Area Bioremediation Treatability Study

Well	Event	Sample Date	QC Type	Lab Sample ID	Lithology	Screened Interval (ft bgs)	EPA 314.0	EPA 300.1B	Anions by EPA 300.0		SM5310B/ SW9060
							Perchlorate	Chlorate	Nitrate (as N)	Sulfate	Total Organic Carbon
							µg/L	µg/L	mg/L	mg/L	mg/L
SWFTS-MW06A	EM37	3/7/2022	N	550-180322-6	Alluvium	11.8 - 21.4	590	<24	0.089	590	3.1
SWFTS-MW06A	EM37	3/7/2022	FD	550-180322-7	Alluvium	11.8 - 21.4	530	<24	0.081	590	3.1
SWFTS-MW06A	EM38	6/22/2022	N	550-186069-14	Alluvium	11.8 - 21.4	750	150	3.9	550	3.7 J+
SWFTS-MW06A	EM38	6/22/2022	FD	550-186069-15	Alluvium	11.8 - 21.4	700	140	3.8	550	3.8 J+
SWFTS-MW06A	EM39	9/14/2022	N	550-190504-13	Alluvium	11.8 - 21.4	700	33 J	0.64	580	3.2
SWFTS-MW06A	EM39	9/14/2022	FD	550-190504-14	Alluvium	11.8 - 21.4	730	33 J	0.67	570	3.3
SWFTS-MW06A	EM40	12/14/2022	N	550-195015-5	Alluvium	11.8 - 21.4	1,300	96 J	0.29	700	3.2
SWFTS-MW06A	EM40	12/14/2022	FD	550-195015-7	Alluvium	11.8 - 21.4	1,300	92 J	0.29	700	3.1
SWFTS-MW06B	BL01	3/30/2017	N	440-181045-2	Alluvium	25.9 - 35.5	1,000	490	0.13 J	620	3.5
SWFTS-MW06B	EM01	9/21/2017	N	440-192728-9	Alluvium	25.9 - 35.5	2,000	350	0.70	770	2.8
SWFTS-MW06B	EM02	9/27/2017	N	440-193167-4	Alluvium	25.9 - 35.5	2,000	360	0.76	780	3.3
SWFTS-MW06B	EM03	10/3/2017	N	440-193622-5	Alluvium	25.9 - 35.5	2,500	340	1.0	790	2.8
SWFTS-MW06B	EM04	10/11/2017	N	440-194090-5	Alluvium	25.9 - 35.5	4,400	380	1.1	820	3.1
SWFTS-MW06B	EM05	10/23/2017	N	440-194846-6	Alluvium	25.9 - 35.5	2,000	390	1.3	890	3.1
SWFTS-MW06B	EM06	11/16/2017	N	440-196786-20	Alluvium	25.9 - 35.5	2,800	400	1.8	970	2.9
SWFTS-MW06B	EM07	12/13/2017	N	440-198508-2	Alluvium	25.9 - 35.5	3,200	590	2.2	990	2.9
SWFTS-MW06B	EM08	2/22/2018	N	440-204033-5	Alluvium	25.9 - 35.5	2,900	480	1.9	1,100	3.1
SWFTS-MW06B	EM09	3/28/2018	N	440-207497-2	Alluvium	25.9 - 35.5	2,500	370	1.1	900	2.8
SWFTS-MW06B	EM10	5/1/2018	N	440-210284-8	Alluvium	25.9 - 35.5	1,800	270	0.56	780	2.9
SWFTS-MW06B	EM11	7/11/2018	N	440-215585-4	Alluvium	25.9 - 35.5	880	140	0.18 J	660	2.9
SWFTS-MW06B	EM13	8/14/2018	N	440-218109-6	Alluvium	25.9 - 35.5	1,200	170	0.14	--	3.8
SWFTS-MW06B	EM14	9/11/2018	N	440-219886-14	Alluvium	25.9 - 35.5	1,700	230	0.23	720	3.3
SWFTS-MW06B	EM15	10/10/2018	N	440-221975-9	Alluvium	25.9 - 35.5	1,700	260	0.36 J	720	4.1
SWFTS-MW06B	EM16	12/28/2018	N	440-228887-5	Alluvium	25.9 - 35.5	1,900	270	0.66	770	3.1
SWFTS-MW06B	EM17	2/28/2019	N	440-235000-6	Alluvium	25.9 - 35.5	1,600	230	0.53	760	3.2
SWFTS-MW06B	EM18	4/10/2019	N	440-238544-4	Alluvium	25.9 - 35.5	1,600	210	1.2	740	3.4
SWFTS-MW06B	EM19	5/21/2019	N	440-242084-5	Alluvium	25.9 - 35.5	1,700	220	0.43	750	3.7
SWFTS-MW06B	EM20	7/1/2019	N	440-245046-4	Alluvium	25.9 - 35.5	2,100	340	0.73	780	3.6
SWFTS-MW06B	EM21	8/14/2019	N	440-248104-9	Alluvium	25.9 - 35.5	2,900	420	1.4	840	3.2
SWFTS-MW06B	EM22	11/6/2019	N	440-254027-6	Alluvium	25.9 - 35.5	3,000	530	1.6	930	<0.65
SWFTS-MW06B	EM23	12/19/2019	N	440-257866-11	Alluvium	25.9 - 35.5	2,500	410	1.0	820	2.9
SWFTS-MW06B	EM24	1/29/2020	N	440-259985-7	Alluvium	25.9 - 35.5	1,900	290	0.72	820 J+	3.4
SWFTS-MW06B	EM25	3/11/2020	N	440-262720-4	Alluvium	25.9 - 35.5	1,300	150	0.32	700	2.8
SWFTS-MW06B	EM26	4/29/2020	N	440-265346-4	Alluvium	25.9 - 35.5	690	70	<0.11	600	3.0
SWFTS-MW06B	EM27	7/7/2020	N	440-268480-4	Alluvium	25.9 - 35.5	600	29 J	<0.11	600	3.3
SWFTS-MW06B	EM28	8/19/2020	N	440-270632-4	Alluvium	25.9 - 35.5	890	61 J	<0.11	610	3.9
SWFTS-MW06B	EM29	10/13/2020	N	440-273236-6	Alluvium	25.9 - 35.5	1,800	170	0.35	700	3.4
SWFTS-MW06B	EM30	12/8/2020	N	550-154358-14	Alluvium	25.9 - 35.5	2,100	230	0.44 J+	750	2.8
SWFTS-MW06B	EM31	2/3/2021	N	550-157817-11	Alluvium	25.9 - 35.5	2,400	180	0.37	790	2.9
SWFTS-MW06B	EM32	3/31/2021	N	550-161063-5	Alluvium	25.9 - 35.5	1,900	180	0.25	740	3.1
SWFTS-MW06B	EM33	6/4/2021	N	550-164930-23	Alluvium	25.9 - 35.5	1,800	170	0.36	750	2.8 J+
SWFTS-MW06B	EM34	7/19/2021	N	550-167353-5	Alluvium	25.9 - 35.5	1,900	560	0.34	750	3.6
SWFTS-MW06B	EM35	9/16/2021	N	550-170815-3	Alluvium	25.9 - 35.5	1,900	170	0.46	760	3.1
SWFTS-MW06B	EM36	12/1/2021	N	550-175045-11	Alluvium	25.9 - 35.5	1,300	84 J	0.14	760	3.1
SWFTS-MW06B	EM37	3/7/2022	N	550-180322-8	Alluvium	25.9 - 35.5	1,000	100	0.11	660	3.5
SWFTS-MW06B	EM38	6/22/2022	N	550-186069-16	Alluvium	25.9 - 35.5	2,600	2,700	12	710	4.6 J+
SWFTS-MW06B	EM39	9/14/2022	N	550-190504-15	Alluvium	25.9 - 35.5	1,300	940	3.8	610	3.4
SWFTS-MW06B	EM40	12/14/2022	N	550-195015-9	Alluvium	25.9 - 35.5	1,300	300	0.75	970	3.3
SWFTS-MW07A	BL01	3/30/2017	N	440-181045-3	Alluvium	15.0 - 29.5	14,000	44,000	11	1,600	2.1

Table D.1
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Seep Well Field Area Bioremediation Treatability Study

Well	Event	Sample Date	QC Type	Lab Sample ID	Lithology	Screened Interval (ft bgs)	EPA 314.0	EPA 300.1B	Anions by EPA 300.0		SM5310B/ SW9060
							Perchlorate	Chlorate	Nitrate (as N)	Sulfate	Total Organic Carbon
							µg/L	µg/L	mg/L	mg/L	mg/L
SWFTS-MW07A	EM01	9/20/2017	N	440-192627-7	Alluvium	15.0 - 29.5	14,000	41,000	11	1,700	2.0
SWFTS-MW07A	EM02	9/26/2017	N	440-192973-1	Alluvium	15.0 - 29.5	15,000	36,000	11	1,600	2.3
SWFTS-MW07A	EM03	10/3/2017	N	440-193472-6	Alluvium	15.0 - 29.5	16,000	37,000	10	1,600	2.1
SWFTS-MW07A	EM04	10/11/2017	N	440-194242-3	Alluvium	15.0 - 29.5	12,000	39,000	12	1,600	2.0
SWFTS-MW07A	EM05	10/24/2017	N	440-194947-4	Alluvium	15.0 - 29.5	14,000	38,000	10	1,700	2.3
SWFTS-MW07A	EM06	11/15/2017	N	440-196659-7	Alluvium	15.0 - 29.5	16,000	40,000	12	1,600	2.1
SWFTS-MW07A	EM07	12/14/2017	N	440-198571-3	Alluvium	15.0 - 29.5	14,000	35,000	11	1,600	2.1
SWFTS-MW07A	EM08	2/19/2018	N	440-203775-3	Alluvium	15.0 - 29.5	12,000	36,000	12	1,600	2.2
SWFTS-MW07A	EM09	3/28/2018	N	440-207497-4	Alluvium	15.0 - 29.5	11,000	36,000	12	1,300	1.8
SWFTS-MW07A	EM10	5/2/2018	N	440-210430-2	Alluvium	15.0 - 29.5	11,000	40,000	13	1,400	1.7
SWFTS-MW07A	EM11	7/11/2018	N	440-215585-7	Alluvium	15.0 - 29.5	11,000	44,000	14	1,300	1.6
SWFTS-MW07A	EM13	8/16/2018	N	440-218296-2	Alluvium	15.0 - 29.5	8,600	76,000	15	1,300	2.0
SWFTS-MW07A	EM14	9/12/2018	N	440-220031-6	Alluvium	15.0 - 29.5	9,500	42,000	17	1,400	1.8
SWFTS-MW07A	EM15	10/10/2018	N	440-221975-11	Alluvium	15.0 - 29.5	9,300	40,000	17	1,300	2.1
SWFTS-MW07A	EM16	1/2/2019	N	440-229018-10	Alluvium	15.0 - 29.5	8,100	35,000	15	1,300	1.8
SWFTS-MW07A	EM17	2/28/2019	N	440-235000-10	Alluvium	15.0 - 29.5	7,300	34,000	15	1,200	2.5
SWFTS-MW07A	EM18	4/12/2019	N	440-238733-5	Alluvium	15.0 - 29.5	7,600	36,000	16	1,200	1.7
SWFTS-MW07A	EM19	5/22/2019	N	440-242200-5	Alluvium	15.0 - 29.5	6,800	35,000	15	1,200	1.9
SWFTS-MW07A	EM20	7/3/2019	N	440-245218-6	Alluvium	15.0 - 29.5	7,800	36,000	14	1,200	2.2
SWFTS-MW07A	EM21	8/15/2019	N	440-248187-1	Alluvium	15.0 - 29.5	8,500	38,000	15	1,100	2.1
SWFTS-MW07A	EM22	11/7/2019	N	440-254148-4	Alluvium	15.0 - 29.5	7,900	35,000	13	1,100	1.8
SWFTS-MW07A	EM23	12/20/2019	N	440-257938-4	Alluvium	15.0 - 29.5	8,900	35,000	13	1,000	1.8
SWFTS-MW07A	EM24	1/28/2020	N	440-259893-4	Alluvium	15.0 - 29.5	9,000	39,000	14 J-	1,000 J+	1.8
SWFTS-MW07A	EM25	3/12/2020	N	440-262887-5	Alluvium	15.0 - 29.5	12,000	44,000	13 J-	1,100	2.0
SWFTS-MW07A	EM26	4/30/2020	N	440-265382-5	Alluvium	15.0 - 29.5	12,000	35,000	13	1,400	1.9
SWFTS-MW07A	EM27	7/9/2020	N	440-268680-4	Alluvium	15.0 - 29.5	5,300	42,000	15	1,400	2.1 J-
SWFTS-MW07A	EM28	8/19/2020	N	440-270632-5	Alluvium	15.0 - 29.5	9,300	37,000	12	1,400	2.2
SWFTS-MW07A	EM29	10/16/2020	N	440-273433-1	Alluvium	15.0 - 29.5	9,800	33,000	12	1,300	1.9
SWFTS-MW07A	EM30	12/9/2020	N	550-154431-6	Alluvium	15.0 - 29.5	8,600	32,000	13	1,300	1.7
SWFTS-MW07A	EM31	2/3/2021	N	550-157817-12	Alluvium	15.0 - 29.5	9,100	31,000	12	1,200	1.5
SWFTS-MW07A	EM32	3/31/2021	N	550-161063-6	Alluvium	15.0 - 29.5	8,500	23,000 J+	11	1,100	1.5
SWFTS-MW07A	EM33	6/4/2021	N	550-164930-25	Alluvium	15.0 - 29.5	10,000	35,000	12	1,100	1.4 J+
SWFTS-MW07A	EM34	7/22/2021	N	550-167639-9	Alluvium	15.0 - 29.5	14,000	30,000	12	520	1.7
SWFTS-MW07A	EM35	9/16/2021	N	550-170815-8	Alluvium	15.0 - 29.5	17,000	39,000	13	1,200	1.6
SWFTS-MW07A	EM36	12/3/2021	N	550-175222-3	Alluvium	15.0 - 29.5	21,000	37,000	13	1,600	1.9
SWFTS-MW07A	EM37	3/8/2022	N	550-180407-18	Alluvium	15.0 - 29.5	21,000	35,000	13	1,300	1.8 J+
SWFTS-MW07A	EM38	6/23/2022	N	550-186171-6	Alluvium	15.0 - 29.5	19,000	38,000	16	1,700	2.1
SWFTS-MW07A	EM39	9/14/2022	N	550-190504-18	Alluvium	15.0 - 29.5	16,000	36,000	20	1,800	2.5
SWFTS-MW07A	EM40	12/14/2022	N	550-195015-11	Alluvium	15.0 - 29.5	9,000	17,000	21	2,800	2.1
SWFTS-MW07B	BL01	3/30/2017	N	440-181045-4	Alluvium	33.8 - 38.3	13,000	40,000	11	1,800	2.0
SWFTS-MW07B	EM01	9/20/2017	N	440-192627-8	Alluvium	33.8 - 38.3	10,000	33,000	9.0	1,300	1.8
SWFTS-MW07B	EM02	9/26/2017	N	440-192973-2	Alluvium	33.8 - 38.3	11,000	29,000	10	1,500	2.2
SWFTS-MW07B	EM03	10/3/2017	N	440-193472-7	Alluvium	33.8 - 38.3	9,400	28,000	9.9	1,400	1.6
SWFTS-MW07B	EM04	10/11/2017	N	440-194242-4	Alluvium	33.8 - 38.3	8,400	28,000	11	1,400	1.7
SWFTS-MW07B	EM05	10/24/2017	N	440-194947-3	Alluvium	33.8 - 38.3	9,300	29,000	11	1,400	1.2
SWFTS-MW07B	EM06	11/15/2017	N	440-196659-8	Alluvium	33.8 - 38.3	9,700	29,000	12	1,300	2.0
SWFTS-MW07B	EM07	12/14/2017	N	440-198571-4	Alluvium	33.8 - 38.3	9,400	30,000	12	1,300	1.9
SWFTS-MW07B	EM08	2/19/2018	N	440-203775-2	Alluvium	33.8 - 38.3	9,700	37,000	14	1,300	2.2
SWFTS-MW07B	EM09	3/28/2018	N	440-207497-10	Alluvium	33.8 - 38.3	11,000	47,000	16	1,300	1.7

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Well	Event	Sample Date	QC Type	Lab Sample ID	Lithology	Screened Interval (ft bgs)	EPA 314.0	EPA 300.1B	Anions by EPA 300.0		SM5310B/ SW9060
							Perchlorate	Chlorate	Nitrate (as N)	Sulfate	Total Organic Carbon
							µg/L	µg/L	mg/L	mg/L	mg/L
SWFTS-MW07B	EM10	5/2/2018	N	440-210430-1	Alluvium	33.8 - 38.3	9,100	34,000	13	1,200	1.9
SWFTS-MW07B	EM11	7/11/2018	N	440-215585-8	Alluvium	33.8 - 38.3	8,300	43,000	16	1,300	1.7
SWFTS-MW07B	EM13	8/16/2018	N	440-218296-3	Alluvium	33.8 - 38.3	6,500	44,000	17	1,200	2.0
SWFTS-MW07B	EM14	9/12/2018	N	440-220031-7	Alluvium	33.8 - 38.3	6,200	31,000	17	1,200	1.8
SWFTS-MW07B	EM15	10/10/2018	N	440-221975-12	Alluvium	33.8 - 38.3	5,700	28,000	16	1,100	1.8
SWFTS-MW07B	EM16	1/3/2019	N	440-229111-1	Alluvium	33.8 - 38.3	6,100	32,000	13	900	1.6
SWFTS-MW07B	EM17	2/28/2019	N	440-235000-11	Alluvium	33.8 - 38.3	6,700	40,000	15	1,000	2.3
SWFTS-MW07B	EM18	4/12/2019	N	440-238733-4	Alluvium	33.8 - 38.3	7,500	39,000	14	1,100	1.6
SWFTS-MW07B	EM19	5/22/2019	N	440-242200-6	Alluvium	33.8 - 38.3	7,600	37,000	14	1,100	1.4
SWFTS-MW07B	EM20	7/3/2019	N	440-245218-5	Alluvium	33.8 - 38.3	6,500	30,000	13	1,000	2.1
SWFTS-MW07B	EM21	8/15/2019	N	440-248187-2	Alluvium	33.8 - 38.3	7,200	33,000	13	940	2.0
SWFTS-MW07B	EM22	11/7/2019	N	440-254148-5	Alluvium	33.8 - 38.3	6,400	33,000	12	890	1.6
SWFTS-MW07B	EM23	12/20/2019	N	440-257938-5	Alluvium	33.8 - 38.3	9,800	38,000	13	950	1.4
SWFTS-MW07B	EM24	1/28/2020	N	440-259893-5	Alluvium	33.8 - 38.3	12,000	47,000	14	1,100 J+	2.1
SWFTS-MW07B	EM25	3/12/2020	N	440-262887-6	Alluvium	33.8 - 38.3	14,000	46,000	13 J-	1,300	2.0
SWFTS-MW07B	EM26	4/30/2020	N	440-265382-4	Alluvium	33.8 - 38.3	10,000	41,000	12	1,400	1.7
SWFTS-MW07B	EM27	7/9/2020	N	440-268680-5	Alluvium	33.8 - 38.3	8,900	30,000	14	1,400	2.3 J-
SWFTS-MW07B	EM28	8/19/2020	N	440-270632-6	Alluvium	33.8 - 38.3	7,300	27,000	11	1,100	2.1
SWFTS-MW07B	EM29	10/16/2020	N	440-273433-2	Alluvium	33.8 - 38.3	6,500	21,000	11	920	2.1
SWFTS-MW07B	EM30	12/9/2020	N	550-154431-7	Alluvium	33.8 - 38.3	6,000	23,000	12	930	1.5
SWFTS-MW07B	EM31	2/3/2021	N	550-157817-13	Alluvium	33.8 - 38.3	8,500	37,000	12	990	1.5
SWFTS-MW07B	EM32	3/31/2021	N	550-161063-7	Alluvium	33.8 - 38.3	8,500	24,000	9.5	1,000	1.6
SWFTS-MW07B	EM33	6/4/2021	N	550-164930-27	Alluvium	33.8 - 38.3	15,000	44,000	12	1,100	1.5 J+
SWFTS-MW07B	EM34	7/22/2021	N	550-167639-10	Alluvium	33.8 - 38.3	25,000	28,000	13	580	2.0
SWFTS-MW07B	EM35	9/16/2021	N	550-170815-9	Alluvium	33.8 - 38.3	25,000	47,000	14	1,400	1.7
SWFTS-MW07B	EM36	12/3/2021	N	550-175222-5	Alluvium	33.8 - 38.3	26,000	51,000	14	2,300	1.7
SWFTS-MW07B	EM37	3/8/2022	N	550-180407-17	Alluvium	33.8 - 38.3	21,000	43,000	13	1,400	1.8 J+
SWFTS-MW07B	EM38	6/23/2022	N	550-186171-7	Alluvium	33.8 - 38.3	15,000	34,000	23	2,000	2.5
SWFTS-MW07B	EM39	9/14/2022	N	550-190504-19	Alluvium	33.8 - 38.3	9,100	21,000	23	1,700	2.4
SWFTS-MW07B	EM40	12/14/2022	N	550-195015-13	Alluvium	33.8 - 38.3	4,900	12,000	19	1,900	2.1
SWFTS-MW08A	BL01	3/30/2017	N	440-181045-9	Alluvium	20.2 - 34.8	14,000	20,000	11	1,700	1.5
SWFTS-MW08A	EM01	9/20/2017	N	440-192627-9	Alluvium	20.2 - 34.8	10,000	47,000	12	1,500	1.4
SWFTS-MW08A	EM01	9/20/2017	FD	440-192627-10	Alluvium	20.2 - 34.8	10,000	46,000	13	1,500	1.4
SWFTS-MW08A	EM02	9/26/2017	N	440-192973-4	Alluvium	20.2 - 34.8	9,800	40,000	12	1,600	1.7
SWFTS-MW08A	EM02	9/26/2017	FD	440-192973-5	Alluvium	20.2 - 34.8	10,000	42,000	12	1,600	1.8
SWFTS-MW08A	EM03	10/5/2017	N	440-193712-16	Alluvium	20.2 - 34.8	7,800	42,000	14	1,600	1.6
SWFTS-MW08A	EM03	10/5/2017	FD	440-193712-15	Alluvium	20.2 - 34.8	9,800	49,000	12	1,500	2.0
SWFTS-MW08A	EM04	10/10/2017	N	440-194094-4	Alluvium	20.2 - 34.8	9,500	43,000	12	1,500	1.6
SWFTS-MW08A	EM05	10/23/2017	N	440-194846-1	Alluvium	20.2 - 34.8	8,100	41,000	14	1,500	1.8
SWFTS-MW08A	EM05	10/23/2017	FD	440-194846-2	Alluvium	20.2 - 34.8	8,100	40,000	12	1,500	1.8
SWFTS-MW08A	EM06	11/15/2017	N	440-196659-4	Alluvium	20.2 - 34.8	9,000	43,000	14	1,500	1.6
SWFTS-MW08A	EM07	12/14/2017	N	440-198571-1	Alluvium	20.2 - 34.8	8,900	45,000	14	1,400	1.6
SWFTS-MW08A	EM08	2/22/2018	N	440-204033-8	Alluvium	20.2 - 34.8	9,500	54,000	14	1,600	1.9
SWFTS-MW08A	EM09	3/29/2018	N	440-207586-1	Alluvium	20.2 - 34.8	9,100	59,000	15	1,500	1.5
SWFTS-MW08A	EM10	5/3/2018	N	440-210534-5	Alluvium	20.2 - 34.8	9,100	55,000	17	1,700	1.5
SWFTS-MW08A	EM11	7/11/2018	N	440-215717-14	Alluvium	20.2 - 34.8	7,500	63,000	15	1,400	1.3
SWFTS-MW08A	EM13	8/16/2018	N	440-218296-4	Alluvium	20.2 - 34.8	5,500	47,000	15	1,300	1.8
SWFTS-MW08A	EM14	9/12/2018	N	440-220031-10	Alluvium	20.2 - 34.8	5,600	43,000	15	1,400	1.6
SWFTS-MW08A	EM15	10/10/2018	N	440-221975-13	Alluvium	20.2 - 34.8	5,500	42,000	15	1,400	1.8

Table D.1
Groundwater Analytical Results Summary
Seep Well Field Area Bioremediation Treatability Study

Well	Event	Sample Date	QC Type	Lab Sample ID	Lithology	Screened Interval (ft bgs)	EPA 314.0	EPA 300.1B	Anions by EPA 300.0		SM5310B/ SW9060
							Perchlorate	Chlorate	Nitrate (as N)	Sulfate	Total Organic Carbon
							µg/L	µg/L	mg/L	mg/L	mg/L
SWFTS-MW08A	EM16	1/2/2019	N	440-229018-4	Alluvium	20.2 - 34.8	7,200	45,000	15	1,500	2.0
SWFTS-MW08A	EM17	2/28/2019	N	440-235000-5	Alluvium	20.2 - 34.8	7,500	53,000	16	1,300	1.7
SWFTS-MW08A	EM18	4/12/2019	N	440-238733-1	Alluvium	20.2 - 34.8	7,100	50,000	15	1,300	1.4
SWFTS-MW08A	EM19	5/22/2019	N	440-242198-4	Alluvium	20.2 - 34.8	7,600	46,000	14	1,300	1.5
SWFTS-MW08A	EM20	7/1/2019	N	440-245068-11	Alluvium	20.2 - 34.8	6,700	44,000	14	1,200	1.9
SWFTS-MW08A	EM21	8/15/2019	N	440-248187-11	Alluvium	20.2 - 34.8	6,500	41,000	12	1,300	1.9
SWFTS-MW08A	EM22	11/7/2019	N	440-254148-6	Alluvium	20.2 - 34.8	6,400	17,000	13	1,100	1.5
SWFTS-MW08A	EM23	12/19/2019	N	440-257866-13	Alluvium	20.2 - 34.8	9,100	49,000	13	1,300	1.3
SWFTS-MW08A	EM24	1/28/2020	N	440-259893-3	Alluvium	20.2 - 34.8	11,000	57,000	15 J-	1,300 J+	1.6
SWFTS-MW08A	EM25	3/12/2020	N	440-262887-4	Alluvium	20.2 - 34.8	14,000	58,000	14 J-	1,400	1.5
SWFTS-MW08A	EM26	4/29/2020	N	440-265346-3	Alluvium	20.2 - 34.8	12,000	51,000	14	1,400	1.4
SWFTS-MW08A	EM27	7/8/2020	N	440-268610-5	Alluvium	20.2 - 34.8	9,800	47,000	15	1,400	1.2
SWFTS-MW08A	EM28	8/17/2020	N	440-270515-5	Alluvium	20.2 - 34.8	8,500	21,000	12	1,200	1.8
SWFTS-MW08A	EM29	10/16/2020	N	440-273433-4	Alluvium	20.2 - 34.8	7,400	36,000	13	1,100	1.4
SWFTS-MW08A	EM30	12/9/2020	N	550-154431-3	Alluvium	20.2 - 34.8	9,000	38,000	13	1,300	1.4
SWFTS-MW08A	EM31	2/3/2021	N	550-157817-14	Alluvium	20.2 - 34.8	8,700	36,000	13	1,200	1.4
SWFTS-MW08A	EM32	3/31/2021	N	550-161063-8	Alluvium	20.2 - 34.8	9,100	38,000	12	1,200	1.3
SWFTS-MW08A	EM33	6/4/2021	N	550-164930-29	Alluvium	20.2 - 34.8	12,000	54,000	14	1,300	1.3 J+
SWFTS-MW08A	EM34	7/22/2021	N	550-167639-3	Alluvium	20.2 - 34.8	17,000	35,000	14	1,400	1.5
SWFTS-MW08A	EM35	9/16/2021	N	550-170815-10	Alluvium	20.2 - 34.8	19,000	68,000	15	1,500	1.3
SWFTS-MW08A	EM36	12/2/2021	N	550-175153-23	Alluvium	20.2 - 34.8	21,000	73,000	15	1,700	1.4 J+
SWFTS-MW08C	BL01	3/28/2017	N	440-180820-3	UMCf	49.9 - 69.5	7,800	55,000	13	2,800	1.3
SWFTS-MW08C	EM07	12/14/2017	N	440-198571-2	UMCf	49.9 - 69.5	9,300	50,000	13	--	1.1
SWFTS-MW08C	EM26	4/29/2020	N	440-265342-4	UMCf	49.9 - 69.5	8,800	52,000	--	--	--
SWFTS-MW08C	EM40	12/14/2022	N	550-195015-15	UMCf	49.9 - 69.5	8,800	39,000	14	2,600	1.2 J
SWFTS-MW09A	BL01	3/29/2017	N	440-180937-3	Alluvium	19.3 - 28.9	14,000	50,000	13	1,700	1.6
SWFTS-MW09A	EM01	9/21/2017	N	440-192818-1	Alluvium	19.3 - 28.9	3,400	1,200	<0.55	1,700	51
SWFTS-MW09A	EM02	9/28/2017	N	440-193167-14	Alluvium	19.3 - 28.9	54	<100	<0.55	1,700	40
SWFTS-MW09A	EM03	10/4/2017	N	440-193712-5	Alluvium	19.3 - 28.9	420	200	<0.55	1,800	22
SWFTS-MW09A	EM04	10/11/2017	N	440-194094-7	Alluvium	19.3 - 28.9	8.4 J+	55	<0.55	1,600	7.5
SWFTS-MW09A	EM05	10/25/2017	N	440-195026-2	Alluvium	19.3 - 28.9	1,300	1,700	<0.55	1,600	2.9
SWFTS-MW09A	EM06	11/16/2017	N	440-196786-14	Alluvium	19.3 - 28.9	3,400	8,400	1.2	1,500	2.1
SWFTS-MW09A	EM07	12/12/2017	N	440-198371-6	Alluvium	19.3 - 28.9	5,400	16,000	2.7	1,500	2.1
SWFTS-MW09A	EM08	2/20/2018	N	440-203841-14	Alluvium	19.3 - 28.9	6,800	16,000	5.3	1,500	2.1
SWFTS-MW09A	EM09	3/27/2018	N	440-207268-7	Alluvium	19.3 - 28.9	6,700	18,000	6.4	1,500	1.8
SWFTS-MW09A	EM10	5/1/2018	N	440-210284-13	Alluvium	19.3 - 28.9	7,300	19,000	8.0	1,400	1.6
SWFTS-MW09A	EM11	7/12/2018	N	440-215717-10	Alluvium	19.3 - 28.9	2,800	2,700	3.1	1,400	2.0
SWFTS-MW09A	EM12	7/27/2018	N	440-216872-9	Alluvium	19.3 - 28.9	1,900	1,600	--	--	--
SWFTS-MW09A	EM13	8/14/2018	N	440-218109-9	Alluvium	19.3 - 28.9	7,200	7,600	4.5	1,400	2.2
SWFTS-MW09A	EM14	9/11/2018	N	440-219886-12	Alluvium	19.3 - 28.9	4,000	13,000	6.5	1,500	1.7
SWFTS-MW09A	EM15	10/9/2018	N	440-221855-7	Alluvium	19.3 - 28.9	4,600	15,000	7.7	1,400	2.0
SWFTS-MW09A	EM16	12/27/2018	N	440-228818-5	Alluvium	19.3 - 28.9	3,600	14,000	9.1	1,400	1.8
SWFTS-MW09A	EM17	2/26/2019	N	440-234812-12	Alluvium	19.3 - 28.9	2,400	5,600	3.8	1,200	2.1
SWFTS-MW09A	EM18	4/10/2019	N	440-238531-3	Alluvium	19.3 - 28.9	3,500	12,000	6.0	1,400	1.8
SWFTS-MW09A	EM19	5/22/2019	N	440-242200-1	Alluvium	19.3 - 28.9	2,900	6,000	6.6	1,400	1.8
SWFTS-MW09A	EM20	7/2/2019	N	440-245153-10	Alluvium	19.3 - 28.9	3,500	13,000	6.5	1,400	2.2
SWFTS-MW09A	EM21	8/12/2019	N	440-247878-7	Alluvium	19.3 - 28.9	4,800	20,000	8.0	1,200	1.8
SWFTS-MW09A	EM22	11/5/2019	N	440-253891-1	Alluvium	19.3 - 28.9	2,500	8,400	3.6	1,200	2.0
SWFTS-MW09A	EM23	12/18/2019	N	440-257733-5	Alluvium	19.3 - 28.9	5,400	20,000	6.9 J+	1,000	1.7

Table D.1
Groundwater Analytical Results Summary
Seep Well Field Area Bioremediation Treatability Study

Well	Event	Sample Date	QC Type	Lab Sample ID	Lithology	Screened Interval (ft bgs)	EPA 314.0	EPA 300.1B	Anions by EPA 300.0		SM5310B/ SW9060
							Perchlorate	Chlorate	Nitrate (as N)	Sulfate	Total Organic Carbon
							µg/L	µg/L	mg/L	mg/L	mg/L
SWFTS-MW09A	EM24	1/28/2020	N	440-259893-1	Alluvium	19.3 - 28.9	5,700	25,000	7.6 J-	1,200 J+	1.8
SWFTS-MW09A	EM25	3/10/2020	N	440-262640-5	Alluvium	19.3 - 28.9	7,100	27,000	7.5 J-	1,300	1.7
SWFTS-MW09A	EM26	4/28/2020	N	440-265289-4	Alluvium	19.3 - 28.9	7,500	28,000	8.2	1,300	1.6
SWFTS-MW09A	EM27	7/6/2020	N	440-268415-3	Alluvium	19.3 - 28.9	3,000	5,600	3.3	1,300	2.2
SWFTS-MW09A	EM28	8/18/2020	N	440-270573-1	Alluvium	19.3 - 28.9	5,500	17,000	5.7	1,200	2.3
SWFTS-MW09A	EM29	10/13/2020	N	440-273236-3	Alluvium	19.3 - 28.9	5,700	20,000	7.1	1,300	1.7
SWFTS-MW09A	EM30	12/9/2020	N	550-154431-1	Alluvium	19.3 - 28.9	4,800	17,000	8.0	1,400	1.6
SWFTS-MW09A	EM31	2/3/2021	N	550-157817-15	Alluvium	19.3 - 28.9	6,400	24,000	8.6	1,300	1.5
SWFTS-MW09A	EM32	4/1/2021	N	550-161146-1	Alluvium	19.3 - 28.9	3,400	6,600	4.3	1,200	1.8
SWFTS-MW09A	EM33	6/1/2021	N	550-164699-1	Alluvium	19.3 - 28.9	4,900	14,000	6.2	1,300	1.5
SWFTS-MW09A	EM34	7/20/2021	N	550-167449-3	Alluvium	19.3 - 28.9	8,400	23,000	8.7	1,300	1.6
SWFTS-MW09A	EM35	9/15/2021	N	550-170733-5	Alluvium	19.3 - 28.9	11,000	25,000	9.0	1,500	1.5
SWFTS-MW09A	EM36	12/2/2021	N	550-175153-9	Alluvium	19.3 - 28.9	8,800	19,000	5.4	1,600	2.0 J+
SWFTS-MW09A	EM37	3/8/2022	N	550-180407-5	Alluvium	19.3 - 28.9	14,000	20,000	8.6	1,600	1.8 J+
SWFTS-MW09A	EM38	6/23/2022	N	550-186171-3	Alluvium	19.3 - 28.9	11,000	19,000	9.5	1,800	1.9
SWFTS-MW09A	EM39	9/13/2022	N	550-190412-9	Alluvium	19.3 - 28.9	8,500	14,000	10	1,700	1.6
SWFTS-MW09A	EM40	12/13/2022	N	550-194920-9	Alluvium	19.3 - 28.9	5,700	22,000	11	1,600 J+	1.6
SWFTS-MW09B	BL01	3/29/2017	N	440-180937-4	Alluvium	34.4 - 39.0	13,000	46,000	12	1,900	1.8
SWFTS-MW09B	BL01	3/29/2017	FD	440-180937-5	Alluvium	34.4 - 39.0	15,000	46,000	12	1,800	1.8
SWFTS-MW09B	EM01	9/21/2017	N	440-192728-13	Alluvium	34.4 - 39.0	220	390	<0.55	1,700	30
SWFTS-MW09B	EM02	9/28/2017	N	440-193167-15	Alluvium	34.4 - 39.0	990	2,500	<0.55	1,700	25
SWFTS-MW09B	EM03	10/4/2017	N	440-193712-6	Alluvium	34.4 - 39.0	430	1,000	<1.1	1,500	29
SWFTS-MW09B	EM04	10/11/2017	N	440-194094-5	Alluvium	34.4 - 39.0	1,400	3,000	1.1	1,500	18
SWFTS-MW09B	EM05	10/25/2017	N	440-195026-1	Alluvium	34.4 - 39.0	2,700	7,700	1.7	1,400	2.4
SWFTS-MW09B	EM06	11/16/2017	N	440-196786-15	Alluvium	34.4 - 39.0	2,400	8,600	2.1	1,200	2.1
SWFTS-MW09B	EM07	12/12/2017	N	440-198371-7	Alluvium	34.4 - 39.0	3,500	13,000	3.4	1,300	2.1
SWFTS-MW09B	EM08	2/20/2018	N	440-203841-13	Alluvium	34.4 - 39.0	800	1,400	<1.1	1,200	2.5
SWFTS-MW09B	EM09	3/27/2018	N	440-207268-6	Alluvium	34.4 - 39.0	7,700	28,000	5.9	1,600	1.8
SWFTS-MW09B	EM10	4/30/2018	N	440-210173-11	Alluvium	34.4 - 39.0	7,400	23,000	7.9	1,600	1.8
SWFTS-MW09B	EM11	7/12/2018	N	440-215717-9	Alluvium	34.4 - 39.0	6,500	15,000	7.0	1,500	1.9
SWFTS-MW09B	EM12	7/26/2018	N	440-216784-1	Alluvium	34.4 - 39.0	6,600	20,000	--	--	--
SWFTS-MW09B	EM13	8/14/2018	N	440-218109-8	Alluvium	34.4 - 39.0	6,400	24,000	9.7	1,500	2.1
SWFTS-MW09B	EM14	9/11/2018	N	440-219886-13	Alluvium	34.4 - 39.0	6,600	28,000	11	1,500	1.6
SWFTS-MW09B	EM15	10/9/2018	N	440-221855-8	Alluvium	34.4 - 39.0	6,500	24,000	10	1,400	2.0
SWFTS-MW09B	EM16	12/28/2018	N	440-228887-1	Alluvium	34.4 - 39.0	5,500	21,000	11	1,300	1.7
SWFTS-MW09B	EM17	2/28/2019	N	440-235000-1	Alluvium	34.4 - 39.0	5,800	25,000	16 J-	1,400	1.9
SWFTS-MW09B	EM18	4/10/2019	N	440-238531-5	Alluvium	34.4 - 39.0	8,300	32,000	11	1,400	1.6
SWFTS-MW09B	EM19	5/22/2019	N	440-242200-2	Alluvium	34.4 - 39.0	7,300	30,000	10	1,300	1.6
SWFTS-MW09B	EM20	7/2/2019	N	440-245153-11	Alluvium	34.4 - 39.0	6,900	30,000	11	1,300	1.9
SWFTS-MW09B	EM21	8/12/2019	N	440-247878-8	Alluvium	34.4 - 39.0	7,200	28,000	11	1,100	1.9
SWFTS-MW09B	EM22	11/5/2019	N	440-253891-3	Alluvium	34.4 - 39.0	7,400	26,000	9.4	1,100	1.7
SWFTS-MW09B	EM23	12/18/2019	N	440-257733-6	Alluvium	34.4 - 39.0	8,300	28,000	11	1,100	1.5
SWFTS-MW09B	EM24	1/28/2020	N	440-259893-2	Alluvium	34.4 - 39.0	9,800	35,000	11 J-	1,300 J+	1.7
SWFTS-MW09B	EM25	3/10/2020	N	440-262640-6	Alluvium	34.4 - 39.0	11,000	36,000	11 J-	1,200	1.7
SWFTS-MW09B	EM26	4/28/2020	N	440-265289-3	Alluvium	34.4 - 39.0	12,000	39,000	11	1,400	1.6
SWFTS-MW09B	EM27	7/7/2020	N	440-268478-1	Alluvium	34.4 - 39.0	11,000	30,000	9.9	1,500	1.8
SWFTS-MW09B	EM28	8/18/2020	N	440-270573-3	Alluvium	34.4 - 39.0	11,000	31,000	11	1,400	2.0
SWFTS-MW09B	EM29	10/13/2020	N	440-273236-4	Alluvium	34.4 - 39.0	8,700	26,000	9.4	1,200	<0.65
SWFTS-MW09B	EM30	12/8/2020	N	550-154358-1	Alluvium	34.4 - 39.0	11,000	29,000	12	1,300	1.4

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Seep Well Field Area Bioremediation Treatability Study

Well	Event	Sample Date	QC Type	Lab Sample ID	Lithology	Screened Interval (ft bgs)	EPA 314.0	EPA 300.1B	Anions by EPA 300.0		SM5310B/ SW9060
							Perchlorate	Chlorate	Nitrate (as N)	Sulfate	Total Organic Carbon
							µg/L	µg/L	mg/L	mg/L	mg/L
SWFTS-MW09B	EM31	2/1/2021	N	550-157577-7	Alluvium	34.4 - 39.0	10,000	21,000 J+	11	1,300	1.4
SWFTS-MW09B	EM32	4/1/2021	N	550-161146-2	Alluvium	34.4 - 39.0	9,000	20,000	12	1,200	1.5
SWFTS-MW09B	EM33	6/2/2021	N	550-164872-1	Alluvium	34.4 - 39.0	12,000	34,000	12	1,300	1.4
SWFTS-MW09B	EM34	7/20/2021	N	550-167449-2	Alluvium	34.4 - 39.0	15,000	34,000	12	1,300	1.5
SWFTS-MW09B	EM35	9/15/2021	N	550-170733-6	Alluvium	34.4 - 39.0	15,000	37,000	13	1,600	1.4
SWFTS-MW09B	EM36	12/2/2021	N	550-175153-11	Alluvium	34.4 - 39.0	20,000	46,000	13	1,700	1.7 J+
SWFTS-MW09B	EM37	3/8/2022	N	550-180407-6	Alluvium	34.4 - 39.0	18,000	37,000	14	1,700	1.8 J+
SWFTS-MW09B	EM38	6/23/2022	N	550-186171-4	Alluvium	34.4 - 39.0	16,000	36,000 J+	16	1,900	1.7
SWFTS-MW09B	EM38	6/23/2022	FD	550-186171-5	Alluvium	34.4 - 39.0	17,000	33,000 J+	16	2,000	2.0
SWFTS-MW09B	EM39	9/13/2022	N	550-190412-1	Alluvium	34.4 - 39.0	12,000	18,000	16	1,800	1.6
SWFTS-MW09B	EM40	12/13/2022	N	550-194920-13	Alluvium	34.4 - 39.0	7,200	28,000	15	1,600 J+	1.5
SWFTS-MW10A	BL01	3/31/2017	N	440-181122-2	Alluvium	20.4 - 35.0	13,000	27,000	5.1	1,400	2.8
SWFTS-MW10A	EM01	9/21/2017	N	440-192818-5	Alluvium	20.4 - 35.0	1.9 J	<50	<0.55	960	23
SWFTS-MW10A	EM02	9/27/2017	N	440-193062-5	Alluvium	20.4 - 35.0	100	<100	0.66 J	990	12
SWFTS-MW10A	EM03	10/4/2017	N	440-193625-5	Alluvium	20.4 - 35.0	14	<100	<0.28	920	10
SWFTS-MW10A	EM04	10/12/2017	N	440-194242-10	Alluvium	20.4 - 35.0	<0.95	13 J	<0.11	920	13
SWFTS-MW10A	EM05	10/24/2017	N	440-194947-8	Alluvium	20.4 - 35.0	14	630	<0.28	730	6.3
SWFTS-MW10A	EM06	11/16/2017	N	440-196786-5	Alluvium	20.4 - 35.0	11	<50	<0.28	690	4.2
SWFTS-MW10A	EM06	11/16/2017	FD	440-196786-6	Alluvium	20.4 - 35.0	15	<50	<0.28	670	4.0
SWFTS-MW10A	EM07	12/12/2017	N	440-198371-10	Alluvium	20.4 - 35.0	160	190	<0.28	790	3.2
SWFTS-MW10A	EM07	12/12/2017	FD	440-198371-11	Alluvium	20.4 - 35.0	170	180	<0.28	770	3.4
SWFTS-MW10A	EM08	2/20/2018	N	440-203841-4	Alluvium	20.4 - 35.0	990	1,400	<1.1	1,100	3.2
SWFTS-MW10A	EM08	2/20/2018	FD	440-203841-5	Alluvium	20.4 - 35.0	1,000	1,300	1.3 J	1,200	3.3
SWFTS-MW10A	EM09	3/26/2018	N	440-207137-7	Alluvium	20.4 - 35.0	2,300	4,000	0.37 J	1,300	2.8
SWFTS-MW10A	EM09	3/26/2018	FD	440-207137-8	Alluvium	20.4 - 35.0	2,200	4,000	0.36 J	1,300	2.8 J-
SWFTS-MW10A	EM10	5/1/2018	N	440-210284-1	Alluvium	20.4 - 35.0	4,300	4,800	0.96 J	1,300	2.5
SWFTS-MW10A	EM11	7/11/2018	N	440-215585-9	Alluvium	20.4 - 35.0	3,000 J-	40 J	0.89 J	1,300	2.2
SWFTS-MW10A	EM12	7/26/2018	N	440-216784-2	Alluvium	20.4 - 35.0	1,300	<10	--	--	--
SWFTS-MW10A	EM13	8/14/2018	N	440-218109-10	Alluvium	20.4 - 35.0	1,500	<10	<0.55	1,300	3.0
SWFTS-MW10A	EM14	9/10/2018	N	440-219797-4	Alluvium	20.4 - 35.0	1,500	<10	<0.55	1,200	2.9
SWFTS-MW10A	EM15	10/9/2018	N	440-221855-9	Alluvium	20.4 - 35.0	2,300	<20	<0.55	1,200	2.8
SWFTS-MW10A	EM16	12/20/2018	N	440-228491-6	Alluvium	20.4 - 35.0	3,000	83	1.3	1,300	3.4
SWFTS-MW10A	EM17	2/26/2019	N	440-234812-4	Alluvium	20.4 - 35.0	3,900	1,200	2.1 J	1,400	2.6
SWFTS-MW10A	EM18	4/10/2019	N	440-238544-1	Alluvium	20.4 - 35.0	2,800	1,400	1.7	1,400	2.8
SWFTS-MW10A	EM19	5/21/2019	N	440-242084-2	Alluvium	20.4 - 35.0	1,500	34 J	1.2	1,200	3.3
SWFTS-MW10A	EM20	7/1/2019	N	440-245046-3	Alluvium	20.4 - 35.0	1,500	<10	0.84 J	1,000	3.4
SWFTS-MW10A	EM21	8/12/2019	N	440-247878-3	Alluvium	20.4 - 35.0	870	<10	<0.55	930	3.1
SWFTS-MW10A	EM22	11/6/2019	N	440-254051-1	Alluvium	20.4 - 35.0	2,600	310	1.4	1,100	3.6 J-
SWFTS-MW10A	EM23	12/17/2019	N	440-257635-11	Alluvium	20.4 - 35.0	4,000 J+	3,600	2.1	1,200	4.4
SWFTS-MW10A	EM24	1/28/2020	N	440-259893-6	Alluvium	20.4 - 35.0	7,900	19,000	6.5	1,300 J+	2.3
SWFTS-MW10A	EM25	3/13/2020	N	440-263004-1	Alluvium	20.4 - 35.0	9,900	26,000	8.7	1,400	2.1 J+
SWFTS-MW10A	EM26	4/29/2020	N	440-265342-6	Alluvium	20.4 - 35.0	10,000	28,000	8.1	1,500	2.3
SWFTS-MW10A	EM27	7/7/2020	N	440-268478-2	Alluvium	20.4 - 35.0	9,600	24,000	7.9	1,500	2.8
SWFTS-MW10A	EM28	8/18/2020	N	440-270573-4	Alluvium	20.4 - 35.0	10,000	24,000	7.7	1,400	3.0
SWFTS-MW10A	EM29	10/14/2020	N	440-273303-4	Alluvium	20.4 - 35.0	9,100	27,000	8.3	1,500	3.1
SWFTS-MW10A	EM30	12/8/2020	N	550-154358-2	Alluvium	20.4 - 35.0	8,800	19,000	7.9	1,500	2.6 J-
SWFTS-MW10A	EM31	2/1/2021	N	550-157577-8	Alluvium	20.4 - 35.0	12,000	20,000 J+	8.6 J-	1,500 J-	2.0
SWFTS-MW10A	EM32	4/1/2021	N	550-161146-5	Alluvium	20.4 - 35.0	14,000 J-	19,000 J-	10 J	1,500	1.8 J-
SWFTS-MW10A	EM33	6/4/2021	N	550-164930-13	Alluvium	20.4 - 35.0	9,600	32,000	11	1,500	1.7 J

Table D.1
Groundwater Analytical Results Summary
Seep Well Field Area Bioremediation Treatability Study

Well	Event	Sample Date	QC Type	Lab Sample ID	Lithology	Screened Interval (ft bgs)	EPA 314.0	EPA 300.1B	Anions by EPA 300.0		SM5310B/ SW9060
							Perchlorate	Chlorate	Nitrate (as N)	Sulfate	Total Organic Carbon
							µg/L	µg/L	mg/L	mg/L	mg/L
SWFTS-MW10A	EM34	7/20/2021	N	550-167449-12	Alluvium	20.4 - 35.0	12,000	17,000 J+	9.5	1,400	1.8
SWFTS-MW10A	EM35	9/15/2021	N	550-170733-7	Alluvium	20.4 - 35.0	12,000	24,000 J+	12	1,700	1.6
SWFTS-MW10A	EM36	11/30/2021	N	550-174968-17	Alluvium	20.4 - 35.0	12,000	25,000	7.8	1,600	1.9 J+
SWFTS-MW10A	EM37	3/7/2022	N	550-180322-9	Alluvium	20.4 - 35.0	15,000	25,000 J+	11	1,500	1.8 J-
SWFTS-MW10A	EM38	6/23/2022	N	550-186171-2	Alluvium	20.4 - 35.0	16,000	18,000 J+	16	2,000	2.1
SWFTS-MW10A	EM39	9/13/2022	N	550-190412-2	Alluvium	20.4 - 35.0	17,000	30,000	16	1,900	2.0 J-
SWFTS-MW10A	EM40	12/15/2022	N	550-195103-1	Alluvium	20.4 - 35.0	12,000	25,000	14	1,900	2.0 J-
SWFTS-MW10C	BL01	3/28/2017	N	440-180820-4	UMCf	43.5 - 63.1	8,300	39,000	7.6	2,400	1.5
SWFTS-MW10C	EM07	12/12/2017	N	440-198371-9	UMCf	43.5 - 63.1	9,200	38,000	8.4	--	1.3
SWFTS-MW10C	EM26	5/1/2020	N	440-265414-1	UMCf	43.5 - 63.1	9,900	51,000	--	--	--
SWFTS-MW10C	EM40	12/15/2022	N	550-195103-3	UMCf	43.5 - 63.1	11,000	49,000	10	2,200	1.6
SWFTS-MW11	BL02	7/12/2017	N	440-188244-7	Alluvium	14.8 - 39.6	13,000 J+	41,000	12	1,900	1.8
SWFTS-MW11	EM01	9/20/2017	N	440-192627-11	Alluvium	14.8 - 39.6	13,000	40,000	11	1,700	1.7
SWFTS-MW11	EM02	9/26/2017	N	440-192973-3	Alluvium	14.8 - 39.6	14,000	37,000	12	1,800	2.1
SWFTS-MW11	EM03	10/3/2017	N	440-193472-1	Alluvium	14.8 - 39.6	13,000	36,000	12	1,800	1.8
SWFTS-MW11	EM04	10/11/2017	N	440-194094-8	Alluvium	14.8 - 39.6	16,000	38,000	11	1,800	1.6
SWFTS-MW11	EM05	10/24/2017	N	440-194947-9	Alluvium	14.8 - 39.6	13,000	36,000	12	1,800	5.7
SWFTS-MW11	EM06	11/16/2017	N	440-196786-3	Alluvium	14.8 - 39.6	14,000	37,000	12	1,800	1.7
SWFTS-MW11	EM07	12/14/2017	N	440-198571-13	Alluvium	14.8 - 39.6	12,000	40,000	11	1,800	2.0
SWFTS-MW11	EM08	2/21/2018	N	440-203937-10	Alluvium	14.8 - 39.6	12,000	45,000	14	1,900	1.7
SWFTS-MW11	EM08	2/21/2018	FD	440-203937-11	Alluvium	14.8 - 39.6	12,000	46,000	13	2,000	1.9
SWFTS-MW11	EM09	3/28/2018	N	440-207497-7	Alluvium	14.8 - 39.6	13,000	49,000	14	1,900	1.5
SWFTS-MW11	EM09	3/28/2018	FD	440-207497-8	Alluvium	14.8 - 39.6	13,000	49,000	14	2,100	1.5
SWFTS-MW11	EM10	5/1/2018	N	440-210284-11	Alluvium	14.8 - 39.6	13,000	52,000	14	1,900	1.5
SWFTS-MW11	EM10	5/1/2018	FD	440-210367-1	Alluvium	14.8 - 39.6	12,000	48,000	14	1,900	1.4
SWFTS-MW11	EM11	7/12/2018	N	440-215717-17	Alluvium	14.8 - 39.6	11,000	52,000	16	1,900	1.2
SWFTS-MW11	EM11	7/12/2018	FD	440-215717-18	Alluvium	14.8 - 39.6	11,000	52,000	16	1,900	1.2
SWFTS-MW11	EM13	8/16/2018	N	440-218296-12	Alluvium	14.8 - 39.6	9,400	53,000	16	1,900	1.7
SWFTS-MW11	EM13	8/16/2018	FD	440-218296-13	Alluvium	14.8 - 39.6	9,600	52,000	16	1,900	1.8
SWFTS-MW11	EM14	9/12/2018	N	440-220031-8	Alluvium	14.8 - 39.6	11,000	52,000	16	1,800	1.5
SWFTS-MW11	EM14	9/12/2018	FD	440-220031-9	Alluvium	14.8 - 39.6	11,000	52,000	16	1,800	1.4
SWFTS-MW11	EM15	10/11/2018	N	440-222092-10	Alluvium	14.8 - 39.6	10,000	54,000	17	1,900	1.6
SWFTS-MW11	EM15	10/11/2018	FD	440-222092-11	Alluvium	14.8 - 39.6	11,000	52,000	17	1,900	1.7
SWFTS-MW11	EM16	1/2/2019	N	440-229018-8	Alluvium	14.8 - 39.6	8,600	44,000	16	1,700	1.5
SWFTS-MW11	EM16	1/2/2019	FD	440-229018-9	Alluvium	14.8 - 39.6	8,400	45,000	16	1,700	1.5
SWFTS-MW11	EM17	3/1/2019	N	440-235133-3	Alluvium	14.8 - 39.6	7,900 J+	42,000	17	1,700	1.5
SWFTS-MW11	EM17	3/1/2019	FD	440-235133-4	Alluvium	14.8 - 39.6	7,700 J+	41,000	17	1,700	1.6
SWFTS-MW11	EM18	4/12/2019	N	440-238733-6	Alluvium	14.8 - 39.6	7,700	41,000	15	1,600	1.9
SWFTS-MW11	EM18	4/12/2019	FD	440-238733-7	Alluvium	14.8 - 39.6	7,800	42,000	17	1,600	1.4
SWFTS-MW11	EM19	5/22/2019	N	440-242200-3	Alluvium	14.8 - 39.6	8,000	44,000	14	1,500	1.7
SWFTS-MW11	EM19	5/22/2019	FD	440-242200-4	Alluvium	14.8 - 39.6	7,800	44,000	16	1,600	1.8
SWFTS-MW11	EM20	7/3/2019	N	440-245218-3	Alluvium	14.8 - 39.6	7,100	43,000	16	1,500	1.9
SWFTS-MW11	EM20	7/3/2019	FD	440-245218-4	Alluvium	14.8 - 39.6	7,500	43,000	17	1,500	1.9
SWFTS-MW11	EM21	8/15/2019	N	440-248187-3	Alluvium	14.8 - 39.6	9,200	43,000	16	1,400	1.8
SWFTS-MW11	EM21	8/15/2019	FD	440-248187-4	Alluvium	14.8 - 39.6	8,900	43,000	16	1,400	1.8
SWFTS-MW11	EM22	11/7/2019	N	440-254150-3	Alluvium	14.8 - 39.6	7,600	42,000	14	1,300	1.5
SWFTS-MW11	EM22	11/7/2019	FD	440-254150-4	Alluvium	14.8 - 39.6	7,400	43,000	14	1,300	1.5
SWFTS-MW11	EM23	12/17/2019	N	440-257635-3	Alluvium	14.8 - 39.6	8,200	21,000	14	1,600	1.6
SWFTS-MW11	EM23	12/17/2019	FD	440-257635-4	Alluvium	14.8 - 39.6	8,300	20,000	14	1,600	1.4

Table D.1
Groundwater Analytical Results Summary
Seep Well Field Area Bioremediation Treatability Study

Well	Event	Sample Date	QC Type	Lab Sample ID	Lithology	Screened Interval (ft bgs)	EPA 314.0	EPA 300.1B	Anions by EPA 300.0		SM5310B/ SW9060
							Perchlorate	Chlorate	Nitrate (as N)	Sulfate	Total Organic Carbon
							µg/L	µg/L	mg/L	mg/L	mg/L
SWFTS-MW11	EM24	1/28/2020	N	440-259893-7	Alluvium	14.8 - 39.6	10,000	47,000	15	1,500 J+	1.6
SWFTS-MW11	EM24	1/28/2020	FD	440-259893-8	Alluvium	14.8 - 39.6	10,000	47,000	15	1,700 J+	1.5
SWFTS-MW11	EM25	3/13/2020	N	440-263003-2	Alluvium	14.8 - 39.6	12,000	51,000	15	1,700	2.0
SWFTS-MW11	EM25	3/13/2020	FD	440-263003-4	Alluvium	14.8 - 39.6	12,000	51,000	14	1,800	2.2
SWFTS-MW11	EM26	4/30/2020	N	440-265383-4	Alluvium	14.8 - 39.6	11,000	52,000	14	1,800	1.6
SWFTS-MW11	EM26	4/30/2020	FD	440-265383-5	Alluvium	14.8 - 39.6	12,000	51,000	15	1,800	1.5
SWFTS-MW11	EM27	7/7/2020	N	440-268478-3	Alluvium	14.8 - 39.6	11,000	41,000	13	2,000	1.7
SWFTS-MW11	EM27	7/7/2020	FD	440-268478-4	Alluvium	14.8 - 39.6	11,000	41,000	13	2,000	1.9
SWFTS-MW11	EM28	8/18/2020	N	440-270573-5	Alluvium	14.8 - 39.6	10,000	42,000	13	1,900	2.0
SWFTS-MW11	EM28	8/18/2020	FD	440-270573-6	Alluvium	14.8 - 39.6	11,000	41,000	12	1,900	2.0
SWFTS-MW11	EM29	10/16/2020	N	440-273433-7	Alluvium	14.8 - 39.6	9,500	34,000	11 J+	1,700	1.7
SWFTS-MW11	EM29	10/16/2020	FD	440-273433-8	Alluvium	14.8 - 39.6	9,500	35,000	11 J+	1,700	2.2
SWFTS-MW11	EM30	12/8/2020	N	550-154358-3	Alluvium	14.8 - 39.6	8,100	32,000	13	1,800	1.3
SWFTS-MW11	EM30	12/8/2020	FD	550-154358-4	Alluvium	14.8 - 39.6	8,200	32,000	13	1,800	1.4
SWFTS-MW11	EM31	2/1/2021	N	550-157577-9	Alluvium	14.8 - 39.6	8,700	29,000	13	1,700	1.2
SWFTS-MW11	EM31	2/1/2021	FD	550-157577-10	Alluvium	14.8 - 39.6	8,600	27,000 J+	13	1,700	1.4
SWFTS-MW11	EM32	4/1/2021	N	550-161146-6	Alluvium	14.8 - 39.6	8,600	22,000	13 J	1,700	1.4
SWFTS-MW11	EM32	4/1/2021	FD	550-161146-7	Alluvium	14.8 - 39.6	8,800	19,000	13 J	1,700	1.5
SWFTS-MW11	EM33	6/4/2021	N	550-164930-7	Alluvium	14.8 - 39.6	9,300	37,000	13	1,600	1.3 J+
SWFTS-MW11	EM33	6/4/2021	FD	550-164930-9	Alluvium	14.8 - 39.6	9,400	33,000	13	1,600	1.3 J+
SWFTS-MW11	EM34	7/22/2021	N	550-167639-7	Alluvium	14.8 - 39.6	13,000	29,000	13	1,500 J	1.5
SWFTS-MW11	EM34	7/22/2021	FD	550-167639-8	Alluvium	14.8 - 39.6	13,000	28,000	13	700 J	1.4
SWFTS-MW11	EM35	9/16/2021	N	550-170815-11	Alluvium	14.8 - 39.6	16,000	33,000 J+	14	1,600	1.4
SWFTS-MW11	EM35	9/16/2021	FD	550-170815-12	Alluvium	14.8 - 39.6	17,000	36,000	14	1,600	1.4
SWFTS-MW11	EM36	12/3/2021	N	550-175222-7	Alluvium	14.8 - 39.6	20,000	53,000	14	2,400	1.5
SWFTS-MW11	EM36	12/3/2021	FD	550-175222-9	Alluvium	14.8 - 39.6	20,000	53,000	14	2,000	1.4
SWFTS-MW11	EM37	3/7/2022	N	550-180322-4	Alluvium	14.8 - 39.6	17,000	33,000	25	3,000	2.2
SWFTS-MW11	EM37	3/7/2022	FD	550-180322-5	Alluvium	14.8 - 39.6	16,000	32,000	24	2,900	2.2
SWFTS-MW11	EM39	9/13/2022	N	550-190412-3	Alluvium	14.8 - 39.6	8,300	25,000	21	2,100	1.8
SWFTS-MW11	EM39	9/13/2022	FD	550-190412-4	Alluvium	14.8 - 39.6	8,300	21,000	21	2,100	1.8
SWFTS-MW11	EM40	12/15/2022	N	550-195103-5	Alluvium	14.8 - 39.6	5,100	17,000	18	1,600	1.7
SWFTS-MW11	EM40	12/15/2022	FD	550-195103-7	Alluvium	14.8 - 39.6	5,200	15,000	18	1,600	1.8
SWFTS-MW12	BL02	7/13/2017	N	440-188324-6	Alluvium	15.8 - 40.6	5,100	37,000	16	2,600	0.88 J
SWFTS-MW12	EM01	9/19/2017	N	440-192627-2	Alluvium	15.8 - 40.6	5,100	36,000	14	2,700	1.1
SWFTS-MW12	EM02	9/26/2017	N	440-192973-10	Alluvium	15.8 - 40.6	4,900	34,000	14	2,600	1.6
SWFTS-MW12	EM03	10/3/2017	N	440-193622-2	Alluvium	15.8 - 40.6	5,400	34,000	14 J-	2,500	0.78 J
SWFTS-MW12	EM04	10/11/2017	N	440-194090-1	Alluvium	15.8 - 40.6	4,800	35,000	13	2,600	0.93 J
SWFTS-MW12	EM05	10/24/2017	N	440-194947-10	Alluvium	15.8 - 40.6	5,000	37,000	14	2,600	1.2
SWFTS-MW12	EM06	11/14/2017	N	440-196558-5	Alluvium	15.8 - 40.6	4,700	33,000	14	2,700	0.99 J
SWFTS-MW12	EM07	12/14/2017	N	440-198571-15	Alluvium	15.8 - 40.6	4,900	30,000	13	2,800	1.5
SWFTS-MW12	EM08	2/22/2018	N	440-204033-2	Alluvium	15.8 - 40.6	4,500	26,000	12	2,300	1.6
SWFTS-MW12	EM09	3/28/2018	N	440-207497-5	Alluvium	15.8 - 40.6	6,400	39,000	14	2,300	1.3
SWFTS-MW12	EM10	5/3/2018	N	440-210534-4	Alluvium	15.8 - 40.6	4,200	28,000	13	2,700	0.89 J
SWFTS-MW12	EM11	7/12/2018	N	440-215717-16	Alluvium	15.8 - 40.6	4,600	35,000	13	2,500	0.69 J
SWFTS-MW12	EM13	8/16/2018	N	440-218296-14	Alluvium	15.8 - 40.6	4,000	34,000	14	2,800	1.2
SWFTS-MW12	EM14	9/12/2018	N	440-220031-11	Alluvium	15.8 - 40.6	4,800	36,000	14	2,400	1.1
SWFTS-MW12	EM15	10/11/2018	N	440-222092-12	Alluvium	15.8 - 40.6	4,200	28,000	14	2,400	1.3
SWFTS-MW12	EM16	1/2/2019	N	440-229018-7	Alluvium	15.8 - 40.6	5,800	55,000	17	2,500	1.2
SWFTS-MW12	EM17	2/28/2019	N	440-235000-4	Alluvium	15.8 - 40.6	3,700	29,000	14	2,700	1.1

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Seep Well Field Area Bioremediation Treatability Study

Well	Event	Sample Date	QC Type	Lab Sample ID	Lithology	Screened Interval (ft bgs)	EPA 314.0	EPA 300.1B	Anions by EPA 300.0		SM5310B/ SW9060
							Perchlorate	Chlorate	Nitrate (as N)	Sulfate	Total Organic Carbon
							µg/L	µg/L	mg/L	mg/L	mg/L
SWFTS-MW12	EM18	4/12/2019	N	440-238733-2	Alluvium	15.8 - 40.6	4,500	31,000	14	2,500	1.2
SWFTS-MW12	EM19	5/22/2019	N	440-242198-7	Alluvium	15.8 - 40.6	4,400	32,000	12	2,700	0.87 J
SWFTS-MW12	EM20	7/5/2019	N	440-245259-4	Alluvium	15.8 - 40.6	4,300	33,000	13 J+	2,600	1.2
SWFTS-MW12	EM21	8/16/2019	N	440-248259-2	Alluvium	15.8 - 40.6	4,200	31,000	13	2,800	1.2
SWFTS-MW12	EM22	11/7/2019	N	440-254150-2	Alluvium	15.8 - 40.6	<4.8	88 J	<0.55	1,300	560
SWFTS-MW12	EM22	11/26/2019	N	440-255698-1	Alluvium	15.8 - 40.6	<4.8	<20	<0.55	78	610 J-
SWFTS-MW12	EM22	11/26/2019	FD	440-255698-2	Alluvium	15.8 - 40.6	<4.8	<20	<0.55	84	610 J-
SWFTS-MW12	EM23	12/20/2019	N	440-257938-1	Alluvium	15.8 - 40.6	<4.8	<10	<0.55	2.6 J	230
SWFTS-MW12	EM24	1/29/2020	N	440-259981-1	Alluvium	15.8 - 40.6	22	60 J	<0.55	130 J+	14 J-
SWFTS-MW12	EM25	3/12/2020	N	440-262887-3	Alluvium	15.8 - 40.6	170	<10	0.55 R	1,100	9.3
SWFTS-MW12	EM26	4/30/2020	N	440-265383-3	Alluvium	15.8 - 40.6	<4.8	<10	<0.55	780	8.2
SWFTS-MW12	EM27	7/7/2020	N	440-268478-5	Alluvium	15.8 - 40.6	<0.95	<10	<0.55	990	13
SWFTS-MW12	EM28	8/18/2020	N	440-270573-7	Alluvium	15.8 - 40.6	<0.95	<10	<0.55	1,100	9.3
SWFTS-MW12	EM29	10/16/2020	N	440-273433-6	Alluvium	15.8 - 40.6	<0.95	<10	<0.55	1,500	4.8
SWFTS-MW12	EM30	12/8/2020	N	550-154358-5	Alluvium	15.8 - 40.6	0.48 J	<20	<0.014	1,900	8.2
SWFTS-MW12	EM31	2/2/2021	N	550-157679-9	Alluvium	15.8 - 40.6	<0.31	<9.8	<0.014	2,000	2.6 J+
SWFTS-MW12	EM32	4/1/2021	N	550-161146-8	Alluvium	15.8 - 40.6	0.97 J	<49	<0.014 UJ	1,800	5.5
SWFTS-MW12	EM33	6/4/2021	N	550-164930-5	Alluvium	15.8 - 40.6	540	83	1.9	2,200	2.2 J+
SWFTS-MW12	EM34	7/22/2021	N	550-167639-5	Alluvium	15.8 - 40.6	840	430	2.8	2,300	6.1
SWFTS-MW12	EM35	9/15/2021	N	550-170733-4	Alluvium	15.8 - 40.6	390	950	1.5	2,000	3.2
SWFTS-MW12	EM36	12/2/2021	N	550-175153-19	Alluvium	15.8 - 40.6	1,500	4,400	4.6	2,600	2.2 J+
SWFTS-MW12	EM37	3/8/2022	N	550-180407-19	Alluvium	15.8 - 40.6	940	1,200	0.44	1,600	7.8
SWFTS-MW12	EM38	6/23/2022	N	550-186171-1	Alluvium	15.8 - 40.6	2,500	1,500	6.6	1,600	3.0
SWFTS-MW12	EM39	9/13/2022	N	550-190412-5	Alluvium	15.8 - 40.6	360	820	0.23	1,500	3.8
SWFTS-MW12	EM40	12/15/2022	N	550-195103-9	Alluvium	15.8 - 40.6	1,600	5,500	7.3	1,600	2.6
SWFTS-MW13	BL02	7/12/2017	N	440-188244-6	Alluvium	17.8 - 47.6	4,600	40,000	12	2,100	1.6
SWFTS-MW13	EM01	9/20/2017	N	440-192627-12	Alluvium	17.8 - 47.6	10,000	52,000	17	2,500	1.1
SWFTS-MW13	EM02	9/26/2017	N	440-192973-9	Alluvium	17.8 - 47.6	6,200	53,000	18	2,500	1.4
SWFTS-MW13	EM03	10/3/2017	N	440-193622-1	Alluvium	17.8 - 47.6	6,900	100	17 J-	2,600	1.1
SWFTS-MW13	EM04	10/10/2017	N	440-193989-4	Alluvium	17.8 - 47.6	6,300	51,000	16	2,900	0.98 J
SWFTS-MW13	EM05	10/24/2017	N	440-194947-11	Alluvium	17.8 - 47.6	6,100	52,000	19	2,800	1.3
SWFTS-MW13	EM06	11/15/2017	N	440-196659-1	Alluvium	17.8 - 47.6	5,900	49,000	16	2,800	0.93 J
SWFTS-MW13	EM07	12/14/2017	N	440-198571-14	Alluvium	17.8 - 47.6	6,200	49,000	16	2,800	1.2
SWFTS-MW13	EM08	2/22/2018	N	440-204033-7	Alluvium	17.8 - 47.6	5,800	50,000	15	2,600	1.5
SWFTS-MW13	EM09	3/26/2018	N	440-207137-4	Alluvium	17.8 - 47.6	6,400	52,000	16 J+	2,700	1.2
SWFTS-MW13	EM10	5/3/2018	N	440-210534-1	Alluvium	17.8 - 47.6	6,000	49,000	18	2,700	1.1
SWFTS-MW13	EM11	7/12/2018	N	440-215717-15	Alluvium	17.8 - 47.6	6,300	49,000	16	2,700	0.80 J
SWFTS-MW13	EM13	8/16/2018	N	440-218296-15	Alluvium	17.8 - 47.6	5,200	54,000	17	2,600	1.3
SWFTS-MW13	EM14	9/13/2018	N	440-220125-6	Alluvium	17.8 - 47.6	5,000	48,000	16	2,700	1.2
SWFTS-MW13	EM15	10/11/2018	N	440-222092-14	Alluvium	17.8 - 47.6	5,800	55,000	17	2,600	1.2
SWFTS-MW13	EM16	1/2/2019	N	440-229018-6	Alluvium	17.8 - 47.6	3,900	28,000	13	2,400	1.1
SWFTS-MW13	EM17	2/28/2019	N	440-235000-3	Alluvium	17.8 - 47.6	5,500	53,000	18	2,900	1.1
SWFTS-MW13	EM18	4/12/2019	N	440-238733-3	Alluvium	17.8 - 47.6	5,300	45,000	18	2,500	1.2
SWFTS-MW13	EM19	5/22/2019	N	440-242198-5	Alluvium	17.8 - 47.6	5,300	45,000	17	2,600	0.94 J
SWFTS-MW13	EM20	7/5/2019	N	440-245259-5	Alluvium	17.8 - 47.6	5,600	48,000	17	2,700	1.3
SWFTS-MW13	EM21	8/16/2019	N	440-248259-3	Alluvium	17.8 - 47.6	5,200	51,000	18	2,600	1.3
SWFTS-MW13	EM22	11/6/2019	N	440-254051-6	Alluvium	17.8 - 47.6	6,200	50,000	16	2,700	1.2
SWFTS-MW13	EM23	12/20/2019	N	440-257938-3	Alluvium	17.8 - 47.6	5,300	43,000	14	2,400	0.84 J
SWFTS-MW13	EM24	1/29/2020	N	440-259981-3	Alluvium	17.8 - 47.6	5,400	48,000	16	2,700 J+	1.1

Table D.1
Groundwater Analytical Results Summary
Seep Well Field Area Bioremediation Treatability Study

Well	Event	Sample Date	QC Type	Lab Sample ID	Lithology	Screened Interval (ft bgs)	EPA 314.0	EPA 300.1B	Anions by EPA 300.0		SM5310B/ SW9060
							Perchlorate	Chlorate	Nitrate (as N)	Sulfate	Total Organic Carbon
							µg/L	µg/L	mg/L	mg/L	mg/L
SWFTS-MW13	EM25	3/12/2020	N	440-262887-2	Alluvium	17.8 - 47.6	5,100	46,000	15 J-	2,700	0.89 J
SWFTS-MW13	EM26	4/30/2020	N	440-265383-2	Alluvium	17.8 - 47.6	4,900	48,000	18	2,700	0.79 J
SWFTS-MW13	EM27	7/10/2020	N	440-268742-4	Alluvium	17.8 - 47.6	5,700	51,000	17	2,900	1.1
SWFTS-MW13	EM28	8/18/2020	N	440-270573-8	Alluvium	17.8 - 47.6	5,600	49,000	16	2,700	1.2
SWFTS-MW13	EM29	10/15/2020	N	550-151259-6	Alluvium	17.8 - 47.6	5,300	57,000	18	2,700	0.82 J
SWFTS-MW13	EM30	12/8/2020	N	550-154358-6	Alluvium	17.8 - 47.6	7,200	54,000	18	2,800	1.1
SWFTS-MW13	EM31	2/2/2021	N	550-157679-10	Alluvium	17.8 - 47.6	6,900	28,000 J+	17	2,600	0.95 J+
SWFTS-MW13	EM32	3/31/2021	N	550-161063-13	Alluvium	17.8 - 47.6	5,400	27,000 J+	18	2,800	1.1
SWFTS-MW13	EM33	6/4/2021	N	550-164930-3	Alluvium	17.8 - 47.6	5,300	40,000	18	3,000	0.95 J+
SWFTS-MW13	EM34	7/22/2021	N	550-167639-4	Alluvium	17.8 - 47.6	5,900	50,000	18	2,800	0.98
SWFTS-MW13	EM35	9/15/2021	N	550-170733-3	Alluvium	17.8 - 47.6	5,900	53,000	19	3,900	0.91
SWFTS-MW13	EM36	12/2/2021	N	550-175153-17	Alluvium	17.8 - 47.6	5,900	49,000	18	3,100	1.1 J+
SWFTS-MW13	EM37	3/9/2022	N	550-180516-3	Alluvium	17.8 - 47.6	2,800	21,000	14	2,300	1.3
SWFTS-MW13	EM38	6/22/2022	N	550-186069-8	Alluvium	17.8 - 47.6	5,400	35,000	18	2,900	0.95 J+
SWFTS-MW13	EM39	9/13/2022	N	550-190412-6	Alluvium	17.8 - 47.6	4,600	35,000	18	2,500	0.99
SWFTS-MW13	EM40	12/15/2022	N	550-195106-7	Alluvium	17.8 - 47.6	3,700	39,000	17	2,400	1.0
SWFTS-MW14	BL02	7/12/2017	N	440-188244-8	Alluvium	16.8 - 36.6	23,000	54,000	12	2,000	2.6
SWFTS-MW14	BL02	7/12/2017	FD	440-188244-9	Alluvium	16.8 - 36.6	22,000	52,000	12	2,000	2.3
SWFTS-MW14	EM01	9/20/2017	N	440-192728-1	Alluvium	16.8 - 36.6	<9.5	<100	<0.55	1,900	100
SWFTS-MW14	EM02	9/26/2017	N	440-193062-15	Alluvium	16.8 - 36.6	<4.8	2,400	<1.1	1,800	81
SWFTS-MW14	EM03	10/3/2017	N	440-193622-3	Alluvium	16.8 - 36.6	4.8	<100	<0.55 UJ	1,500	36
SWFTS-MW14	EM04	10/11/2017	N	440-194242-8	Alluvium	16.8 - 36.6	<9.5	<50	<0.55	1,200	4.1
SWFTS-MW14	EM05	10/27/2017	N	440-195218-4	Alluvium	16.8 - 36.6	26	<50	<0.28	1,100	3.5
SWFTS-MW14	EM06	11/15/2017	N	440-196659-3	Alluvium	16.8 - 36.6	20 J+	<50	<0.55	1,100	3.1
SWFTS-MW14	EM07	12/12/2017	N	440-198371-12	Alluvium	16.8 - 36.6	1,600	2,400	<0.55	1,200	2.6
SWFTS-MW14	EM08	2/20/2018	N	440-203841-11	Alluvium	16.8 - 36.6	2,200	<100	<1.1	780	670
SWFTS-MW14	EM09	3/26/2018	N	440-207137-9	Alluvium	16.8 - 36.6	5,500	<50	<0.28	410	220
SWFTS-MW14	EM10	4/30/2018	N	440-210173-9	Alluvium	16.8 - 36.6	4,300	26 J	<0.55	160	91
SWFTS-MW14	EM11	7/10/2018	N	440-215437-8	Alluvium	16.8 - 36.6	6.5	<25	<0.55	110	180
SWFTS-MW14	EM12	7/26/2018	N	440-216784-3	Alluvium	16.8 - 36.6	<95	<10	--	--	--
SWFTS-MW14	EM13	8/14/2018	N	440-218109-11	Alluvium	16.8 - 36.6	8.2 J	<10	<0.55	320	130
SWFTS-MW14	EM14	9/11/2018	N	440-219886-17	Alluvium	16.8 - 36.6	6.4 J	<10	<0.55	440	91
SWFTS-MW14	EM15	10/9/2018	N	440-221855-10	Alluvium	16.8 - 36.6	<0.95	<20	<1.1	610	80
SWFTS-MW14	EM16	12/20/2018	N	440-228491-2	Alluvium	16.8 - 36.6	<0.95	<10	<0.28	720 J+	16
SWFTS-MW14	EM17	2/26/2019	N	440-234812-1	Alluvium	16.8 - 36.6	<0.95	<10	<0.55	790	6.2
SWFTS-MW14	EM18	4/9/2019	N	440-238618-4	Alluvium	16.8 - 36.6	38	150	<0.55 UJ	600	5.3
SWFTS-MW14	EM19	5/21/2019	N	440-242084-1	Alluvium	16.8 - 36.6	<0.95	<20	<0.55	830	6.3
SWFTS-MW14	EM20	7/2/2019	N	440-245153-7	Alluvium	16.8 - 36.6	2.8 J	<4.0	<0.11	860	6.5
SWFTS-MW14	EM21	8/13/2019	N	440-247965-6	Alluvium	16.8 - 36.6	<0.50	<10	<0.55	870	6.7
SWFTS-MW14	EM22	11/6/2019	N	440-254051-2	Alluvium	16.8 - 36.6	<0.95	28 J	<0.55	990	5.6
SWFTS-MW14	EM23	12/17/2019	N	440-257635-7	Alluvium	16.8 - 36.6	<4.8	<10	<0.55	1,200	4.0
SWFTS-MW14	EM24	1/29/2020	N	440-259981-4	Alluvium	16.8 - 36.6	<0.95	<10	<0.55	1,200 J+	3.9
SWFTS-MW14	EM25	3/13/2020	N	440-263004-2	Alluvium	16.8 - 36.6	<0.95	<20	<0.28	1,300	4.2 J+
SWFTS-MW14	EM26	5/1/2020	N	440-265414-2	Alluvium	16.8 - 36.6	97	<20	<0.55	1,400	3.8
SWFTS-MW14	EM27	7/7/2020	N	440-268478-6	Alluvium	16.8 - 36.6	<0.95	<10	<0.55	1,500	4.0
SWFTS-MW14	EM28	8/19/2020	N	440-270634-1	Alluvium	16.8 - 36.6	210	<10	<0.55	1,600	4.7
SWFTS-MW14	EM29	10/14/2020	N	440-273303-5	Alluvium	16.8 - 36.6	460	21 J	<0.55	1,600	4.0
SWFTS-MW14	EM30	12/8/2020	N	550-154358-7	Alluvium	16.8 - 36.6	2,900	<20	0.89 J+	1,600	2.2
SWFTS-MW14	EM31	2/2/2021	N	550-157679-13	Alluvium	16.8 - 36.6	3,300	<49	1.4	1,500	2.2 J+

Table D.1
Groundwater Analytical Results Summary
Seep Well Field Area Bioremediation Treatability Study

Well	Event	Sample Date	QC Type	Lab Sample ID	Lithology	Screened Interval (ft bgs)	EPA 314.0	EPA 300.1B	Anions by EPA 300.0		SM5310B/ SW9060
							Perchlorate	Chlorate	Nitrate (as N)	Sulfate	Total Organic Carbon
							µg/L	µg/L	mg/L	mg/L	mg/L
SWFTS-MW14	EM32	3/31/2021	N	550-161063-12	Alluvium	16.8 - 36.6	760	<49	0.086	1,400	2.4
SWFTS-MW14	EM33	6/4/2021	N	550-164930-1	Alluvium	16.8 - 36.6	3,400	73 J	0.99	1,400	2.2 J+
SWFTS-MW14	EM34	7/21/2021	N	550-167523-12	Alluvium	16.8 - 36.6	2,700	2,300	0.91	1,300	4.5
SWFTS-MW14	EM35	9/16/2021	N	550-170815-16	Alluvium	16.8 - 36.6	6,000	100	1.9	1,400	2.4
SWFTS-MW14	EM36	12/3/2021	N	550-175222-1	Alluvium	16.8 - 36.6	670	59 J	0.16	2,000	2.9
SWFTS-MW14	EM37	3/8/2022	N	550-180407-15	Alluvium	16.8 - 36.6	4,800	2,900	1.7	1,400	3.0 J+
SWFTS-MW14	EM38	6/22/2022	N	550-186069-7	Alluvium	16.8 - 36.6	6,400	1,500	4.3	2,400	3.3 J+
SWFTS-MW14	EM39	9/13/2022	N	550-190412-7	Alluvium	16.8 - 36.6	7,800	1,500	5.1	2,200	2.7
SWFTS-MW14	EM40	12/15/2022	N	550-195106-3	Alluvium	16.8 - 36.6	8,200	7,800	6.3	1,900	2.7
SWFTS-MW15	BL02	7/13/2017	N	440-188325-3	Alluvium	14.8 - 34.6	15,000	43,000	10	1,700	1.6
SWFTS-MW15	EM01	9/20/2017	N	440-192728-2	Alluvium	14.8 - 34.6	11,000	40,000	10	1,600	1.6
SWFTS-MW15	EM02	9/26/2017	N	440-193062-13	Alluvium	14.8 - 34.6	12,000	41,000	11	1,600	1.5
SWFTS-MW15	EM03	10/4/2017	N	440-193625-4	Alluvium	14.8 - 34.6	11,000	39,000	12	1,500	1.4
SWFTS-MW15	EM04	10/10/2017	N	440-194094-1	Alluvium	14.8 - 34.6	18,000	40,000	11	1,500	1.6
SWFTS-MW15	EM05	10/27/2017	N	440-195218-3	Alluvium	14.8 - 34.6	13,000	38,000	13	1,600	1.8
SWFTS-MW15	EM06	11/14/2017	N	440-196558-4	Alluvium	14.8 - 34.6	9,900	38,000	12	1,600	1.8
SWFTS-MW15	EM07	12/13/2017	N	440-198508-13	Alluvium	14.8 - 34.6	13,000	38,000	12	1,700	1.6
SWFTS-MW15	EM08	2/19/2018	N	440-203775-4	Alluvium	14.8 - 34.6	12,000	47,000	11	1,600	1.6
SWFTS-MW15	EM09	3/26/2018	N	440-207137-10	Alluvium	14.8 - 34.6	12,000	52,000	12	1,600	1.7
SWFTS-MW15	EM10	5/2/2018	N	440-210430-3	Alluvium	14.8 - 34.6	13,000	59,000	14	1,500	1.4
SWFTS-MW15	EM11	7/11/2018	N	440-215717-1	Alluvium	14.8 - 34.6	9,300	45,000	12 J-	1,500	3.5
SWFTS-MW15	EM12	7/26/2018	N	440-216784-4	Alluvium	14.8 - 34.6	6,800	39,000	--	--	--
SWFTS-MW15	EM13	8/15/2018	N	440-218208-12	Alluvium	14.8 - 34.6	9,000	52,000	16	1,400	1.9
SWFTS-MW15	EM14	9/11/2018	N	440-219886-2	Alluvium	14.8 - 34.6	7,800	48,000	16	1,500	1.4
SWFTS-MW15	EM15	10/9/2018	N	440-221855-11	Alluvium	14.8 - 34.6	6,400	28,000	7.5	1,500	3.3
SWFTS-MW15	EM16	12/20/2018	N	440-228491-1	Alluvium	14.8 - 34.6	5,300	33,000	9.4	1,400	1.8
SWFTS-MW15	EM17	2/25/2019	N	440-234705-1	Alluvium	14.8 - 34.6	6,200	31,000	9.2	1,200	3.0
SWFTS-MW15	EM18	4/9/2019	N	440-238618-11	Alluvium	14.8 - 34.6	9,700	53,000	14 J-	1,400	1.4
SWFTS-MW15	EM19	5/20/2019	N	440-242014-1	Alluvium	14.8 - 34.6	9,200	48,000	15	1,300	1.6
SWFTS-MW15	EM20	7/2/2019	N	440-245153-9	Alluvium	14.8 - 34.6	8,800	49,000	13	1,300	2.0
SWFTS-MW15	EM21	8/13/2019	N	440-247965-5	Alluvium	14.8 - 34.6	6,400	50,000	14	1,200	1.7
SWFTS-MW15	EM22	11/6/2019	N	440-254051-3	Alluvium	14.8 - 34.6	9,900	46,000	13	1,200	1.4
SWFTS-MW15	EM23	12/17/2019	N	440-257635-6	Alluvium	14.8 - 34.6	9,700	46,000	13	1,200	1.3
SWFTS-MW15	EM24	1/29/2020	N	440-259981-5	Alluvium	14.8 - 34.6	12,000	49,000	15	1,500 J+	1.6
SWFTS-MW15	EM25	3/13/2020	N	440-263004-3	Alluvium	14.8 - 34.6	14,000	44,000	13	1,400	1.8 J+
SWFTS-MW15	EM26	4/29/2020	N	440-265342-3	Alluvium	14.8 - 34.6	13,000	46,000	13	1,400	1.5
SWFTS-MW15	EM27	7/7/2020	N	440-268478-7	Alluvium	14.8 - 34.6	9,700	24,000	4.6	1,400	34
SWFTS-MW15	EM28	8/19/2020	N	440-270634-2	Alluvium	14.8 - 34.6	4,400	14,000	3.8	1,300	11
SWFTS-MW15	EM29	10/15/2020	N	550-151259-4	Alluvium	14.8 - 34.6	4,800	16,000	5.7	1,300	3.5
SWFTS-MW15	EM30	12/8/2020	N	550-154358-8	Alluvium	14.8 - 34.6	6,200	22,000	7.0	1,300	2.0
SWFTS-MW15	EM31	2/2/2021	N	550-157679-14	Alluvium	14.8 - 34.6	7,700	31,000	7.7	1,300	1.5 J+
SWFTS-MW15	EM32	3/31/2021	N	550-161063-11	Alluvium	14.8 - 34.6	7,900	23,000	6.0	1,200	3.8
SWFTS-MW15	EM33	6/3/2021	N	550-164869-13	Alluvium	14.8 - 34.6	17,000	40,000	11	1,300	1.9
SWFTS-MW15	EM34	7/21/2021	N	550-167523-4	Alluvium	14.8 - 34.6	11,000	24,000	8.0	1,200	2.5 J+
SWFTS-MW15	EM35	9/16/2021	N	550-170815-14	Alluvium	14.8 - 34.6	18,000	30,000	12	1,500	1.8
SWFTS-MW15	EM36	11/30/2021	N	550-174968-9	Alluvium	14.8 - 34.6	23,000	58,000	15	1,700	1.7 J+
SWFTS-MW15	EM37	3/8/2022	N	550-180407-16	Alluvium	14.8 - 34.6	14,000	42 J	13	2,300	3.0 J+
SWFTS-MW15	EM38	6/22/2022	N	550-186069-6	Alluvium	14.8 - 34.6	1,400	<24	2.2	1,200	3.6 J+
SWFTS-MW15	EM39	9/14/2022	N	550-190504-1	Alluvium	14.8 - 34.6	7,400	16,000	11	1,500	2.2

Table D.1
Groundwater Analytical Results Summary
Seep Well Field Area Bioremediation Treatability Study

Well	Event	Sample Date	QC Type	Lab Sample ID	Lithology	Screened Interval (ft bgs)	EPA 314.0	EPA 300.1B	Anions by EPA 300.0		SM5310B/ SW9060
							Perchlorate	Chlorate	Nitrate (as N)	Sulfate	Total Organic Carbon
							µg/L	µg/L	mg/L	mg/L	mg/L
SWFTS-MW15	EM40	12/15/2022	N	550-195106-1	Alluvium	14.8 - 34.6	2,700	2,600	5.9	1,200	1.9
SWFTS-MW16	BL02	7/13/2017	N	440-188325-2	Alluvium	21.8 - 41.6	8,400	38,000	12	2,100	1.6
SWFTS-MW16	EM01	9/22/2017	N	440-192818-7	Alluvium	21.8 - 41.6	1,700	8,700	3.3	1,900	120
SWFTS-MW16	EM02	9/26/2017	N	440-192973-6	Alluvium	21.8 - 41.6	1,300	8,800	3.8	2,000	68
SWFTS-MW16	EM03	10/3/2017	N	440-193472-3	Alluvium	21.8 - 41.6	1,600	6,300	2.7	1,800	92
SWFTS-MW16	EM04	10/12/2017	N	440-194204-7	Alluvium	21.8 - 41.6	1,100	5,800	2.1	1,500	180
SWFTS-MW16	EM05	10/24/2017	N	440-194947-2	Alluvium	21.8 - 41.6	830	4,700	1.5	520	180
SWFTS-MW16	EM06	11/16/2017	N	440-196786-4	Alluvium	21.8 - 41.6	<0.95	4,000	1.2	480	110
SWFTS-MW16	EM07	12/12/2017	N	440-198371-4	Alluvium	21.8 - 41.6	490	3,100	1.1	550	5.9
SWFTS-MW16	EM08	2/21/2018	N	440-203937-6	Alluvium	21.8 - 41.6	620	2,800	<1.1	1,000	7.7
SWFTS-MW16	EM09	3/27/2018	N	440-207268-13	Alluvium	21.8 - 41.6	9,000	46,000	12	1,700	1.5
SWFTS-MW16	EM10	5/2/2018	N	440-210430-13	Alluvium	21.8 - 41.6	1,500 J	11,000	3.5	1,600	2.3
SWFTS-MW16	EM11	7/11/2018	N	440-215585-12	Alluvium	21.8 - 41.6	<4.8	<5.0	<0.55	690	7.9
SWFTS-MW16	EM12	7/26/2018	N	440-216784-5	Alluvium	21.8 - 41.6	<0.95	<4.0	--	--	--
SWFTS-MW16	EM13	8/15/2018	N	440-218208-13	Alluvium	21.8 - 41.6	12	67	<0.28	1,100	3.2
SWFTS-MW16	EM14	9/10/2018	N	440-219797-6	Alluvium	21.8 - 41.6	200	1,400	0.42 J	1,300	2.9
SWFTS-MW16	EM15	10/11/2018	N	440-222092-3	Alluvium	21.8 - 41.6	340	2,200	0.76 J	1,800	2.8
SWFTS-MW16	EM16	12/19/2018	N	440-228394-1	Alluvium	21.8 - 41.6	270	2,300	1.0 J	1,600	2.5
SWFTS-MW16	EM17	2/26/2019	N	440-234812-7	Alluvium	21.8 - 41.6	<0.95	<10	<0.55	970	5.6
SWFTS-MW16	EM18	4/9/2019	N	440-238618-12	Alluvium	21.8 - 41.6	<0.95	<10	<0.55 UJ	970	2.9
SWFTS-MW16	EM19	5/20/2019	N	440-242014-3	Alluvium	21.8 - 41.6	<0.95 UJ	<10	<0.55	1,100	3.5
SWFTS-MW16	EM20	7/1/2019	N	440-245068-1	Alluvium	21.8 - 41.6	<0.95	<10	<0.55	1,100	4.0
SWFTS-MW16	EM21	8/13/2019	N	440-247965-4	Alluvium	21.8 - 41.6	19	100	<0.55	1,300	3.6
SWFTS-MW16	EM22	11/6/2019	N	440-254051-5	Alluvium	21.8 - 41.6	<0.95	<40	<0.55	820	3.2
SWFTS-MW16	EM23	12/17/2019	N	440-257635-1	Alluvium	21.8 - 41.6	<4.8	<10	<0.55	990	2.3
SWFTS-MW16	EM24	1/29/2020	N	440-259981-6	Alluvium	21.8 - 41.6	<0.95	<100	<0.55	1,200 J+	2.7
SWFTS-MW16	EM25	3/13/2020	N	440-263003-3	Alluvium	21.8 - 41.6	<0.95	<10	<0.55	1,300	3.6
SWFTS-MW16	EM26	4/30/2020	N	440-265383-1	Alluvium	21.8 - 41.6	<4.8	<10	<0.55	1,300	5.7
SWFTS-MW16	EM27	7/9/2020	N	440-268679-1	Alluvium	21.8 - 41.6	<0.95	16 J	<0.55	950	4.9
SWFTS-MW16	EM28	8/19/2020	N	440-270634-3	Alluvium	21.8 - 41.6	<4.8	<10	<0.55	1,100	4.9
SWFTS-MW16	EM29	10/15/2020	N	550-151259-1	Alluvium	21.8 - 41.6	<0.95	16 J	<0.014	1,100	3.6
SWFTS-MW16	EM30	12/8/2020	N	550-154358-9	Alluvium	21.8 - 41.6	<0.31	<20	<0.014	1,100	2.7
SWFTS-MW16	EM31	2/2/2021	N	550-157679-15	Alluvium	21.8 - 41.6	<0.31	<49	<0.014	1,200	2.8 J+
SWFTS-MW16	EM32	3/31/2021	N	550-161063-10	Alluvium	21.8 - 41.6	2.4	<9.8	0.051	1,200	2.8
SWFTS-MW16	EM33	6/3/2021	N	550-164869-11	Alluvium	21.8 - 41.6	450	<9.8	0.096	1,300	1.9
SWFTS-MW16	EM34	7/21/2021	N	550-167523-3	Alluvium	21.8 - 41.6	960	<24	0.20	1,300	2.3 J+
SWFTS-MW16	EM35	9/16/2021	N	550-170815-15	Alluvium	21.8 - 41.6	1,100	33 J	0.20	1,400	2.9
SWFTS-MW16	EM36	11/30/2021	N	550-174968-11	Alluvium	21.8 - 41.6	1,900	16 J	0.43	1,500	3.6 J+
SWFTS-MW16	EM37	3/9/2022	N	550-180516-2	Alluvium	21.8 - 41.6	1,800	<9.8	0.14 J+	1,600	2.8
SWFTS-MW16	EM38	6/22/2022	N	550-186069-5	Alluvium	21.8 - 41.6	740	11 J	0.085	1,700	3.0 J+
SWFTS-MW16	EM39	9/14/2022	N	550-190504-2	Alluvium	21.8 - 41.6	260	<9.8	0.016 J	1,700	2.2
SWFTS-MW16	EM40	12/14/2022	N	550-195013-15	Alluvium	21.8 - 41.6	82	<9.8	0.088	1,600 J+	2.4
SWFTS-MW17	BL02	7/12/2017	N	440-188244-1	Alluvium	22.8 - 52.6	3,200	--	16	2,200	1.1
SWFTS-MW17	EM01	9/19/2017	N	440-192627-3	Alluvium	22.8 - 52.6	2,600	18,000	16	2,200	1.2
SWFTS-MW17	EM01	9/19/2017	FD	440-192627-4	Alluvium	22.8 - 52.6	2,600	18,000	16	2,300	1.3
SWFTS-MW17	EM02	9/26/2017	N	440-192973-7	Alluvium	22.8 - 52.6	2,800	17,000	17	2,300	1.5
SWFTS-MW17	EM02	9/26/2017	FD	440-192973-8	Alluvium	22.8 - 52.6	2,800	17,000	17	2,300	1.5
SWFTS-MW17	EM03	10/3/2017	N	440-193472-8	Alluvium	22.8 - 52.6	3,300	19,000	15	2,300	1.1
SWFTS-MW17	EM03	10/3/2017	FD	440-193472-9	Alluvium	22.8 - 52.6	3,300	19,000	16	2,300	1.0

Table D.1
Groundwater Analytical Results Summary
Seep Well Field Area Bioremediation Treatability Study

Well	Event	Sample Date	QC Type	Lab Sample ID	Lithology	Screened Interval (ft bgs)	EPA 314.0	EPA 300.1B	Anions by EPA 300.0		SM5310B/ SW9060
							Perchlorate	Chlorate	Nitrate (as N)	Sulfate	Total Organic Carbon
							µg/L	µg/L	mg/L	mg/L	mg/L
SWFTS-MW17	EM04	10/10/2017	N	440-193989-3	Alluvium	22.8 - 52.6	2,800	16,000	16	2,500	1.3
SWFTS-MW17	EM05	10/24/2017	N	440-194947-1	Alluvium	22.8 - 52.6	2,700	15,000	17	2,200	1.2
SWFTS-MW17	EM05	10/24/2017	FD	440-194947-5	Alluvium	22.8 - 52.6	2,700	15,000	16	2,200	2.2
SWFTS-MW17	EM06	11/15/2017	N	440-196659-5	Alluvium	22.8 - 52.6	2,300	16,000	17	2,200	1.3
SWFTS-MW17	EM06	11/15/2017	FD	440-196659-6	Alluvium	22.8 - 52.6	2,200	15,000	17	2,100	1.2
SWFTS-MW17	EM07	12/13/2017	N	440-198508-6	Alluvium	22.8 - 52.6	2,200	14,000	16	2,100	1.2
SWFTS-MW17	EM07	12/13/2017	FD	440-198508-7	Alluvium	22.8 - 52.6	2,300	13,000	16	2,100	1.2
SWFTS-MW17	EM08	2/22/2018	N	440-204033-11	Alluvium	22.8 - 52.6	2,000	15,000	16	2,100	2.1
SWFTS-MW17	EM09	3/28/2018	N	440-207497-11	Alluvium	22.8 - 52.6	2,000	14,000	15	1,900	1.2
SWFTS-MW17	EM10	5/3/2018	N	440-210534-3	Alluvium	22.8 - 52.6	1,900 J-	11,000	15	2,000	1.1
SWFTS-MW17	EM11	7/11/2018	N	440-215585-13	Alluvium	22.8 - 52.6	1,300	11,000	15	1,900	1.1
SWFTS-MW17	EM13	8/16/2018	N	440-218296-19	Alluvium	22.8 - 52.6	1,600	12,000	16	2,000	1.4
SWFTS-MW17	EM14	9/12/2018	N	440-220031-5	Alluvium	22.8 - 52.6	1,900	13,000	15	1,900	1.0
SWFTS-MW17	EM15	10/11/2018	N	440-222092-4	Alluvium	22.8 - 52.6	2,100	15,000	16	2,100	1.6
SWFTS-MW17	EM16	1/2/2019	N	440-229018-5	Alluvium	22.8 - 52.6	1,700	11,000	15	1,900	1.2
SWFTS-MW17	EM17	2/28/2019	N	440-235000-2	Alluvium	22.8 - 52.6	1,700	13,000	15	2,000	1.3
SWFTS-MW17	EM18	4/11/2019	N	440-238688-5	Alluvium	22.8 - 52.6	1,700	12,000	14	2,000	1.3
SWFTS-MW17	EM19	5/22/2019	N	440-242198-6	Alluvium	22.8 - 52.6	1,900	13,000	14	1,900	1.1
SWFTS-MW17	EM20	7/5/2019	N	440-245259-3	Alluvium	22.8 - 52.6	1,800	13,000	16	2,000	1.3
SWFTS-MW17	EM21	8/16/2019	N	440-248259-1	Alluvium	22.8 - 52.6	2,200	13,000	16	2,100	1.4
SWFTS-MW17	EM22	11/7/2019	N	440-254150-1	Alluvium	22.8 - 52.6	2,100	15,000	12	1,600	1.3
SWFTS-MW17	EM23	12/20/2019	N	440-257938-2	Alluvium	22.8 - 52.6	2,100	16,000	14	2,000	1.2
SWFTS-MW17	EM24	1/30/2020	N	440-260037-1	Alluvium	22.8 - 52.6	2,200	18,000	14	2,100	1.1
SWFTS-MW17	EM25	3/13/2020	N	440-263003-1	Alluvium	22.8 - 52.6	2,100	17,000	14	2,100	1.6
SWFTS-MW17	EM26	4/30/2020	N	440-265383-6	Alluvium	22.8 - 52.6	2,000	17,000	13	2,000	1.0
SWFTS-MW17	EM27	7/9/2020	N	440-268679-2	Alluvium	22.8 - 52.6	2,000	16,000	14	2,300	0.93 J
SWFTS-MW17	EM28	8/19/2020	N	440-270634-4	Alluvium	22.8 - 52.6	1,900	15,000	15	2,200	1.7
SWFTS-MW17	EM29	10/15/2020	N	550-151259-5	Alluvium	22.8 - 52.6	2,200	16,000	15	2,000	1.1
SWFTS-MW17	EM30	12/9/2020	N	550-154431-10	Alluvium	22.8 - 52.6	2,100	15,000	15	2,000	1.3
SWFTS-MW17	EM31	2/2/2021	N	550-157679-16	Alluvium	22.8 - 52.6	2,300	8,000 J+	15	2,000	1.1 J+
SWFTS-MW17	EM32	3/31/2021	N	550-161063-9	Alluvium	22.8 - 52.6	2,100	7,400	13	2,000	1.1
SWFTS-MW17	EM33	6/3/2021	N	550-164869-9	Alluvium	22.8 - 52.6	2,300	8,400	16	2,100	1.0
SWFTS-MW17	EM34	7/21/2021	N	550-167523-5	Alluvium	22.8 - 52.6	2,100	12,000	15	2,000	1.2 J+
SWFTS-MW17	EM35	9/16/2021	N	550-170815-17	Alluvium	22.8 - 52.6	2,000	7,900	17	2,100	1.2
SWFTS-MW17	EM36	12/2/2021	N	550-175153-21	Alluvium	22.8 - 52.6	2,700	17,000	15	2,300	1.5 J+
SWFTS-MW17	EM37	3/9/2022	N	550-180516-1	Alluvium	22.8 - 52.6	4,400	31,000	17	2,600	1.1
SWFTS-MW17	EM38	6/22/2022	N	550-186069-4	Alluvium	22.8 - 52.6	2,300	16,000	16	2,100	1.3 J+
SWFTS-MW17	EM39	9/14/2022	N	550-190504-3	Alluvium	22.8 - 52.6	2,100	16,000	15	1,900	1.0
SWFTS-MW17	EM40	12/14/2022	N	550-195013-13	Alluvium	22.8 - 52.6	1,800	19,000	14	1,900 J+	1.1
SWFTS-MW18	BL02	7/11/2017	N	440-188133-17	Alluvium	16.8 - 36.6	13,000	52,000	12	1,600	1.5
SWFTS-MW18	EM01	9/21/2017	N	440-192728-8	Alluvium	16.8 - 36.6	9,700	34,000	8.9	1,700	2.0
SWFTS-MW18	EM02	9/27/2017	N	440-193167-5	Alluvium	16.8 - 36.6	11,000	36,000	12	1,700	2.2
SWFTS-MW18	EM03	10/3/2017	N	440-193472-2	Alluvium	16.8 - 36.6	8,100	30,000	8.6	1,700	1.5
SWFTS-MW18	EM04	10/10/2017	N	440-194094-3	Alluvium	16.8 - 36.6	9,700	40,000	12	1,800	1.7
SWFTS-MW18	EM05	10/23/2017	N	440-194846-3	Alluvium	16.8 - 36.6	8,200	38,000	12	1,700	1.7
SWFTS-MW18	EM06	11/15/2017	N	440-196690-11	Alluvium	16.8 - 36.6	11,000	37,000	11	1,800	1.8
SWFTS-MW18	EM07	12/13/2017	N	440-198508-5	Alluvium	16.8 - 36.6	9,100	39,000	12	1,600	1.6
SWFTS-MW18	EM08	2/22/2018	N	440-204033-4	Alluvium	16.8 - 36.6	8,900	45,000	12	1,600	2.3
SWFTS-MW18	EM09	3/27/2018	N	440-207268-11	Alluvium	16.8 - 36.6	2,000	11,000	3.9	1,400	2.5

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Seep Well Field Area Bioremediation Treatability Study

Well	Event	Sample Date	QC Type	Lab Sample ID	Lithology	Screened Interval (ft bgs)	EPA 314.0	EPA 300.1B	Anions by EPA 300.0		SM5310B/ SW9060
							Perchlorate	Chlorate	Nitrate (as N)	Sulfate	Total Organic Carbon
							µg/L	µg/L	mg/L	mg/L	mg/L
SWFTS-MW18	EM09	3/27/2018	FD	440-207268-12	Alluvium	16.8 - 36.6	2,100	11,000	3.5	1,500	2.4
SWFTS-MW18	EM10	5/1/2018	N	440-210284-6	Alluvium	16.8 - 36.6	9,200	50,000	13	1,600	1.5
SWFTS-MW18	EM11	7/11/2018	N	440-215717-2	Alluvium	16.8 - 36.6	6,900	41,000	11	1,700	1.6
SWFTS-MW18	EM12	7/26/2018	N	440-216784-6	Alluvium	16.8 - 36.6	6,100	43,000	--	--	--
SWFTS-MW18	EM13	8/15/2018	N	440-218208-14	Alluvium	16.8 - 36.6	5,900	41,000	13	1,700	2.0
SWFTS-MW18	EM14	9/11/2018	N	440-219886-1	Alluvium	16.8 - 36.6	5,600	41,000	13	1,700	1.6
SWFTS-MW18	EM15	10/11/2018	N	440-222092-5	Alluvium	16.8 - 36.6	5,300	41,000	13	1,400	2.1
SWFTS-MW18	EM16	12/20/2018	N	440-228491-8	Alluvium	16.8 - 36.6	5,000	38,000	15	1,500	1.8
SWFTS-MW18	EM17	2/26/2019	N	440-234812-9	Alluvium	16.8 - 36.6	4,600	28,000	11	1,600	1.9
SWFTS-MW18	EM18	4/9/2019	N	440-238618-13	Alluvium	16.8 - 36.6	4,800	26,000	11 J-	1,700	1.6
SWFTS-MW18	EM19	5/21/2019	N	440-242084-15	Alluvium	16.8 - 36.6	4,600	25,000	12	1,600	1.5
SWFTS-MW18	EM20	7/1/2019	N	440-245068-3	Alluvium	16.8 - 36.6	4,300	29,000	12	1,600	1.9
SWFTS-MW18	EM21	8/13/2019	N	440-247965-3	Alluvium	16.8 - 36.6	4,600	25,000	12	1,400	1.8
SWFTS-MW18	EM22	11/6/2019	N	440-254051-4	Alluvium	16.8 - 36.6	2,600	6,600	2.8	1,400	2.0
SWFTS-MW18	EM23	12/17/2019	N	440-257635-13	Alluvium	16.8 - 36.6	4,200	19,000	8.8	1,400	1.9
SWFTS-MW18	EM24	1/29/2020	N	440-259981-7	Alluvium	16.8 - 36.6	5,800	23,000	10	1,500 J+	2.0
SWFTS-MW18	EM25	3/11/2020	N	440-262726-7	Alluvium	16.8 - 36.6	7,100	30,000	9.4	1,300	1.7
SWFTS-MW18	EM26	4/29/2020	N	440-265342-2	Alluvium	16.8 - 36.6	6,700	31,000	10	1,400	1.9
SWFTS-MW18	EM27	7/9/2020	N	440-268679-4	Alluvium	16.8 - 36.6	4,400	12,000	6.0	1,600	1.8
SWFTS-MW18	EM28	8/19/2020	N	440-270634-5	Alluvium	16.8 - 36.6	3,900	13,000	9.5	1,600	3.0
SWFTS-MW18	EM29	10/15/2020	N	550-151259-2	Alluvium	16.8 - 36.6	3,600	12,000	10	1,500	2.2
SWFTS-MW18	EM30	12/9/2020	N	550-154431-11	Alluvium	16.8 - 36.6	3,100	8,100	8.9	1,600	1.7
SWFTS-MW18	EM31	2/3/2021	N	550-157817-1	Alluvium	16.8 - 36.6	4,100	12,000 J+	10	1,600	1.4
SWFTS-MW18	EM32	3/30/2021	N	550-160995-9	Alluvium	16.8 - 36.6	1,400	1,100 J+	0.94	1,400	2.7
SWFTS-MW18	EM33	6/3/2021	N	550-164869-7	Alluvium	16.8 - 36.6	4,200	6,100	7.8	1,600	1.7
SWFTS-MW18	EM34	7/21/2021	N	550-167523-2	Alluvium	16.8 - 36.6	5,600	14,000 J+	10	1,600	1.7 J+
SWFTS-MW18	EM35	9/16/2021	N	550-170815-13	Alluvium	16.8 - 36.6	6,700	1,000 J+	10	1,600	1.9
SWFTS-MW18	EM36	12/1/2021	N	550-175045-5	Alluvium	16.8 - 36.6	760	330	0.76	1,500	4.1
SWFTS-MW18	EM37	3/8/2022	N	550-180407-14	Alluvium	16.8 - 36.6	7,300	16,000	4.3	1,500	2.3 J
SWFTS-MW18	EM38	6/22/2022	N	550-186069-3	Alluvium	16.8 - 36.6	4,700	13,000	8.8	1,800	2.8 J+
SWFTS-MW18	EM39	9/14/2022	N	550-190504-4	Alluvium	16.8 - 36.6	3,300	10,000	9.6	1,800	2.3
SWFTS-MW18	EM40	12/14/2022	N	550-195013-11	Alluvium	16.8 - 36.6	2,400	13,000	11	1,800 J+	2.2
SWFTS-MW19	BL02	7/12/2017	N	440-188244-2	Alluvium	11.3 - 31.1	840	130	0.33	660	2.6
SWFTS-MW19	EM01	9/21/2017	N	440-192728-10	Alluvium	11.3 - 31.1	1,400	220	0.51	670	2.3
SWFTS-MW19	EM02	9/28/2017	N	440-193167-6	Alluvium	11.3 - 31.1	1,400	260	0.74	680	2.8
SWFTS-MW19	EM03	10/5/2017	N	440-193712-13	Alluvium	11.3 - 31.1	1,400	220	0.63	690	2.6
SWFTS-MW19	EM04	10/12/2017	N	440-194204-1	Alluvium	11.3 - 31.1	1,400	220 J+	0.70	760	2.2
SWFTS-MW19	EM05	10/27/2017	N	440-195218-5	Alluvium	11.3 - 31.1	1,900	250	0.77	720	2.6
SWFTS-MW19	EM06	11/16/2017	N	440-196786-12	Alluvium	11.3 - 31.1	1,500	270	0.97	740	2.3
SWFTS-MW19	EM07	12/12/2017	N	440-198371-8	Alluvium	11.3 - 31.1	2,000	410	1.2	780	2.4
SWFTS-MW19	EM08	2/20/2018	N	440-203841-6	Alluvium	11.3 - 31.1	1,900	610	0.73	890	2.6
SWFTS-MW19	EM09	3/27/2018	N	440-207268-3	Alluvium	11.3 - 31.1	1,800	650	0.71	860	2.2
SWFTS-MW19	EM10	4/30/2018	N	440-210173-4	Alluvium	11.3 - 31.1	1,800	820	0.70	960	2.2
SWFTS-MW19	EM10	4/30/2018	FD	440-210173-5	Alluvium	11.3 - 31.1	1,700	760	0.67	910	2.2
SWFTS-MW19	EM11	7/10/2018	N	440-215437-10	Alluvium	11.3 - 31.1	2,000	1,100	0.52	840	1.9
SWFTS-MW19	EM11	7/10/2018	FD	440-215437-11	Alluvium	11.3 - 31.1	2,000	1,000	0.52	850	1.9
SWFTS-MW19	EM12	7/26/2018	N	440-216784-7	Alluvium	11.3 - 31.1	1,800	890	--	--	--
SWFTS-MW19	EM12	7/26/2018	FD	440-216784-8	Alluvium	11.3 - 31.1	1,700	890	--	--	--
SWFTS-MW19	EM13	8/15/2018	N	440-218208-15	Alluvium	11.3 - 31.1	1,700	900	0.44	820	2.4

Table D.1
Groundwater Analytical Results Summary
Seep Well Field Area Bioremediation Treatability Study

Well	Event	Sample Date	QC Type	Lab Sample ID	Lithology	Screened Interval (ft bgs)	EPA 314.0	EPA 300.1B	Anions by EPA 300.0		SM5310B/ SW9060
							Perchlorate	Chlorate	Nitrate (as N)	Sulfate	Total Organic Carbon
							µg/L	µg/L	mg/L	mg/L	mg/L
SWFTS-MW19	EM14	9/11/2018	N	440-219886-6	Alluvium	11.3 - 31.1	1,500	850	0.37	790	2.0
SWFTS-MW19	EM15	10/9/2018	N	440-221855-4	Alluvium	11.3 - 31.1	2,000	870	0.41 J	800	2.4
SWFTS-MW19	EM15	10/9/2018	FD	440-221855-5	Alluvium	11.3 - 31.1	1,700	870	0.40 J	800	2.4
SWFTS-MW19	EM16	12/27/2018	N	440-228818-3	Alluvium	11.3 - 31.1	1,400	760	0.36	860	2.4
SWFTS-MW19	EM16	12/27/2018	FD	440-228818-4	Alluvium	11.3 - 31.1	1,300	760	0.36	860	2.1
SWFTS-MW19	EM17	2/27/2019	N	440-234933-1	Alluvium	11.3 - 31.1	1,300	590	0.35	900	2.1
SWFTS-MW19	EM17	2/27/2019	FD	440-234933-2	Alluvium	11.3 - 31.1	1,300	560	0.38 J	940	2.1
SWFTS-MW19	EM18	4/10/2019	N	440-238544-5	Alluvium	11.3 - 31.1	1,500	530	0.33 J	840	2.2
SWFTS-MW19	EM18	4/10/2019	FD	440-238544-8	Alluvium	11.3 - 31.1	1,300	510	0.37 J	880	2.1
SWFTS-MW19	EM19	5/21/2019	N	440-242084-6	Alluvium	11.3 - 31.1	1,200	420	0.18 J	790	3.3
SWFTS-MW19	EM19	5/21/2019	FD	440-242084-7	Alluvium	11.3 - 31.1	1,200	400	0.24	830	3.2
SWFTS-MW19	EM20	7/2/2019	N	440-245153-1	Alluvium	11.3 - 31.1	1,100	340	0.11	740	2.9
SWFTS-MW19	EM20	7/2/2019	FD	440-245153-2	Alluvium	11.3 - 31.1	1,100	340	0.11	740	3.1
SWFTS-MW19	EM21	8/15/2019	N	440-248187-5	Alluvium	11.3 - 31.1	1,200	260	<0.28	680	2.6
SWFTS-MW19	EM21	8/15/2019	FD	440-248187-6	Alluvium	11.3 - 31.1	1,200	260	<0.28	690	2.6
SWFTS-MW19	EM22	11/5/2019	N	440-253891-6	Alluvium	11.3 - 31.1	1,300	270	0.36 J	780	2.3
SWFTS-MW19	EM22	11/5/2019	FD	440-253891-7	Alluvium	11.3 - 31.1	1,300	270	0.37 J	800	2.3
SWFTS-MW19	EM23	12/19/2019	N	440-257866-1	Alluvium	11.3 - 31.1	1,200	420	0.31 J	810	2.0
SWFTS-MW19	EM23	12/19/2019	FD	440-257866-2	Alluvium	11.3 - 31.1	1,300	370	0.32 J	820	2.1
SWFTS-MW19	EM24	1/29/2020	N	440-259981-8	Alluvium	11.3 - 31.1	1,400	550	0.61	990 J+	2.3
SWFTS-MW19	EM24	1/29/2020	FD	440-259981-9	Alluvium	11.3 - 31.1	1,300	570	0.62	990 J+	2.2
SWFTS-MW19	EM25	3/11/2020	N	440-262720-5	Alluvium	11.3 - 31.1	1,300	780	0.70 J	1,200	2.3
SWFTS-MW19	EM25	3/11/2020	FD	440-262720-6	Alluvium	11.3 - 31.1	1,300	740	0.72 J	1,200	2.3
SWFTS-MW19	EM26	4/28/2020	N	440-265288-4	Alluvium	11.3 - 31.1	1,200	1,100	<0.55	1,300	2.5
SWFTS-MW19	EM26	4/28/2020	FD	440-265288-7	Alluvium	11.3 - 31.1	1,200	1,100	0.56 J	1,300	2.6
SWFTS-MW19	EM27	7/9/2020	N	440-268679-6	Alluvium	11.3 - 31.1	1,300	1,400	0.47 J	1,100	2.3
SWFTS-MW19	EM27	7/9/2020	FD	440-268679-7	Alluvium	11.3 - 31.1	1,400	1,300	0.61	1,100	2.1
SWFTS-MW19	EM28	8/19/2020	N	440-270634-6	Alluvium	11.3 - 31.1	1,300	1,300	0.43	930	2.4
SWFTS-MW19	EM28	8/19/2020	FD	440-270634-7	Alluvium	11.3 - 31.1	1,300	1,300	0.44	910	2.6
SWFTS-MW19	EM29	10/14/2020	N	440-273303-2	Alluvium	11.3 - 31.1	1,500	1,300	0.43 J	910	2.3
SWFTS-MW19	EM29	10/14/2020	FD	440-273303-3	Alluvium	11.3 - 31.1	1,400	1,300	0.43 J	1,000	2.2
SWFTS-MW19	EM30	12/9/2020	N	550-154431-12	Alluvium	11.3 - 31.1	1,500	990	0.36 J+	940	2.0
SWFTS-MW19	EM30	12/9/2020	FD	550-154431-13	Alluvium	11.3 - 31.1	1,500	1,000	0.33 J+	940	2.0
SWFTS-MW19	EM31	2/3/2021	N	550-157817-2	Alluvium	11.3 - 31.1	1,600	920	0.26	950	2.0
SWFTS-MW19	EM31	2/3/2021	FD	550-157817-3	Alluvium	11.3 - 31.1	1,700	800	0.26	960	2.2
SWFTS-MW19	EM32	3/30/2021	N	550-160995-7	Alluvium	11.3 - 31.1	1,300	730	0.20	1,000	2.3
SWFTS-MW19	EM32	3/30/2021	FD	550-160995-8	Alluvium	11.3 - 31.1	1,300	740	0.17	990	2.3
SWFTS-MW19	EM33	6/3/2021	N	550-164869-3	Alluvium	11.3 - 31.1	1,100	580	0.16	970	2.1
SWFTS-MW19	EM33	6/3/2021	FD	550-164869-5	Alluvium	11.3 - 31.1	1,200	560	0.16	990	2.1
SWFTS-MW19	EM34	7/20/2021	N	550-167449-10	Alluvium	11.3 - 31.1	1,100	420	0.14	880	2.1
SWFTS-MW19	EM34	7/20/2021	FD	550-167449-11	Alluvium	11.3 - 31.1	1,200	430	0.14	860	2.4
SWFTS-MW19	EM35	9/16/2021	N	550-170815-30	Alluvium	11.3 - 31.1	1,200	580	0.19 J	970	2.5
SWFTS-MW19	EM35	9/16/2021	FD	550-170815-31	Alluvium	11.3 - 31.1	1,200	570	0.18 J	950	2.7
SWFTS-MW19	EM36	12/1/2021	N	550-175045-13	Alluvium	11.3 - 31.1	1,100	800	0.21	1,000	2.6
SWFTS-MW19	EM36	12/1/2021	FD	550-175045-15	Alluvium	11.3 - 31.1	1,100	800	0.21	1,000	2.8
SWFTS-MW19	EM37	3/8/2022	N	550-180407-12	Alluvium	11.3 - 31.1	7,100	5,300	6.7	2,200	7.5
SWFTS-MW19	EM37	3/8/2022	FD	550-180407-13	Alluvium	11.3 - 31.1	7,100	5,400	7.1	2,400	7.5
SWFTS-MW19	EM38	6/22/2022	N	550-186069-1	Alluvium	11.3 - 31.1	3,900	110	1.7	1,900	4.8 J+
SWFTS-MW19	EM38	6/22/2022	FD	550-186069-2	Alluvium	11.3 - 31.1	4,000	110	1.7	1,900	4.8 J+

Table D.1
Groundwater Analytical Results Summary
Seep Well Field Area Bioremediation Treatability Study

Well	Event	Sample Date	QC Type	Lab Sample ID	Lithology	Screened Interval (ft bgs)	EPA 314.0	EPA 300.1B	Anions by EPA 300.0		SM5310B/ SW9060
							Perchlorate	Chlorate	Nitrate (as N)	Sulfate	Total Organic Carbon
							µg/L	µg/L	mg/L	mg/L	mg/L
SWFTS-MW19	EM39	9/14/2022	N	550-190504-5	Alluvium	11.3 - 31.1	7,300	9,100	4.6	1,200	2.6
SWFTS-MW19	EM39	9/14/2022	FD	550-190504-6	Alluvium	11.3 - 31.1	7,500	10,000	4.6	1,200	2.7
SWFTS-MW19	EM40	12/14/2022	N	550-195013-3	Alluvium	11.3 - 31.1	5,200	8,900	3.5	1,100 J+	2.6
SWFTS-MW19	EM40	12/14/2022	FD	550-195013-5	Alluvium	11.3 - 31.1	5,300	9,100	3.5	1,100 J+	2.7
SWFTS-MW20	BL02	7/12/2017	N	440-188244-5	Alluvium	12.8 - 37.6	20,000	51,000	13	2,200	1.7
SWFTS-MW20	EM01	9/21/2017	N	440-192818-3	Alluvium	12.8 - 37.6	17,000	30,000	7.3	2,000	2.5
SWFTS-MW20	EM02	9/26/2017	N	440-193062-1	Alluvium	12.8 - 37.6	16,000	33,000	7.6	2,100	3.0
SWFTS-MW20	EM03	10/4/2017	N	440-193712-4	Alluvium	12.8 - 37.6	19,000	38,000	9.6	2,200	2.6
SWFTS-MW20	EM04	10/12/2017	N	440-194202-1	Alluvium	12.8 - 37.6	14,000	42,000	8.5	2,000	2.2
SWFTS-MW20	EM04	10/12/2017	FD	440-194202-2	Alluvium	12.8 - 37.6	14,000	40,000	9.1	2,100	2.2
SWFTS-MW20	EM05	10/25/2017	N	440-195026-5	Alluvium	12.8 - 37.6	17,000	40,000	11	2,100	2.6
SWFTS-MW20	EM06	11/16/2017	N	440-196786-7	Alluvium	12.8 - 37.6	7,900	16,000	4.0	1,700	3.0
SWFTS-MW20	EM07	12/12/2017	N	440-198371-3	Alluvium	12.8 - 37.6	16,000	43,000	8.5	2,200	2.2
SWFTS-MW20	EM08	2/19/2018	N	440-203775-5	Alluvium	12.8 - 37.6	6,600	16,000	3.2	1,600	2.5
SWFTS-MW20	EM09	3/27/2018	N	440-207268-9	Alluvium	12.8 - 37.6	11,000	24,000	5.2	2,100	2.2
SWFTS-MW20	EM10	4/30/2018	N	440-210173-10	Alluvium	12.8 - 37.6	6,700	14,000	3.3	1,600	2.3
SWFTS-MW20	EM11	7/11/2018	N	440-215717-8	Alluvium	12.8 - 37.6	6,700	16,000	3.2	1,600	2.8
SWFTS-MW20	EM12	7/26/2018	N	440-216784-9	Alluvium	12.8 - 37.6	7,500	19,000	--	--	--
SWFTS-MW20	EM13	8/15/2018	N	440-218208-16	Alluvium	12.8 - 37.6	4,300	5,600	2.8	1,500	2.8
SWFTS-MW20	EM13	8/15/2018	FD	440-218208-17	Alluvium	12.8 - 37.6	4,300	5,700	2.7	1,400	2.8
SWFTS-MW20	EM14	9/11/2018	N	440-219886-3	Alluvium	12.8 - 37.6	3,400	8,500	2.3 J	1,400	2.6
SWFTS-MW20	EM14	9/11/2018	FD	440-219886-4	Alluvium	12.8 - 37.6	3,900	9,500	6.9 J	1,500	2.6
SWFTS-MW20	EM15	10/9/2018	N	440-221855-1	Alluvium	12.8 - 37.6	4,000	5,900	2.2	1,400	3.0
SWFTS-MW20	EM16	12/20/2018	N	440-228491-7	Alluvium	12.8 - 37.6	2,800	830	2.1	1,500 J+	2.8
SWFTS-MW20	EM17	2/26/2019	N	440-234812-5	Alluvium	12.8 - 37.6	1,500	170	1.5 J	1,100	3.2
SWFTS-MW20	EM18	4/9/2019	N	440-238618-5	Alluvium	12.8 - 37.6	1,400	300	1.7 J	1,600	2.9
SWFTS-MW20	EM19	5/21/2019	N	440-242084-3	Alluvium	12.8 - 37.6	1,000	69 J	1.3 J	1,600	2.8
SWFTS-MW20	EM20	7/2/2019	N	440-245153-3	Alluvium	12.8 - 37.6	870	37 J	0.70 J	1,400	4.0
SWFTS-MW20	EM21	8/13/2019	N	440-247965-1	Alluvium	12.8 - 37.6	390	23 J	0.41 J	1,400	3.4
SWFTS-MW20	EM22	11/5/2019	N	440-253918-6	Alluvium	12.8 - 37.6	430	26 J	<1.1	1,400	3.4
SWFTS-MW20	EM23	12/17/2019	N	440-257635-12	Alluvium	12.8 - 37.6	290	30 J	<1.1	1,400	2.8
SWFTS-MW20	EM24	1/29/2020	N	440-259981-10	Alluvium	12.8 - 37.6	340	32 J	0.49 J	1,400 J+	3.0
SWFTS-MW20	EM25	3/12/2020	N	440-262887-1	Alluvium	12.8 - 37.6	220	370	0.55 R	1,500	4.8
SWFTS-MW20	EM26	4/29/2020	N	440-265342-5	Alluvium	12.8 - 37.6	180	38 J	<0.28	1,500	4.3
SWFTS-MW20	EM27	7/9/2020	N	440-268679-8	Alluvium	12.8 - 37.6	170	<10	<0.55	2,000	3.0
SWFTS-MW20	EM28	8/20/2020	N	440-270697-1	Alluvium	12.8 - 37.6	89	27 J	<0.55	1,500	4.6
SWFTS-MW20	EM29	10/14/2020	N	440-273303-6	Alluvium	12.8 - 37.6	110	<10	<0.55	1,800	3.8
SWFTS-MW20	EM30	12/9/2020	N	550-154431-14	Alluvium	12.8 - 37.6	140	27 J	0.18 J+	2,100	3.3
SWFTS-MW20	EM31	2/3/2021	N	550-157817-4	Alluvium	12.8 - 37.6	79	<9.8	<0.014	1,800	3.1
SWFTS-MW20	EM32	3/30/2021	N	550-160995-6	Alluvium	12.8 - 37.6	68	24 R	0.057	1,800	3.7
SWFTS-MW20	EM33	6/3/2021	N	550-164869-1	Alluvium	12.8 - 37.6	44	<9.8	<0.014	1,500	3.7
SWFTS-MW20	EM34	7/20/2021	N	550-167449-13	Alluvium	12.8 - 37.6	<31	83	0.037 J	1,600	4.6
SWFTS-MW20	EM35	9/16/2021	N	550-170815-24	Alluvium	12.8 - 37.6	50	140	0.076 J	1,300	4.9
SWFTS-MW20	EM36	11/29/2021	N	550-174897-1	Alluvium	12.8 - 37.6	3.3	76 J	0.054	1,600	4.6
SWFTS-MW20	EM37	3/8/2022	N	550-180407-10	Alluvium	12.8 - 37.6	730	790	0.72	2,500	6.1
SWFTS-MW20	EM38	6/21/2022	N	550-186012-15	Alluvium	12.8 - 37.6	<0.31	28 J	0.017 J	2,800	4.3
SWFTS-MW20	EM39	9/14/2022	N	550-190504-9	Alluvium	12.8 - 37.6	10 J+	43	<0.014	2,700	3.9
SWFTS-MW20	EM40	12/13/2022	N	550-194919-7	Alluvium	12.8 - 37.6	3.0 J	64	0.031 J	2,400	4.8
SWFTS-MW21	BL02	7/13/2017	N	440-188324-5	Alluvium	14.8 - 39.6	5,800	49,000	15	2,600	0.94 J

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Seep Well Field Area Bioremediation Treatability Study

Well	Event	Sample Date	QC Type	Lab Sample ID	Lithology	Screened Interval (ft bgs)	EPA 314.0	EPA 300.1B	Anions by EPA 300.0		SM5310B/ SW9060
							Perchlorate	Chlorate	Nitrate (as N)	Sulfate	Total Organic Carbon
							µg/L	µg/L	mg/L	mg/L	mg/L
SWFTS-MW21	EM01	9/21/2017	N	440-192728-11	Alluvium	14.8 - 39.6	5,200	15,000	3.9	2,600	7.5
SWFTS-MW21	EM02	9/27/2017	N	440-193062-12	Alluvium	14.8 - 39.6	950	4,700	1.8 J	2,800	19
SWFTS-MW21	EM03	10/5/2017	N	440-193712-17	Alluvium	14.8 - 39.6	1,100	7,700	3.2	2,500	24
SWFTS-MW21	EM04	10/11/2017	N	440-194090-8	Alluvium	14.8 - 39.6	820	4,200	1.8	2,500	25
SWFTS-MW21	EM05	10/27/2017	N	440-195218-6	Alluvium	14.8 - 39.6	890	5,000	2.0	2,600	2.8
SWFTS-MW21	EM06	11/15/2017	N	440-196665-5	Alluvium	14.8 - 39.6	2,300	13,000	3.7	2,500	2.1
SWFTS-MW21	EM07	12/13/2017	N	440-198508-10	Alluvium	14.8 - 39.6	3,500	26,000	4.7	2,500 J-	1.6
SWFTS-MW21	EM08	2/20/2018	N	440-203841-9	Alluvium	14.8 - 39.6	4,800	34,000	11	2,600	1.6
SWFTS-MW21	EM08	2/20/2018	FD	440-203841-10	Alluvium	14.8 - 39.6	4,900	33,000	11	2,600	1.6
SWFTS-MW21	EM09	3/27/2018	N	440-207268-14	Alluvium	14.8 - 39.6	4,600	32,000	10	2,800	1.1
SWFTS-MW21	EM10	4/30/2018	N	440-210173-7	Alluvium	14.8 - 39.6	4,400	27,000	10	2,700	1.3
SWFTS-MW21	EM11	7/12/2018	N	440-215717-3	Alluvium	14.8 - 39.6	1,300	7,900	2.8	2,600	3.7
SWFTS-MW21	EM12	7/27/2018	N	440-216872-3	Alluvium	14.8 - 39.6	1,000	9,000	--	--	--
SWFTS-MW21	EM13	8/15/2018	N	440-218208-18	Alluvium	14.8 - 39.6	1,300	2,900	1.9	2,000	2.7
SWFTS-MW21	EM14	9/12/2018	N	440-220031-4	Alluvium	14.8 - 39.6	2,000	2,600	1.3	1,900	2.2
SWFTS-MW21	EM15	10/9/2018	N	440-221855-3	Alluvium	14.8 - 39.6	2,700	2,600	2.9	2,200	1.9
SWFTS-MW21	EM16	12/20/2018	N	440-228491-13	Alluvium	14.8 - 39.6	3,000	5,200	7.5	2,500	1.6
SWFTS-MW21	EM17	2/26/2019	N	440-234812-10	Alluvium	14.8 - 39.6	2,800	2,500	9.3	2,700	1.4
SWFTS-MW21	EM18	4/10/2019	N	440-238531-8	Alluvium	14.8 - 39.6	2,400	200	7.1	2,500	1.3
SWFTS-MW21	EM19	5/22/2019	N	440-242198-3	Alluvium	14.8 - 39.6	3,100	530	9.6	2,600	1.3
SWFTS-MW21	EM20	7/1/2019	N	440-245068-8	Alluvium	14.8 - 39.6	3,400	4,500	11	2,400	1.8
SWFTS-MW21	EM21	8/13/2019	N	440-247965-2	Alluvium	14.8 - 39.6	4,000	5,400	11	2,500	1.5
SWFTS-MW21	EM22	11/4/2019	N	440-253773-3	Alluvium	14.8 - 39.6	690	1,200	1.9	2,500	5.2
SWFTS-MW21	EM23	12/18/2019	N	440-257733-7	Alluvium	14.8 - 39.6	810	230	2.0	2,100	1.5
SWFTS-MW21	EM24	1/30/2020	N	440-260037-2	Alluvium	14.8 - 39.6	2,300	2,500	3.7	2,400	1.4
SWFTS-MW21	EM25	3/11/2020	N	440-262726-4	Alluvium	14.8 - 39.6	2,600	2,700	7.2 J-	2,200	1.4
SWFTS-MW21	EM26	4/29/2020	N	440-265342-1	Alluvium	14.8 - 39.6	4,200	17,000	9.7	1,900	1.5
SWFTS-MW21	EM27	7/10/2020	N	440-268742-1	Alluvium	14.8 - 39.6	1,500	690	3.6	2,200	3.1
SWFTS-MW21	EM28	8/20/2020	N	440-270697-2	Alluvium	14.8 - 39.6	1,700	110	3.1	2,400	2.4
SWFTS-MW21	EM29	10/14/2020	N	440-273303-7	Alluvium	14.8 - 39.6	2,900	62 J	6.0	2,500	1.5
SWFTS-MW21	EM30	12/9/2020	N	550-154431-15	Alluvium	14.8 - 39.6	2,700	52 J	9.0	2,900	1.2
SWFTS-MW21	EM31	2/3/2021	N	550-157817-5	Alluvium	14.8 - 39.6	3,400	<9.8	8.9	2,400	1.2
SWFTS-MW21	EM32	3/30/2021	N	550-160995-5	Alluvium	14.8 - 39.6	1,100	24 R	2.3	2,400	1.6
SWFTS-MW21	EM33	6/2/2021	N	550-164872-15	Alluvium	14.8 - 39.6	600 J-	<9.8 UJ	2.0 J-	2,200 J-	1.4 J-
SWFTS-MW21	EM34	7/20/2021	N	550-167449-6	Alluvium	14.8 - 39.6	890	58 J	2.0	2,500	1.4
SWFTS-MW21	EM35	9/16/2021	N	550-170815-29	Alluvium	14.8 - 39.6	1,200	<24	3.7 J	3,200	1.3
SWFTS-MW21	EM36	12/1/2021	N	550-175045-3	Alluvium	14.8 - 39.6	720	<24	1.9	2,600	1.8
SWFTS-MW21	EM37	3/8/2022	N	550-180407-11	Alluvium	14.8 - 39.6	4,100	15 J	7.6	2,000	1.7 J+
SWFTS-MW21	EM38	6/21/2022	N	550-186012-13	Alluvium	14.8 - 39.6	2,600	42 J	2.7	2,100	1.6 J
SWFTS-MW21	EM39	9/14/2022	N	550-190504-10	Alluvium	14.8 - 39.6	920	26 J	2.3	2,300	1.8
SWFTS-MW21	EM40	12/15/2022	N	550-195106-5	Alluvium	14.8 - 39.6	1,800	<9.8	3.1	2,400	1.9
SWFTS-MW22	BL02	7/13/2017	N	440-188324-1	Alluvium	11.8 - 31.6	5,000	7,900	2.2	980	2.2
SWFTS-MW22	EM01	9/20/2017	N	440-192728-4	Alluvium	11.8 - 31.6	4,000	6,700	1.7	930	2.2
SWFTS-MW22	EM02	9/27/2017	N	440-193167-2	Alluvium	11.8 - 31.6	3,800	6,300	1.7	980	2.6
SWFTS-MW22	EM03	10/5/2017	N	440-193712-14	Alluvium	11.8 - 31.6	3,500	6,000	1.7	920	2.7
SWFTS-MW22	EM04	10/12/2017	N	440-194242-9	Alluvium	11.8 - 31.6	2,600	5,700	1.4	1,000	2.3
SWFTS-MW22	EM05	10/26/2017	N	440-195136-10	Alluvium	11.8 - 31.6	3,700	5,500	1.6	930	2.6
SWFTS-MW22	EM06	11/16/2017	N	440-196786-18	Alluvium	11.8 - 31.6	3,000	4,400	1.3	960	2.5
SWFTS-MW22	EM07	12/14/2017	N	440-198571-17	Alluvium	11.8 - 31.6	2,500	4,900	1.4	1,000	2.6

Table D.1
Groundwater Analytical Results Summary
Seep Well Field Area Bioremediation Treatability Study

Well	Event	Sample Date	QC Type	Lab Sample ID	Lithology	Screened Interval (ft bgs)	EPA 314.0	EPA 300.1B	Anions by EPA 300.0		SM5310B/ SW9060
							Perchlorate	Chlorate	Nitrate (as N)	Sulfate	Total Organic Carbon
							µg/L	µg/L	mg/L	mg/L	mg/L
SWFTS-MW22	EM08	2/21/2018	N	440-203937-1	Alluvium	11.8 - 31.6	2,000	2,400	0.89 J	880	2.4
SWFTS-MW22	EM09	3/28/2018	N	440-207497-1	Alluvium	11.8 - 31.6	2,000	2,600	0.83	900	2.4
SWFTS-MW22	EM10	4/30/2018	N	440-210173-6	Alluvium	11.8 - 31.6	1,900	1,800	<0.055	19	2.2
SWFTS-MW22	EM11	7/10/2018	N	440-215437-9	Alluvium	11.8 - 31.6	2,900	840	0.81	970	2.3
SWFTS-MW22	EM12	7/27/2018	N	440-216872-4	Alluvium	11.8 - 31.6	2,200	3,600	--	--	--
SWFTS-MW22	EM13	8/16/2018	N	440-218296-16	Alluvium	11.8 - 31.6	2,400	1,300	0.95 J+	980	2.4
SWFTS-MW22	EM14	9/11/2018	N	440-219886-5	Alluvium	11.8 - 31.6	2,800	1,600 J+	1.2	1,000	2.2
SWFTS-MW22	EM15	10/9/2018	N	440-221855-2	Alluvium	11.8 - 31.6	3,100	1,600	1.2	930	2.7
SWFTS-MW22	EM16	12/27/2018	N	440-228818-2	Alluvium	11.8 - 31.6	2,400	1,700	1.3	910	2.4
SWFTS-MW22	EM17	2/27/2019	N	440-234933-3	Alluvium	11.8 - 31.6	2,500	2,100	1.5	950	2.4
SWFTS-MW22	EM18	4/11/2019	N	440-238688-2	Alluvium	11.8 - 31.6	2,500	2,700	1.7	1,000	2.4
SWFTS-MW22	EM19	5/21/2019	N	440-242084-4	Alluvium	11.8 - 31.6	2,500	2,500	1.6	930	3.4
SWFTS-MW22	EM20	7/2/2019	N	440-245153-5	Alluvium	11.8 - 31.6	2,300	2,200	1.5	920	2.7
SWFTS-MW22	EM21	8/12/2019	N	440-247878-5	Alluvium	11.8 - 31.6	2,300	2,300	1.3	660	2.6
SWFTS-MW22	EM22	11/5/2019	N	440-253891-4	Alluvium	11.8 - 31.6	2,000	2,300	1.2	820	2.4
SWFTS-MW22	EM23	12/19/2019	N	440-257866-3	Alluvium	11.8 - 31.6	1,600	2,200	0.92	840	2.2
SWFTS-MW22	EM24	1/30/2020	N	440-260037-3	Alluvium	11.8 - 31.6	1,700	2,100	1.0	800	2.2
SWFTS-MW22	EM25	3/11/2020	N	440-262720-7	Alluvium	11.8 - 31.6	1,900	3,100	1.3	820	2.3
SWFTS-MW22	EM26	4/28/2020	N	440-265288-5	Alluvium	11.8 - 31.6	3,000	4,700	1.9	870	2.3
SWFTS-MW22	EM27	7/10/2020	N	440-268742-2	Alluvium	11.8 - 31.6	2,700	4,700	2.0	890	2.7
SWFTS-MW22	EM28	8/20/2020	N	440-270697-3	Alluvium	11.8 - 31.6	4,400	9,600	2.8	980	3.0
SWFTS-MW22	EM29	10/14/2020	N	440-273303-1	Alluvium	11.8 - 31.6	4,400	8,600	3.1	1,000	2.4
SWFTS-MW22	EM30	12/9/2020	N	550-154431-16	Alluvium	11.8 - 31.6	3,500	7,300	2.8	1,000	2.2
SWFTS-MW22	EM31	2/3/2021	N	550-157817-6	Alluvium	11.8 - 31.6	4,700	8,800	2.7	1,000	2.1 J-
SWFTS-MW22	EM32	3/30/2021	N	550-160995-4	Alluvium	11.8 - 31.6	3,600	5,200 J+	2.2	950	2.5
SWFTS-MW22	EM33	6/2/2021	N	550-164872-11	Alluvium	11.8 - 31.6	3,200 J-	6,300 J-	2.3 J-	940 J-	2.1 J-
SWFTS-MW22	EM35	9/16/2021	N	550-170815-28	Alluvium	11.8 - 31.6	3,400	4,800	2.3 J	970	2.3
SWFTS-MW22	EM36	12/2/2021	N	550-175153-1	Alluvium	11.8 - 31.6	3,500	5,700	2.1	1,000	2.7 J+
SWFTS-MW22	EM37	3/8/2022	N	550-180407-9	Alluvium	11.8 - 31.6	3,700	4,800	2.2	920	3.9 J
SWFTS-MW22	EM38	6/21/2022	N	550-186012-14	Alluvium	11.8 - 31.6	5,600	9,400	3.8	1,200	3.0 J
SWFTS-MW22	EM39	9/14/2022	N	550-190504-20	Alluvium	11.8 - 31.6	6,500	11,000	5.0	1,300	2.3
SWFTS-MW22	EM40	12/14/2022	N	550-195013-1	Alluvium	11.8 - 31.6	8,000	15,000	6.0	1,500 J+	1.5 J
SWFTS-MW23	BL02	7/13/2017	N	440-188325-7	Alluvium	13.8 - 33.6	930	20	0.14 J	3,300	2.9
SWFTS-MW23	EM01	9/22/2017	N	440-192818-15	Alluvium	13.8 - 33.6	1,700	160 J	0.64	760	3.1
SWFTS-MW23	EM02	9/28/2017	N	440-193167-13	Alluvium	13.8 - 33.6	1,700	120	0.67	740	3.3
SWFTS-MW23	EM03	10/5/2017	N	440-193712-11	Alluvium	13.8 - 33.6	1,900	<2,000	0.79	760	3.2
SWFTS-MW23	EM04	10/11/2017	N	440-194090-7	Alluvium	13.8 - 33.6	4,000	220	0.88	780	2.9
SWFTS-MW23	EM05	10/26/2017	N	440-195136-11	Alluvium	13.8 - 33.6	2,400	270	1.2	820	2.8
SWFTS-MW23	EM06	11/15/2017	N	440-196665-3	Alluvium	13.8 - 33.6	2,400	270	1.4	900	3.0
SWFTS-MW23	EM07	12/12/2017	N	440-198371-2	Alluvium	13.8 - 33.6	2,800	370	1.5	970	2.7
SWFTS-MW23	EM08	2/21/2018	N	440-203937-14	Alluvium	13.8 - 33.6	2,800	300 J-	1.6	1,000	3.1
SWFTS-MW23	EM09	3/28/2018	N	440-207497-9	Alluvium	13.8 - 33.6	2,100	180	0.83	910	2.8
SWFTS-MW23	EM10	5/2/2018	N	440-210430-5	Alluvium	13.8 - 33.6	1,400	120	0.43	700	2.8
SWFTS-MW23	EM11	7/10/2018	N	440-215437-7	Alluvium	13.8 - 33.6	1,000	18 J	0.11	710	2.7
SWFTS-MW23	EM13	8/16/2018	N	440-218296-17	Alluvium	13.8 - 33.6	870	28	0.055 J	710	3.2
SWFTS-MW23	EM14	9/12/2018	N	440-220031-1	Alluvium	13.8 - 33.6	1,300	52	0.11	720	2.7
SWFTS-MW23	EM15	10/11/2018	N	440-222092-7	Alluvium	13.8 - 33.6	1,500	95 J	<0.28	740	3.2
SWFTS-MW23	EM16	12/28/2018	N	440-228887-6	Alluvium	13.8 - 33.6	1,700	110	0.46	760	2.9
SWFTS-MW23	EM17	2/27/2019	N	440-234933-4	Alluvium	13.8 - 33.6	1,400	66	0.30	780	2.9

Table D.1
Groundwater Analytical Results Summary
Seep Well Field Area Bioremediation Treatability Study

Well	Event	Sample Date	QC Type	Lab Sample ID	Lithology	Screened Interval (ft bgs)	EPA 314.0	EPA 300.1B	Anions by EPA 300.0		SM5310B/ SW9060
							Perchlorate	Chlorate	Nitrate (as N)	Sulfate	Total Organic Carbon
							µg/L	µg/L	mg/L	mg/L	mg/L
SWFTS-MW23	EM18	4/11/2019	N	440-238688-3	Alluvium	13.8 - 33.6	1,400	76	0.26	760	3.3
SWFTS-MW23	EM19	5/22/2019	N	440-242201-7	Alluvium	13.8 - 33.6	1,400	100	0.35	790	2.9
SWFTS-MW23	EM20	7/3/2019	N	440-245218-2	Alluvium	13.8 - 33.6	1,800	160	0.73	740	3.4
SWFTS-MW23	EM21	8/14/2019	N	440-248104-6	Alluvium	13.8 - 33.6	2,500	250	1.2	880	3.1
SWFTS-MW23	EM22	11/5/2019	N	440-253891-5	Alluvium	13.8 - 33.6	3,000	310	1.4	920	2.7
SWFTS-MW23	EM23	12/19/2019	N	440-257866-7	Alluvium	13.8 - 33.6	2,300	290	0.94	930	2.6
SWFTS-MW23	EM24	1/30/2020	N	440-260037-4	Alluvium	13.8 - 33.6	1,700	140	0.66	890	2.7
SWFTS-MW23	EM25	3/10/2020	N	440-262640-3	Alluvium	13.8 - 33.6	1,200	50	0.24 J-	730	3.0
SWFTS-MW23	EM26	4/28/2020	N	440-265288-3	Alluvium	13.8 - 33.6	670	8.8 J	<0.11	700	2.9
SWFTS-MW23	EM27	7/10/2020	N	440-268741-2	Alluvium	13.8 - 33.6	470	<10	<0.11	630	3.3
SWFTS-MW23	EM28	8/20/2020	N	440-270697-4	Alluvium	13.8 - 33.6	740	<10	<0.11	640	3.4
SWFTS-MW23	EM29	10/13/2020	N	440-273236-1	Alluvium	13.8 - 33.6	1,500	39	0.92	650	3.0
SWFTS-MW23	EM30	12/9/2020	N	550-154431-17	Alluvium	13.8 - 33.6	1,800	87	0.31 J+	780	2.7
SWFTS-MW23	EM31	2/3/2021	N	550-157817-7	Alluvium	13.8 - 33.6	2,100	50	0.26	790	2.7
SWFTS-MW23	EM32	3/30/2021	N	550-160995-3	Alluvium	13.8 - 33.6	1,700	50 J+	0.16	760	2.8
SWFTS-MW23	EM33	6/2/2021	N	550-164872-3	Alluvium	13.8 - 33.6	1,500	44	0.25 J-	750	2.6
SWFTS-MW23	EM34	7/21/2021	N	550-167523-8	Alluvium	13.8 - 33.6	1,800	46 J+	0.29	720	2.8 J+
SWFTS-MW23	EM35	9/16/2021	N	550-170815-27	Alluvium	13.8 - 33.6	1,800	45	0.22 J	750	3.0
SWFTS-MW23	EM36	12/2/2021	N	550-175153-15	Alluvium	13.8 - 33.6	1,100	<9.8	0.072	760	2.8 J+
SWFTS-MW23	EM37	3/7/2022	N	550-180322-11	Alluvium	13.8 - 33.6	1,100	350	0.43	740	2.8
SWFTS-MW23	EM38	6/21/2022	N	550-186012-11	Alluvium	13.8 - 33.6	1,700	1,600	10	750	3.4 J
SWFTS-MW23	EM39	9/15/2022	N	550-190606-1	Alluvium	13.8 - 33.6	1,000	550	3.4	670	3.0
SWFTS-MW23	EM40	12/13/2022	N	550-194919-5	Alluvium	13.8 - 33.6	1,100	160	0.81	670	2.6
SWFTS-MW24	BL02	7/13/2017	N	440-188324-2	Alluvium	12.8 - 37.6	13,000	47,000	13	1,900	1.3
SWFTS-MW24	EM01	9/22/2017	N	440-192818-9	Alluvium	12.8 - 37.6	9,400	32,000	9.0	1,900	1.7
SWFTS-MW24	EM02	9/28/2017	N	440-193167-12	Alluvium	12.8 - 37.6	5,200	12,000	4.5	1,900	4.3
SWFTS-MW24	EM03	10/5/2017	N	440-193712-12	Alluvium	12.8 - 37.6	7,800	34,000	9.4	3,900	2.0
SWFTS-MW24	EM04	10/11/2017	N	440-194242-2	Alluvium	12.8 - 37.6	4,400	17,000	4.7	1,900	1.9
SWFTS-MW24	EM05	10/26/2017	N	440-195136-3	Alluvium	12.8 - 37.6	7,000	24,000	7.9	1,900	2.0 J-
SWFTS-MW24	EM06	11/15/2017	N	440-196665-1	Alluvium	12.8 - 37.6	4,100	14,000	3.9	1,900	1.9
SWFTS-MW24	EM07	12/12/2017	N	440-198371-5	Alluvium	12.8 - 37.6	6,600	26,000	6.1	1,900	1.5
SWFTS-MW24	EM08	2/21/2018	N	440-203937-8	Alluvium	12.8 - 37.6	6,100	22,000	6.9	1,800	2.0
SWFTS-MW24	EM09	3/28/2018	N	440-207497-12	Alluvium	12.8 - 37.6	4,800	15,000	5.4	1,600 J	1.6
SWFTS-MW24	EM10	5/2/2018	N	440-210430-7	Alluvium	12.8 - 37.6	4,800	12,000	6.6	2,000	1.5
SWFTS-MW24	EM11	7/12/2018	N	440-215717-5	Alluvium	12.8 - 37.6	5,000	6,100	7.3	1,800	1.3
SWFTS-MW24	EM12	7/27/2018	N	440-216872-5	Alluvium	12.8 - 37.6	4,000	7,100	--	--	--
SWFTS-MW24	EM13	8/15/2018	N	440-218208-11	Alluvium	12.8 - 37.6	4,000	4,800	7.6	1,800	1.9
SWFTS-MW24	EM14	9/12/2018	N	440-220031-3	Alluvium	12.8 - 37.6	3,700	3,500	6.1	1,800	1.6
SWFTS-MW24	EM15	10/10/2018	N	440-221975-7	Alluvium	12.8 - 37.6	3,500	2,700	6.5	1,700	2.0
SWFTS-MW24	EM16	1/2/2019	N	440-229018-2	Alluvium	12.8 - 37.6	3,500	2,000	7.7	1,800	1.7
SWFTS-MW24	EM17	2/27/2019	N	440-234938-2	Alluvium	12.8 - 37.6	3,400	2,100	7.8	1,700	1.5
SWFTS-MW24	EM18	4/10/2019	N	440-238531-6	Alluvium	12.8 - 37.6	2,700	1,100	6.1	1,700	1.5
SWFTS-MW24	EM19	5/22/2019	N	440-242198-1	Alluvium	12.8 - 37.6	2,700	1,900	5.8	1,700	1.6
SWFTS-MW24	EM20	7/1/2019	N	440-245068-9	Alluvium	12.8 - 37.6	2,800	1,900	5.1	1,900	2.0
SWFTS-MW24	EM21	8/14/2019	N	440-248104-1	Alluvium	12.8 - 37.6	3,400	5,500	6.9	1,700	1.9
SWFTS-MW24	EM22	11/5/2019	N	440-253891-2	Alluvium	12.8 - 37.6	3,500	6,900	6.9	1,700	1.6
SWFTS-MW24	EM23	12/19/2019	N	440-257866-6	Alluvium	12.8 - 37.6	2,400	2,400	5.4	1,600	1.4
SWFTS-MW24	EM24	1/30/2020	N	440-260037-5	Alluvium	12.8 - 37.6	2,500	2,900	4.8	1,600	1.6
SWFTS-MW24	EM25	3/10/2020	N	440-262640-1	Alluvium	12.8 - 37.6	3,400	6,000	4.9 J-	1,500	1.5

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Seep Well Field Area Bioremediation Treatability Study

Well	Event	Sample Date	QC Type	Lab Sample ID	Lithology	Screened Interval (ft bgs)	EPA 314.0	EPA 300.1B	Anions by EPA 300.0		SM5310B/ SW9060
							Perchlorate	Chlorate	Nitrate (as N)	Sulfate	Total Organic Carbon
							µg/L	µg/L	mg/L	mg/L	mg/L
SWFTS-MW24	EM26	4/28/2020	N	440-265288-1	Alluvium	12.8 - 37.6	5,800	15,000	6.9	1,500	1.4
SWFTS-MW24	EM27	7/10/2020	N	440-268742-3	Alluvium	12.8 - 37.6	4,800	12,000	6.7	1,600	2.1
SWFTS-MW24	EM28	8/18/2020	N	440-270571-8	Alluvium	12.8 - 37.6	3,900	7,700	5.3	1,400	2.3
SWFTS-MW24	EM29	10/12/2020	N	440-273153-1	Alluvium	12.8 - 37.6	3,800	5,300	5.3	1,600	1.9
SWFTS-MW24	EM30	12/9/2020	N	550-154431-18	Alluvium	12.8 - 37.6	3,600	6,800	5.5	1,600	1.4
SWFTS-MW24	EM31	2/3/2021	N	550-157817-8	Alluvium	12.8 - 37.6	3,900	4,800 J+	5.9	1,600	1.5
SWFTS-MW24	EM32	3/30/2021	N	550-160995-1	Alluvium	12.8 - 37.6	3,500	4,900 J+	5.4	1,600	1.4
SWFTS-MW24	EM33	6/2/2021	N	550-164872-7	Alluvium	12.8 - 37.6	2,600	3,700	4.7	1,600	1.4
SWFTS-MW24	EM34	7/19/2021	N	550-167353-1	Alluvium	12.8 - 37.6	3,100	4,000	3.9	1,500	1.6
SWFTS-MW24	EM35	9/16/2021	N	550-170815-26	Alluvium	12.8 - 37.6	4,200	6,700	5.0 J	1,700	1.6
SWFTS-MW24	EM36	12/1/2021	N	550-175045-17	Alluvium	12.8 - 37.6	5,100	11,000	6.1	1,900	1.5
SWFTS-MW24	EM37	3/8/2022	N	550-180407-7	Alluvium	12.8 - 37.6	5,300	9,900	5.2	1,700	1.5 J+
SWFTS-MW24	EM38	6/21/2022	N	550-186012-12	Alluvium	12.8 - 37.6	7,900	15,000	6.8	1,700	1.6 J
SWFTS-MW24	EM39	9/15/2022	N	550-190606-2	Alluvium	12.8 - 37.6	6,200	11,000	7.5	1,800	1.5
SWFTS-MW24	EM40	12/13/2022	N	550-194919-3	Alluvium	12.8 - 37.6	5,000	16,000	10	1,800	1.5
SWFTS-MW25	BL02	7/13/2017	N	440-188324-4	Alluvium	12.8 - 42.6	17,000	43,000	10	1,700	1.8
SWFTS-MW25	EM01	9/22/2017	N	440-192818-14	Alluvium	12.8 - 42.6	280	<200	<0.55	1,800	13
SWFTS-MW25	EM02	9/28/2017	N	440-193167-11	Alluvium	12.8 - 42.6	370	130	<0.55	1,900	4.8
SWFTS-MW25	EM03	10/5/2017	N	440-193712-9	Alluvium	12.8 - 42.6	230	<500	<0.55	1,600	3.3
SWFTS-MW25	EM04	10/11/2017	N	440-194242-1	Alluvium	12.8 - 42.6	140	160	<0.55	1,600	2.7
SWFTS-MW25	EM05	10/26/2017	N	440-195136-2	Alluvium	12.8 - 42.6	420	170	<0.28	830	2.6
SWFTS-MW25	EM06	11/15/2017	N	440-196665-2	Alluvium	12.8 - 42.6	440	630	<0.55	1,400	2.5
SWFTS-MW25	EM07	12/12/2017	N	440-198371-1	Alluvium	12.8 - 42.6	2,300	1,700	<0.55	1,300	2.3
SWFTS-MW25	EM08	2/21/2018	N	440-203937-7	Alluvium	12.8 - 42.6	2,800	4,700	<1.1	1,500	2.4
SWFTS-MW25	EM09	3/28/2018	N	440-207497-13	Alluvium	12.8 - 42.6	4,600	11,000	2.8	1,400	2.0
SWFTS-MW25	EM10	5/3/2018	N	440-210534-2	Alluvium	12.8 - 42.6	5,700	3,600	4.2	1,600	1.9
SWFTS-MW25	EM11	7/10/2018	N	440-215437-12	Alluvium	12.8 - 42.6	4,300	2,100	3.6	1,500	1.7
SWFTS-MW25	EM12	7/27/2018	N	440-216872-6	Alluvium	12.8 - 42.6	3,500	2,300	--	--	--
SWFTS-MW25	EM13	8/15/2018	N	440-218208-10	Alluvium	12.8 - 42.6	4,500	4,300	5.2	1,500	2.3
SWFTS-MW25	EM14	9/12/2018	N	440-220031-2	Alluvium	12.8 - 42.6	5,200	6,800	6.9	1,400	1.9
SWFTS-MW25	EM15	10/11/2018	N	440-222092-6	Alluvium	12.8 - 42.6	5,000	7,600	7.9	1,400	2.0
SWFTS-MW25	EM16	1/2/2019	N	440-229018-1	Alluvium	12.8 - 42.6	6,300	11,000	8.7	1,500	2.0
SWFTS-MW25	EM17	2/27/2019	N	440-234933-5	Alluvium	12.8 - 42.6	4,000	6,400	4.9	1,400	2.0
SWFTS-MW25	EM18	4/11/2019	N	440-238688-4	Alluvium	12.8 - 42.6	5,300	13,000	7.4	1,400	2.1
SWFTS-MW25	EM19	5/22/2019	N	440-242201-6	Alluvium	12.8 - 42.6	5,700	15,000	9.2	1,400	1.9
SWFTS-MW25	EM20	7/3/2019	N	440-245218-1	Alluvium	12.8 - 42.6	5,600	15,000	8.1	1,200	2.2
SWFTS-MW25	EM21	8/14/2019	N	440-248104-4	Alluvium	12.8 - 42.6	6,600	19,000	8.2	1,200	2.5
SWFTS-MW25	EM22	11/5/2019	N	440-253918-4	Alluvium	12.8 - 42.6	6,100	14,000	7.7	1,200	1.8
SWFTS-MW25	EM23	12/19/2019	N	440-257866-8	Alluvium	12.8 - 42.6	6,000	15,000	7.4	1,200	1.7
SWFTS-MW25	EM24	1/30/2020	N	440-260037-6	Alluvium	12.8 - 42.6	7,500	21,000	8.7	1,300	1.9
SWFTS-MW25	EM25	3/10/2020	N	440-262640-2	Alluvium	12.8 - 42.6	8,300	22,000	8.6 J-	1,300	2.0
SWFTS-MW25	EM26	4/28/2020	N	440-265288-2	Alluvium	12.8 - 42.6	8,400	23,000	9.5	1,400	1.8
SWFTS-MW25	EM27	7/10/2020	N	440-268741-1	Alluvium	12.8 - 42.6	7,600	17,000	7.1	1,500	2.3
SWFTS-MW25	EM28	8/19/2020	N	440-270632-1	Alluvium	12.8 - 42.6	7,600	19,000	8.5	1,400	2.8
SWFTS-MW25	EM29	10/13/2020	N	440-273236-2	Alluvium	12.8 - 42.6	7,600	19,000	9.5	1,400	1.9
SWFTS-MW25	EM30	12/9/2020	N	550-154431-19	Alluvium	12.8 - 42.6	7,100	17,000	9.5	1,300	1.5
SWFTS-MW25	EM31	2/4/2021	N	550-157924-1	Alluvium	12.8 - 42.6	8,800	9,200 J+	9.3	1,400 J-	2.0
SWFTS-MW25	EM32	3/30/2021	N	550-160995-2	Alluvium	12.8 - 42.6	4,800	8,600	4.6	1,300	2.2
SWFTS-MW25	EM33	6/2/2021	N	550-164872-5	Alluvium	12.8 - 42.6	7,000	14,000	7.1 J-	1,200	1.8 J

Table D.1
Groundwater Analytical Results Summary
Seep Well Field Area Bioremediation Treatability Study

Well	Event	Sample Date	QC Type	Lab Sample ID	Lithology	Screened Interval (ft bgs)	EPA 314.0	EPA 300.1B	Anions by EPA 300.0		SM5310B/ SW9060
							Perchlorate	Chlorate	Nitrate (as N)	Sulfate	Total Organic Carbon
							µg/L	µg/L	mg/L	mg/L	mg/L
SWFTS-MW25	EM34	7/21/2021	N	550-167523-7	Alluvium	12.8 - 42.6	10,000	15,000	8.2	1,200	2.1 J+
SWFTS-MW25	EM35	9/16/2021	N	550-170815-25	Alluvium	12.8 - 42.6	13,000	9,700	9.1 J	1,300	2.4
SWFTS-MW25	EM36	12/1/2021	N	550-175045-19	Alluvium	12.8 - 42.6	13,000	19,000	6.1	1,500	1.9
SWFTS-MW25	EM37	3/7/2022	N	550-180322-10	Alluvium	12.8 - 42.6	13,000	240	9.3	1,600	1.8
SWFTS-MW25	EM38	6/21/2022	N	550-186012-10	Alluvium	12.8 - 42.6	12,000	11,000	15	2,100	3.1 J
SWFTS-MW25	EM39	9/15/2022	N	550-190606-3	Alluvium	12.8 - 42.6	9,600	15,000	16	2,000	3.3 J
SWFTS-MW25	EM40	12/13/2022	N	550-194919-1	Alluvium	12.8 - 42.6	8,800	17,000	15	1,700	2.0

Notes:
1. Lithology of monitoring well COH-2B1 was inferred from state records of well construction and generalized stratigraphy.
FD - Field duplicate
J The result is an estimated quantity. The associated numerical value is the approximate concentration of the analyte.
J- The result is an estimated quantity, but the result may be biased low.
J+ The result is an estimated quantity, but the result may be biased high.
mg/L - milligrams per liter
µg/L - micrograms per liter
N - Normal field sample
UMCf- Upper Muddy Creek Formation
R The data are unusable. The sample results are rejected due to serious deficiencies in meeting QC criteria. The
< The analyte was analyzed for, but was not detected above the level of the reported sample quantitation limit.
--- Not tested.

Table D.2
Groundater Analytical Results Summary - Secondary Parameters
Seep Well Field Area Bioremediation Treatability Study

Well	Event	Sample Date	QC Type	Lab Sample ID	Lithology	Screened Interval (ft bgs)	Anions by EPA 300.0		Dissolved Gases by RSK-175	Dissolved Metals by SW6010	Dissolved Metals by SW6010	Dissolved Metals by SW6010	Dissolved Metals by SW6010	Dissolved Metals by SW6010	Dissolved Metals by SW6010
							Chloride	Nitrite (as N)	Methane	Aluminum	Barium	Beryllium	Boron	Cadmium	Calcium
							mg/L	mg/L	µg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
COH-2B1	BL02	8/9/2017	N	440-189933-1	Alluvium/UMCf	36.0 - 66.0	520	--	--	<0.050	0.018	<0.0010	1.4	<0.0025	160
COH-2B1	EM04	10/12/2017	N	440-194204-2	Alluvium/UMCf	36.0 - 66.0	570	--	--	<0.050	0.016	<0.0010	1.5	<0.0025	160
COH-2B1	EM07	12/14/2017	N	440-198571-5	Alluvium/UMCf	36.0 - 66.0	--	--	--	--	--	--	--	--	--
COH-2B1	EM08	2/22/2018	N	440-204033-6	Alluvium/UMCf	36.0 - 66.0	--	--	--	--	--	--	--	--	--
COH-2B1	EM09	3/29/2018	N	440-207586-2	Alluvium/UMCf	36.0 - 66.0	--	--	--	--	--	--	--	--	--
COH-2B1	EM10	5/2/2018	N	440-210430-11	Alluvium/UMCf	36.0 - 66.0	--	--	--	--	--	--	--	--	--
COH-2B1	EM11	7/10/2018	N	440-215437-6	Alluvium/UMCf	36.0 - 66.0	--	--	--	<0.050	0.017	<0.0010	1.5	<0.0025	190
COH-2B1	EM15	10/11/2018	N	440-222092-1	Alluvium/UMCf	36.0 - 66.0	--	--	--	<0.25	<0.025	<0.0050	1.5	<0.013	160
COH-2B1	EM19	5/22/2019	N	440-242201-5	Alluvium/UMCf	36.0 - 66.0	--	--	--	<0.050	0.015	<0.0010	1.4	<0.0025	150
COH-2B1	EM22	11/4/2019	N	440-253773-1	Alluvium/UMCf	36.0 - 66.0	--	--	<0.25	0.37	0.020	<0.0010	1.5	<0.0025	210
COH-2B1	EM26	4/27/2020	N	440-265243-1	Alluvium/UMCf	36.0 - 66.0	--	--	--	<0.050	0.014	<0.0010	1.2	<0.0025	140
COH-2B1	EM29	10/13/2020	N	440-273236-9	Alluvium/UMCf	36.0 - 66.0	--	--	0.34 J	<0.050	0.013	<0.0010	1.5	<0.0025	250
PC-58	BL01	3/28/2017	N	440-180820-1	Alluvium	7.8 - 32.8	--	--	--	<0.050	0.020	<0.0010	2.0	<0.0025	220
PC-58	BL02	7/13/2017	N	440-188324-3	Alluvium	7.8 - 32.8	520	--	--	<0.050	0.025	<0.0010	2.0	<0.0025	230
PC-58	EM04	10/11/2017	N	440-194094-6	Alluvium	7.8 - 32.8	440	--	--	<0.050	0.015	<0.0010	1.7	<0.0025	160
PC-58	EM06	11/16/2017	N	440-196786-11	Alluvium	7.8 - 32.8	610	--	--	--	--	--	--	--	--
PC-58	EM07	12/14/2017	N	440-198571-9	Alluvium	7.8 - 32.8	--	--	--	--	--	--	--	--	--
PC-58	EM08	2/21/2018	N	440-203937-13	Alluvium	7.8 - 32.8	--	--	--	--	--	--	--	--	--
PC-58	EM09	3/28/2018	N	440-207497-6	Alluvium	7.8 - 32.8	--	--	--	--	--	--	--	--	--
PC-58	EM10	5/2/2018	N	440-210430-10	Alluvium	7.8 - 32.8	--	--	--	--	--	--	--	--	--
PC-58	EM11	7/11/2018	N	440-215717-7	Alluvium	7.8 - 32.8	--	--	--	<0.050	0.018	<0.0010	1.8	<0.0025	190
PC-58	EM15	10/11/2018	N	440-222092-19	Alluvium	7.8 - 32.8	--	--	--	0.081 J	0.016	<0.0010	1.5	<0.0025	150
PC-58	EM19	5/22/2019	N	440-242200-7	Alluvium	7.8 - 32.8	--	--	--	<0.050	0.017	<0.0010	1.9	<0.0025	190
PC-58	EM22	11/7/2019	N	440-254148-1	Alluvium	7.8 - 32.8	--	--	<0.25	0.072 J	0.017	<0.0010	1.3	<0.0025	140
PC-58	EM26	5/1/2020	N	440-265414-3	Alluvium	7.8 - 32.8	--	--	--	<0.050	0.017	<0.0010	1.6	<0.0025	160
PC-58	EM29	10/16/2020	N	440-273433-5	Alluvium	7.8 - 32.8	--	--	0.14 J	0.067 J	0.013	<0.0010	1.3	<0.0025	97
PC-58	EM33	6/2/2021	N	550-164872-23	Alluvium	7.8 - 32.8	--	--	--	--	--	--	--	--	--
PC-58	EM33	6/2/2021	N	550-164872-24	Alluvium	7.8 - 32.8	--	--	--	0.19 J	0.017 J+	<0.00019	1.2	<0.00072	120
PC-58	EM36	12/3/2021	N	550-175222-11	Alluvium	7.8 - 32.8	--	--	<0.63	--	--	--	--	--	--
PC-58	EM36	12/3/2021	N	550-175222-12	Alluvium	7.8 - 32.8	--	--	--	0.18 J	0.017	<0.00019	1.4	<0.00072	120
PC-58	EM40	12/12/2022	N	550-194841-5	Alluvium	7.8 - 32.8	--	--	<0.63	--	--	--	--	--	--
PC-58	EM40	12/12/2022	N	550-194841-6	Alluvium	7.8 - 32.8	--	--	--	0.85	0.034	<0.00019	1.5	<0.00072	170
PC-88	EM04	10/11/2017	N	440-194090-2	Alluvium	40.0 - 50.0	810	--	--	<0.050	0.016	<0.0010	1.5	<0.0025	180
PC-88	EM04	10/11/2017	FD	440-194090-3	Alluvium	40.0 - 50.0	800	--	--	<0.050	0.017	<0.0010	1.5	<0.0025	180
PC-88	EM06	11/15/2017	N	440-196690-9	Alluvium	40.0 - 50.0	800	--	--	--	--	--	--	--	--
PC-88	EM06	11/15/2017	FD	440-196690-10	Alluvium	40.0 - 50.0	800	--	--	--	--	--	--	--	--
PC-88	EM07	12/14/2017	N	440-198571-11	Alluvium	40.0 - 50.0	--	--	--	--	--	--	--	--	--
PC-88	EM08	2/22/2018	N	440-204033-10	Alluvium	40.0 - 50.0	--	--	--	--	--	--	--	--	--
PC-88	EM09	3/29/2018	N	440-207586-3	Alluvium	40.0 - 50.0	--	--	--	--	--	--	--	--	--
PC-88	EM10	5/2/2018	N	440-210430-8	Alluvium	40.0 - 50.0	--	--	--	--	--	--	--	--	--
PC-88	EM10	5/2/2018	FD	440-210430-9	Alluvium	40.0 - 50.0	--	--	--	--	--	--	--	--	--
PC-88	EM11	7/12/2018	N	440-215717-11	Alluvium	40.0 - 50.0	--	--	--	<0.050	0.020	<0.0010	1.1	<0.0025	150
PC-88	EM11	7/12/2018	FD	440-215717-12	Alluvium	40.0 - 50.0	--	--	--	<0.050	0.019	<0.0010	1.1	<0.0025	150
PC-88	EM15	10/11/2018	N	440-222092-15	Alluvium	40.0 - 50.0	--	--	--	0.088 J	0.019	<0.0010	1.5	<0.0025	180
PC-88	EM15	10/11/2018	FD	440-222092-16	Alluvium	40.0 - 50.0	--	--	--	0.059 J	0.020	<0.0010	1.4	<0.0025	180
PC-88	EM19	5/22/2019	N	440-242201-2	Alluvium	40.0 - 50.0	--	--	--	<0.050	0.015	<0.0010	1.2	<0.0025	130
PC-88	EM19	5/22/2019	FD	440-242201-3	Alluvium	40.0 - 50.0	--	--	--	<0.050	0.014	<0.0010	1.1	<0.0025	120
PC-88	EM22	11/7/2019	N	440-254148-2	Alluvium	40.0 - 50.0	--	--	<0.25	<0.050	0.015	<0.0010	0.96	<0.0025	130
PC-88	EM22	11/7/2019	FD	440-254148-3	Alluvium	40.0 - 50.0	--	--	<0.25	<0.050	0.016	<0.0010	1.0	<0.0025	120
PC-88	EM26	5/1/2020	N	440-265412-2	Alluvium	40.0 - 50.0	--	--	--	0.051 J	0.017	<0.0010	1.2	<0.0025	140
PC-88	EM26	5/1/2020	FD	440-265412-3	Alluvium	40.0 - 50.0	--	--	--	0.050 J	0.017	<0.0010	1.2	<0.0025	140
PC-88	EM29	10/15/2020	N	550-151259-10	Alluvium	40.0 - 50.0	--	--	<0.078	<0.050	0.017	<0.0010	0.98	<0.0025	160
PC-88	EM29	10/15/2020	FD	550-151259-11	Alluvium	40.0 - 50.0	--	--	<0.078	<0.050	0.017	<0.0010	0.98	<0.0025	160
PC-88	EM33	6/3/2021	N	550-164869-25	Alluvium	40.0 - 50.0	--	--	--	--	--	--	--	--	--
PC-88	EM33	6/3/2021	N	550-164869-26	Alluvium	40.0 - 50.0	--	--	--	0.11 J	0.0094 J+	0.00022 J	0.73	<0.00072	77
PC-88	EM33	6/3/2021	FD	550-164869-27	Alluvium	40.0 - 50.0	--	--	--	--	--	--	--	--	--
PC-88	EM33	6/3/2021	FD	550-164869-28	Alluvium	40.0 - 50.0	--	--	--	0.12 J	0.0090 J+	<0.00019	0.74	<0.00072	77
PC-88	EM36	12/2/2021	N	550-175153-5	Alluvium	40.0 - 50.0	--	--	<0.63	--	--	--	--	--	--
PC-88	EM36	12/2/2021	N	550-175153-6	Alluvium	40.0 - 50.0	--	--	--	0.11 J	0.011 J+	<0.00019	0.81	<0.00072	89
PC-88	EM36	12/2/2021	FD	550-175153-7	Alluvium	40.0 - 50.0	--	--	<0.63	--	--	--	--	--	--
PC-88	EM36	12/2/2021	FD	550-175153-8	Alluvium	40.0 - 50.0	--	--	--	0.097 J	0.012 J+	<0.00019	0.84	<0.00072	90
PC-88	EM40	12/12/2022	N	550-194841-1	Alluvium	40.0 - 50.0	--	--	<0.63	--	--	--	--	--	--
PC-88	EM40	12/12/2022	N	550-194841-2	Alluvium	40.0 - 50.0	--	--	--	0.74	0.026	<0.00019	1.2	<0.00072	210
PC-88	EM40	12/12/2022	FD	550-194841-3	Alluvium	40.0 - 50.0	--	--	<0.63	--	--	--	--	--	--

Table D.2
Groundater Analytical Results Summary - Secondary Parameters
Seep Well Field Area Bioremediation Treatability Study

Well	Event	Sample Date	QC Type	Lab Sample ID	Lithology	Screened Interval (ft bgs)	Anions by EPA 300.0		Dissolved Gases by RSK-175	Dissolved Metals by SW6010	Dissolved Metals by SW6010	Dissolved Metals by SW6010	Dissolved Metals by SW6010	Dissolved Metals by SW6010	Dissolved Metals by SW6010
							Chloride	Nitrite (as N)	Methane	Aluminum	Barium	Beryllium	Boron	Cadmium	Calcium
							mg/L	mg/L	µg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
PC-88	EM40	12/12/2022	FD	550-194841-4	Alluvium	40.0 - 50.0	--	--	--	0.55	0.025	<0.00019	1.3	<0.00072	210
PC-91	BL01	3/29/2017	N	440-180937-1	Alluvium	11.5 - 21.5	590	--	--	<0.050	0.012	<0.0010	1.3	<0.0025	150
PC-91	BL02	7/12/2017	N	440-188247-5	Alluvium	11.5 - 21.5	630	--	--	<0.050	0.012	<0.0010	1.3	<0.0025	160
PC-91	BL02	7/12/2017	FD	440-188244-4	Alluvium	11.5 - 21.5	600	--	--	<0.050	0.012	<0.0010	1.3	<0.0025	140
PC-91	EM04	10/12/2017	N	440-194204-3	Alluvium	11.5 - 21.5	580	--	--	<0.050	0.011	<0.0010	1.2	<0.0025	130
PC-91	EM06	11/16/2017	N	440-196786-8	Alluvium	11.5 - 21.5	520	--	--	--	--	--	--	--	--
PC-91	EM07	12/13/2017	N	440-198508-9	Alluvium	11.5 - 21.5	--	<0.14	--	<0.050	0.014	<0.0010	1.4	<0.0025	130
PC-91	EM08	2/20/2018	N	440-203841-1	Alluvium	11.5 - 21.5	--	--	--	--	--	--	--	--	--
PC-91	EM09	3/26/2018	N	440-207137-1	Alluvium	11.5 - 21.5	--	--	--	--	--	--	--	--	--
PC-91	EM10	5/1/2018	N	440-210284-3	Alluvium	11.5 - 21.5	--	--	--	--	--	--	--	--	--
PC-91	EM11	7/11/2018	N	440-215585-6	Alluvium	11.5 - 21.5	--	--	--	<0.050	0.015	<0.0010	1.5	<0.0025	160
PC-91	EM15	10/10/2018	N	440-221975-16	Alluvium	11.5 - 21.5	--	--	--	<0.25	<0.025	<0.0050	1.7	<0.013	190
PC-91	EM19	5/21/2019	N	440-242084-9	Alluvium	11.5 - 21.5	--	--	--	<0.050	0.026	<0.0010	1.9	<0.0025	190
PC-91	EM22	11/6/2019	N	440-254027-3	Alluvium	11.5 - 21.5	--	--	330	0.051 J	0.044	<0.0010	2.2	<0.0025	180
PC-91	EM26	4/30/2020	N	440-265382-2	Alluvium	11.5 - 21.5	--	--	--	<0.050	0.021	<0.0010	1.3	<0.0025	140
PC-91	EM29	10/14/2020	N	440-273303-11	Alluvium	11.5 - 21.5	--	--	950	0.061 J	0.082	<0.0010	1.7	<0.0025	150
PC-91	EM33	6/2/2021	N	550-164872-17	Alluvium	11.5 - 21.5	--	--	--	--	--	--	--	--	--
PC-91	EM33	6/2/2021	N	550-164872-18	Alluvium	11.5 - 21.5	--	--	--	0.12 J	0.56	<0.00019	1.8	<0.00072	160
PC-91	EM36	11/30/2021	N	550-174968-1	Alluvium	11.5 - 21.5	--	--	12,000	--	--	--	--	--	--
PC-91	EM36	11/30/2021	N	550-174968-2	Alluvium	11.5 - 21.5	--	--	--	<0.080	0.087	<0.00019	1.5	<0.00072	72
PC-91	EM40	12/12/2022	N	550-194841-7	Alluvium	11.5 - 21.5	--	--	6,400	--	--	--	--	--	--
PC-91	EM40	12/12/2022	N	550-194841-8	Alluvium	11.5 - 21.5	--	--	--	0.40	0.20	<0.00019	1.5	<0.00072	190
PC-92	BL01	3/29/2017	N	440-180937-2	Alluvium	26.5 - 36.5	970	--	--	<0.050	0.018	<0.0010	1.8	<0.0025	300
PC-92	BL02	7/12/2017	N	440-188247-6	Alluvium	26.5 - 36.5	800	--	--	<0.050	0.017	<0.0010	1.4	<0.0025	190
PC-92	EM04	10/12/2017	N	440-194204-4	Alluvium	26.5 - 36.5	710	<0.35	<0.25	<0.050	0.016	<0.0010	1.2	<0.0025	200
PC-92	EM04	10/12/2017	FD	440-194204-5	Alluvium	26.5 - 36.5	670	<0.35	<0.25	<0.050	0.016	<0.0010	1.3	<0.0025	200
PC-92	EM06	11/16/2017	N	440-196786-9	Alluvium	26.5 - 36.5	500	--	--	--	--	--	--	--	--
PC-92	EM06	11/16/2017	FD	440-196786-10	Alluvium	26.5 - 36.5	600	--	--	--	--	--	--	--	--
PC-92	EM07	12/14/2017	N	440-198571-7	Alluvium	26.5 - 36.5	--	<0.14	<0.25	<0.050	0.029	<0.0010	1.5	<0.0025	240
PC-92	EM07	12/14/2017	FD	440-198571-8	Alluvium	26.5 - 36.5	--	<0.35	<0.25	<0.050	0.027	<0.0010	1.4	<0.0025	220
PC-92	EM08	2/20/2018	N	440-203841-2	Alluvium	26.5 - 36.5	--	--	--	--	--	--	--	--	--
PC-92	EM08	2/20/2018	FD	440-203841-3	Alluvium	26.5 - 36.5	--	--	--	--	--	--	--	--	--
PC-92	EM09	3/26/2018	N	440-207137-2	Alluvium	26.5 - 36.5	--	--	--	--	--	--	--	--	--
PC-92	EM09	3/26/2018	FD	440-207137-3	Alluvium	26.5 - 36.5	--	--	--	--	--	--	--	--	--
PC-92	EM10	5/1/2018	N	440-210284-4	Alluvium	26.5 - 36.5	--	--	--	--	--	--	--	--	--
PC-92	EM11	7/11/2018	N	440-215585-5	Alluvium	26.5 - 36.5	--	--	--	<0.050	0.018	<0.0010	1.6	<0.0025	230
PC-92	EM15	10/11/2018	N	440-222092-17	Alluvium	26.5 - 36.5	--	--	--	0.068 J	0.017	<0.0010	1.6	<0.0025	210
PC-92	EM19	5/21/2019	N	440-242084-10	Alluvium	26.5 - 36.5	--	--	--	<0.050	0.019	<0.0010	1.0	<0.0025	150
PC-92	EM22	11/6/2019	N	440-254027-2	Alluvium	26.5 - 36.5	--	--	5.50	0.057 J	0.019	<0.0010	1.3	<0.0025	220
PC-92	EM26	4/30/2020	N	440-265382-1	Alluvium	26.5 - 36.5	--	--	--	<0.050	0.024	<0.0010	1.1	<0.0025	190
PC-92	EM29	10/14/2020	N	440-273303-10	Alluvium	26.5 - 36.5	--	--	0.14 J	0.060 J	0.016	<0.0010	1.4	<0.0025	220
PC-92	EM33	6/2/2021	N	550-164872-19	Alluvium	26.5 - 36.5	--	--	--	--	--	--	--	--	--
PC-92	EM33	6/2/2021	N	550-164872-20	Alluvium	26.5 - 36.5	--	--	--	0.25	0.018 J+	<0.00019	1.5	<0.00072	240
PC-92	EM36	11/30/2021	N	550-174968-3	Alluvium	26.5 - 36.5	--	--	320	--	--	--	--	--	--
PC-92	EM36	11/30/2021	N	550-174968-4	Alluvium	26.5 - 36.5	--	--	--	0.25	0.032	<0.00019	1.7	<0.00072	270
PC-92	EM40	12/13/2022	N	550-194920-1	Alluvium	26.5 - 36.5	--	--	<0.63	--	--	--	--	--	--
PC-92	EM40	12/13/2022	N	550-194920-2	Alluvium	26.5 - 36.5	--	--	--	0.20	0.018	0.00028 J	1.2	<0.00072	180
PC-94	BL01	3/28/2017	N	440-180820-2	Alluvium	9.5 - 19.5	1,300	--	--	<0.050	0.026	<0.0010	2.9	<0.0025	390
PC-94	BL02	7/13/2017	N	440-188325-1	Alluvium	9.5 - 19.5	1,300	--	--	0.37	0.033	<0.0010	2.7	<0.0025	430
PC-94	EM04	10/11/2017	N	440-194090-6	Alluvium	9.5 - 19.5	1,200	<0.70	<0.25	0.38 J+	0.044	<0.0010	2.6	<0.0025	360
PC-94	EM06	11/16/2017	N	440-196786-17	Alluvium	9.5 - 19.5	1,100	<0.70	--	0.098 J	0.030	<0.0010	2.7	<0.0025	320
PC-94	EM07	12/12/2017	N	440-198371-14	Alluvium	9.5 - 19.5	--	--	--	--	--	--	--	--	--
PC-94	EM08	2/21/2018	N	440-203937-12	Alluvium	9.5 - 19.5	--	<1.4	--	<0.050	0.030	<0.0010	2.9	<0.0025	320
PC-94	EM09	3/27/2018	N	440-207268-8	Alluvium	9.5 - 19.5	--	<0.70	--	4.1	0.077	<0.0010	2.5	<0.0025	270
PC-94	EM10	5/1/2018	N	440-210284-14	Alluvium	9.5 - 19.5	--	<0.70	--	0.052 J	0.029	<0.0010	2.6 J+	<0.0025	300
PC-94	EM11	7/10/2018	N	440-215437-1	Alluvium	9.5 - 19.5	--	<0.70	--	<0.050	0.028	<0.0010	2.5	<0.0025	290
PC-94	EM13	8/15/2018	N	440-218208-2	Alluvium	9.5 - 19.5	--	<0.25	--	0.77	0.030	<0.0010	2.7	<0.0025	310
PC-94	EM14	9/11/2018	N	440-219886-9	Alluvium	9.5 - 19.5	--	0.41 J	--	<0.050	0.026	<0.0010	2.6	<0.0025	290
PC-94	EM15	10/11/2018	N	440-222092-18	Alluvium	9.5 - 19.5	--	<0.25	--	0.076 J	0.027	<0.0010	2.8	<0.0025	310
PC-94	EM19	5/22/2019	N	440-242201-4	Alluvium	9.5 - 19.5	--	--	--	<0.050	0.028	<0.0010	2.3	<0.0025	270
PC-94	EM22	11/6/2019	N	440-254027-1	Alluvium	9.5 - 19.5	--	--	<0.25	0.056 J	0.028	<0.0010	2.0	<0.0025	240
PC-94	EM26	4/28/2020	N	440-265289-2	Alluvium	9.5 - 19.5	--	--	--	<0.050	0.035	<0.0010	2.0	<0.0025	290
PC-94	EM29	10/15/2020	N	550-151259-7	Alluvium	9.5 - 19.5	--	--	<0.078	<0.050	0.026	<0.0010	1.7	<0.0025	240
PC-94	EM33	6/2/2021	N	550-164872-21	Alluvium	9.5 - 19.5	--	--	--	--	--	--	--	--	--

Table D.2
Groundater Analytical Results Summary - Secondary Parameters
Seep Well Field Area Bioremediation Treatability Study

Well	Event	Sample Date	QC Type	Lab Sample ID	Lithology	Screened Interval (ft bgs)	Anions by EPA 300.0		Dissolved Gases by RSK-175	Dissolved Metals by SW6010	Dissolved Metals by SW6010	Dissolved Metals by SW6010	Dissolved Metals by SW6010	Dissolved Metals by SW6010	Dissolved Metals by SW6010
							Chloride	Nitrite (as N)	Methane	Aluminum	Barium	Beryllium	Boron	Cadmium	Calcium
							mg/L	mg/L	µg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
PC-94	EM33	6/2/2021	N	550-164872-22	Alluvium	9.5 - 19.5	--	--	--	0.30	0.034	<0.00019	1.9	<0.00072	270
PC-94	EM36	11/30/2021	N	550-174968-5	Alluvium	9.5 - 19.5	--	--	<0.63	--	--	--	--	--	--
PC-94	EM36	11/30/2021	N	550-174968-6	Alluvium	9.5 - 19.5	--	--	--	0.31	0.035	<0.00019	1.8	<0.00072	340
PC-94	EM40	12/13/2022	N	550-194920-7	Alluvium	9.5 - 19.5	--	--	<0.63	--	--	--	--	--	--
PC-94	EM40	12/13/2022	N	550-194920-8	Alluvium	9.5 - 19.5	--	--	--	0.31	0.027	<0.00019	2.2	<0.00072	330
PC-97	BL02	7/13/2017	N	440-188325-8	Alluvium	23.0 - 33.0	--	--	--	0.050 J	0.025	<0.0010	0.96	<0.0025	220
PC-97	EM04	10/11/2017	N	440-194242-5	Alluvium	23.0 - 33.0	540	--	--	0.051 J	0.021	<0.0010	1.1	<0.0025	230
PC-97	EM04	10/11/2017	FD	440-194242-6	Alluvium	23.0 - 33.0	540	--	--	0.056 J	0.023	<0.0010	1.3	<0.0025	260
PC-97	EM06	11/16/2017	N	440-196786-13	Alluvium	23.0 - 33.0	580	--	--	--	--	--	--	--	--
PC-97	EM07	12/13/2017	N	440-198508-11	Alluvium	23.0 - 33.0	--	--	--	--	--	--	--	--	--
PC-97	EM07	12/13/2017	FD	440-198508-12	Alluvium	23.0 - 33.0	--	--	--	--	--	--	--	--	--
PC-97	EM08	2/21/2018	N	440-203937-4	Alluvium	23.0 - 33.0	--	--	--	--	--	--	--	--	--
PC-97	EM09	3/27/2018	N	440-207268-4	Alluvium	23.0 - 33.0	--	--	--	--	--	--	--	--	--
PC-97	EM10	5/1/2018	N	440-210284-7	Alluvium	23.0 - 33.0	--	--	--	--	--	--	--	--	--
PC-97	EM11	7/10/2018	N	440-215437-3	Alluvium	23.0 - 33.0	--	--	--	<0.050	0.022	<0.0010	0.90	<0.0025	170
PC-97	EM15	10/11/2018	N	440-222092-13	Alluvium	23.0 - 33.0	--	--	--	0.059 J	0.020	<0.0010	0.99	<0.0025	180
PC-97	EM19	5/22/2019	N	440-242201-1	Alluvium	23.0 - 33.0	--	--	--	<0.050	0.021	<0.0010	1.0	<0.0025	190
PC-97	EM22	11/6/2019	N	440-254027-7	Alluvium	23.0 - 33.0	--	--	<0.25	0.066 J	0.018	<0.0010	1.0	<0.0025	160
PC-97	EM26	4/30/2020	N	440-265383-7	Alluvium	23.0 - 33.0	--	--	--	<0.050	0.023	<0.0010	0.72	<0.0025	140
PC-97	EM29	10/15/2020	N	550-151259-9	Alluvium	23.0 - 33.0	--	--	0.38 J	<0.050	0.019	<0.0010	0.74	<0.0025	150
SWFTS-IW01A	BL02	7/11/2017	N	440-188133-3	Alluvium	15.8 - 25.6	--	--	--	--	--	--	--	--	--
SWFTS-IW01B	BL02	7/11/2017	N	440-188133-13	Alluvium	26.9 - 36.7	--	--	--	--	--	--	--	--	--
SWFTS-IW02A	BL02	7/11/2017	N	440-188133-14	Alluvium	16.8 - 26.6	--	--	<0.25	--	--	--	--	--	--
SWFTS-IW02B	BL02	7/11/2017	N	440-188133-2	Alluvium	26.3 - 36.1	--	--	<0.25	--	--	--	--	--	--
SWFTS-IW03	BL02	7/11/2017	N	440-188133-4	Alluvium	16.8 - 36.6	--	--	--	--	--	--	--	--	--
SWFTS-IW03	BL02	7/11/2017	FD	440-188133-5	Alluvium	16.8 - 36.6	--	--	--	--	--	--	--	--	--
SWFTS-IW04	BL02	7/11/2017	N	440-188133-11	Alluvium	19.8 - 34.6	--	--	--	--	--	--	--	--	--
SWFTS-IW04	BL02	7/11/2017	FD	440-188133-12	Alluvium	19.8 - 34.6	--	--	--	--	--	--	--	--	--
SWFTS-IW05	BL02	7/11/2017	N	440-188133-16	Alluvium	14.6 - 34.4	--	--	0.610 J	--	--	--	--	--	--
SWFTS-IW06A	BL02	7/11/2017	N	440-188133-10	Alluvium	16.8 - 26.6	--	--	--	--	--	--	--	--	--
SWFTS-IW06B	BL02	7/11/2017	N	440-188133-6	Alluvium	28.8 - 33.6	--	--	--	--	--	--	--	--	--
SWFTS-IW07	BL02	7/11/2017	N	440-188133-7	Alluvium	17.3 - 37.1	--	--	--	--	--	--	--	--	--
SWFTS-IW08	BL02	7/12/2017	N	440-188247-7	Alluvium	17.5 - 37.3	--	--	--	--	--	--	--	--	--
SWFTS-IW09	BL02	7/12/2017	N	440-188247-8	Alluvium	26.6 - 46.4	--	--	<0.25	--	--	--	--	--	--
SWFTS-IW09	BL02	7/12/2017	FD	440-188244-3	Alluvium	26.6 - 46.4	--	--	<0.25	--	--	--	--	--	--
SWFTS-IW10	BL02	7/12/2017	N	440-188247-9	Alluvium	26.8 - 46.6	--	--	--	--	--	--	--	--	--
SWFTS-IW11	BL02	7/12/2017	N	440-188247-3	Alluvium	17.3 - 37.1	--	--	<0.25	--	--	--	--	--	--
SWFTS-IW12	BL02	7/12/2017	N	440-188247-4	Alluvium	14.3 - 39.1	--	--	--	--	--	--	--	--	--
SWFTS-IW13A	BL02	7/11/2017	N	440-188133-1	Alluvium	15.8 - 25.6	--	--	--	--	--	--	--	--	--
SWFTS-IW13B	BL02	7/11/2017	N	440-188133-15	Alluvium	27.8 - 37.6	--	--	--	--	--	--	--	--	--
SWFTS-IW14	BL02	7/12/2017	N	440-188247-1	Alluvium	16.2 - 36.1	--	--	<0.25	--	--	--	--	--	--
SWFTS-IW15	BL02	7/12/2017	N	440-188247-2	Alluvium	16.4 - 36.2	--	--	--	--	--	--	--	--	--
SWFTS-IW16A	BL02	7/11/2017	N	440-188133-9	Alluvium	17.3 - 27.1	--	--	--	--	--	--	--	--	--
SWFTS-IW16B	BL02	7/11/2017	N	440-188133-8	Alluvium	26.5 - 36.3	--	--	--	--	--	--	--	--	--
SWFTS-IW17	BL02	7/13/2017	N	440-188325-6	Alluvium	17.3 - 37.1	--	--	<0.25	--	--	--	--	--	--
SWFTS-IW18	BL02	7/13/2017	N	440-188325-4	Alluvium	18.1 - 38.1	--	--	--	--	--	--	--	--	--
SWFTS-IW19	BL02	7/13/2017	N	440-188325-5	Alluvium	24.3 - 44.1	--	--	--	--	--	--	--	--	--
SWFTS-IW20	BL02	7/12/2017	N	440-188247-10	Alluvium	30.8 - 50.6	--	--	<0.25	--	--	--	--	--	--
SWFTS-MW01	BL01	3/29/2017	N	440-180937-6	Alluvium	24.2 - 38.9	1,400	--	--	<0.050	0.024	<0.0010	2.9	<0.0025	390
SWFTS-MW01	EM04	10/10/2017	N	440-194094-2	Alluvium	24.2 - 38.9	1,400	<0.70	<0.25	<0.050	0.029	<0.0010	2.7	<0.0025	330
SWFTS-MW01	EM06	11/15/2017	N	440-196665-4	Alluvium	24.2 - 38.9	1,500	--	--	--	--	--	--	--	--
SWFTS-MW01	EM07	12/14/2017	N	440-198571-10	Alluvium	24.2 - 38.9	--	--	--	--	--	--	--	--	--
SWFTS-MW01	EM08	2/20/2018	N	440-203841-12	Alluvium	24.2 - 38.9	--	--	--	--	--	--	--	--	--
SWFTS-MW01	EM09	3/27/2018	N	440-207268-10	Alluvium	24.2 - 38.9	--	--	--	--	--	--	--	--	--
SWFTS-MW01	EM10	4/30/2018	N	440-210173-1	Alluvium	24.2 - 38.9	--	--	--	--	--	--	--	--	--
SWFTS-MW01	EM11	7/10/2018	N	440-215437-2	Alluvium	24.2 - 38.9	--	--	--	<0.050	0.036	<0.0010	2.5	<0.0025	280
SWFTS-MW01	EM14	9/10/2018	N	440-219797-1	Alluvium	24.2 - 38.9	--	<0.25	--	--	--	--	--	--	--
SWFTS-MW01	EM15	10/9/2018	N	440-221855-12	Alluvium	24.2 - 38.9	--	--	--	<0.25	0.039 J	<0.0050	2.8	<0.013	290
SWFTS-MW01	EM19	5/21/2019	N	440-242084-14	Alluvium	24.2 - 38.9	--	--	--	<0.050	0.047	<0.0010	2.3	<0.0025	240
SWFTS-MW01	EM22	11/5/2019	N	440-253918-3	Alluvium	24.2 - 38.9	--	--	4,300	0.057 J	0.051	<0.0010	2.0	<0.0025	190
SWFTS-MW01	EM26	4/28/2020	N	440-265289-5	Alluvium	24.2 - 38.9	--	--	--	<0.050	0.041	<0.0010	2.0	<0.0025	260
SWFTS-MW01	EM29	10/13/2020	N	440-273236-11	Alluvium	24.2 - 38.9	--	--	1,500	<0.050	0.035	<0.0010	2.2	<0.0025	260
SWFTS-MW01	EM33	6/4/2021	N	550-164930-17	Alluvium	24.2 - 38.9	--	--	--	--	--	--	--	--	--
SWFTS-MW01	EM33	6/4/2021	N	550-164930-18	Alluvium	24.2 - 38.9	--	--	--	0.29	0.040	<0.00019	2.0	<0.00072	260

Table D.2
Groundater Analytical Results Summary - Secondary Parameters
Seep Well Field Area Bioremediation Treatability Study

Well	Event	Sample Date	QC Type	Lab Sample ID	Lithology	Screened Interval (ft bgs)	Anions by EPA 300.0		Dissolved Gases by RSK-175	Dissolved Metals by SW6010	Dissolved Metals by SW6010	Dissolved Metals by SW6010	Dissolved Metals by SW6010	Dissolved Metals by SW6010	Dissolved Metals by SW6010
							Chloride	Nitrite (as N)	Methane	Aluminum	Barium	Beryllium	Boron	Cadmium	Calcium
							mg/L	mg/L	µg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
SWFTS-MW01	EM36	11/30/2021	N	550-174968-19	Alluvium	24.2 - 38.9	--	--	2.1 J	--	--	--	--	--	--
SWFTS-MW01	EM36	11/30/2021	N	550-174968-20	Alluvium	24.2 - 38.9	--	--	--	0.28	0.042	<0.00019	1.8	<0.00072	350
SWFTS-MW01	EM40	12/13/2022	N	550-194920-3	Alluvium	24.2 - 38.9	--	--	25	--	--	--	--	--	--
SWFTS-MW01	EM40	12/13/2022	N	550-194920-4	Alluvium	24.2 - 38.9	--	--	--	0.28	0.029	<0.00019	2.2	<0.00072	280
SWFTS-MW02	BL01	3/29/2017	N	440-180937-7	Alluvium	18.4 - 33.1	--	--	--	<0.050	0.015	<0.0010	3.2	<0.0025	520
SWFTS-MW02	EM04	10/12/2017	N	440-194204-6	Alluvium	18.4 - 33.1	1,600	<1.4	<0.25	<0.050	0.015	<0.0010	2.9	<0.0025	450
SWFTS-MW02	EM06	11/14/2017	N	440-196558-3	Alluvium	18.4 - 33.1	1,800	--	--	--	--	--	--	--	--
SWFTS-MW02	EM07	12/13/2017	N	440-198508-8	Alluvium	18.4 - 33.1	--	--	--	--	--	--	--	--	--
SWFTS-MW02	EM08	2/19/2018	N	440-203775-1	Alluvium	18.4 - 33.1	--	--	--	--	--	--	--	--	--
SWFTS-MW02	EM09	3/27/2018	N	440-207268-1	Alluvium	18.4 - 33.1	--	--	--	--	--	--	--	--	--
SWFTS-MW02	EM10	4/30/2018	N	440-210173-3	Alluvium	18.4 - 33.1	--	--	--	--	--	--	--	--	--
SWFTS-MW02	EM11	7/11/2018	N	440-215717-13	Alluvium	18.4 - 33.1	--	--	--	<0.050	0.021	<0.0010	2.8	<0.0025	320
SWFTS-MW02	EM14	9/10/2018	N	440-219797-2	Alluvium	18.4 - 33.1	--	<0.25	--	--	--	--	--	--	--
SWFTS-MW02	EM15	10/10/2018	N	440-221975-15	Alluvium	18.4 - 33.1	--	--	--	0.68 J+	0.032 J	<0.0050	3.0	<0.013	340
SWFTS-MW02	EM19	5/21/2019	N	440-242084-8	Alluvium	18.4 - 33.1	--	--	--	<0.050	0.025	<0.0010	3.0	<0.0025	350
SWFTS-MW02	EM22	11/7/2019	N	440-254148-7	Alluvium	18.4 - 33.1	--	--	3,300	0.11	0.027	<0.0010	2.7	<0.0025	290
SWFTS-MW02	EM26	4/30/2020	N	440-265382-3	Alluvium	18.4 - 33.1	--	--	--	<0.050	0.022	<0.0010	2.5	<0.0025	280
SWFTS-MW02	EM29	10/15/2020	N	550-151259-8	Alluvium	18.4 - 33.1	--	--	0.29 J	<0.050	0.019	<0.0010	2.2	<0.0025	260
SWFTS-MW02	EM33	6/3/2021	N	550-164869-21	Alluvium	18.4 - 33.1	--	--	--	--	--	--	--	--	--
SWFTS-MW02	EM33	6/3/2021	N	550-164869-22	Alluvium	18.4 - 33.1	--	--	--	0.31	0.020	<0.00019	2.7	<0.00072	290
SWFTS-MW02	EM36	11/30/2021	N	550-174968-7	Alluvium	18.4 - 33.1	--	--	150	--	--	--	--	--	--
SWFTS-MW02	EM36	11/30/2021	N	550-174968-8	Alluvium	18.4 - 33.1	--	--	--	0.31	0.020	<0.00019	2.7	<0.00072	280
SWFTS-MW02	EM40	12/14/2022	N	550-195015-3	Alluvium	18.4 - 33.1	--	--	21	--	--	--	--	--	--
SWFTS-MW02	EM40	12/14/2022	N	550-195015-4	Alluvium	18.4 - 33.1	--	--	--	0.28	0.026	<0.00019	3.1	<0.00072	370
SWFTS-MW03	BL01	3/30/2017	N	440-181045-5	Alluvium	27.2 - 42.1	--	--	--	<0.050 UJ	0.021	<0.0010	3.2	<0.0025	450
SWFTS-MW03	BL01	3/30/2017	FD	440-181045-6	Alluvium	27.2 - 42.1	--	--	--	0.34 J	0.023	<0.0010	3.2	<0.0025	440
SWFTS-MW03	EM04	10/12/2017	N	440-194204-8	Alluvium	27.2 - 42.1	1,100	<0.70	<0.25	<0.050	0.021	<0.0010	3.0	<0.0025	440
SWFTS-MW03	EM06	11/16/2017	N	440-196786-16	Alluvium	27.2 - 42.1	1,000	<0.70	--	<0.050	0.034	<0.0010	2.9	<0.0025	410
SWFTS-MW03	EM07	12/12/2017	N	440-198371-13	Alluvium	27.2 - 42.1	--	--	--	--	--	--	--	--	--
SWFTS-MW03	EM08	2/21/2018	N	440-203937-5	Alluvium	27.2 - 42.1	--	<1.4	--	0.43 J+	0.040	<0.0010	3.1	<0.0025	420
SWFTS-MW03	EM09	3/27/2018	N	440-207268-15	Alluvium	27.2 - 42.1	--	<0.70	--	0.10 J+	0.026	<0.0010	2.6	<0.0025	360
SWFTS-MW03	EM10	5/2/2018	N	440-210430-6	Alluvium	27.2 - 42.1	--	<0.35	--	0.13 J+	0.032	<0.0010	3.1	<0.0025	480
SWFTS-MW03	EM11	7/10/2018	N	440-215437-5	Alluvium	27.2 - 42.1	--	<0.70	--	<0.050	0.030	<0.0010	2.9 J+	<0.0025	390
SWFTS-MW03	EM13	8/15/2018	N	440-218208-4	Alluvium	27.2 - 42.1	--	<0.25	--	0.18	0.031	<0.0010	2.9	<0.0025	410
SWFTS-MW03	EM14	9/11/2018	N	440-219886-11	Alluvium	27.2 - 42.1	--	<0.25	--	0.056 J	0.028	<0.0010	2.9	<0.0025	400
SWFTS-MW03	EM15	10/9/2018	N	440-221855-13	Alluvium	27.2 - 42.1	--	--	--	0.49 J	0.034 J	<0.0050	3.1	<0.013	460
SWFTS-MW03	EM19	5/21/2019	N	440-242084-12	Alluvium	27.2 - 42.1	--	--	--	<0.050	0.027	<0.0010	3.0	<0.0025	460
SWFTS-MW03	EM22	11/4/2019	N	440-253773-2	Alluvium	27.2 - 42.1	--	--	38.0	0.11	0.023	<0.0010	2.6	<0.0025	370
SWFTS-MW03	EM26	4/28/2020	N	440-265289-1	Alluvium	27.2 - 42.1	--	--	--	<0.050	0.021	<0.0010	2.2	<0.0025	350
SWFTS-MW03	EM29	10/13/2020	N	440-273236-10	Alluvium	27.2 - 42.1	--	--	280	<0.050	0.024	<0.0010	2.6	<0.0025	400
SWFTS-MW03	EM33	6/3/2021	N	550-164869-15	Alluvium	27.2 - 42.1	--	--	--	--	--	--	--	--	--
SWFTS-MW03	EM33	6/3/2021	N	550-164869-16	Alluvium	27.2 - 42.1	--	--	--	0.38	0.024 J+	<0.00019	2.5	<0.00072	400
SWFTS-MW03	EM36	12/1/2021	N	550-175045-1	Alluvium	27.2 - 42.1	--	--	<0.63	--	--	--	--	--	--
SWFTS-MW03	EM36	12/1/2021	N	550-175045-2	Alluvium	27.2 - 42.1	--	--	--	0.37	0.024	<0.00019	2.3	<0.00072	410
SWFTS-MW03	EM40	12/13/2022	N	550-194920-15	Alluvium	27.2 - 42.1	--	--	<0.63	--	--	--	--	--	--
SWFTS-MW03	EM40	12/13/2022	N	550-194920-16	Alluvium	27.2 - 42.1	--	--	--	0.37	0.023	<0.00019	2.5	<0.00072	410
SWFTS-MW04	BL01	3/31/2017	N	440-181122-1	Alluvium	25.8 - 40.4	--	--	--	<0.050	0.018	<0.0010	2.0	<0.0025	330
SWFTS-MW04	EM04	10/11/2017	N	440-194242-7	Alluvium	25.8 - 40.4	570	<0.14	<0.25	<0.050	0.018	<0.0010	1.1	<0.0025	140
SWFTS-MW04	EM06	11/15/2017	N	440-196659-2	Alluvium	25.8 - 40.4	590	--	--	--	--	--	--	--	--
SWFTS-MW04	EM07	12/14/2017	N	440-198571-12	Alluvium	25.8 - 40.4	--	--	--	--	--	--	--	--	--
SWFTS-MW04	EM08	2/21/2018	N	440-203937-2	Alluvium	25.8 - 40.4	--	--	--	--	--	--	--	--	--
SWFTS-MW04	EM09	3/27/2018	N	440-207268-5	Alluvium	25.8 - 40.4	--	--	--	--	--	--	--	--	--
SWFTS-MW04	EM10	5/1/2018	N	440-210284-5	Alluvium	25.8 - 40.4	--	--	--	--	--	--	--	--	--
SWFTS-MW04	EM11	7/10/2018	N	440-215437-4	Alluvium	25.8 - 40.4	--	--	--	<0.050	0.020	<0.0010	1.4	<0.0025	160
SWFTS-MW04	EM15	10/11/2018	N	440-222092-9	Alluvium	25.8 - 40.4	--	--	--	0.072 J	0.017	<0.0010	1.4	<0.0025	170
SWFTS-MW04	EM19	5/21/2019	N	440-242084-11	Alluvium	25.8 - 40.4	--	--	--	<0.050	0.018	<0.0010	1.1	<0.0025	150
SWFTS-MW04	EM22	11/7/2019	N	440-254150-6	Alluvium	25.8 - 40.4	--	--	<0.25	<0.050	0.015	<0.0010	1.1	<0.0025	150
SWFTS-MW04	EM26	5/1/2020	N	440-265412-1	Alluvium	25.8 - 40.4	--	--	--	<0.050	0.019	<0.0010	1.6	<0.0025	250
SWFTS-MW04	EM29	10/14/2020	N	440-273303-12	Alluvium	25.8 - 40.4	--	--	0.15 J	<0.050	0.017	<0.0010	1.2	<0.0025	170
SWFTS-MW04	EM33	6/3/2021	N	550-164869-23	Alluvium	25.8 - 40.4	--	--	--	--	--	--	--	--	--
SWFTS-MW04	EM33	6/3/2021	N	550-164869-24	Alluvium	25.8 - 40.4	--	--	--	0.18 J	0.016	<0.00019	1.2	<0.00072	180
SWFTS-MW04	EM36	12/2/2021	N	550-175153-3	Alluvium	25.8 - 40.4	--	--	<0.63	--	--	--	--	--	--
SWFTS-MW04	EM36	12/2/2021	N	550-175153-4	Alluvium	25.8 - 40.4	--	--	--	0.16 J	0.017 J+	<0.00019	1.3	<0.00072	190
SWFTS-MW04	EM40	12/14/2022	N	550-195015-1	Alluvium	25.8 - 40.4	--	--	<0.63	--	--	--	--	--	--

Table D.2
Groundater Analytical Results Summary - Secondary Parameters
Seep Well Field Area Bioremediation Treatability Study

Well	Event	Sample Date	QC Type	Lab Sample ID	Lithology	Screened Interval (ft bgs)	Anions by EPA 300.0		Dissolved Gases by RSK-175	Dissolved Metals by SW6010	Dissolved Metals by SW6010	Dissolved Metals by SW6010	Dissolved Metals by SW6010	Dissolved Metals by SW6010	Dissolved Metals by SW6010
							Chloride	Nitrite (as N)	Methane	Aluminum	Barium	Beryllium	Boron	Cadmium	Calcium
							mg/L	mg/L	µg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
SWFTS-MW04	EM40	12/14/2022	N	550-195015-2	Alluvium	25.8 - 40.4	--	--	--	0.16 J	0.016	<0.00019	1.0	<0.00072	160
SWFTS-MW05A	BL01	3/30/2017	N	440-181045-7	Alluvium	19.3 - 29.3	--	--	--	0.32 J	0.034 J	<0.0050	3.7	<0.013	820
SWFTS-MW05A	EM04	10/10/2017	N	440-193989-2	Alluvium	19.3 - 29.3	1,000	--	--	<0.050	0.026	<0.0010	3.0	<0.0025	700
SWFTS-MW05A	EM06	11/14/2017	N	440-196558-1	Alluvium	19.3 - 29.3	1,000	--	--	--	--	--	--	--	--
SWFTS-MW05A	EM07	12/13/2017	N	440-198508-3	Alluvium	19.3 - 29.3	--	--	--	--	--	--	--	--	--
SWFTS-MW05A	EM08	2/20/2018	N	440-203841-7	Alluvium	19.3 - 29.3	--	--	--	--	--	--	--	--	--
SWFTS-MW05A	EM09	3/26/2018	N	440-207137-5	Alluvium	19.3 - 29.3	--	--	--	--	--	--	--	--	--
SWFTS-MW05A	EM10	4/30/2018	N	440-210173-8	Alluvium	19.3 - 29.3	--	--	--	--	--	--	--	--	--
SWFTS-MW05A	EM11	7/11/2018	N	440-215585-14	Alluvium	19.3 - 29.3	--	--	--	<0.050	0.024	<0.0010	3.2	<0.0025	680
SWFTS-MW05A	EM15	10/10/2018	N	440-221975-14	Alluvium	19.3 - 29.3	--	--	--	0.40 J	0.032 J	<0.0050	3.4 J+	<0.013	680
SWFTS-MW05A	EM19	5/21/2019	N	440-242084-17	Alluvium	19.3 - 29.3	--	--	--	<0.050	0.025	<0.0010	3.2	<0.0025	630
SWFTS-MW05A	EM22	11/5/2019	N	440-253918-1	Alluvium	19.3 - 29.3	--	--	3,700	0.055 J	0.024	<0.0010	2.6	<0.0025	600
SWFTS-MW05A	EM26	4/29/2020	N	440-265346-2	Alluvium	19.3 - 29.3	--	--	--	<0.050	0.025	<0.0010	3.2	<0.0025	660
SWFTS-MW05A	EM29	10/14/2020	N	440-273303-9	Alluvium	19.3 - 29.3	--	--	3,300	<0.050	0.027	<0.0010	3.4	<0.0025	660
SWFTS-MW05A	EM33	6/3/2021	N	550-164869-17	Alluvium	19.3 - 29.3	--	--	--	--	--	--	--	--	--
SWFTS-MW05A	EM33	6/3/2021	N	550-164869-18	Alluvium	19.3 - 29.3	--	--	--	0.47	0.025 J+	0.00072 J	3.2	0.00097 J	610
SWFTS-MW05A	EM36	11/29/2021	N	550-174897-3	Alluvium	19.3 - 29.3	--	--	11,000	--	--	--	--	--	--
SWFTS-MW05A	EM36	11/29/2021	N	550-174897-4	Alluvium	19.3 - 29.3	--	--	--	0.47	0.027	<0.00019	3.2	<0.00072	650
SWFTS-MW05B	BL01	3/30/2017	N	440-181045-8	Alluvium	32.3 - 42.0	--	--	--	0.16	0.020	<0.0010	3.2	<0.0025	560
SWFTS-MW05B	EM04	10/10/2017	N	440-193989-1	Alluvium	32.3 - 42.0	990	--	--	<0.050	0.11	<0.0010	2.7	<0.0025	490
SWFTS-MW05B	EM06	11/14/2017	N	440-196558-2	Alluvium	32.3 - 42.0	970	--	--	--	--	--	--	--	--
SWFTS-MW05B	EM07	12/13/2017	N	440-198508-4	Alluvium	32.3 - 42.0	--	--	--	--	--	--	--	--	--
SWFTS-MW05B	EM08	2/20/2018	N	440-203841-8	Alluvium	32.3 - 42.0	--	--	--	--	--	--	--	--	--
SWFTS-MW05B	EM09	3/26/2018	N	440-207137-6	Alluvium	32.3 - 42.0	--	--	--	--	--	--	--	--	--
SWFTS-MW05B	EM10	4/30/2018	N	440-210173-2	Alluvium	32.3 - 42.0	--	--	--	--	--	--	--	--	--
SWFTS-MW05B	EM11	7/10/2018	N	440-215585-10	Alluvium	32.3 - 42.0	--	--	--	<0.050	0.032	<0.0010	2.9	<0.0025	430
SWFTS-MW05B	EM15	10/9/2018	N	440-221855-14	Alluvium	32.3 - 42.0	--	--	--	<0.25	0.038 J	<0.0050	2.7	<0.013	450
SWFTS-MW05B	EM19	5/21/2019	N	440-242084-18	Alluvium	32.3 - 42.0	--	--	--	<0.050	0.029	<0.0010	2.5	<0.0025	420
SWFTS-MW05B	EM22	11/5/2019	N	440-253918-2	Alluvium	32.3 - 42.0	--	--	3,300	0.056 J	0.028	<0.0010	2.4	<0.0025	420
SWFTS-MW05B	EM26	4/29/2020	N	440-265346-1	Alluvium	32.3 - 42.0	--	--	--	<0.050	0.025	<0.0010	2.6	<0.0025	490
SWFTS-MW05B	EM29	10/14/2020	N	440-273303-8	Alluvium	32.3 - 42.0	--	--	920	<0.050	0.028	<0.0010	2.4	<0.0025	400
SWFTS-MW05B	EM33	6/3/2021	N	550-164869-19	Alluvium	32.3 - 42.0	--	--	--	--	--	--	--	--	--
SWFTS-MW05B	EM33	6/3/2021	N	550-164869-20	Alluvium	32.3 - 42.0	--	--	--	0.38	0.043	<0.00019	2.7	<0.00072	450
SWFTS-MW05B	EM36	11/30/2021	N	550-174968-15	Alluvium	32.3 - 42.0	--	--	7,900	--	--	--	--	--	--
SWFTS-MW05B	EM36	11/30/2021	N	550-174968-16	Alluvium	32.3 - 42.0	--	--	--	0.40	0.029	<0.00019	2.5	<0.00072	500
SWFTS-MW06A	BL01	3/30/2017	N	440-181045-1	Alluvium	11.8 - 21.4	--	--	--	<0.050	0.025	<0.0010	0.86	<0.0025	180
SWFTS-MW06A	EM04	10/11/2017	N	440-194090-4	Alluvium	11.8 - 21.4	510	--	--	<0.050	0.022	<0.0010	1.1	<0.0025	230
SWFTS-MW06A	EM06	11/16/2017	N	440-196786-19	Alluvium	11.8 - 21.4	620	--	--	--	--	--	--	--	--
SWFTS-MW06A	EM07	12/13/2017	N	440-198508-1	Alluvium	11.8 - 21.4	--	--	--	--	--	--	--	--	--
SWFTS-MW06A	EM08	2/22/2018	N	440-204033-1	Alluvium	11.8 - 21.4	--	--	--	--	--	--	--	--	--
SWFTS-MW06A	EM09	3/28/2018	N	440-207497-3	Alluvium	11.8 - 21.4	--	--	--	--	--	--	--	--	--
SWFTS-MW06A	EM10	5/1/2018	N	440-210284-9	Alluvium	11.8 - 21.4	--	--	--	--	--	--	--	--	--
SWFTS-MW06A	EM10	5/1/2018	FD	440-210284-10	Alluvium	11.8 - 21.4	--	--	--	--	--	--	--	--	--
SWFTS-MW06A	EM11	7/11/2018	N	440-215585-2	Alluvium	11.8 - 21.4	--	--	--	<0.050	0.017	<0.0010	0.84	<0.0025	150
SWFTS-MW06A	EM11	7/11/2018	FD	440-215585-3	Alluvium	11.8 - 21.4	--	--	--	<0.050	0.019	<0.0010	0.94	<0.0025	170
SWFTS-MW06A	EM15	10/10/2018	N	440-221975-8	Alluvium	11.8 - 21.4	--	--	--	0.074 J	0.021	<0.0010	1.0	<0.0025	190
SWFTS-MW06A	EM15	10/10/2018	FD	440-221975-10	Alluvium	11.8 - 21.4	--	--	--	0.073 J	0.019	<0.0010	0.92	<0.0025	170
SWFTS-MW06A	EM19	5/20/2019	N	440-242015-1	Alluvium	11.8 - 21.4	--	--	--	<0.050	0.017	<0.0010	0.88	<0.0025	180
SWFTS-MW06A	EM19	5/20/2019	FD	440-242015-2	Alluvium	11.8 - 21.4	--	--	--	<0.050	0.018	<0.0010	0.92	<0.0025	160
SWFTS-MW06A	EM22	11/6/2019	N	440-254027-4	Alluvium	11.8 - 21.4	--	--	<0.25	0.10	0.017	<0.0010	1.2	<0.0025	200
SWFTS-MW06A	EM22	11/6/2019	FD	440-254027-5	Alluvium	11.8 - 21.4	--	--	<0.25	0.13	0.018	<0.0010	1.2	<0.0025	200
SWFTS-MW06A	EM26	4/29/2020	N	440-265346-5	Alluvium	11.8 - 21.4	--	--	--	<0.050	0.017	<0.0010	0.77	<0.0025	130
SWFTS-MW06A	EM26	4/29/2020	FD	440-265346-6	Alluvium	11.8 - 21.4	--	--	--	<0.050	0.017	<0.0010	0.72	<0.0025	130
SWFTS-MW06A	EM29	10/13/2020	N	440-273236-7	Alluvium	11.8 - 21.4	--	--	0.25 J	<0.050	0.020	<0.0010	0.90	<0.0025	180
SWFTS-MW06A	EM29	10/13/2020	FD	440-273236-8	Alluvium	11.8 - 21.4	--	--	0.23 J	<0.050	0.019	<0.0010	0.92	<0.0025	180
SWFTS-MW06A	EM33	6/4/2021	N	550-164930-19	Alluvium	11.8 - 21.4	--	--	--	--	--	--	--	--	--
SWFTS-MW06A	EM33	6/4/2021	N	550-164930-20	Alluvium	11.8 - 21.4	--	--	--	0.20	0.018 J+	<0.00019	0.95	<0.00072	180
SWFTS-MW06A	EM33	6/4/2021	FD	550-164930-21	Alluvium	11.8 - 21.4	--	--	--	--	--	--	--	--	--
SWFTS-MW06A	EM33	6/4/2021	FD	550-164930-22	Alluvium	11.8 - 21.4	--	--	--	0.22	0.018 J+	<0.00019	0.95	<0.00072	190
SWFTS-MW06A	EM36	12/1/2021	N	550-175045-7	Alluvium	11.8 - 21.4	--	--	5.8	--	--	--	--	--	--
SWFTS-MW06A	EM36	12/1/2021	N	550-175045-8	Alluvium	11.8 - 21.4	--	--	--	0.13 J	0.017	<0.00019	0.85	<0.00072	160
SWFTS-MW06A	EM36	12/1/2021	FD	550-175045-10	Alluvium	11.8 - 21.4	--	--	--	0.14 J	0.017	<0.00019	0.85	<0.00072	160
SWFTS-MW06A	EM36	12/1/2021	FD	550-175045-9	Alluvium	11.8 - 21.4	--	--	5.2	--	--	--	--	--	--
SWFTS-MW06A	EM40	12/14/2022	N	550-195015-5	Alluvium	11.8 - 21.4	--	--	<0.63	--	--	--	--	--	--

Table D.2
Groundater Analytical Results Summary - Secondary Parameters
Seep Well Field Area Bioremediation Treatability Study

Well	Event	Sample Date	QC Type	Lab Sample ID	Lithology	Screened Interval (ft bgs)	Anions by EPA 300.0		Dissolved Gases by RSK-175	Dissolved Metals by SW6010	Dissolved Metals by SW6010	Dissolved Metals by SW6010	Dissolved Metals by SW6010	Dissolved Metals by SW6010	Dissolved Metals by SW6010
							Chloride	Nitrite (as N)	Methane	Aluminum	Barium	Beryllium	Boron	Cadmium	Calcium
							mg/L	mg/L	µg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
SWFTS-MW06A	EM40	12/14/2022	N	550-195015-6	Alluvium	11.8 - 21.4	--	--	--	0.15 J	0.019	<0.00019	0.75	<0.00072	160
SWFTS-MW06A	EM40	12/14/2022	FD	550-195015-7	Alluvium	11.8 - 21.4	--	--	<0.63	--	--	--	--	--	--
SWFTS-MW06A	EM40	12/14/2022	FD	550-195015-8	Alluvium	11.8 - 21.4	--	--	--	0.14 J	0.019	<0.00019	0.74	<0.00072	160
SWFTS-MW06B	BL01	3/30/2017	N	440-181045-2	Alluvium	25.9 - 35.5	--	--	--	0.081 J	0.019	<0.0010	0.95	<0.0025	160
SWFTS-MW06B	EM04	10/11/2017	N	440-194090-5	Alluvium	25.9 - 35.5	470	--	--	<0.050	0.018	<0.0010	0.91	<0.0025	190
SWFTS-MW06B	EM06	11/16/2017	N	440-196786-20	Alluvium	25.9 - 35.5	540	--	--	--	--	--	--	--	--
SWFTS-MW06B	EM07	12/13/2017	N	440-198508-2	Alluvium	25.9 - 35.5	--	--	--	--	--	--	--	--	--
SWFTS-MW06B	EM08	2/22/2018	N	440-204033-5	Alluvium	25.9 - 35.5	--	--	--	--	--	--	--	--	--
SWFTS-MW06B	EM09	3/28/2018	N	440-207497-2	Alluvium	25.9 - 35.5	--	--	--	--	--	--	--	--	--
SWFTS-MW06B	EM10	5/1/2018	N	440-210284-8	Alluvium	25.9 - 35.5	--	--	--	--	--	--	--	--	--
SWFTS-MW06B	EM11	7/11/2018	N	440-215585-4	Alluvium	25.9 - 35.5	--	--	--	<0.050	0.014	<0.0010	0.99	<0.0025	160
SWFTS-MW06B	EM15	10/10/2018	N	440-221975-9	Alluvium	25.9 - 35.5	--	--	--	0.094 J	0.016	<0.0010	0.99	<0.0025	180
SWFTS-MW06B	EM19	5/21/2019	N	440-242084-5	Alluvium	25.9 - 35.5	--	--	--	<0.050	0.015	<0.0010	0.96	<0.0025	180
SWFTS-MW06B	EM22	11/6/2019	N	440-254027-6	Alluvium	25.9 - 35.5	--	--	<0.25	0.11	0.018	<0.0010	1.1	<0.0025	220
SWFTS-MW06B	EM26	4/29/2020	N	440-265346-4	Alluvium	25.9 - 35.5	--	--	--	<0.050	0.014	<0.0010	0.92	<0.0025	140
SWFTS-MW06B	EM29	10/13/2020	N	440-273236-6	Alluvium	25.9 - 35.5	--	--	0.52 J	<0.050	0.016	<0.0010	0.83	<0.0025	170
SWFTS-MW06B	EM33	6/4/2021	N	550-164930-23	Alluvium	25.9 - 35.5	--	--	--	--	--	--	--	--	--
SWFTS-MW06B	EM33	6/4/2021	N	550-164930-24	Alluvium	25.9 - 35.5	--	--	--	0.19 J	0.015 J+	<0.00019	0.93	<0.00072	180
SWFTS-MW06B	EM36	12/1/2021	N	550-175045-11	Alluvium	25.9 - 35.5	--	--	1.3 J	--	--	--	--	--	--
SWFTS-MW06B	EM36	12/1/2021	N	550-175045-12	Alluvium	25.9 - 35.5	--	--	--	0.16 J	0.015	<0.00019	0.88	<0.00072	160
SWFTS-MW06B	EM40	12/14/2022	N	550-195015-10	Alluvium	25.9 - 35.5	--	--	--	0.13 J	0.014	<0.00019	0.71	<0.00072	160
SWFTS-MW06B	EM40	12/14/2022	N	550-195015-9	Alluvium	25.9 - 35.5	--	--	0.73 J	--	--	--	--	--	--
SWFTS-MW07A	BL01	3/30/2017	N	440-181045-3	Alluvium	15.0 - 29.5	--	--	--	<0.050	0.019	<0.0010	3.0	<0.0025	380
SWFTS-MW07A	EM04	10/11/2017	N	440-194242-3	Alluvium	15.0 - 29.5	1,300	--	--	<0.050	0.018	<0.0010	2.6	<0.0025	370
SWFTS-MW07A	EM06	11/15/2017	N	440-196659-7	Alluvium	15.0 - 29.5	1,300	--	--	--	--	--	--	--	--
SWFTS-MW07A	EM07	12/14/2017	N	440-198571-3	Alluvium	15.0 - 29.5	--	--	--	--	--	--	--	--	--
SWFTS-MW07A	EM08	2/19/2018	N	440-203775-3	Alluvium	15.0 - 29.5	--	--	--	--	--	--	--	--	--
SWFTS-MW07A	EM09	3/28/2018	N	440-207497-4	Alluvium	15.0 - 29.5	--	--	--	--	--	--	--	--	--
SWFTS-MW07A	EM10	5/2/2018	N	440-210430-2	Alluvium	15.0 - 29.5	--	--	--	--	--	--	--	--	--
SWFTS-MW07A	EM11	7/11/2018	N	440-215585-7	Alluvium	15.0 - 29.5	--	--	--	<0.050	0.017	<0.0010	2.3	<0.0025	290
SWFTS-MW07A	EM15	10/10/2018	N	440-221975-11	Alluvium	15.0 - 29.5	--	--	--	<0.25	<0.025	<0.0050	2.3	<0.013	270
SWFTS-MW07A	EM19	5/22/2019	N	440-242200-5	Alluvium	15.0 - 29.5	--	--	--	<0.050	0.017	<0.0010	1.7	<0.0025	210
SWFTS-MW07A	EM22	11/7/2019	N	440-254148-4	Alluvium	15.0 - 29.5	--	--	<0.25	0.060 J	0.016	<0.0010	1.8	<0.0025	190
SWFTS-MW07A	EM26	4/30/2020	N	440-265382-5	Alluvium	15.0 - 29.5	--	--	--	0.054 J	0.021	<0.0010	1.7	<0.0025	240
SWFTS-MW07A	EM29	10/16/2020	N	440-273433-1	Alluvium	15.0 - 29.5	--	--	0.15 J	0.066 J	0.017	<0.0010	1.7	<0.0025	240
SWFTS-MW07A	EM33	6/4/2021	N	550-164930-25	Alluvium	15.0 - 29.5	--	--	--	--	--	--	--	--	--
SWFTS-MW07A	EM33	6/4/2021	N	550-164930-26	Alluvium	15.0 - 29.5	--	--	--	0.27	0.016 J+	<0.00019	1.7	<0.00072	230
SWFTS-MW07A	EM36	12/3/2021	N	550-175222-3	Alluvium	15.0 - 29.5	--	--	<0.63	--	--	--	--	--	--
SWFTS-MW07A	EM36	12/3/2021	N	550-175222-4	Alluvium	15.0 - 29.5	--	--	--	0.27	0.019	<0.00019	1.6	<0.00072	270
SWFTS-MW07A	EM40	12/14/2022	N	550-195015-11	Alluvium	15.0 - 29.5	--	--	<0.63	--	--	--	--	--	--
SWFTS-MW07A	EM40	12/14/2022	N	550-195015-12	Alluvium	15.0 - 29.5	--	--	--	0.23	0.016	<0.00019	2.0	<0.00072	330
SWFTS-MW07B	BL01	3/30/2017	N	440-181045-4	Alluvium	33.8 - 38.3	--	--	--	<0.050	0.021	<0.0010	2.6	<0.0025	380
SWFTS-MW07B	EM04	10/11/2017	N	440-194242-4	Alluvium	33.8 - 38.3	1,100	--	--	<0.050	0.017	<0.0010	2.3	<0.0025	280
SWFTS-MW07B	EM06	11/15/2017	N	440-196659-8	Alluvium	33.8 - 38.3	1,000	--	--	--	--	--	--	--	--
SWFTS-MW07B	EM07	12/14/2017	N	440-198571-4	Alluvium	33.8 - 38.3	--	--	--	--	--	--	--	--	--
SWFTS-MW07B	EM08	2/19/2018	N	440-203775-2	Alluvium	33.8 - 38.3	--	--	--	--	--	--	--	--	--
SWFTS-MW07B	EM09	3/28/2018	N	440-207497-10	Alluvium	33.8 - 38.3	--	--	--	--	--	--	--	--	--
SWFTS-MW07B	EM10	5/2/2018	N	440-210430-1	Alluvium	33.8 - 38.3	--	--	--	--	--	--	--	--	--
SWFTS-MW07B	EM11	7/11/2018	N	440-215585-8	Alluvium	33.8 - 38.3	--	--	--	<0.050	0.018	<0.0010	2.0	<0.0025	250
SWFTS-MW07B	EM15	10/10/2018	N	440-221975-12	Alluvium	33.8 - 38.3	--	--	--	<0.25	<0.025	<0.0050	2.1	<0.013	210
SWFTS-MW07B	EM19	5/22/2019	N	440-242200-6	Alluvium	33.8 - 38.3	--	--	--	<0.050	0.016	<0.0010	2.1	<0.0025	220
SWFTS-MW07B	EM22	11/7/2019	N	440-254148-5	Alluvium	33.8 - 38.3	--	--	<0.25	0.073 J	0.015	<0.0010	1.4	<0.0025	170
SWFTS-MW07B	EM26	4/30/2020	N	440-265382-4	Alluvium	33.8 - 38.3	--	--	--	<0.050	0.020	<0.0010	1.7	<0.0025	290
SWFTS-MW07B	EM29	10/16/2020	N	440-273433-2	Alluvium	33.8 - 38.3	--	--	0.098 J	0.058 J	0.015	<0.0010	1.6	<0.0025	200
SWFTS-MW07B	EM33	6/4/2021	N	550-164930-27	Alluvium	33.8 - 38.3	--	--	--	--	--	--	--	--	--
SWFTS-MW07B	EM33	6/4/2021	N	550-164930-28	Alluvium	33.8 - 38.3	--	--	--	0.28	0.019 J+	<0.00019	1.3	<0.00072	280
SWFTS-MW07B	EM36	12/3/2021	N	550-175222-5	Alluvium	33.8 - 38.3	--	--	<0.63	--	--	--	--	--	--
SWFTS-MW07B	EM36	12/3/2021	N	550-175222-6	Alluvium	33.8 - 38.3	--	--	--	0.31	0.024	<0.00019	1.8	<0.00072	410
SWFTS-MW07B	EM40	12/14/2022	N	550-195015-13	Alluvium	33.8 - 38.3	--	--	<0.63	--	--	--	--	--	--
SWFTS-MW07B	EM40	12/14/2022	N	550-195015-14	Alluvium	33.8 - 38.3	--	--	--	0.22	0.014	<0.00019	1.9	<0.00072	280
SWFTS-MW08A	BL01	3/30/2017	N	440-181045-9	Alluvium	20.2 - 34.8	1,300	--	--	<0.050	0.025	<0.0010	2.9	<0.0025	400
SWFTS-MW08A	EM04	10/10/2017	N	440-194094-4	Alluvium	20.2 - 34.8	1,100	--	--	<0.050	0.022	<0.0010	2.5	<0.0025	320
SWFTS-MW08A	EM06	11/15/2017	N	440-196659-4	Alluvium	20.2 - 34.8	1,000	--	--	--	--	--	--	--	--
SWFTS-MW08A	EM07	12/14/2017	N	440-198571-1	Alluvium	20.2 - 34.8	--	--	--	--	--	--	--	--	--

Table D.2
Groundater Analytical Results Summary - Secondary Parameters
Seep Well Field Area Bioremediation Treatability Study

Well	Event	Sample Date	QC Type	Lab Sample ID	Lithology	Screened Interval (ft bgs)	Anions by EPA 300.0		Dissolved Gases by RSK-175	Dissolved Metals by SW6010	Dissolved Metals by SW6010	Dissolved Metals by SW6010	Dissolved Metals by SW6010	Dissolved Metals by SW6010	Dissolved Metals by SW6010
							Chloride	Nitrite (as N)	Methane	Aluminum	Barium	Beryllium	Boron	Cadmium	Calcium
							mg/L	mg/L	µg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
SWFTS-MW08A	EM08	2/22/2018	N	440-204033-8	Alluvium	20.2 - 34.8	--	--	--	--	--	--	--	--	--
SWFTS-MW08A	EM09	3/29/2018	N	440-207586-1	Alluvium	20.2 - 34.8	--	--	--	--	--	--	--	--	--
SWFTS-MW08A	EM10	5/3/2018	N	440-210534-5	Alluvium	20.2 - 34.8	--	--	--	--	--	--	--	--	--
SWFTS-MW08A	EM11	7/11/2018	N	440-215717-14	Alluvium	20.2 - 34.8	--	--	--	<0.050	0.022	<0.0010	2.3	<0.0025	280
SWFTS-MW08A	EM15	10/10/2018	N	440-221975-13	Alluvium	20.2 - 34.8	--	--	--	<0.25	0.026 J	<0.0050	2.3	<0.013	260
SWFTS-MW08A	EM19	5/22/2019	N	440-242198-4	Alluvium	20.2 - 34.8	--	--	--	<0.050	0.023	<0.0010	1.9	<0.0025	250
SWFTS-MW08A	EM22	11/7/2019	N	440-254148-6	Alluvium	20.2 - 34.8	--	--	<0.25	0.057 J	0.024	<0.0010	1.6	<0.0025	230
SWFTS-MW08A	EM26	4/29/2020	N	440-265346-3	Alluvium	20.2 - 34.8	--	--	--	<0.050	0.027	<0.0010	1.8	<0.0025	320
SWFTS-MW08A	EM29	10/16/2020	N	440-273433-4	Alluvium	20.2 - 34.8	--	--	0.15 J	0.065 J	0.024	<0.0010	1.8	<0.0025	250
SWFTS-MW08A	EM33	6/4/2021	N	550-164930-29	Alluvium	20.2 - 34.8	--	--	--	--	--	--	--	--	--
SWFTS-MW08A	EM33	6/4/2021	N	550-164930-30	Alluvium	20.2 - 34.8	--	--	--	0.30	0.028 J+	<0.00019	1.7	<0.00072	330
SWFTS-MW08A	EM36	12/2/2021	N	550-175153-23	Alluvium	20.2 - 34.8	--	--	<0.63	--	--	--	--	--	--
SWFTS-MW08A	EM36	12/2/2021	N	550-175153-24	Alluvium	20.2 - 34.8	--	--	--	0.30	0.031 J+	<0.00019	1.9	<0.00072	410
SWFTS-MW08C	BL01	3/28/2017	N	440-180820-3	UMCf	49.9 - 69.5	1,500	--	--	0.096 J	0.015	<0.0010	2.7	<0.0025	590
SWFTS-MW08C	EM40	12/14/2022	N	550-195015-15	UMCf	49.9 - 69.5	--	--	<0.63	--	--	--	--	--	--
SWFTS-MW08C	EM40	12/14/2022	N	550-195015-16	UMCf	49.9 - 69.5	--	--	--	0.35	0.015	<0.00019	3.1	<0.00072	540
SWFTS-MW09A	BL01	3/29/2017	N	440-180937-3	Alluvium	19.3 - 28.9	1,300	--	--	<0.050	0.025	<0.0010	2.8	<0.0025	330
SWFTS-MW09A	EM04	10/11/2017	N	440-194094-7	Alluvium	19.3 - 28.9	1,200	--	--	<0.050	0.075	<0.0010	2.4	<0.0025	340
SWFTS-MW09A	EM06	11/16/2017	N	440-196786-14	Alluvium	19.3 - 28.9	1,300	--	--	--	--	--	--	--	--
SWFTS-MW09A	EM07	12/12/2017	N	440-198371-6	Alluvium	19.3 - 28.9	--	--	--	--	--	--	--	--	--
SWFTS-MW09A	EM08	2/20/2018	N	440-203841-14	Alluvium	19.3 - 28.9	--	--	--	--	--	--	--	--	--
SWFTS-MW09A	EM09	3/27/2018	N	440-207268-7	Alluvium	19.3 - 28.9	--	--	--	--	--	--	--	--	--
SWFTS-MW09A	EM10	5/1/2018	N	440-210284-13	Alluvium	19.3 - 28.9	--	--	--	--	--	--	--	--	--
SWFTS-MW09A	EM11	7/12/2018	N	440-215717-10	Alluvium	19.3 - 28.9	--	--	--	<0.050	0.035	<0.0010	2.4	<0.0025	270
SWFTS-MW09A	EM15	10/9/2018	N	440-221855-7	Alluvium	19.3 - 28.9	--	--	--	<0.25	0.044 J	<0.0050	3.0	<0.013	290
SWFTS-MW09A	EM19	5/22/2019	N	440-242200-1	Alluvium	19.3 - 28.9	--	--	--	<0.050	0.036	<0.0010	2.2	<0.0025	270
SWFTS-MW09A	EM22	11/5/2019	N	440-253891-1	Alluvium	19.3 - 28.9	--	--	12.0	0.051 J	0.032	<0.0010	2.0	<0.0025	230
SWFTS-MW09A	EM26	4/28/2020	N	440-265289-4	Alluvium	19.3 - 28.9	--	--	--	<0.050	0.036	<0.0010	2.0	<0.0025	290
SWFTS-MW09A	EM29	10/13/2020	N	440-273236-3	Alluvium	19.3 - 28.9	--	--	<0.078	<0.050	0.032	<0.0010	2.1	<0.0025	270
SWFTS-MW09A	EM33	6/1/2021	N	550-164699-1	Alluvium	19.3 - 28.9	--	--	--	--	--	--	--	--	--
SWFTS-MW09A	EM33	6/1/2021	N	550-164699-2	Alluvium	19.3 - 28.9	--	--	--	0.35	0.036	<0.00019	2.0	<0.00072	280
SWFTS-MW09A	EM36	12/2/2021	N	550-175153-10	Alluvium	19.3 - 28.9	--	--	--	0.27	0.038	<0.00019	2.0	<0.00072	340
SWFTS-MW09A	EM36	12/2/2021	N	550-175153-9	Alluvium	19.3 - 28.9	--	--	7.5	--	--	--	--	--	--
SWFTS-MW09A	EM40	12/13/2022	N	550-194920-10	Alluvium	19.3 - 28.9	--	--	--	0.30	0.030	<0.00019	2.2	<0.00072	320
SWFTS-MW09A	EM40	12/13/2022	N	550-194920-9	Alluvium	19.3 - 28.9	--	--	<0.63	--	--	--	--	--	--
SWFTS-MW09B	BL01	3/29/2017	N	440-180937-4	Alluvium	34.4 - 39.0	1,300	--	--	0.067 J	0.017	<0.0010	2.7	<0.0025	380
SWFTS-MW09B	BL01	3/29/2017	FD	440-180937-5	Alluvium	34.4 - 39.0	1,300	--	--	0.072 J	0.016	<0.0010	2.3	<0.0025	390
SWFTS-MW09B	EM04	10/11/2017	N	440-194094-5	Alluvium	34.4 - 39.0	1,200	--	--	<0.050	0.090	<0.0010	2.7	<0.0025	320
SWFTS-MW09B	EM06	11/16/2017	N	440-196786-15	Alluvium	34.4 - 39.0	1,200	--	--	--	--	--	--	--	--
SWFTS-MW09B	EM07	12/12/2017	N	440-198371-7	Alluvium	34.4 - 39.0	--	--	--	--	--	--	--	--	--
SWFTS-MW09B	EM08	2/20/2018	N	440-203841-13	Alluvium	34.4 - 39.0	--	--	--	--	--	--	--	--	--
SWFTS-MW09B	EM09	3/27/2018	N	440-207268-6	Alluvium	34.4 - 39.0	--	--	--	--	--	--	--	--	--
SWFTS-MW09B	EM10	4/30/2018	N	440-210173-11	Alluvium	34.4 - 39.0	--	--	--	--	--	--	--	--	--
SWFTS-MW09B	EM11	7/12/2018	N	440-215717-9	Alluvium	34.4 - 39.0	--	--	--	<0.050	0.042	<0.0010	2.4	<0.0025	280
SWFTS-MW09B	EM15	10/9/2018	N	440-221855-8	Alluvium	34.4 - 39.0	--	--	--	<0.25	0.046 J	<0.0050	2.6	<0.013	290
SWFTS-MW09B	EM19	5/22/2019	N	440-242200-2	Alluvium	34.4 - 39.0	--	--	--	<0.050	0.032	<0.0010	2.1	<0.0025	260
SWFTS-MW09B	EM22	11/5/2019	N	440-253891-3	Alluvium	34.4 - 39.0	--	--	<0.25	0.058 J	0.032	<0.0010	1.8	<0.0025	220
SWFTS-MW09B	EM26	4/28/2020	N	440-265289-3	Alluvium	34.4 - 39.0	--	--	--	<0.050	0.032	<0.0010	1.8	<0.0025	290
SWFTS-MW09B	EM29	10/13/2020	N	440-273236-4	Alluvium	34.4 - 39.0	--	--	0.22 J	<0.050	0.030	<0.0010	2.0	<0.0025	280
SWFTS-MW09B	EM33	6/2/2021	N	550-164872-1	Alluvium	34.4 - 39.0	--	--	--	--	--	--	--	--	--
SWFTS-MW09B	EM33	6/2/2021	N	550-164872-2	Alluvium	34.4 - 39.0	--	--	--	0.31	0.029	<0.00019	1.8	<0.00072	280
SWFTS-MW09B	EM36	12/2/2021	N	550-175153-11	Alluvium	34.4 - 39.0	--	--	<0.63	--	--	--	--	--	--
SWFTS-MW09B	EM36	12/2/2021	N	550-175153-12	Alluvium	34.4 - 39.0	--	--	--	0.30	0.035 J+	<0.00019	1.9	<0.00072	360
SWFTS-MW09B	EM40	12/13/2022	N	550-194920-13	Alluvium	34.4 - 39.0	--	--	<0.63	--	--	--	--	--	--
SWFTS-MW09B	EM40	12/13/2022	N	550-194920-14	Alluvium	34.4 - 39.0	--	--	--	0.29	0.025	<0.00019	2.2	<0.00072	310
SWFTS-MW10A	BL01	3/31/2017	N	440-181122-2	Alluvium	20.4 - 35.0	1,200	--	--	0.14	0.020	<0.0010	2.1	<0.0025	350
SWFTS-MW10A	EM04	10/12/2017	N	440-194242-10	Alluvium	20.4 - 35.0	910	--	--	<0.050	0.058	<0.0010	1.5	<0.0025	200
SWFTS-MW10A	EM06	11/16/2017	N	440-196786-5	Alluvium	20.4 - 35.0	910	<0.35	31.0	<0.050	0.046	<0.0010	1.5	<0.0025	180
SWFTS-MW10A	EM06	11/16/2017	FD	440-196786-6	Alluvium	20.4 - 35.0	920	<0.35	33.0	<0.050	0.047	<0.0010	1.6	<0.0025	170
SWFTS-MW10A	EM07	12/12/2017	N	440-198371-10	Alluvium	20.4 - 35.0	--	--	--	--	--	--	--	--	--
SWFTS-MW10A	EM07	12/12/2017	FD	440-198371-11	Alluvium	20.4 - 35.0	--	--	--	--	--	--	--	--	--
SWFTS-MW10A	EM08	2/20/2018	N	440-203841-4	Alluvium	20.4 - 35.0	--	<1.4	4,000	<0.050	0.040	<0.0010	2.3	<0.0025	260
SWFTS-MW10A	EM08	2/20/2018	FD	440-203841-5	Alluvium	20.4 - 35.0	--	<1.4	4,100	<0.050	0.040	<0.0010	2.3	<0.0025	260
SWFTS-MW10A	EM09	3/26/2018	N	440-207137-7	Alluvium	20.4 - 35.0	--	<0.35	3,300	0.072 J	0.035	<0.0010	2.5	<0.0025	300

Table D.2
Groundater Analytical Results Summary - Secondary Parameters
Seep Well Field Area Bioremediation Treatability Study

Well	Event	Sample Date	QC Type	Lab Sample ID	Lithology	Screened Interval (ft bgs)	Anions by EPA 300.0		Dissolved Gases by RSK-175	Dissolved Metals by SW6010	Dissolved Metals by SW6010	Dissolved Metals by SW6010	Dissolved Metals by SW6010	Dissolved Metals by SW6010	Dissolved Metals by SW6010
							Chloride	Nitrite (as N)	Methane	Aluminum	Barium	Beryllium	Boron	Cadmium	Calcium
							mg/L	mg/L	µg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
SWFTS-MW10A	EM09	3/26/2018	FD	440-207137-8	Alluvium	20.4 - 35.0	--	<0.35	2,800	<0.050	0.032	<0.0010	2.3	<0.0025	280
SWFTS-MW10A	EM10	5/1/2018	N	440-210284-1	Alluvium	20.4 - 35.0	--	<0.70	2,700	<0.050	0.035	<0.0010	2.7	<0.0025	340
SWFTS-MW10A	EM11	7/11/2018	N	440-215585-9	Alluvium	20.4 - 35.0	--	<0.70	2,400	<0.050	0.026	<0.0010	2.4	<0.0025	290
SWFTS-MW10A	EM13	8/14/2018	N	440-218109-10	Alluvium	20.4 - 35.0	--	<0.25	2,200	<0.050	0.024	<0.0010	2.2	<0.0025	270
SWFTS-MW10A	EM14	9/10/2018	N	440-219797-4	Alluvium	20.4 - 35.0	--	<0.25	1,500	<0.050	0.023	<0.0010	2.1	<0.0025	250
SWFTS-MW10A	EM15	10/9/2018	N	440-221855-9	Alluvium	20.4 - 35.0	--	<0.25	2,000	<0.25	0.028 J	<0.0050	2.3	<0.013	280
SWFTS-MW10A	EM19	5/21/2019	N	440-242084-2	Alluvium	20.4 - 35.0	--	--	--	<0.050	0.022	<0.0010	2.1	<0.0025	240
SWFTS-MW10A	EM22	11/6/2019	N	440-254051-1	Alluvium	20.4 - 35.0	--	--	560	0.065 J	0.022	<0.0010	2.2 J	<0.0025	250
SWFTS-MW10A	EM26	4/29/2020	N	440-265342-6	Alluvium	20.4 - 35.0	--	--	--	<0.050	0.023	<0.0010	2.5	<0.0025	300
SWFTS-MW10A	EM29	10/14/2020	N	440-273303-4	Alluvium	20.4 - 35.0	--	--	0.079 J	0.067 J	0.019	<0.0010	2.4	<0.0025	290
SWFTS-MW10A	EM33	6/4/2021	N	550-164930-13	Alluvium	20.4 - 35.0	--	--	--	--	--	--	--	--	--
SWFTS-MW10A	EM33	6/4/2021	N	550-164930-14	Alluvium	20.4 - 35.0	--	--	--	0.34	0.020 J+	0.00051 J	2.5	<0.00072	280
SWFTS-MW10A	EM36	11/30/2021	N	550-174968-17	Alluvium	20.4 - 35.0	--	--	22	--	--	--	--	--	--
SWFTS-MW10A	EM36	11/30/2021	N	550-174968-18	Alluvium	20.4 - 35.0	--	--	--	0.32	0.020	<0.00019	2.3	<0.00072	280
SWFTS-MW10A	EM40	12/15/2022	N	550-195103-1	Alluvium	20.4 - 35.0	--	--	13	--	--	--	--	--	--
SWFTS-MW10A	EM40	12/15/2022	N	550-195103-2	Alluvium	20.4 - 35.0	--	--	--	0.28	0.016	<0.00019	2.5	<0.00072	360
SWFTS-MW10C	BL01	3/28/2017	N	440-180820-4	UMCf	43.5 - 63.1	1,500	--	--	<0.050	0.015	<0.0010	3.1	<0.0025	600
SWFTS-MW10C	EM40	12/15/2022	N	550-195103-3	UMCf	43.5 - 63.1	--	--	3.0 J	--	--	--	--	--	--
SWFTS-MW10C	EM40	12/15/2022	N	550-195103-4	UMCf	43.5 - 63.1	--	--	--	0.30	0.020	0.00064 J	3.2	<0.00072	500
SWFTS-MW11	BL02	7/12/2017	N	440-188244-7	Alluvium	14.8 - 39.6	1,300	<1.4	3.70	0.098 J	0.040	<0.0010	2.9	<0.0025	430
SWFTS-MW11	EM04	10/11/2017	N	440-194094-8	Alluvium	14.8 - 39.6	1,300	<0.70	<0.25	<0.050	0.021	<0.0010	2.8	<0.0025	370
SWFTS-MW11	EM06	11/16/2017	N	440-196786-3	Alluvium	14.8 - 39.6	1,500	--	--	--	--	--	--	--	--
SWFTS-MW11	EM07	12/14/2017	N	440-198571-13	Alluvium	14.8 - 39.6	--	--	--	--	--	--	--	--	--
SWFTS-MW11	EM08	2/21/2018	N	440-203937-10	Alluvium	14.8 - 39.6	--	--	--	--	--	--	--	--	--
SWFTS-MW11	EM08	2/21/2018	FD	440-203937-11	Alluvium	14.8 - 39.6	--	--	--	--	--	--	--	--	--
SWFTS-MW11	EM09	3/28/2018	N	440-207497-7	Alluvium	14.8 - 39.6	--	--	--	--	--	--	--	--	--
SWFTS-MW11	EM09	3/28/2018	FD	440-207497-8	Alluvium	14.8 - 39.6	--	--	--	--	--	--	--	--	--
SWFTS-MW11	EM10	5/1/2018	N	440-210284-11	Alluvium	14.8 - 39.6	--	--	--	--	--	--	--	--	--
SWFTS-MW11	EM10	5/1/2018	FD	440-210367-1	Alluvium	14.8 - 39.6	--	--	--	--	--	--	--	--	--
SWFTS-MW11	EM11	7/12/2018	N	440-215717-17	Alluvium	14.8 - 39.6	--	<0.70	<0.25	<0.050	0.017	<0.0010	2.6	<0.0025	320
SWFTS-MW11	EM11	7/12/2018	FD	440-215717-18	Alluvium	14.8 - 39.6	--	<0.70	<0.25	<0.050	0.017	<0.0010	2.6	<0.0025	320
SWFTS-MW11	EM15	10/11/2018	N	440-222092-10	Alluvium	14.8 - 39.6	--	<0.50	<0.25	<0.050	0.024	<0.0010	3.2	<0.0025	360
SWFTS-MW11	EM15	10/11/2018	FD	440-222092-11	Alluvium	14.8 - 39.6	--	<0.50	<0.25	<0.050	0.017	<0.0010	2.7	<0.0025	350
SWFTS-MW11	EM19	5/22/2019	N	440-242200-3	Alluvium	14.8 - 39.6	--	--	--	<0.050	0.016	<0.0010	2.3	<0.0025	260
SWFTS-MW11	EM19	5/22/2019	FD	440-242200-4	Alluvium	14.8 - 39.6	--	--	--	<0.050	0.016	<0.0010	2.3	<0.0025	260
SWFTS-MW11	EM22	11/7/2019	N	440-254150-3	Alluvium	14.8 - 39.6	--	--	<0.25	0.062 J	0.014	<0.0010	1.9	<0.0025	220
SWFTS-MW11	EM22	11/7/2019	FD	440-254150-4	Alluvium	14.8 - 39.6	--	--	<0.25	0.066 J	0.015	<0.0010	2.0	<0.0025	220
SWFTS-MW11	EM26	4/30/2020	N	440-265383-4	Alluvium	14.8 - 39.6	--	--	--	<0.050	0.018	<0.0010	1.9	<0.0025	340
SWFTS-MW11	EM26	4/30/2020	FD	440-265383-5	Alluvium	14.8 - 39.6	--	--	--	<0.050	0.018	<0.0010	1.9	<0.0025	330
SWFTS-MW11	EM29	10/16/2020	N	440-273433-7	Alluvium	14.8 - 39.6	--	--	0.17 J	0.061 J	0.016	<0.0010	2.0	<0.0025	310
SWFTS-MW11	EM29	10/16/2020	FD	440-273433-8	Alluvium	14.8 - 39.6	--	--	0.13 J	0.063 J	0.016	<0.0010	2.0	<0.0025	320
SWFTS-MW11	EM33	6/4/2021	N	550-164930-7	Alluvium	14.8 - 39.6	--	--	--	--	--	--	--	--	--
SWFTS-MW11	EM33	6/4/2021	N	550-164930-8	Alluvium	14.8 - 39.6	--	--	--	0.33	0.014 J+	<0.00019	1.8	<0.00072	300
SWFTS-MW11	EM33	6/4/2021	FD	550-164930-10	Alluvium	14.8 - 39.6	--	--	--	0.31	0.014 J+	<0.00019	1.8	<0.00072	300
SWFTS-MW11	EM33	6/4/2021	FD	550-164930-9	Alluvium	14.8 - 39.6	--	--	--	--	--	--	--	--	--
SWFTS-MW11	EM36	12/3/2021	N	550-175222-7	Alluvium	14.8 - 39.6	--	--	<0.63	--	--	--	--	--	--
SWFTS-MW11	EM36	12/3/2021	N	550-175222-8	Alluvium	14.8 - 39.6	--	--	--	0.31	0.017	<0.00019	1.8	<0.00072	360
SWFTS-MW11	EM36	12/3/2021	FD	550-175222-10	Alluvium	14.8 - 39.6	--	--	--	0.31	0.018	<0.00019	1.8	<0.00072	390
SWFTS-MW11	EM36	12/3/2021	FD	550-175222-9	Alluvium	14.8 - 39.6	--	--	<0.63	--	--	--	--	--	--
SWFTS-MW11	EM40	12/15/2022	N	550-195103-5	Alluvium	14.8 - 39.6	--	--	<0.63	--	--	--	--	--	--
SWFTS-MW11	EM40	12/15/2022	N	550-195103-6	Alluvium	14.8 - 39.6	--	--	--	0.21	0.012	<0.00019	2.1	<0.00072	330
SWFTS-MW11	EM40	12/15/2022	FD	550-195103-7	Alluvium	14.8 - 39.6	--	--	<0.63	--	--	--	--	--	--
SWFTS-MW11	EM40	12/15/2022	FD	550-195103-8	Alluvium	14.8 - 39.6	--	--	--	0.24	0.012	<0.00019	2.1	<0.00072	320
SWFTS-MW12	BL02	7/13/2017	N	440-188324-6	Alluvium	15.8 - 40.6	950	--	--	<0.050	0.033	<0.0010	3.4	<0.0025	530
SWFTS-MW12	EM04	10/11/2017	N	440-194090-1	Alluvium	15.8 - 40.6	910	<0.70	<0.25	<0.050	0.028	<0.0010	3.3	<0.0025	530
SWFTS-MW12	EM06	11/14/2017	N	440-196558-5	Alluvium	15.8 - 40.6	990	--	--	--	--	--	--	--	--
SWFTS-MW12	EM07	12/14/2017	N	440-198571-15	Alluvium	15.8 - 40.6	--	--	--	--	--	--	--	--	--
SWFTS-MW12	EM08	2/22/2018	N	440-204033-2	Alluvium	15.8 - 40.6	--	--	--	--	--	--	--	--	--
SWFTS-MW12	EM09	3/28/2018	N	440-207497-5	Alluvium	15.8 - 40.6	--	--	--	--	--	--	--	--	--
SWFTS-MW12	EM10	5/3/2018	N	440-210534-4	Alluvium	15.8 - 40.6	--	--	--	--	--	--	--	--	--
SWFTS-MW12	EM11	7/12/2018	N	440-215717-16	Alluvium	15.8 - 40.6	--	--	--	<0.050	0.030	<0.0010	3.4	<0.0025	510
SWFTS-MW12	EM15	10/11/2018	N	440-222092-12	Alluvium	15.8 - 40.6	--	--	--	<0.050	0.024	<0.0010	3.2	<0.0025	460
SWFTS-MW12	EM19	5/22/2019	N	440-242198-7	Alluvium	15.8 - 40.6	--	--	--	<0.050	0.028	<0.0010	3.4	<0.0025	560
SWFTS-MW12	EM22	11/7/2019	N	440-254150-2	Alluvium	15.8 - 40.6	--	--	<0.25 UJ	<0.25	0.094	<0.0050	3.6	<0.013	510

Table D.2
Groundater Analytical Results Summary - Secondary Parameters
Seep Well Field Area Bioremediation Treatability Study

Well	Event	Sample Date	QC Type	Lab Sample ID	Lithology	Screened Interval (ft bgs)	Anions by EPA 300.0		Dissolved Gases by RSK-175	Dissolved Metals by SW6010	Dissolved Metals by SW6010	Dissolved Metals by SW6010	Dissolved Metals by SW6010	Dissolved Metals by SW6010	Dissolved Metals by SW6010
							Chloride	Nitrite (as N)	Methane	Aluminum	Barium	Beryllium	Boron	Cadmium	Calcium
							mg/L	mg/L	µg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
SWFTS-MW12	EM22	11/26/2019	N	440-255698-1	Alluvium	15.8 - 40.6	--	--	84.0 J	0.077 J	0.14 J-	<0.0010 UJ	3.5 J-	<0.0025 UJ	440 J-
SWFTS-MW12	EM22	11/26/2019	FD	440-255698-2	Alluvium	15.8 - 40.6	--	--	91.0 J	0.080 J	0.13 J-	<0.0010 UJ	3.2 J-	<0.0025 UJ	390 J-
SWFTS-MW12	EM26	4/30/2020	N	440-265383-3	Alluvium	15.8 - 40.6	--	--	--	<0.050	0.13	<0.0010	2.1	<0.0025	310
SWFTS-MW12	EM29	10/16/2020	N	440-273433-6	Alluvium	15.8 - 40.6	--	--	4,900	0.059 J	0.11	<0.0010	2.8	<0.0025	430
SWFTS-MW12	EM33	6/4/2021	N	550-164930-5	Alluvium	15.8 - 40.6	--	--	--	--	--	--	--	--	--
SWFTS-MW12	EM33	6/4/2021	N	550-164930-6	Alluvium	15.8 - 40.6	--	--	--	0.42	0.062	<0.00019	3.0	<0.00072	450
SWFTS-MW12	EM36	12/2/2021	N	550-175153-19	Alluvium	15.8 - 40.6	--	--	1,300	--	--	--	--	--	--
SWFTS-MW12	EM36	12/2/2021	N	550-175153-20	Alluvium	15.8 - 40.6	--	--	--	0.38	0.046	<0.00019	3.2	<0.00072	440
SWFTS-MW12	EM40	12/15/2022	N	550-195103-10	Alluvium	15.8 - 40.6	--	--	--	0.20	0.037	<0.00019	2.1	<0.00072	340
SWFTS-MW12	EM40	12/15/2022	N	550-195103-9	Alluvium	15.8 - 40.6	--	--	2,600	--	--	--	--	--	--
SWFTS-MW13	BL02	7/12/2017	N	440-188244-6	Alluvium	17.8 - 47.6	900	<1.4	5.90	0.072 J	0.029	<0.0010	2.9	<0.0025	580
SWFTS-MW13	EM04	10/10/2017	N	440-193989-4	Alluvium	17.8 - 47.6	1,200	--	--	<0.050	0.024	<0.0010	3.4	<0.0025	650
SWFTS-MW13	EM06	11/15/2017	N	440-196659-1	Alluvium	17.8 - 47.6	1,100	--	--	--	--	--	--	--	--
SWFTS-MW13	EM07	12/14/2017	N	440-198571-14	Alluvium	17.8 - 47.6	--	--	--	--	--	--	--	--	--
SWFTS-MW13	EM08	2/22/2018	N	440-204033-7	Alluvium	17.8 - 47.6	--	--	--	--	--	--	--	--	--
SWFTS-MW13	EM09	3/26/2018	N	440-207137-4	Alluvium	17.8 - 47.6	--	--	--	--	--	--	--	--	--
SWFTS-MW13	EM10	5/3/2018	N	440-210534-1	Alluvium	17.8 - 47.6	--	--	--	--	--	--	--	--	--
SWFTS-MW13	EM11	7/12/2018	N	440-215717-15	Alluvium	17.8 - 47.6	--	--	--	<0.050	0.027	<0.0010	2.9	<0.0025	570
SWFTS-MW13	EM15	10/11/2018	N	440-222092-14	Alluvium	17.8 - 47.6	--	--	--	<0.050	0.027	<0.0010	3.4	<0.0025	680
SWFTS-MW13	EM19	5/22/2019	N	440-242198-5	Alluvium	17.8 - 47.6	--	--	--	<0.050	0.025	<0.0010	3.0	<0.0025	610
SWFTS-MW13	EM22	11/6/2019	N	440-254051-6	Alluvium	17.8 - 47.6	--	--	<0.25	<0.25	0.025 J	<0.0050	3.1	<0.013	590
SWFTS-MW13	EM26	4/30/2020	N	440-265383-2	Alluvium	17.8 - 47.6	--	--	--	<0.050	0.024	<0.0010	3.4	<0.0025	570
SWFTS-MW13	EM29	10/15/2020	N	550-151259-6	Alluvium	17.8 - 47.6	--	--	<0.078	<0.050	0.021	<0.0010	2.9	<0.0025	530
SWFTS-MW13	EM33	6/4/2021	N	550-164930-3	Alluvium	17.8 - 47.6	--	--	--	--	--	--	--	--	--
SWFTS-MW13	EM33	6/4/2021	N	550-164930-4	Alluvium	17.8 - 47.6	--	--	--	0.51	0.023 J+	<0.00019	3.5	<0.00072	620
SWFTS-MW13	EM36	12/2/2021	N	550-175153-17	Alluvium	17.8 - 47.6	--	--	<0.63	--	--	--	--	--	--
SWFTS-MW13	EM36	12/2/2021	N	550-175153-18	Alluvium	17.8 - 47.6	--	--	--	0.48	0.022 J+	<0.00019	3.5	<0.00072	570
SWFTS-MW13	EM40	12/15/2022	N	550-195106-7	Alluvium	17.8 - 47.6	--	--	<0.63	--	--	--	--	--	--
SWFTS-MW13	EM40	12/15/2022	N	550-195106-8	Alluvium	17.8 - 47.6	--	--	--	0.31	0.020	<0.00019	2.4	<0.00072	580
SWFTS-MW14	BL02	7/12/2017	N	440-188244-8	Alluvium	16.8 - 36.6	1,700	<1.4	<0.25	0.084 J	0.022	<0.0010	2.9	<0.0025	520
SWFTS-MW14	BL02	7/12/2017	FD	440-188244-9	Alluvium	16.8 - 36.6	1,700	<1.4	<0.25	0.061 J	0.022	<0.0010	3.0	<0.0025	510
SWFTS-MW14	EM04	10/11/2017	N	440-194242-8	Alluvium	16.8 - 36.6	1,500	<0.70	13.0	<0.050	0.066	<0.0010	2.8	<0.0025	350
SWFTS-MW14	EM06	11/15/2017	N	440-196659-3	Alluvium	16.8 - 36.6	1,500	<0.70	49.0	0.25 J+	0.053	<0.0010	2.6	<0.0025	300
SWFTS-MW14	EM07	12/12/2017	N	440-198371-12	Alluvium	16.8 - 36.6	--	--	--	--	--	--	--	--	--
SWFTS-MW14	EM08	2/20/2018	N	440-203841-11	Alluvium	16.8 - 36.6	--	<1.4	760 J-	<0.10	0.037	0.0020 J	2.8	<0.0050	490
SWFTS-MW14	EM09	3/26/2018	N	440-207137-9	Alluvium	16.8 - 36.6	--	<0.35	2,300	<0.25	0.042 J	<0.0050	2.8 J+	<0.013	320
SWFTS-MW14	EM10	4/30/2018	N	440-210173-9	Alluvium	16.8 - 36.6	--	<0.70	7,400	<0.25	0.11	<0.0050	2.8	<0.013	220
SWFTS-MW14	EM11	7/10/2018	N	440-215437-8	Alluvium	16.8 - 36.6	--	<0.70	12,000	<0.050	0.31	<0.0010	2.7	<0.0025	220
SWFTS-MW14	EM13	8/14/2018	N	440-218109-11	Alluvium	16.8 - 36.6	--	<0.25	9,900	<0.050	0.28	<0.0010	2.5	<0.0025	220
SWFTS-MW14	EM14	9/11/2018	N	440-219886-17	Alluvium	16.8 - 36.6	--	<0.25	9,000	0.051 J	0.29	<0.0010	2.8	<0.0025	230
SWFTS-MW14	EM15	10/9/2018	N	440-221855-10	Alluvium	16.8 - 36.6	--	<0.50	12,000	<0.25	0.33	<0.0050	2.9	<0.013	280
SWFTS-MW14	EM19	5/21/2019	N	440-242084-1	Alluvium	16.8 - 36.6	--	--	--	<0.050	0.15	<0.0010	2.5	<0.0025	230
SWFTS-MW14	EM22	11/6/2019	N	440-254051-2	Alluvium	16.8 - 36.6	--	--	9,300	0.066 J	0.12	<0.0010	2.3	<0.0025	200
SWFTS-MW14	EM26	5/1/2020	N	440-265414-2	Alluvium	16.8 - 36.6	--	--	--	0.050 J	0.089	<0.0010	2.2	<0.0025	280
SWFTS-MW14	EM29	10/14/2020	N	440-273303-5	Alluvium	16.8 - 36.6	--	--	6,700	0.062 J	0.052	<0.0010	2.1	<0.0025	270
SWFTS-MW14	EM33	6/4/2021	N	550-164930-1	Alluvium	16.8 - 36.6	--	--	--	--	--	--	--	--	--
SWFTS-MW14	EM33	6/4/2021	N	550-164930-2	Alluvium	16.8 - 36.6	--	--	--	0.30	0.038	0.0014 J+	2.1	<0.00072	250
SWFTS-MW14	EM36	12/3/2021	N	550-175222-1	Alluvium	16.8 - 36.6	--	--	4,400	--	--	--	--	--	--
SWFTS-MW14	EM36	12/3/2021	N	550-175222-2	Alluvium	16.8 - 36.6	--	--	--	0.24	0.039	<0.00019	2.2	<0.00072	250
SWFTS-MW14	EM40	12/15/2022	N	550-195106-3	Alluvium	16.8 - 36.6	--	--	95	--	--	--	--	--	--
SWFTS-MW14	EM40	12/15/2022	N	550-195106-4	Alluvium	16.8 - 36.6	--	--	--	0.22	0.037	<0.00019	2.2	<0.00072	370
SWFTS-MW15	BL02	7/13/2017	N	440-188325-3	Alluvium	14.8 - 34.6	1,300	<0.70	<0.25	1.2	0.040	<0.0010	2.7	<0.0025	410
SWFTS-MW15	EM04	10/10/2017	N	440-194094-1	Alluvium	14.8 - 34.6	1,100	<0.70	<0.25	<0.050	0.018	<0.0010	2.5	<0.0025	290
SWFTS-MW15	EM06	11/14/2017	N	440-196558-4	Alluvium	14.8 - 34.6	1,200	--	--	--	--	--	--	--	--
SWFTS-MW15	EM07	12/13/2017	N	440-198508-13	Alluvium	14.8 - 34.6	--	<0.70	--	0.098 J	0.027	<0.0010	2.9	<0.0025	340
SWFTS-MW15	EM08	2/19/2018	N	440-203775-4	Alluvium	14.8 - 34.6	--	--	--	--	--	--	--	--	--
SWFTS-MW15	EM09	3/26/2018	N	440-207137-10	Alluvium	14.8 - 34.6	--	--	--	--	--	--	--	--	--
SWFTS-MW15	EM10	5/2/2018	N	440-210430-3	Alluvium	14.8 - 34.6	--	--	--	--	--	--	--	--	--
SWFTS-MW15	EM11	7/11/2018	N	440-215717-1	Alluvium	14.8 - 34.6	--	--	--	<0.050	0.025	<0.0010	2.4	<0.0025	270
SWFTS-MW15	EM15	10/9/2018	N	440-221855-11	Alluvium	14.8 - 34.6	--	--	--	<0.25	0.079	<0.0050	2.5	<0.013	270
SWFTS-MW15	EM19	5/20/2019	N	440-242014-1	Alluvium	14.8 - 34.6	--	--	--	0.076 J	0.028	<0.0010	2.0	<0.0025	250
SWFTS-MW15	EM22	11/6/2019	N	440-254051-3	Alluvium	14.8 - 34.6	--	--	<0.25	0.15	0.021	<0.0010	1.8	<0.0025	230
SWFTS-MW15	EM26	4/29/2020	N	440-265342-3	Alluvium	14.8 - 34.6	--	--	--	<0.050	0.041	<0.0010	2.0	<0.0025	280
SWFTS-MW15	EM29	10/15/2020	N	550-151259-4	Alluvium	14.8 - 34.6	--	--	100	<0.050	0.039	<0.0010	1.7	<0.0025	230

Table D.2
Groundater Analytical Results Summary - Secondary Parameters
Seep Well Field Area Bioremediation Treatability Study

Well	Event	Sample Date	QC Type	Lab Sample ID	Lithology	Screened Interval (ft bgs)	Anions by EPA 300.0		Dissolved Gases by RSK-175	Dissolved Metals by SW6010	Dissolved Metals by SW6010	Dissolved Metals by SW6010	Dissolved Metals by SW6010	Dissolved Metals by SW6010	Dissolved Metals by SW6010
							Chloride	Nitrite (as N)	Methane	Aluminum	Barium	Beryllium	Boron	Cadmium	Calcium
							mg/L	mg/L	µg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
SWFTS-MW15	EM33	6/3/2021	N	550-164869-13	Alluvium	14.8 - 34.6	--	--	--	--	--	--	--	--	--
SWFTS-MW15	EM33	6/3/2021	N	550-164869-14	Alluvium	14.8 - 34.6	--	--	--	0.29	0.043	<0.00019	1.8	<0.00072	290
SWFTS-MW15	EM36	11/30/2021	N	550-174968-10	Alluvium	14.8 - 34.6	--	--	--	0.34	0.036	<0.00019	1.7	<0.00072	410
SWFTS-MW15	EM36	11/30/2021	N	550-174968-9	Alluvium	14.8 - 34.6	--	--	2.2 J	--	--	--	--	--	--
SWFTS-MW15	EM40	12/15/2022	N	550-195106-1	Alluvium	14.8 - 34.6	--	--	5.3	--	--	--	--	--	--
SWFTS-MW15	EM40	12/15/2022	N	550-195106-2	Alluvium	14.8 - 34.6	--	--	--	0.18 J	0.051	<0.00019	1.8	<0.00072	240
SWFTS-MW16	BL02	7/13/2017	N	440-188325-2	Alluvium	21.8 - 41.6	1,100	--	--	1.7	0.052	<0.0010	3.0	<0.0025	510
SWFTS-MW16	EM04	10/12/2017	N	440-194204-7	Alluvium	21.8 - 41.6	960	<0.70	0.920 J	<0.050	0.058	<0.0010	2.7	<0.0025	380
SWFTS-MW16	EM06	11/16/2017	N	440-196786-4	Alluvium	21.8 - 41.6	970	<0.70	670	2.5	0.50	<0.0010	2.5	<0.0025	220
SWFTS-MW16	EM07	12/12/2017	N	440-198371-4	Alluvium	21.8 - 41.6	--	--	--	--	--	--	--	--	--
SWFTS-MW16	EM08	2/21/2018	N	440-203937-6	Alluvium	21.8 - 41.6	--	<1.4	6,900	0.48 J+	0.22	<0.0010	3.0	<0.0025	320
SWFTS-MW16	EM09	3/27/2018	N	440-207268-13	Alluvium	21.8 - 41.6	--	<0.70	27.0	0.26 J+	0.025	<0.0010	2.3	<0.0025	300
SWFTS-MW16	EM10	5/2/2018	N	440-210430-13	Alluvium	21.8 - 41.6	--	<0.070	11,000	<0.10	0.16	<0.0020	2.8	<0.0050	340
SWFTS-MW16	EM11	7/11/2018	N	440-215585-12	Alluvium	21.8 - 41.6	--	<0.70	10,000	<0.050	0.13	<0.0010	2.8	<0.0025	270
SWFTS-MW16	EM13	8/15/2018	N	440-218208-13	Alluvium	21.8 - 41.6	--	<0.13	9,200	0.23	0.11	<0.0010	2.5	<0.0025	250
SWFTS-MW16	EM14	9/10/2018	N	440-219797-6	Alluvium	21.8 - 41.6	--	<0.13	12,000	<0.050	0.10	<0.0010	2.4	<0.0025	260
SWFTS-MW16	EM15	10/11/2018	N	440-222092-3	Alluvium	21.8 - 41.6	--	<0.25	8,600	0.057 J	0.080	<0.0010	2.8	<0.0025	320
SWFTS-MW16	EM19	5/20/2019	N	440-242014-3	Alluvium	21.8 - 41.6	--	--	--	0.29	0.091	<0.0010	2.2	<0.0025	270
SWFTS-MW16	EM22	11/6/2019	N	440-254051-5	Alluvium	21.8 - 41.6	--	--	11,000	0.11	0.13	<0.0010	2.0	<0.0025	220
SWFTS-MW16	EM26	4/30/2020	N	440-265383-1	Alluvium	21.8 - 41.6	--	--	--	<0.050	0.082	<0.0010	2.0	<0.0025	290
SWFTS-MW16	EM29	10/15/2020	N	550-151259-1	Alluvium	21.8 - 41.6	--	--	2,700	<0.050	0.054	<0.0010	1.7	<0.0025	230
SWFTS-MW16	EM33	6/3/2021	N	550-164869-11	Alluvium	21.8 - 41.6	--	--	--	--	--	--	--	--	--
SWFTS-MW16	EM33	6/3/2021	N	550-164869-12	Alluvium	21.8 - 41.6	--	--	--	0.31	0.057	<0.00019	1.8	<0.00072	290
SWFTS-MW16	EM36	11/30/2021	N	550-174968-11	Alluvium	21.8 - 41.6	--	--	11,000	--	--	--	--	--	--
SWFTS-MW16	EM36	11/30/2021	N	550-174968-12	Alluvium	21.8 - 41.6	--	--	--	0.32	0.058	<0.00019	1.7	<0.00072	360
SWFTS-MW16	EM40	12/14/2022	N	550-195013-15	Alluvium	21.8 - 41.6	--	--	5,100	--	--	--	--	--	--
SWFTS-MW16	EM40	12/14/2022	N	550-195013-16	Alluvium	21.8 - 41.6	--	--	--	0.30	0.046	<0.00019	2.1	<0.00072	350
SWFTS-MW17	BL02	7/12/2017	N	440-188244-1	Alluvium	22.8 - 52.6	650	--	--	0.063 J	0.027	<0.0010	1.7	<0.0025	610
SWFTS-MW17	EM04	10/10/2017	N	440-193989-3	Alluvium	22.8 - 52.6	670	<0.70	<0.25	<0.050	0.024	<0.0010	1.8	<0.0025	580
SWFTS-MW17	EM06	11/15/2017	N	440-196659-5	Alluvium	22.8 - 52.6	580	--	--	--	--	--	--	--	--
SWFTS-MW17	EM06	11/15/2017	FD	440-196659-6	Alluvium	22.8 - 52.6	570	--	--	--	--	--	--	--	--
SWFTS-MW17	EM07	12/13/2017	N	440-198508-6	Alluvium	22.8 - 52.6	--	--	--	--	--	--	--	--	--
SWFTS-MW17	EM07	12/13/2017	FD	440-198508-7	Alluvium	22.8 - 52.6	--	--	--	--	--	--	--	--	--
SWFTS-MW17	EM08	2/22/2018	N	440-204033-11	Alluvium	22.8 - 52.6	--	--	--	--	--	--	--	--	--
SWFTS-MW17	EM09	3/28/2018	N	440-207497-11	Alluvium	22.8 - 52.6	--	--	--	--	--	--	--	--	--
SWFTS-MW17	EM10	5/3/2018	N	440-210534-3	Alluvium	22.8 - 52.6	--	--	--	--	--	--	--	--	--
SWFTS-MW17	EM11	7/11/2018	N	440-215585-13	Alluvium	22.8 - 52.6	--	--	--	<0.050	0.021	<0.0010	1.4	<0.0025	490
SWFTS-MW17	EM15	10/11/2018	N	440-222092-4	Alluvium	22.8 - 52.6	--	--	--	<0.050	0.020	<0.0010	1.4	<0.0025	490
SWFTS-MW17	EM19	5/22/2019	N	440-242198-6	Alluvium	22.8 - 52.6	--	--	--	<0.050	0.020	<0.0010	1.4	<0.0025	480
SWFTS-MW17	EM22	11/7/2019	N	440-254150-1	Alluvium	22.8 - 52.6	--	--	<0.25	0.079 J	0.021	<0.0010	1.4	<0.0025	510
SWFTS-MW17	EM26	4/30/2020	N	440-265383-6	Alluvium	22.8 - 52.6	--	--	--	<0.050	0.021	<0.0010	1.6	<0.0025	530
SWFTS-MW17	EM29	10/15/2020	N	550-151259-5	Alluvium	22.8 - 52.6	--	--	<0.078	<0.050	0.019	<0.0010	1.3	<0.0025	480
SWFTS-MW17	EM33	6/3/2021	N	550-164869-10	Alluvium	22.8 - 52.6	--	--	--	0.40	0.021 J+	<0.00019	1.5	<0.00072	520
SWFTS-MW17	EM33	6/3/2021	N	550-164869-9	Alluvium	22.8 - 52.6	--	--	--	--	--	--	--	--	--
SWFTS-MW17	EM36	12/2/2021	N	550-175153-21	Alluvium	22.8 - 52.6	--	--	<0.63	--	--	--	--	--	--
SWFTS-MW17	EM36	12/2/2021	N	550-175153-22	Alluvium	22.8 - 52.6	--	--	--	0.33	0.020 J+	<0.00019	1.8	<0.00072	480
SWFTS-MW17	EM40	12/14/2022	N	550-195013-13	Alluvium	22.8 - 52.6	--	--	<0.63	--	--	--	--	--	--
SWFTS-MW17	EM40	12/14/2022	N	550-195013-14	Alluvium	22.8 - 52.6	--	--	--	0.35	0.019	<0.00019	1.5	<0.00072	480
SWFTS-MW18	BL02	7/11/2017	N	440-188133-17	Alluvium	16.8 - 36.6	1,200	<0.70	<0.25	0.063 J	0.031	<0.0010	2.8	<0.0025	460
SWFTS-MW18	EM04	10/10/2017	N	440-194094-3	Alluvium	16.8 - 36.6	1,100	--	--	<0.050	0.022	<0.0010	2.6	<0.0025	350
SWFTS-MW18	EM06	11/15/2017	N	440-196690-11	Alluvium	16.8 - 36.6	1,100	--	--	--	--	--	--	--	--
SWFTS-MW18	EM07	12/13/2017	N	440-198508-5	Alluvium	16.8 - 36.6	--	<0.35	20.0	<0.050	0.024	<0.0010	3.0	<0.0025	380
SWFTS-MW18	EM08	2/22/2018	N	440-204033-4	Alluvium	16.8 - 36.6	--	--	--	--	--	--	--	--	--
SWFTS-MW18	EM09	3/27/2018	N	440-207268-11	Alluvium	16.8 - 36.6	--	--	--	--	--	--	--	--	--
SWFTS-MW18	EM09	3/27/2018	FD	440-207268-12	Alluvium	16.8 - 36.6	--	--	--	--	--	--	--	--	--
SWFTS-MW18	EM10	5/1/2018	N	440-210284-6	Alluvium	16.8 - 36.6	--	--	--	--	--	--	--	--	--
SWFTS-MW18	EM11	7/11/2018	N	440-215717-2	Alluvium	16.8 - 36.6	--	--	--	<0.050	0.024	<0.0010	2.6	<0.0025	320
SWFTS-MW18	EM15	10/11/2018	N	440-222092-5	Alluvium	16.8 - 36.6	--	--	--	0.063 J	0.022	<0.0010	2.5	<0.0025	290
SWFTS-MW18	EM19	5/21/2019	N	440-242084-15	Alluvium	16.8 - 36.6	--	--	--	<0.050	0.028	<0.0010	2.4	<0.0025	320
SWFTS-MW18	EM22	11/6/2019	N	440-254051-4	Alluvium	16.8 - 36.6	--	--	1,100	0.087 J	0.041	<0.0010	2.6	<0.0025	300
SWFTS-MW18	EM26	4/29/2020	N	440-265342-2	Alluvium	16.8 - 36.6	--	--	--	<0.050	0.033	<0.0010	2.1	<0.0025	310
SWFTS-MW18	EM29	10/15/2020	N	550-151259-2	Alluvium	16.8 - 36.6	--	--	120	<0.050	0.031	<0.0010	2.0	<0.0025	270
SWFTS-MW18	EM33	6/3/2021	N	550-164869-7	Alluvium	16.8 - 36.6	--	--	--	--	--	--	--	--	--
SWFTS-MW18	EM33	6/3/2021	N	550-164869-8	Alluvium	16.8 - 36.6	--	--	--	0.33	0.049	<0.00019	2.4	<0.00072	330

Table D.2
Groundater Analytical Results Summary - Secondary Parameters
Seep Well Field Area Bioremediation Treatability Study

Well	Event	Sample Date	QC Type	Lab Sample ID	Lithology	Screened Interval (ft bgs)	Anions by EPA 300.0		Dissolved Gases by RSK-175	Dissolved Metals by SW6010	Dissolved Metals by SW6010	Dissolved Metals by SW6010	Dissolved Metals by SW6010	Dissolved Metals by SW6010	Dissolved Metals by SW6010
							Chloride	Nitrite (as N)	Methane	Aluminum	Barium	Beryllium	Boron	Cadmium	Calcium
							mg/L	mg/L	µg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
SWFTS-MW18	EM36	12/1/2021	N	550-175045-5	Alluvium	16.8 - 36.6	--	--	2,200	--	--	--	--	--	--
SWFTS-MW18	EM36	12/1/2021	N	550-175045-6	Alluvium	16.8 - 36.6	--	--	--	0.33	0.062	<0.00019	2.8	<0.00072	340
SWFTS-MW18	EM40	12/14/2022	N	550-195013-11	Alluvium	16.8 - 36.6	--	--	20	--	--	--	--	--	--
SWFTS-MW18	EM40	12/14/2022	N	550-195013-12	Alluvium	16.8 - 36.6	--	--	--	0.30	0.034	<0.00019	2.5	<0.00072	330
SWFTS-MW19	BL02	7/12/2017	N	440-188244-2	Alluvium	11.3 - 31.1	440	<0.14	<0.25	0.079 J	0.011	<0.0010	0.94	<0.0025	160
SWFTS-MW19	EM04	10/12/2017	N	440-194204-1	Alluvium	11.3 - 31.1	480	--	--	<0.050	0.012	<0.0010	0.99	<0.0025	170
SWFTS-MW19	EM06	11/16/2017	N	440-196786-12	Alluvium	11.3 - 31.1	460	--	--	--	--	--	--	--	--
SWFTS-MW19	EM07	12/12/2017	N	440-198371-8	Alluvium	11.3 - 31.1	--	--	--	--	--	--	--	--	--
SWFTS-MW19	EM08	2/20/2018	N	440-203841-6	Alluvium	11.3 - 31.1	--	--	--	--	--	--	--	--	--
SWFTS-MW19	EM09	3/27/2018	N	440-207268-3	Alluvium	11.3 - 31.1	--	--	--	--	--	--	--	--	--
SWFTS-MW19	EM10	4/30/2018	N	440-210173-4	Alluvium	11.3 - 31.1	--	--	--	--	--	--	--	--	--
SWFTS-MW19	EM10	4/30/2018	FD	440-210173-5	Alluvium	11.3 - 31.1	--	--	--	--	--	--	--	--	--
SWFTS-MW19	EM11	7/10/2018	N	440-215437-10	Alluvium	11.3 - 31.1	--	--	--	<0.050	0.012	<0.0010	1.0	<0.0025	180
SWFTS-MW19	EM11	7/10/2018	FD	440-215437-11	Alluvium	11.3 - 31.1	--	--	--	<0.050	0.013	<0.0010	1.1	<0.0025	180
SWFTS-MW19	EM15	10/9/2018	N	440-221855-4	Alluvium	11.3 - 31.1	--	--	--	0.078 J	0.012	<0.0010	1.2	<0.0025	180
SWFTS-MW19	EM15	10/9/2018	FD	440-221855-5	Alluvium	11.3 - 31.1	--	--	--	0.070 J	0.013	<0.0010	1.2	<0.0025	190
SWFTS-MW19	EM19	5/21/2019	N	440-242084-6	Alluvium	11.3 - 31.1	--	--	--	<0.050	0.011	<0.0010	1.0	<0.0025	170
SWFTS-MW19	EM19	5/21/2019	FD	440-242084-7	Alluvium	11.3 - 31.1	--	--	--	<0.050	0.011	<0.0010	1.0	<0.0025	170
SWFTS-MW19	EM22	11/5/2019	N	440-253891-6	Alluvium	11.3 - 31.1	--	--	<0.25	0.051 J	0.012	<0.0010	1.1	<0.0025	170
SWFTS-MW19	EM22	11/5/2019	FD	440-253891-7	Alluvium	11.3 - 31.1	--	--	<0.25	<0.050	0.012	<0.0010	1.0	<0.0025	160
SWFTS-MW19	EM26	4/28/2020	N	440-265288-4	Alluvium	11.3 - 31.1	--	--	--	<0.050	0.017	<0.0010	1.4	<0.0025	270
SWFTS-MW19	EM26	4/28/2020	FD	440-265288-7	Alluvium	11.3 - 31.1	--	--	--	<0.050	0.018	<0.0010	1.4	<0.0025	280
SWFTS-MW19	EM29	10/14/2020	N	440-273303-2	Alluvium	11.3 - 31.1	--	--	<0.078	0.10 J+	0.013	<0.0010	1.2	<0.0025	190
SWFTS-MW19	EM29	10/14/2020	FD	440-273303-3	Alluvium	11.3 - 31.1	--	--	<0.078	0.083 J	0.014	<0.0010	1.2	<0.0025	200
SWFTS-MW19	EM33	6/3/2021	N	550-164869-3	Alluvium	11.3 - 31.1	--	--	--	--	--	--	--	--	--
SWFTS-MW19	EM33	6/3/2021	N	550-164869-4	Alluvium	11.3 - 31.1	--	--	--	0.24	0.014 J+	0.00022 J	1.3	<0.00072	230
SWFTS-MW19	EM33	6/3/2021	FD	550-164869-5	Alluvium	11.3 - 31.1	--	--	--	--	--	--	--	--	--
SWFTS-MW19	EM33	6/3/2021	FD	550-164869-6	Alluvium	11.3 - 31.1	--	--	--	0.21	0.013 J+	<0.00019	1.3	<0.00072	230
SWFTS-MW19	EM36	12/1/2021	N	550-175045-13	Alluvium	11.3 - 31.1	--	--	4.9 J	--	--	--	--	--	--
SWFTS-MW19	EM36	12/1/2021	N	550-175045-14	Alluvium	11.3 - 31.1	--	--	--	0.23	0.013	<0.00019	1.2	<0.00072	210
SWFTS-MW19	EM36	12/1/2021	FD	550-175045-15	Alluvium	11.3 - 31.1	--	--	5.1	--	--	--	--	--	--
SWFTS-MW19	EM36	12/1/2021	FD	550-175045-16	Alluvium	11.3 - 31.1	--	--	--	0.23	0.013	<0.00019	1.3	<0.00072	220
SWFTS-MW19	EM40	12/14/2022	N	550-195013-3	Alluvium	11.3 - 31.1	--	--	<0.63	--	--	--	--	--	--
SWFTS-MW19	EM40	12/14/2022	N	550-195013-4	Alluvium	11.3 - 31.1	--	--	--	0.20	0.013	0.00019 J	1.4	<0.00072	220
SWFTS-MW19	EM40	12/14/2022	FD	550-195013-5	Alluvium	11.3 - 31.1	--	--	<0.63	--	--	--	--	--	--
SWFTS-MW19	EM40	12/14/2022	FD	550-195013-6	Alluvium	11.3 - 31.1	--	--	--	0.21	0.012	<0.00019	1.4	<0.00072	210
SWFTS-MW20	BL02	7/12/2017	N	440-188244-5	Alluvium	12.8 - 37.6	1,700	--	--	0.083 J	0.018	<0.0010	3.2	<0.0050	600
SWFTS-MW20	EM04	10/12/2017	N	440-194202-1	Alluvium	12.8 - 37.6	1,500	<1.4	<0.25	<0.050	0.018	<0.0010	3.2	<0.0025	530
SWFTS-MW20	EM04	10/12/2017	FD	440-194202-2	Alluvium	12.8 - 37.6	1,600	<1.4	<0.25	<0.050	0.019	<0.0010	3.4	<0.0025	570
SWFTS-MW20	EM06	11/16/2017	N	440-196786-7	Alluvium	12.8 - 37.6	1,500	--	--	--	--	--	--	--	--
SWFTS-MW20	EM07	12/12/2017	N	440-198371-3	Alluvium	12.8 - 37.6	--	--	--	--	--	--	--	--	--
SWFTS-MW20	EM08	2/19/2018	N	440-203775-5	Alluvium	12.8 - 37.6	--	--	--	--	--	--	--	--	--
SWFTS-MW20	EM09	3/27/2018	N	440-207268-9	Alluvium	12.8 - 37.6	--	--	--	--	--	--	--	--	--
SWFTS-MW20	EM10	4/30/2018	N	440-210173-10	Alluvium	12.8 - 37.6	--	--	--	--	--	--	--	--	--
SWFTS-MW20	EM11	7/11/2018	N	440-215717-8	Alluvium	12.8 - 37.6	--	--	--	<0.050	0.032	<0.0010	3.2	<0.0025	410
SWFTS-MW20	EM15	10/9/2018	N	440-221855-1	Alluvium	12.8 - 37.6	--	--	--	<0.25	0.039 J	<0.0050	3.5	<0.013	420
SWFTS-MW20	EM19	5/21/2019	N	440-242084-3	Alluvium	12.8 - 37.6	--	--	--	<0.050	0.034	<0.0010	3.3	<0.0025	370
SWFTS-MW20	EM22	11/5/2019	N	440-253918-6	Alluvium	12.8 - 37.6	--	--	3,600	0.077 J	0.038	<0.0010	3.8	<0.0025	400
SWFTS-MW20	EM26	4/29/2020	N	440-265342-5	Alluvium	12.8 - 37.6	--	--	--	<0.050	0.029	<0.0010	3.1	<0.0025	360
SWFTS-MW20	EM29	10/14/2020	N	440-273303-6	Alluvium	12.8 - 37.6	--	--	710	<0.050	0.020	<0.0010	4.0	<0.0025	460
SWFTS-MW20	EM33	6/3/2021	N	550-164869-1	Alluvium	12.8 - 37.6	--	--	--	--	--	--	--	--	--
SWFTS-MW20	EM33	6/3/2021	N	550-164869-2	Alluvium	12.8 - 37.6	--	--	--	0.36	0.023 J+	<0.00019	3.5	<0.00072	370
SWFTS-MW20	EM36	11/29/2021	N	550-174897-1	Alluvium	12.8 - 37.6	--	--	3,300	--	--	--	--	--	--
SWFTS-MW20	EM36	11/29/2021	N	550-174897-2	Alluvium	12.8 - 37.6	--	--	--	0.29	0.030	<0.00019	3.1	<0.00072	300
SWFTS-MW20	EM40	12/13/2022	N	550-194919-7	Alluvium	12.8 - 37.6	--	--	680 J-	--	--	--	--	--	--
SWFTS-MW20	EM40	12/13/2022	N	550-194919-8	Alluvium	12.8 - 37.6	--	--	--	0.44	0.021	<0.00019	4.3	0.00079 J	480
SWFTS-MW21	BL02	7/13/2017	N	440-188324-5	Alluvium	14.8 - 39.6	1,000	<1.4	<0.25	0.83	0.048	<0.0020	3.7	<0.0050	670
SWFTS-MW21	EM04	10/11/2017	N	440-194090-8	Alluvium	14.8 - 39.6	1,000	<0.70	<0.25	<0.050	0.044	<0.0010	3.0	<0.0025	590
SWFTS-MW21	EM06	11/15/2017	N	440-196665-5	Alluvium	14.8 - 39.6	1,300	--	--	--	--	--	--	--	--
SWFTS-MW21	EM07	12/13/2017	N	440-198508-10	Alluvium	14.8 - 39.6	--	1.7	9.40	<0.10	0.040	<0.0020	4.3	<0.0050	680
SWFTS-MW21	EM08	2/20/2018	N	440-203841-9	Alluvium	14.8 - 39.6	--	--	--	--	--	--	--	--	--
SWFTS-MW21	EM08	2/20/2018	FD	440-203841-10	Alluvium	14.8 - 39.6	--	--	--	--	--	--	--	--	--
SWFTS-MW21	EM09	3/27/2018	N	440-207268-14	Alluvium	14.8 - 39.6	--	--	--	--	--	--	--	--	--
SWFTS-MW21	EM10	4/30/2018	N	440-210173-7	Alluvium	14.8 - 39.6	--	--	--	--	--	--	--	--	--

Table D.2
Groundater Analytical Results Summary - Secondary Parameters
Seep Well Field Area Bioremediation Treatability Study

Well	Event	Sample Date	QC Type	Lab Sample ID	Lithology	Screened Interval (ft bgs)	Anions by EPA 300.0		Dissolved Gases by RSK-175	Dissolved Metals by SW6010	Dissolved Metals by SW6010	Dissolved Metals by SW6010	Dissolved Metals by SW6010	Dissolved Metals by SW6010	Dissolved Metals by SW6010
							Chloride	Nitrite (as N)	Methane	Aluminum	Barium	Beryllium	Boron	Cadmium	Calcium
							mg/L	mg/L	µg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
SWFTS-MW21	EM11	7/12/2018	N	440-215717-3	Alluvium	14.8 - 39.6	--	--	--	<0.050	0.033	<0.0010	3.6	<0.0025	540
SWFTS-MW21	EM15	10/9/2018	N	440-221855-3	Alluvium	14.8 - 39.6	--	--	--	<0.25	0.036 J	<0.0050	3.6	<0.013	550
SWFTS-MW21	EM19	5/22/2019	N	440-242198-3	Alluvium	14.8 - 39.6	--	--	--	<0.050	0.030	<0.0010	3.3	<0.0025	560
SWFTS-MW21	EM22	11/4/2019	N	440-253773-3	Alluvium	14.8 - 39.6	--	--	1,000	0.076 J	0.030	<0.0010	3.4	<0.0025	520
SWFTS-MW21	EM26	4/29/2020	N	440-265342-1	Alluvium	14.8 - 39.6	--	--	--	<0.050	0.022	<0.0010	2.3	<0.0025	380
SWFTS-MW21	EM29	10/14/2020	N	440-273303-7	Alluvium	14.8 - 39.6	--	--	1,000	0.49 J+	0.040	<0.0010	3.2	<0.0025	500
SWFTS-MW21	EM33	6/2/2021	N	550-164872-15	Alluvium	14.8 - 39.6	--	--	--	--	--	--	--	--	--
SWFTS-MW21	EM33	6/2/2021	N	550-164872-16	Alluvium	14.8 - 39.6	--	--	--	0.48	0.029	<0.00019	3.3	<0.00072	470
SWFTS-MW21	EM36	12/1/2021	N	550-175045-3	Alluvium	14.8 - 39.6	--	--	1,900	--	--	--	--	--	--
SWFTS-MW21	EM36	12/1/2021	N	550-175045-4	Alluvium	14.8 - 39.6	--	--	--	0.49	0.028	<0.00019	3.2	<0.00072	490
SWFTS-MW21	EM40	12/15/2022	N	550-195106-5	Alluvium	14.8 - 39.6	--	--	170	--	--	--	--	--	--
SWFTS-MW21	EM40	12/15/2022	N	550-195106-6	Alluvium	14.8 - 39.6	--	--	--	0.31	0.028	<0.00019	3.0	<0.00072	490
SWFTS-MW22	BL02	7/13/2017	N	440-188324-1	Alluvium	11.8 - 31.6	690	<0.35	<0.25	15	0.41	<0.0010	1.4	<0.0025	200
SWFTS-MW22	EM04	10/12/2017	N	440-194242-9	Alluvium	11.8 - 31.6	740	--	--	<0.050	0.023	<0.0010	1.5	<0.0025	180
SWFTS-MW22	EM06	11/16/2017	N	440-196786-18	Alluvium	11.8 - 31.6	730	--	--	--	--	--	--	--	--
SWFTS-MW22	EM07	12/14/2017	N	440-198571-17	Alluvium	11.8 - 31.6	--	--	--	--	--	--	--	--	--
SWFTS-MW22	EM08	2/21/2018	N	440-203937-1	Alluvium	11.8 - 31.6	--	--	--	--	--	--	--	--	--
SWFTS-MW22	EM09	3/28/2018	N	440-207497-1	Alluvium	11.8 - 31.6	--	--	--	--	--	--	--	--	--
SWFTS-MW22	EM10	4/30/2018	N	440-210173-6	Alluvium	11.8 - 31.6	--	--	--	--	--	--	--	--	--
SWFTS-MW22	EM11	7/10/2018	N	440-215437-9	Alluvium	11.8 - 31.6	--	--	66.0	<0.050	0.023	<0.0010	1.5	<0.0025	200
SWFTS-MW22	EM15	10/9/2018	N	440-221855-2	Alluvium	11.8 - 31.6	--	--	1.50	<0.25	<0.025	<0.0050	1.5	<0.013	190
SWFTS-MW22	EM19	5/21/2019	N	440-242084-4	Alluvium	11.8 - 31.6	--	--	--	<0.050	0.016	<0.0010	1.4	<0.0025	170
SWFTS-MW22	EM22	11/5/2019	N	440-253891-4	Alluvium	11.8 - 31.6	--	--	<0.25	0.19	0.020	<0.0010	1.5	<0.0025	160
SWFTS-MW22	EM26	4/28/2020	N	440-265288-5	Alluvium	11.8 - 31.6	--	--	--	<0.050	0.018	<0.0010	1.4	<0.0025	180
SWFTS-MW22	EM29	10/14/2020	N	440-273303-1	Alluvium	11.8 - 31.6	--	--	<0.078	0.080 J	0.020	<0.0010	1.6	<0.0025	200
SWFTS-MW22	EM33	6/2/2021	N	550-164872-11	Alluvium	11.8 - 31.6	--	--	--	--	--	--	--	--	--
SWFTS-MW22	EM33	6/2/2021	N	550-164872-12	Alluvium	11.8 - 31.6	--	--	--	0.26	0.022 J+	0.0010 J+	1.7	0.00099 J	200
SWFTS-MW22	EM36	12/2/2021	N	550-175153-1	Alluvium	11.8 - 31.6	--	--	<0.63	--	--	--	--	--	--
SWFTS-MW22	EM36	12/2/2021	N	550-175153-2	Alluvium	11.8 - 31.6	--	--	--	0.20	0.019 J+	<0.00019	1.8	<0.00072	190
SWFTS-MW22	EM40	12/14/2022	N	550-195013-1	Alluvium	11.8 - 31.6	--	--	<0.63	--	--	--	--	--	--
SWFTS-MW22	EM40	12/14/2022	N	550-195013-2	Alluvium	11.8 - 31.6	--	--	--	0.29	0.025	<0.00019	2.4	<0.00072	330
SWFTS-MW23	BL02	7/13/2017	N	440-188325-7	Alluvium	13.8 - 33.6	2,100	--	--	0.052 J	0.015	<0.0010	0.86	<0.0025	190
SWFTS-MW23	EM04	10/11/2017	N	440-194090-7	Alluvium	13.8 - 33.6	460	<0.14	<0.25	<0.050	0.016	<0.0010	0.94	<0.0025	200
SWFTS-MW23	EM06	11/15/2017	N	440-196665-3	Alluvium	13.8 - 33.6	540	--	--	--	--	--	--	--	--
SWFTS-MW23	EM07	12/12/2017	N	440-198371-2	Alluvium	13.8 - 33.6	--	--	--	--	--	--	--	--	--
SWFTS-MW23	EM08	2/21/2018	N	440-203937-14	Alluvium	13.8 - 33.6	--	--	--	--	--	--	--	--	--
SWFTS-MW23	EM09	3/28/2018	N	440-207497-9	Alluvium	13.8 - 33.6	--	--	--	--	--	--	--	--	--
SWFTS-MW23	EM10	5/2/2018	N	440-210430-5	Alluvium	13.8 - 33.6	--	--	--	--	--	--	--	--	--
SWFTS-MW23	EM11	7/10/2018	N	440-215437-7	Alluvium	13.8 - 33.6	--	--	--	0.058 J	0.013	<0.0010	0.97	<0.0025	160
SWFTS-MW23	EM15	10/11/2018	N	440-222092-7	Alluvium	13.8 - 33.6	--	--	--	0.084 J	0.015	<0.0010	1.1	<0.0025	190
SWFTS-MW23	EM19	5/22/2019	N	440-242201-7	Alluvium	13.8 - 33.6	--	--	--	<0.050	0.014	<0.0010	0.93	<0.0025	180
SWFTS-MW23	EM22	11/5/2019	N	440-253891-5	Alluvium	13.8 - 33.6	--	--	<0.25	0.057 J	0.015	<0.0010	1.0	<0.0025	200
SWFTS-MW23	EM26	4/28/2020	N	440-265288-3	Alluvium	13.8 - 33.6	--	--	--	<0.050	0.012	<0.0010	0.96	<0.0025	170
SWFTS-MW23	EM29	10/13/2020	N	440-273236-1	Alluvium	13.8 - 33.6	--	--	<0.078	<0.050	0.015	<0.0010	0.83	<0.0025	170
SWFTS-MW23	EM33	6/2/2021	N	550-164872-3	Alluvium	13.8 - 33.6	--	--	--	--	--	--	--	--	--
SWFTS-MW23	EM33	6/2/2021	N	550-164872-4	Alluvium	13.8 - 33.6	--	--	--	0.16 J	0.014 J+	<0.00019	0.88	<0.00072	180
SWFTS-MW23	EM36	12/2/2021	N	550-175153-15	Alluvium	13.8 - 33.6	--	--	<0.63	--	--	--	--	--	--
SWFTS-MW23	EM36	12/2/2021	N	550-175153-16	Alluvium	13.8 - 33.6	--	--	--	0.13 J	0.013 J+	<0.00019	0.96	<0.00072	160
SWFTS-MW23	EM40	12/13/2022	N	550-194919-5	Alluvium	13.8 - 33.6	--	--	<0.63	--	--	--	--	--	--
SWFTS-MW23	EM40	12/13/2022	N	550-194919-6	Alluvium	13.8 - 33.6	--	--	--	0.15 J	0.014	<0.00019	0.73	<0.00072	170
SWFTS-MW24	BL02	7/13/2017	N	440-188324-2	Alluvium	12.8 - 37.6	1,200	<0.70	<0.25	0.064 J	0.028	<0.0010	2.9	<0.0025	460
SWFTS-MW24	EM04	10/11/2017	N	440-194242-2	Alluvium	12.8 - 37.6	1,200	--	--	<0.050	0.022	<0.0010	2.8	<0.0025	410
SWFTS-MW24	EM06	11/15/2017	N	440-196665-1	Alluvium	12.8 - 37.6	1,200	--	--	--	--	--	--	--	--
SWFTS-MW24	EM07	12/12/2017	N	440-198371-5	Alluvium	12.8 - 37.6	--	--	--	--	--	--	--	--	--
SWFTS-MW24	EM08	2/21/2018	N	440-203937-8	Alluvium	12.8 - 37.6	--	--	--	--	--	--	--	--	--
SWFTS-MW24	EM09	3/28/2018	N	440-207497-12	Alluvium	12.8 - 37.6	--	--	--	--	--	--	--	--	--
SWFTS-MW24	EM10	5/2/2018	N	440-210430-7	Alluvium	12.8 - 37.6	--	--	--	--	--	--	--	--	--
SWFTS-MW24	EM11	7/12/2018	N	440-215717-5	Alluvium	12.8 - 37.6	--	--	--	<0.050	0.019	<0.0010	2.7	<0.0025	320
SWFTS-MW24	EM15	10/10/2018	N	440-221975-7	Alluvium	12.8 - 37.6	--	--	--	0.066 J	0.021	<0.0010	3.2	<0.0025	370
SWFTS-MW24	EM19	5/22/2019	N	440-242198-1	Alluvium	12.8 - 37.6	--	--	--	<0.050	0.020	<0.0010	2.7	<0.0025	350
SWFTS-MW24	EM22	11/5/2019	N	440-253891-2	Alluvium	12.8 - 37.6	--	--	<0.25	0.058 J	0.017	<0.0010	2.5	<0.0025	320
SWFTS-MW24	EM26	4/28/2020	N	440-265288-1	Alluvium	12.8 - 37.6	--	--	--	<0.050	0.024	<0.0010	2.2	<0.0025	310
SWFTS-MW24	EM29	10/12/2020	N	440-273153-1	Alluvium	12.8 - 37.6	--	--	<0.078	<0.050	0.020	<0.0010	2.4	<0.0025	330
SWFTS-MW24	EM33	6/2/2021	N	550-164872-7	Alluvium	12.8 - 37.6	--	--	--	--	--	--	--	--	--

Table D.2
Groundater Analytical Results Summary - Secondary Parameters
Seep Well Field Area Bioremediation Treatability Study

Well	Event	Sample Date	QC Type	Lab Sample ID	Lithology	Screened Interval (ft bgs)	Anions by EPA 300.0		Dissolved Gases by RSK-175	Dissolved Metals by SW6010	Dissolved Metals by SW6010	Dissolved Metals by SW6010	Dissolved Metals by SW6010	Dissolved Metals by SW6010	Dissolved Metals by SW6010
							Chloride	Nitrite (as N)	Methane	Aluminum	Barium	Beryllium	Boron	Cadmium	Calcium
							mg/L	mg/L	µg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
SWFTS-MW24	EM33	6/2/2021	N	550-164872-8	Alluvium	12.8 - 37.6	--	--	--	0.33	0.019 J+	<0.00019	2.3	<0.00072	310
SWFTS-MW24	EM36	12/1/2021	N	550-175045-17	Alluvium	12.8 - 37.6	--	--	<0.63	--	--	--	--	--	--
SWFTS-MW24	EM36	12/1/2021	N	550-175045-18	Alluvium	12.8 - 37.6	--	--	--	0.33	0.021	<0.00019	2.2	<0.00072	340
SWFTS-MW24	EM40	12/13/2022	N	550-194919-3	Alluvium	12.8 - 37.6	--	--	<0.63	--	--	--	--	--	--
SWFTS-MW24	EM40	12/13/2022	N	550-194919-4	Alluvium	12.8 - 37.6	--	--	--	0.33	0.020	<0.00019	2.4	<0.00072	370
SWFTS-MW25	BL02	7/13/2017	N	440-188324-4	Alluvium	12.8 - 42.6	1,400	<1.4	<0.25	0.063 J	0.018	<0.0010	2.6	<0.0025	450
SWFTS-MW25	EM04	10/11/2017	N	440-194242-1	Alluvium	12.8 - 42.6	1,300	--	--	0.077 J	0.044	<0.0010	2.6	<0.0025	350
SWFTS-MW25	EM06	11/15/2017	N	440-196665-2	Alluvium	12.8 - 42.6	1,500	<0.70	--	1.7	0.050	<0.0010	2.3	<0.0025	310
SWFTS-MW25	EM07	12/12/2017	N	440-198371-1	Alluvium	12.8 - 42.6	--	<0.70	--	0.15	0.042	<0.0010	2.9	<0.0025	340
SWFTS-MW25	EM08	2/21/2018	N	440-203937-7	Alluvium	12.8 - 42.6	--	<1.4	--	5.9	0.086	<0.0010	2.8	<0.0025	310
SWFTS-MW25	EM09	3/28/2018	N	440-207497-13	Alluvium	12.8 - 42.6	--	<0.70	--	0.089 J	0.036	<0.0010	2.7	<0.0025	320
SWFTS-MW25	EM10	5/3/2018	N	440-210534-2	Alluvium	12.8 - 42.6	--	<3.5	--	0.077 J	0.039	<0.0010	2.7	<0.0025	330
SWFTS-MW25	EM11	7/10/2018	N	440-215437-12	Alluvium	12.8 - 42.6	--	<0.70	<0.25	0.37	0.037	<0.0010	2.4	<0.0025	280
SWFTS-MW25	EM13	8/15/2018	N	440-218208-10	Alluvium	12.8 - 42.6	--	<0.25	--	1.1	0.034	<0.0010	2.4	<0.0025	290
SWFTS-MW25	EM14	9/12/2018	N	440-220031-2	Alluvium	12.8 - 42.6	--	<0.25	--	0.074 J	0.036	<0.0010	2.4 J	<0.0025	270 J
SWFTS-MW25	EM15	10/11/2018	N	440-222092-6	Alluvium	12.8 - 42.6	--	<0.50	<0.25	0.073 J	0.036	<0.0010	2.7	<0.0025	310
SWFTS-MW25	EM19	5/22/2019	N	440-242201-6	Alluvium	12.8 - 42.6	--	--	--	0.13	0.029	<0.0010	2.2	<0.0025	250
SWFTS-MW25	EM22	11/5/2019	N	440-253918-4	Alluvium	12.8 - 42.6	--	--	<0.25	0.35	0.029	<0.0010	2.1	<0.0025	230
SWFTS-MW25	EM26	4/28/2020	N	440-265288-2	Alluvium	12.8 - 42.6	--	--	--	<0.050	0.032	<0.0010	2.1	<0.0025	280
SWFTS-MW25	EM29	10/13/2020	N	440-273236-2	Alluvium	12.8 - 42.6	--	--	0.081 J	0.056 J	0.028	<0.0010	2.1	<0.0025	260
SWFTS-MW25	EM33	6/2/2021	N	550-164872-5	Alluvium	12.8 - 42.6	--	--	--	--	--	--	--	--	--
SWFTS-MW25	EM33	6/2/2021	N	550-164872-6	Alluvium	12.8 - 42.6	--	--	--	0.29	0.025	<0.00019	1.9	<0.00072	250
SWFTS-MW25	EM36	12/1/2021	N	550-175045-19	Alluvium	12.8 - 42.6	--	--	9.8	--	--	--	--	--	--
SWFTS-MW25	EM36	12/1/2021	N	550-175045-20	Alluvium	12.8 - 42.6	--	--	--	0.40	0.036	<0.00019	1.7	<0.00072	320
SWFTS-MW25	EM40	12/13/2022	N	550-194919-1	Alluvium	12.8 - 42.6	--	--	<0.63	--	--	--	--	--	--
SWFTS-MW25	EM40	12/13/2022	N	550-194919-2	Alluvium	12.8 - 42.6	--	--	--	0.33	0.034	<0.00019	2.2	<0.00072	340

Notes:
1. Lithology of monitoring well COH-2B1 was inferred from state records of well construction and generalized stratigraphy.
FD - Field duplicate
J The result is an estimated quantity. The associated numerical value is the approximate concentration of the analyte.
J- The result is an estimated quantity, but the result may be biased low.
J+ The result is an estimated quantity, but the result may be biased high.
mg/L - milligrams per liter
µg/L - micrograms per liter
N - Normal field sample
UMCf- Upper Muddy Creek Formation
R The data are unusable. The sample results are rejected due to serious deficiencies in meeting QC criteria. The
< The analyte was analyzed for, but was not detected above the level of the reported sample quantitation limit.
--- Not tested.

Table D.2
Groundater Analytical Results Summary - Secondary Parameters
Seep Well Field Area Bioremediation Treatability Study

Well	Event	Sample Date	QC Type	Lab Sample ID	Lithology	Screened Interval (ft bgs)	Dissolved Metals by SW6010	Dissolved Metals by SW6010	Dissolved Metals by SW6010	Dissolved Metals by SW6010	Dissolved Metals by SW6010	Dissolved Metals by SW6010	Dissolved Metals by SW6010	Dissolved Metals by SW6010	Dissolved Metals by SW6010
							Chromium	Cobalt	Copper	Iron	Lead	Magnesium	Manganese	Molybdenum	Nickel
							mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
COH-2B1	BL02	8/9/2017	N	440-189933-1	Alluvium/UMCf	36.0 - 66.0	<0.0025	<0.0050	0.0054 J	<0.050	<0.0038	85	0.089	0.21	0.017
COH-2B1	EM04	10/12/2017	N	440-194204-2	Alluvium/UMCf	36.0 - 66.0	<0.0025	<0.0050	<0.0050	<0.050	<0.0038	86	0.12	0.21	0.016
COH-2B1	EM07	12/14/2017	N	440-198571-5	Alluvium/UMCf	36.0 - 66.0	--	--	--	--	--	--	--	--	--
COH-2B1	EM08	2/22/2018	N	440-204033-6	Alluvium/UMCf	36.0 - 66.0	--	--	--	--	--	--	--	--	--
COH-2B1	EM09	3/29/2018	N	440-207586-2	Alluvium/UMCf	36.0 - 66.0	--	--	--	--	--	--	--	--	--
COH-2B1	EM10	5/2/2018	N	440-210430-11	Alluvium/UMCf	36.0 - 66.0	--	--	--	--	--	--	--	--	--
COH-2B1	EM11	7/10/2018	N	440-215437-6	Alluvium/UMCf	36.0 - 66.0	<0.0025	<0.0050	<0.0050	<0.050	<0.0038	120	0.12	0.18	0.014
COH-2B1	EM15	10/11/2018	N	440-222092-1	Alluvium/UMCf	36.0 - 66.0	<0.013	<0.025	<0.025	<0.25	<0.019	95	0.16	0.21	<0.025
COH-2B1	EM19	5/22/2019	N	440-242201-5	Alluvium/UMCf	36.0 - 66.0	<0.0025	<0.0050	0.024	<0.050	<0.0038	81	0.14	0.16	0.026
COH-2B1	EM22	11/4/2019	N	440-253773-1	Alluvium/UMCf	36.0 - 66.0	0.0095 J+	<0.0050	<0.0050	0.32	<0.0038	130	0.36	0.21	0.013
COH-2B1	EM26	4/27/2020	N	440-265243-1	Alluvium/UMCf	36.0 - 66.0	<0.0025	<0.0050	<0.0050	<0.050	<0.0038	79	0.12	0.15	0.0088 J
COH-2B1	EM29	10/13/2020	N	440-273236-9	Alluvium/UMCf	36.0 - 66.0	0.0050	<0.0050	<0.0050	<0.050	<0.0038	170	0.091	0.21	0.0067 J
PC-58	BL01	3/28/2017	N	440-180820-1	Alluvium	7.8 - 32.8	0.018	<0.0050	<0.0050	<0.050	<0.0035	160	0.014 J	0.18	<0.0050
PC-58	BL02	7/13/2017	N	440-188324-3	Alluvium	7.8 - 32.8	0.026	<0.0050	<0.0050	<0.050	<0.0038	170	<0.015	0.18	<0.0050
PC-58	EM04	10/11/2017	N	440-194094-6	Alluvium	7.8 - 32.8	0.012	<0.0050	<0.0050	<0.050	<0.0038	120	<0.015	0.15	<0.0050
PC-58	EM06	11/16/2017	N	440-196786-11	Alluvium	7.8 - 32.8	--	--	--	--	--	--	--	--	--
PC-58	EM07	12/14/2017	N	440-198571-9	Alluvium	7.8 - 32.8	--	--	--	--	--	--	--	--	--
PC-58	EM08	2/21/2018	N	440-203937-13	Alluvium	7.8 - 32.8	--	--	--	--	--	--	--	--	--
PC-58	EM09	3/28/2018	N	440-207497-6	Alluvium	7.8 - 32.8	--	--	--	--	--	--	--	--	--
PC-58	EM10	5/2/2018	N	440-210430-10	Alluvium	7.8 - 32.8	--	--	--	--	--	--	--	--	--
PC-58	EM11	7/11/2018	N	440-215717-7	Alluvium	7.8 - 32.8	0.025	<0.0050	<0.0050	<0.050	<0.0038	140	<0.015	0.14	<0.0050
PC-58	EM15	10/11/2018	N	440-222092-19	Alluvium	7.8 - 32.8	0.011	<0.0050	<0.0050	<0.050	<0.0038	110	<0.015	0.14	<0.0050
PC-58	EM19	5/22/2019	N	440-242200-7	Alluvium	7.8 - 32.8	0.030	<0.0050	0.026	<0.050	<0.0038	140	<0.015	0.16	0.017
PC-58	EM22	11/7/2019	N	440-254148-1	Alluvium	7.8 - 32.8	0.016 J+	<0.0050	<0.0050	<0.050	<0.0038	110	<0.015	0.14 J+	<0.0050
PC-58	EM26	5/1/2020	N	440-265414-3	Alluvium	7.8 - 32.8	0.020	<0.0050	<0.0050	<0.050	<0.0038	130	<0.015	0.17	<0.0050
PC-58	EM29	10/16/2020	N	440-273433-5	Alluvium	7.8 - 32.8	0.014	<0.0050	0.0068 J	<0.050	<0.0038	71	<0.015	0.16	<0.0050
PC-58	EM33	6/2/2021	N	550-164872-23	Alluvium	7.8 - 32.8	--	--	--	--	--	--	--	--	--
PC-58	EM33	6/2/2021	N	550-164872-24	Alluvium	7.8 - 32.8	0.013	<0.00054	<0.0012	0.025 J	<0.0025	91	<0.0083	0.13	<0.0028
PC-58	EM36	12/3/2021	N	550-175222-11	Alluvium	7.8 - 32.8	--	--	--	--	--	--	--	--	--
PC-58	EM36	12/3/2021	N	550-175222-12	Alluvium	7.8 - 32.8	0.012	<0.00054	<0.0012	0.021 J	<0.0025	96	<0.0083	0.13	<0.0028
PC-58	EM40	12/12/2022	N	550-194841-5	Alluvium	7.8 - 32.8	--	--	--	--	--	--	--	--	--
PC-58	EM40	12/12/2022	N	550-194841-6	Alluvium	7.8 - 32.8	0.0097	<0.00054	0.0020 J	0.49	<0.0025	130	0.014 J	0.10	<0.0028
PC-88	EM04	10/11/2017	N	440-194090-2	Alluvium	40.0 - 50.0	<0.0025	<0.0050	<0.0050	<0.050	<0.0038	75	0.61	0.041	0.0079 J
PC-88	EM04	10/11/2017	FD	440-194090-3	Alluvium	40.0 - 50.0	<0.0025	<0.0050	0.0072 J	<0.050	<0.0038	76	0.62	0.043	0.0085 J
PC-88	EM06	11/15/2017	N	440-196690-9	Alluvium	40.0 - 50.0	--	--	--	--	--	--	--	--	--
PC-88	EM06	11/15/2017	FD	440-196690-10	Alluvium	40.0 - 50.0	--	--	--	--	--	--	--	--	--
PC-88	EM07	12/14/2017	N	440-198571-11	Alluvium	40.0 - 50.0	--	--	--	--	--	--	--	--	--
PC-88	EM08	2/22/2018	N	440-204033-10	Alluvium	40.0 - 50.0	--	--	--	--	--	--	--	--	--
PC-88	EM09	3/29/2018	N	440-207586-3	Alluvium	40.0 - 50.0	--	--	--	--	--	--	--	--	--
PC-88	EM10	5/2/2018	N	440-210430-8	Alluvium	40.0 - 50.0	--	--	--	--	--	--	--	--	--
PC-88	EM10	5/2/2018	FD	440-210430-9	Alluvium	40.0 - 50.0	--	--	--	--	--	--	--	--	--
PC-88	EM11	7/12/2018	N	440-215717-11	Alluvium	40.0 - 50.0	<0.0025	<0.0050	<0.0050	<0.050	<0.0038	63	0.58	0.025	0.0077 J
PC-88	EM11	7/12/2018	FD	440-215717-12	Alluvium	40.0 - 50.0	<0.0025	<0.0050	<0.0050	<0.050	<0.0038	62	0.59	0.024	0.0069 J
PC-88	EM15	10/11/2018	N	440-222092-15	Alluvium	40.0 - 50.0	<0.0025	<0.0050	<0.0050	<0.050	<0.0038	71	0.60	0.036	<0.025
PC-88	EM15	10/11/2018	FD	440-222092-16	Alluvium	40.0 - 50.0	<0.0025	<0.0050	<0.0050	<0.050	<0.0038	73	0.59	0.035	<0.025
PC-88	EM19	5/22/2019	N	440-242201-2	Alluvium	40.0 - 50.0	<0.0025	<0.0050	0.022	<0.050	<0.0038	52	0.45	0.032	0.021
PC-88	EM19	5/22/2019	FD	440-242201-3	Alluvium	40.0 - 50.0	<0.0025	<0.0050	0.021	<0.050	<0.0038	49	0.42	0.029	0.019
PC-88	EM22	11/7/2019	N	440-254148-2	Alluvium	40.0 - 50.0	0.0056 J+	<0.0050	<0.0050	<0.050	0.0056	55	0.44	0.026 J+	0.0081 J
PC-88	EM22	11/7/2019	FD	440-254148-3	Alluvium	40.0 - 50.0	0.0042 J	<0.0050	<0.0050	<0.050	<0.0038	57	0.46	0.024 J+	0.0071 J
PC-88	EM26	5/1/2020	N	440-265412-2	Alluvium	40.0 - 50.0	<0.0025	<0.0050	<0.0050	<0.050	<0.0038	60	0.50	0.029	0.0068 J
PC-88	EM26	5/1/2020	FD	440-265412-3	Alluvium	40.0 - 50.0	<0.0025	<0.0050	<0.0050	<0.050	<0.0038	57	0.49	0.028	0.0059 J
PC-88	EM29	10/15/2020	N	550-151259-10	Alluvium	40.0 - 50.0	<0.0025	<0.0050	0.0085 J	<0.050	<0.0038	68	0.53	0.024	0.0094 J
PC-88	EM29	10/15/2020	FD	550-151259-11	Alluvium	40.0 - 50.0	<0.0025	<0.0050	0.0087 J	<0.050	<0.0038	68	0.53	0.024	0.010
PC-88	EM33	6/3/2021	N	550-164869-25	Alluvium	40.0 - 50.0	--	--	--	--	--	--	--	--	--
PC-88	EM33	6/3/2021	N	550-164869-26	Alluvium	40.0 - 50.0	<0.0011	0.0053	0.0033 J	<0.019	<0.0025	34	0.29	0.011	0.014
PC-88	EM33	6/3/2021	FD	550-164869-27	Alluvium	40.0 - 50.0	--	--	--	--	--	--	--	--	--
PC-88	EM33	6/3/2021	FD	550-164869-28	Alluvium	40.0 - 50.0	<0.0011	0.0049 J	0.0030 J	<0.019	<0.0025	34	0.29	0.011	0.014
PC-88	EM36	12/2/2021	N	550-175153-5	Alluvium	40.0 - 50.0	--	--	--	--	--	--	--	--	--
PC-88	EM36	12/2/2021	N	550-175153-6	Alluvium	40.0 - 50.0	<0.0011	0.0052 J+	0.0031 J	<0.019	<0.0025	41	0.32	0.011	0.012
PC-88	EM36	12/2/2021	FD	550-175153-7	Alluvium	40.0 - 50.0	--	--	--	--	--	--	--	--	--
PC-88	EM36	12/2/2021	FD	550-175153-8	Alluvium	40.0 - 50.0	<0.0011	0.0048 J	0.0030 J	<0.019	<0.0025	42	0.32	0.011	0.012
PC-88	EM40	12/12/2022	N	550-194841-1	Alluvium	40.0 - 50.0	--	--	--	--	--	--	--	--	--
PC-88	EM40	12/12/2022	N	550-194841-2	Alluvium	40.0 - 50.0	<0.0011	0.0069	0.0043 J	0.40	<0.0025	100	0.95	0.012	0.0067
PC-88	EM40	12/12/2022	FD	550-194841-3	Alluvium	40.0 - 50.0	--	--	--	--	--	--	--	--	--

Table D.2
Groundater Analytical Results Summary - Secondary Parameters
Seep Well Field Area Bioremediation Treatability Study

Well	Event	Sample Date	QC Type	Lab Sample ID	Lithology	Screened Interval (ft bgs)	Dissolved Metals by SW6010	Dissolved Metals by SW6010	Dissolved Metals by SW6010	Dissolved Metals by SW6010	Dissolved Metals by SW6010	Dissolved Metals by SW6010	Dissolved Metals by SW6010	Dissolved Metals by SW6010	Dissolved Metals by SW6010
							Chromium	Cobalt	Copper	Iron	Lead	Magnesium	Manganese	Molybdenum	Nickel
							mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
PC-88	EM40	12/12/2022	FD	550-194841-4	Alluvium	40.0 - 50.0	<0.0011	0.0068	0.0033 J	0.31 J	<0.0025	100	0.95	0.012	0.0067
PC-91	BL01	3/29/2017	N	440-180937-1	Alluvium	11.5 - 21.5	<0.0025	0.0063 J	0.0080 J	<0.050	<0.0035	86	0.040	0.090	0.015
PC-91	BL02	7/12/2017	N	440-188247-5	Alluvium	11.5 - 21.5	<0.0025	0.0063 J	<0.0050	<0.050	<0.0038	84	0.047	0.089	0.019
PC-91	BL02	7/12/2017	FD	440-188244-4	Alluvium	11.5 - 21.5	<0.0025	0.0062 J	<0.0050	<0.050	<0.0038	84	0.047	0.085	0.015
PC-91	EM04	10/12/2017	N	440-194204-3	Alluvium	11.5 - 21.5	<0.0025	0.0060 J	<0.0050	<0.050	<0.0038	73	0.045	0.087	0.016
PC-91	EM06	11/16/2017	N	440-196786-8	Alluvium	11.5 - 21.5	--	--	--	--	--	--	--	--	--
PC-91	EM07	12/13/2017	N	440-198508-9	Alluvium	11.5 - 21.5	<0.0025	0.0050 J	0.0071 J	<0.050	<0.0038	79	0.041	0.092	0.028
PC-91	EM08	2/20/2018	N	440-203841-1	Alluvium	11.5 - 21.5	--	--	--	--	--	--	--	--	--
PC-91	EM09	3/26/2018	N	440-207137-1	Alluvium	11.5 - 21.5	--	--	--	--	--	--	--	--	--
PC-91	EM10	5/1/2018	N	440-210284-3	Alluvium	11.5 - 21.5	--	--	--	--	--	--	--	--	--
PC-91	EM11	7/11/2018	N	440-215585-6	Alluvium	11.5 - 21.5	<0.0025	<0.0050	<0.0050	<0.050	<0.0038	95	0.54	0.053	0.025
PC-91	EM15	10/10/2018	N	440-221975-16	Alluvium	11.5 - 21.5	<0.013	<0.025	<0.025	<0.25	<0.019	120	0.51	0.066 J	<0.025
PC-91	EM19	5/21/2019	N	440-242084-9	Alluvium	11.5 - 21.5	<0.0025	<0.0050	0.025	<0.050	<0.0038	110	1.3	0.082	0.035
PC-91	EM22	11/6/2019	N	440-254027-3	Alluvium	11.5 - 21.5	<0.0025	<0.0050	<0.0050	<0.050	<0.0038	110	1.1	0.11	0.017
PC-91	EM26	4/30/2020	N	440-265382-2	Alluvium	11.5 - 21.5	<0.0025	0.0051 J	<0.0050	<0.050	<0.0038	80	1.1	0.085	0.015
PC-91	EM29	10/14/2020	N	440-273303-11	Alluvium	11.5 - 21.5	<0.0025	<0.0050	<0.0050	1.7	<0.0038	92	2.8	0.074	0.014
PC-91	EM33	6/2/2021	N	550-164872-17	Alluvium	11.5 - 21.5	--	--	--	--	--	--	--	--	--
PC-91	EM33	6/2/2021	N	550-164872-18	Alluvium	11.5 - 21.5	<0.0011	<0.00054	<0.0012	5.1	<0.0025	110	3.5	<0.00052	0.014
PC-91	EM36	11/30/2021	N	550-174968-1	Alluvium	11.5 - 21.5	--	--	--	--	--	--	--	--	--
PC-91	EM36	11/30/2021	N	550-174968-2	Alluvium	11.5 - 21.5	<0.0011	<0.00054	<0.0012	3.9	<0.0025	82	2.6	<0.00052	0.027
PC-91	EM40	12/12/2022	N	550-194841-7	Alluvium	11.5 - 21.5	--	--	--	--	--	--	--	--	--
PC-91	EM40	12/12/2022	N	550-194841-8	Alluvium	11.5 - 21.5	<0.0011	<0.00054	<0.0012	0.93	<0.0025	110	1.1	<0.00052	0.0067
PC-92	BL01	3/29/2017	N	440-180937-2	Alluvium	26.5 - 36.5	<0.0025	<0.0050	<0.0050	0.053 J	<0.0035	110	0.82	0.049	0.0096 J
PC-92	BL02	7/12/2017	N	440-188247-6	Alluvium	26.5 - 36.5	<0.0025	<0.0050	<0.0050	<0.050	<0.0038	87	0.53	0.046	0.010
PC-92	EM04	10/12/2017	N	440-194204-4	Alluvium	26.5 - 36.5	<0.0025	<0.0050	0.0055 J	<0.050	<0.0038	89	0.52	0.036	0.015
PC-92	EM04	10/12/2017	FD	440-194204-5	Alluvium	26.5 - 36.5	<0.0025	<0.0050	<0.0050	<0.050	<0.0038	92	0.54	0.037	0.014
PC-92	EM06	11/16/2017	N	440-196786-9	Alluvium	26.5 - 36.5	--	--	--	--	--	--	--	--	--
PC-92	EM06	11/16/2017	FD	440-196786-10	Alluvium	26.5 - 36.5	--	--	--	--	--	--	--	--	--
PC-92	EM07	12/14/2017	N	440-198571-7	Alluvium	26.5 - 36.5	<0.0025	<0.0050	0.0085 J	<0.050	<0.0038	100	1.2	0.041	0.036
PC-92	EM07	12/14/2017	FD	440-198571-8	Alluvium	26.5 - 36.5	<0.0025	<0.0050	0.0078 J	<0.050	<0.0038	98	1.1	0.038	0.033
PC-92	EM08	2/20/2018	N	440-203841-2	Alluvium	26.5 - 36.5	--	--	--	--	--	--	--	--	--
PC-92	EM08	2/20/2018	FD	440-203841-3	Alluvium	26.5 - 36.5	--	--	--	--	--	--	--	--	--
PC-92	EM09	3/26/2018	N	440-207137-2	Alluvium	26.5 - 36.5	--	--	--	--	--	--	--	--	--
PC-92	EM09	3/26/2018	FD	440-207137-3	Alluvium	26.5 - 36.5	--	--	--	--	--	--	--	--	--
PC-92	EM10	5/1/2018	N	440-210284-4	Alluvium	26.5 - 36.5	--	--	--	--	--	--	--	--	--
PC-92	EM11	7/11/2018	N	440-215585-5	Alluvium	26.5 - 36.5	<0.0025	<0.0050	<0.0050	<0.050	<0.0038	96	0.80	0.058	0.015
PC-92	EM15	10/11/2018	N	440-222092-17	Alluvium	26.5 - 36.5	<0.0025	<0.0050	<0.0050	<0.050	<0.0038	96	0.52	0.052	<0.025
PC-92	EM19	5/21/2019	N	440-242084-10	Alluvium	26.5 - 36.5	<0.0025	<0.0050	0.022	<0.050	<0.0038	60	0.68	0.042	0.028
PC-92	EM22	11/6/2019	N	440-254027-2	Alluvium	26.5 - 36.5	0.0048 J	<0.0050	<0.0050	<0.050	<0.0038	100	0.72	0.050 J+	0.014
PC-92	EM26	4/30/2020	N	440-265382-1	Alluvium	26.5 - 36.5	0.0025 J	<0.0050	<0.0050	<0.050	<0.0038	76	0.062	0.043	0.012
PC-92	EM29	10/14/2020	N	440-273303-10	Alluvium	26.5 - 36.5	<0.0025	<0.0050	<0.0050	<0.050	<0.0038	91	0.66	0.056	0.010
PC-92	EM33	6/2/2021	N	550-164872-19	Alluvium	26.5 - 36.5	--	--	--	--	--	--	--	--	--
PC-92	EM33	6/2/2021	N	550-164872-20	Alluvium	26.5 - 36.5	<0.0011	0.0014 J	<0.0012	0.042 J	<0.0025	110	0.69	0.043	0.013
PC-92	EM36	11/30/2021	N	550-174968-3	Alluvium	26.5 - 36.5	--	--	--	--	--	--	--	--	--
PC-92	EM36	11/30/2021	N	550-174968-4	Alluvium	26.5 - 36.5	<0.0011	0.0022 J	<0.0012	0.23 J	<0.0025	130	1.3	0.038	0.017
PC-92	EM40	12/13/2022	N	550-194920-1	Alluvium	26.5 - 36.5	--	--	--	--	--	--	--	--	--
PC-92	EM40	12/13/2022	N	550-194920-2	Alluvium	26.5 - 36.5	<0.0011	0.0025 J	0.0020 J	<0.019	<0.0025	76	0.81	0.030	0.013
PC-94	BL01	3/28/2017	N	440-180820-2	Alluvium	9.5 - 19.5	0.035	<0.0050	<0.0050	<0.050	<0.0035	180	<0.010	0.16	<0.0050
PC-94	BL02	7/13/2017	N	440-188325-1	Alluvium	9.5 - 19.5	0.038	<0.0050	<0.0050	0.37	<0.0038	190	<0.015	0.16	<0.0050
PC-94	EM04	10/11/2017	N	440-194090-6	Alluvium	9.5 - 19.5	<0.0025	0.018	<0.0050	0.55	<0.0038	190	3.0	0.83	0.0097 J
PC-94	EM06	11/16/2017	N	440-196786-17	Alluvium	9.5 - 19.5	<0.0025	0.012	0.0052 J	0.085 J	<0.0038	160	2.8	0.57	0.025
PC-94	EM07	12/12/2017	N	440-198371-14	Alluvium	9.5 - 19.5	--	--	--	--	--	--	--	--	--
PC-94	EM08	2/21/2018	N	440-203937-12	Alluvium	9.5 - 19.5	<0.0025	0.0073 J	<0.0050	<0.050	<0.0038	170	2.6	0.37	0.026
PC-94	EM09	3/27/2018	N	440-207268-8	Alluvium	9.5 - 19.5	0.0067	0.0097 J	0.0065 J	4.0	<0.0038	150	3.0	0.27	0.0085 J
PC-94	EM10	5/1/2018	N	440-210284-14	Alluvium	9.5 - 19.5	<0.0025	0.0066 J	<0.0050	<0.050	<0.0038	160	2.2	0.26	0.0076 J
PC-94	EM11	7/10/2018	N	440-215437-1	Alluvium	9.5 - 19.5	<0.0025	0.013	<0.0050	<0.050	<0.0038	160	5.2	0.19	0.0087 J
PC-94	EM13	8/15/2018	N	440-218208-2	Alluvium	9.5 - 19.5	<0.0025	0.010	<0.0050	0.33	<0.0038	160	4.4	0.20	0.010
PC-94	EM14	9/11/2018	N	440-219886-9	Alluvium	9.5 - 19.5	<0.0025	0.0082 J	<0.0050	<0.050	<0.0038	160	3.6	0.19	0.0086 J
PC-94	EM15	10/11/2018	N	440-222092-18	Alluvium	9.5 - 19.5	<0.0025	0.013	<0.0050	<0.050	<0.0038	160	4.7	0.21	<0.025
PC-94	EM19	5/22/2019	N	440-242201-4	Alluvium	9.5 - 19.5	<0.0025	0.0067 J	0.033	0.079 J	<0.0038	140	3.5	0.18	0.028
PC-94	EM22	11/6/2019	N	440-254027-1	Alluvium	9.5 - 19.5	0.0037 J	0.0068 J	<0.0050	<0.050	<0.0038	120	2.7	0.20	<0.0050
PC-94	EM26	4/28/2020	N	440-265289-2	Alluvium	9.5 - 19.5	<0.0025	0.0076 J	<0.0050	<0.050	<0.0038	150	3.2	0.15	<0.0050
PC-94	EM29	10/15/2020	N	550-151259-7	Alluvium	9.5 - 19.5	<0.0025	0.0057 J	0.0073 J	<0.050	<0.0038	120	2.5	0.14	0.0094 J
PC-94	EM33	6/2/2021	N	550-164872-21	Alluvium	9.5 - 19.5	--	--	--	--	--	--	--	--	--

Table D.2
Groundater Analytical Results Summary - Secondary Parameters
Seep Well Field Area Bioremediation Treatability Study

Well	Event	Sample Date	QC Type	Lab Sample ID	Lithology	Screened Interval (ft bgs)	Dissolved Metals by SW6010	Dissolved Metals by SW6010	Dissolved Metals by SW6010	Dissolved Metals by SW6010	Dissolved Metals by SW6010	Dissolved Metals by SW6010	Dissolved Metals by SW6010	Dissolved Metals by SW6010	Dissolved Metals by SW6010
							Chromium	Cobalt	Copper	Iron	Lead	Magnesium	Manganese	Molybdenum	Nickel
							mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
PC-94	EM33	6/2/2021	N	550-164872-22	Alluvium	9.5 - 19.5	<0.0011	0.0040 J	<0.0012	0.031 J	<0.0025	140	2.7	0.12	0.0061
PC-94	EM36	11/30/2021	N	550-174968-5	Alluvium	9.5 - 19.5	--	--	--	--	--	--	--	--	--
PC-94	EM36	11/30/2021	N	550-174968-6	Alluvium	9.5 - 19.5	<0.0011	0.0052	<0.0012	0.15 J	<0.0025	180	3.2	0.11	0.016
PC-94	EM40	12/13/2022	N	550-194920-7	Alluvium	9.5 - 19.5	--	--	--	--	--	--	--	--	--
PC-94	EM40	12/13/2022	N	550-194920-8	Alluvium	9.5 - 19.5	<0.0011	0.0043 J	<0.0012	0.032 J	<0.0025	170	2.8	0.12	0.0036 J
PC-97	BL02	7/13/2017	N	440-188325-8	Alluvium	23.0 - 33.0	<0.0025	0.0062 J	0.0053 J	0.058 J	<0.0038	72	0.98	0.023	0.021
PC-97	EM04	10/11/2017	N	440-194242-5	Alluvium	23.0 - 33.0	<0.0025	<0.0050	<0.0050	<0.050	<0.0038	89	1.1	0.022	0.014
PC-97	EM04	10/11/2017	FD	440-194242-6	Alluvium	23.0 - 33.0	<0.0025	0.0054 J	<0.0050	<0.050	<0.0038	98	1.3	0.024	0.017
PC-97	EM06	11/16/2017	N	440-196786-13	Alluvium	23.0 - 33.0	--	--	--	--	--	--	--	--	--
PC-97	EM07	12/13/2017	N	440-198508-11	Alluvium	23.0 - 33.0	--	--	--	--	--	--	--	--	--
PC-97	EM07	12/13/2017	FD	440-198508-12	Alluvium	23.0 - 33.0	--	--	--	--	--	--	--	--	--
PC-97	EM08	2/21/2018	N	440-203937-4	Alluvium	23.0 - 33.0	--	--	--	--	--	--	--	--	--
PC-97	EM09	3/27/2018	N	440-207268-4	Alluvium	23.0 - 33.0	--	--	--	--	--	--	--	--	--
PC-97	EM10	5/1/2018	N	440-210284-7	Alluvium	23.0 - 33.0	--	--	--	--	--	--	--	--	--
PC-97	EM11	7/10/2018	N	440-215437-3	Alluvium	23.0 - 33.0	<0.0025	0.0060 J	<0.0050	<0.050	<0.0038	70	0.86	0.025	0.020
PC-97	EM15	10/11/2018	N	440-222092-13	Alluvium	23.0 - 33.0	<0.0025	0.0065 J	<0.0050	<0.050	<0.0038	71	0.86	0.025	0.019
PC-97	EM19	5/22/2019	N	440-242201-1	Alluvium	23.0 - 33.0	<0.0025	<0.0050	0.028	<0.050	<0.0038	77	1.0	0.022	0.031
PC-97	EM22	11/6/2019	N	440-254027-7	Alluvium	23.0 - 33.0	0.0046 J	0.0060 J	<0.0050	<0.050	<0.0038	71	0.91	0.025 J+	0.015
PC-97	EM26	4/30/2020	N	440-265383-7	Alluvium	23.0 - 33.0	<0.0025	0.0065 J	<0.0050	<0.050	<0.0038	55	0.70	0.023	0.017
PC-97	EM29	10/15/2020	N	550-151259-9	Alluvium	23.0 - 33.0	<0.0025	0.0052 J	0.0080 J	<0.050	<0.0038	61	0.82	0.020	0.016
SWFTS-IW01A	BL02	7/11/2017	N	440-188133-3	Alluvium	15.8 - 25.6	--	--	--	--	--	--	--	--	--
SWFTS-IW01B	BL02	7/11/2017	N	440-188133-13	Alluvium	26.9 - 36.7	--	--	--	--	--	--	--	--	--
SWFTS-IW02A	BL02	7/11/2017	N	440-188133-14	Alluvium	16.8 - 26.6	--	--	--	--	--	--	--	--	--
SWFTS-IW02B	BL02	7/11/2017	N	440-188133-2	Alluvium	26.3 - 36.1	--	--	--	--	--	--	--	--	--
SWFTS-IW03	BL02	7/11/2017	N	440-188133-4	Alluvium	16.8 - 36.6	--	--	--	--	--	--	--	--	--
SWFTS-IW03	BL02	7/11/2017	FD	440-188133-5	Alluvium	16.8 - 36.6	--	--	--	--	--	--	--	--	--
SWFTS-IW04	BL02	7/11/2017	N	440-188133-11	Alluvium	19.8 - 34.6	--	--	--	--	--	--	--	--	--
SWFTS-IW04	BL02	7/11/2017	FD	440-188133-12	Alluvium	19.8 - 34.6	--	--	--	--	--	--	--	--	--
SWFTS-IW05	BL02	7/11/2017	N	440-188133-16	Alluvium	14.6 - 34.4	--	--	--	--	--	--	--	--	--
SWFTS-IW06A	BL02	7/11/2017	N	440-188133-10	Alluvium	16.8 - 26.6	--	--	--	--	--	--	--	--	--
SWFTS-IW06B	BL02	7/11/2017	N	440-188133-6	Alluvium	28.8 - 33.6	--	--	--	--	--	--	--	--	--
SWFTS-IW07	BL02	7/11/2017	N	440-188133-7	Alluvium	17.3 - 37.1	--	--	--	--	--	--	--	--	--
SWFTS-IW08	BL02	7/12/2017	N	440-188247-7	Alluvium	17.5 - 37.3	--	--	--	--	--	--	--	--	--
SWFTS-IW09	BL02	7/12/2017	N	440-188247-8	Alluvium	26.6 - 46.4	--	--	--	--	--	--	--	--	--
SWFTS-IW09	BL02	7/12/2017	FD	440-188244-3	Alluvium	26.6 - 46.4	--	--	--	--	--	--	--	--	--
SWFTS-IW10	BL02	7/12/2017	N	440-188247-9	Alluvium	26.8 - 46.6	--	--	--	--	--	--	--	--	--
SWFTS-IW11	BL02	7/12/2017	N	440-188247-3	Alluvium	17.3 - 37.1	--	--	--	--	--	--	--	--	--
SWFTS-IW12	BL02	7/12/2017	N	440-188247-4	Alluvium	14.3 - 39.1	--	--	--	--	--	--	--	--	--
SWFTS-IW13A	BL02	7/11/2017	N	440-188133-1	Alluvium	15.8 - 25.6	--	--	--	--	--	--	--	--	--
SWFTS-IW13B	BL02	7/11/2017	N	440-188133-15	Alluvium	27.8 - 37.6	--	--	--	--	--	--	--	--	--
SWFTS-IW14	BL02	7/12/2017	N	440-188247-1	Alluvium	16.2 - 36.1	--	--	--	--	--	--	--	--	--
SWFTS-IW15	BL02	7/12/2017	N	440-188247-2	Alluvium	16.4 - 36.2	--	--	--	--	--	--	--	--	--
SWFTS-IW16A	BL02	7/11/2017	N	440-188133-9	Alluvium	17.3 - 27.1	--	--	--	--	--	--	--	--	--
SWFTS-IW16B	BL02	7/11/2017	N	440-188133-8	Alluvium	26.5 - 36.3	--	--	--	--	--	--	--	--	--
SWFTS-IW17	BL02	7/13/2017	N	440-188325-6	Alluvium	17.3 - 37.1	--	--	--	--	--	--	--	--	--
SWFTS-IW18	BL02	7/13/2017	N	440-188325-4	Alluvium	18.1 - 38.1	--	--	--	--	--	--	--	--	--
SWFTS-IW19	BL02	7/13/2017	N	440-188325-5	Alluvium	24.3 - 44.1	--	--	--	--	--	--	--	--	--
SWFTS-IW20	BL02	7/12/2017	N	440-188247-10	Alluvium	30.8 - 50.6	--	--	--	--	--	--	--	--	--
SWFTS-MW01	BL01	3/29/2017	N	440-180937-6	Alluvium	24.2 - 38.9	0.031	<0.0050	<0.0050	<0.050	<0.0035	190	<0.010	0.16	<0.0050
SWFTS-MW01	EM04	10/10/2017	N	440-194094-2	Alluvium	24.2 - 38.9	0.0037 J	0.0090 J	0.0052 J	<0.050	<0.0038	170	3.7	0.44	0.011
SWFTS-MW01	EM06	11/15/2017	N	440-196665-4	Alluvium	24.2 - 38.9	--	--	--	--	--	--	--	--	--
SWFTS-MW01	EM07	12/14/2017	N	440-198571-10	Alluvium	24.2 - 38.9	--	--	--	--	--	--	--	--	--
SWFTS-MW01	EM08	2/20/2018	N	440-203841-12	Alluvium	24.2 - 38.9	--	--	--	--	--	--	--	--	--
SWFTS-MW01	EM09	3/27/2018	N	440-207268-10	Alluvium	24.2 - 38.9	--	--	--	--	--	--	--	--	--
SWFTS-MW01	EM10	4/30/2018	N	440-210173-1	Alluvium	24.2 - 38.9	--	--	--	--	--	--	--	--	--
SWFTS-MW01	EM11	7/10/2018	N	440-215437-2	Alluvium	24.2 - 38.9	<0.0025	<0.0050	<0.0050	0.055 J	<0.0038	150	4.6	0.41	0.0096 J
SWFTS-MW01	EM14	9/10/2018	N	440-219797-1	Alluvium	24.2 - 38.9	--	--	--	--	--	--	--	--	--
SWFTS-MW01	EM15	10/9/2018	N	440-221855-12	Alluvium	24.2 - 38.9	<0.013	<0.025	<0.025	<0.25	<0.019	160	4.0	0.18	<0.025
SWFTS-MW01	EM19	5/21/2019	N	440-242084-14	Alluvium	24.2 - 38.9	<0.0025	<0.0050	0.026	<0.050	<0.0038	120	5.5	0.15	0.026
SWFTS-MW01	EM22	11/5/2019	N	440-253918-3	Alluvium	24.2 - 38.9	0.0053 J+	<0.0050	<0.0050	<0.050	<0.0038	110	4.3	0.20	0.0065 J
SWFTS-MW01	EM26	4/28/2020	N	440-265289-5	Alluvium	24.2 - 38.9	<0.0025	<0.0050	<0.0050	<0.050	<0.0038	140	5.3	0.12	<0.0050
SWFTS-MW01	EM29	10/13/2020	N	440-273236-11	Alluvium	24.2 - 38.9	<0.0025	<0.0050	<0.0050	<0.050	<0.0038	130	4.5	0.12	<0.0050
SWFTS-MW01	EM33	6/4/2021	N	550-164930-17	Alluvium	24.2 - 38.9	--	--	--	--	--	--	--	--	--
SWFTS-MW01	EM33	6/4/2021	N	550-164930-18	Alluvium	24.2 - 38.9	<0.0011	0.0018 J	<0.0012	<0.019	<0.0025	140	3.6	0.091	0.0084

Table D.2
Groundater Analytical Results Summary - Secondary Parameters
Seep Well Field Area Bioremediation Treatability Study

Well	Event	Sample Date	QC Type	Lab Sample ID	Lithology	Screened Interval (ft bgs)	Dissolved Metals by SW6010	Dissolved Metals by SW6010	Dissolved Metals by SW6010	Dissolved Metals by SW6010	Dissolved Metals by SW6010	Dissolved Metals by SW6010	Dissolved Metals by SW6010	Dissolved Metals by SW6010	Dissolved Metals by SW6010
							Chromium	Cobalt	Copper	Iron	Lead	Magnesium	Manganese	Molybdenum	Nickel
							mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
SWFTS-MW01	EM36	11/30/2021	N	550-174968-19	Alluvium	24.2 - 38.9	--	--	--	--	--	--	--	--	--
SWFTS-MW01	EM36	11/30/2021	N	550-174968-20	Alluvium	24.2 - 38.9	<0.0011	0.0016 J	<0.0012	0.022 J	<0.0025	170	2.8	0.068	0.0075
SWFTS-MW01	EM40	12/13/2022	N	550-194920-3	Alluvium	24.2 - 38.9	--	--	--	--	--	--	--	--	--
SWFTS-MW01	EM40	12/13/2022	N	550-194920-4	Alluvium	24.2 - 38.9	<0.0011	0.0014 J	<0.0012	0.023 J	<0.0025	140	2.0	0.079	<0.0028
SWFTS-MW02	BL01	3/29/2017	N	440-180937-7	Alluvium	18.4 - 33.1	<0.0025	<0.0050	0.0061 J	<0.050	<0.0035	240	1.7	0.17	<0.0050
SWFTS-MW02	EM04	10/12/2017	N	440-194204-6	Alluvium	18.4 - 33.1	<0.0025	<0.0050	<0.0050	<0.050	<0.0038	220	1.6	0.16	0.0073 J
SWFTS-MW02	EM06	11/14/2017	N	440-196558-3	Alluvium	18.4 - 33.1	--	--	--	--	--	--	--	--	--
SWFTS-MW02	EM07	12/13/2017	N	440-198508-8	Alluvium	18.4 - 33.1	--	--	--	--	--	--	--	--	--
SWFTS-MW02	EM08	2/19/2018	N	440-203775-1	Alluvium	18.4 - 33.1	--	--	--	--	--	--	--	--	--
SWFTS-MW02	EM09	3/27/2018	N	440-207268-1	Alluvium	18.4 - 33.1	--	--	--	--	--	--	--	--	--
SWFTS-MW02	EM10	4/30/2018	N	440-210173-3	Alluvium	18.4 - 33.1	--	--	--	--	--	--	--	--	--
SWFTS-MW02	EM11	7/11/2018	N	440-215717-13	Alluvium	18.4 - 33.1	<0.0025	<0.0050	<0.0050	<0.050	<0.0038	170	1.6	0.17	0.0099 J
SWFTS-MW02	EM14	9/10/2018	N	440-219797-2	Alluvium	18.4 - 33.1	--	--	--	--	--	--	--	--	--
SWFTS-MW02	EM15	10/10/2018	N	440-221975-15	Alluvium	18.4 - 33.1	<0.013	<0.025	<0.025	0.42 J	<0.019	190	1.9	0.21	<0.025
SWFTS-MW02	EM19	5/21/2019	N	440-242084-8	Alluvium	18.4 - 33.1	<0.0025	<0.0050	0.037	<0.050	<0.0038	170	2.2	0.21	0.035
SWFTS-MW02	EM22	11/7/2019	N	440-254148-7	Alluvium	18.4 - 33.1	0.0049 J	0.0055 J	<0.0050	0.080 J	<0.0038	140	2.5	0.14 J+	0.0096 J
SWFTS-MW02	EM26	4/30/2020	N	440-265382-3	Alluvium	18.4 - 33.1	<0.0025	<0.0050	<0.0050	<0.050	<0.0038	140	1.9	0.17	0.0060 J
SWFTS-MW02	EM29	10/15/2020	N	550-151259-8	Alluvium	18.4 - 33.1	<0.0025	<0.0050	0.0076 J	<0.050	<0.0038	130	2.1	0.13	0.0093 J
SWFTS-MW02	EM33	6/3/2021	N	550-164869-21	Alluvium	18.4 - 33.1	--	--	--	--	--	--	--	--	--
SWFTS-MW02	EM33	6/3/2021	N	550-164869-22	Alluvium	18.4 - 33.1	<0.0011	0.0020 J	<0.0012	0.034 J	<0.0025	150	2.2	0.11	0.010
SWFTS-MW02	EM36	11/30/2021	N	550-174968-7	Alluvium	18.4 - 33.1	--	--	--	--	--	--	--	--	--
SWFTS-MW02	EM36	11/30/2021	N	550-174968-8	Alluvium	18.4 - 33.1	<0.0011	0.0025 J	<0.0012	0.098 J	<0.0025	140	2.2	0.10	0.0065
SWFTS-MW02	EM40	12/14/2022	N	550-195015-3	Alluvium	18.4 - 33.1	--	--	--	--	--	--	--	--	--
SWFTS-MW02	EM40	12/14/2022	N	550-195015-4	Alluvium	18.4 - 33.1	<0.0011	0.0085	<0.0012	0.032 J	<0.0025	200	3.6	0.11	0.0098
SWFTS-MW03	BL01	3/30/2017	N	440-181045-5	Alluvium	27.2 - 42.1	0.039	<0.0050	<0.0050	<0.050 UJ	<0.0035	210	<0.010	0.29	<0.0050
SWFTS-MW03	BL01	3/30/2017	FD	440-181045-6	Alluvium	27.2 - 42.1	0.038	<0.0050	<0.0050	0.32 J	<0.0035	210	<0.010	0.27	<0.0050
SWFTS-MW03	EM04	10/12/2017	N	440-194204-8	Alluvium	27.2 - 42.1	<0.0025	<0.0050	<0.0050	<0.050	<0.0038	230	6.6	0.51	0.15
SWFTS-MW03	EM06	11/16/2017	N	440-196786-16	Alluvium	27.2 - 42.1	<0.0025	<0.0050	<0.0050	<0.050	<0.0038	200	3.8	0.33	0.095
SWFTS-MW03	EM07	12/12/2017	N	440-198371-13	Alluvium	27.2 - 42.1	--	--	--	--	--	--	--	--	--
SWFTS-MW03	EM08	2/21/2018	N	440-203937-5	Alluvium	27.2 - 42.1	<0.0025	<0.0050	0.0051 J	0.34 J+	<0.0038	200	2.7	0.28	0.066
SWFTS-MW03	EM09	3/27/2018	N	440-207268-15	Alluvium	27.2 - 42.1	<0.0025	<0.0050	<0.0050	0.058 J	<0.0038	170	2.3	0.28	0.031
SWFTS-MW03	EM10	5/2/2018	N	440-210430-6	Alluvium	27.2 - 42.1	<0.0025	<0.0050	<0.0050	<0.50	<0.0038	220	2.6	0.30	0.036
SWFTS-MW03	EM11	7/10/2018	N	440-215437-5	Alluvium	27.2 - 42.1	<0.0025	<0.0050	<0.0050	<0.050	<0.0038	180	2.6	0.26	0.036
SWFTS-MW03	EM13	8/15/2018	N	440-218208-4	Alluvium	27.2 - 42.1	<0.0025	<0.0050	<0.0050	0.17	<0.0038	190	2.5	0.27	0.035
SWFTS-MW03	EM14	9/11/2018	N	440-219886-11	Alluvium	27.2 - 42.1	<0.0025	<0.0050	<0.0050	<0.050	<0.0038	200	2.5	0.27	0.033
SWFTS-MW03	EM15	10/9/2018	N	440-221855-13	Alluvium	27.2 - 42.1	<0.013	<0.025	<0.025	0.36 J	<0.019	220	2.8	0.29	0.037 J
SWFTS-MW03	EM19	5/21/2019	N	440-242084-12	Alluvium	27.2 - 42.1	<0.0025	<0.0050	0.043	0.054 J	<0.0038	220	2.6	0.34	0.056
SWFTS-MW03	EM22	11/4/2019	N	440-253773-2	Alluvium	27.2 - 42.1	0.0042 J	<0.0050	<0.0050	0.061 J	<0.0038	180	2.1	0.29	0.018
SWFTS-MW03	EM26	4/28/2020	N	440-265289-1	Alluvium	27.2 - 42.1	<0.0025	<0.0050	<0.0050	<0.050	<0.0038	160	1.9	0.23	0.014
SWFTS-MW03	EM29	10/13/2020	N	440-273236-10	Alluvium	27.2 - 42.1	<0.0025	<0.0050	<0.0050	<0.050	<0.0038	190	2.0	0.27	0.011
SWFTS-MW03	EM33	6/3/2021	N	550-164869-15	Alluvium	27.2 - 42.1	--	--	--	--	--	--	--	--	--
SWFTS-MW03	EM33	6/3/2021	N	550-164869-16	Alluvium	27.2 - 42.1	<0.0011	<0.00054	0.0012 J	0.041 J	<0.0025	210	1.9	0.23	0.013
SWFTS-MW03	EM36	12/1/2021	N	550-175045-1	Alluvium	27.2 - 42.1	--	--	--	--	--	--	--	--	--
SWFTS-MW03	EM36	12/1/2021	N	550-175045-2	Alluvium	27.2 - 42.1	<0.0011	<0.00054	<0.0012	0.071 J	<0.0025	210	1.8	0.21	0.0099
SWFTS-MW03	EM40	12/13/2022	N	550-194920-15	Alluvium	27.2 - 42.1	--	--	--	--	--	--	--	--	--
SWFTS-MW03	EM40	12/13/2022	N	550-194920-16	Alluvium	27.2 - 42.1	<0.0011	<0.00054	<0.0012	0.037 J	<0.0025	220	1.8	0.24	0.0054
SWFTS-MW04	BL01	3/31/2017	N	440-181122-1	Alluvium	25.8 - 40.4	<0.0025	<0.0050	<0.0050	<0.050	<0.0035	110	1.2	0.056	0.012
SWFTS-MW04	EM04	10/11/2017	N	440-194242-7	Alluvium	25.8 - 40.4	<0.0025	<0.0050	0.0050 J	<0.050	<0.0038	54	0.63	0.035	0.015
SWFTS-MW04	EM06	11/15/2017	N	440-196659-2	Alluvium	25.8 - 40.4	--	--	--	--	--	--	--	--	--
SWFTS-MW04	EM07	12/14/2017	N	440-198571-12	Alluvium	25.8 - 40.4	--	--	--	--	--	--	--	--	--
SWFTS-MW04	EM08	2/21/2018	N	440-203937-2	Alluvium	25.8 - 40.4	--	--	--	--	--	--	--	--	--
SWFTS-MW04	EM09	3/27/2018	N	440-207268-5	Alluvium	25.8 - 40.4	--	--	--	--	--	--	--	--	--
SWFTS-MW04	EM10	5/1/2018	N	440-210284-5	Alluvium	25.8 - 40.4	--	--	--	--	--	--	--	--	--
SWFTS-MW04	EM11	7/10/2018	N	440-215437-4	Alluvium	25.8 - 40.4	<0.0025	<0.0050	<0.0050	0.17	<0.0038	65	0.77	0.051	0.017
SWFTS-MW04	EM15	10/11/2018	N	440-222092-9	Alluvium	25.8 - 40.4	<0.0025	<0.0050	<0.0050	<0.050	<0.0038	61	0.72	0.052	<0.025
SWFTS-MW04	EM19	5/21/2019	N	440-242084-11	Alluvium	25.8 - 40.4	<0.0025	<0.0050	0.023	<0.050	<0.0038	56	0.70	0.045	0.030
SWFTS-MW04	EM22	11/7/2019	N	440-254150-6	Alluvium	25.8 - 40.4	<0.0025	<0.0050	<0.0050	<0.050	<0.0038	59	0.71	0.042	0.014
SWFTS-MW04	EM26	5/1/2020	N	440-265412-1	Alluvium	25.8 - 40.4	0.0025 J	<0.0050	<0.0050	<0.050	<0.0038	94	1.2	0.070	0.012
SWFTS-MW04	EM29	10/14/2020	N	440-273303-12	Alluvium	25.8 - 40.4	<0.0025	<0.0050	<0.0050	<0.050	<0.0038	67	0.83	0.048	0.014
SWFTS-MW04	EM33	6/3/2021	N	550-164869-23	Alluvium	25.8 - 40.4	--	--	--	--	--	--	--	--	--
SWFTS-MW04	EM33	6/3/2021	N	550-164869-24	Alluvium	25.8 - 40.4	<0.0011	0.0025 J	0.0024 J	<0.019	<0.0025	70	0.84	0.036	0.018
SWFTS-MW04	EM36	12/2/2021	N	550-175153-3	Alluvium	25.8 - 40.4	--	--	--	--	--	--	--	--	--
SWFTS-MW04	EM36	12/2/2021	N	550-175153-4	Alluvium	25.8 - 40.4	<0.0011	0.0028 J	0.0021 J	0.044 J	<0.0025	78	0.93	0.039	0.017
SWFTS-MW04	EM40	12/14/2022	N	550-195015-1	Alluvium	25.8 - 40.4	--	--	--	--	--	--	--	--	--

Table D.2
Groundater Analytical Results Summary - Secondary Parameters
Seep Well Field Area Bioremediation Treatability Study

Well	Event	Sample Date	QC Type	Lab Sample ID	Lithology	Screened Interval (ft bgs)	Dissolved Metals by SW6010	Dissolved Metals by SW6010	Dissolved Metals by SW6010	Dissolved Metals by SW6010	Dissolved Metals by SW6010	Dissolved Metals by SW6010	Dissolved Metals by SW6010	Dissolved Metals by SW6010	Dissolved Metals by SW6010
							Chromium	Cobalt	Copper	Iron	Lead	Magnesium	Manganese	Molybdenum	Nickel
							mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
SWFTS-MW04	EM40	12/14/2022	N	550-195015-2	Alluvium	25.8 - 40.4	<0.0011	0.0024 J	0.0015 J	<0.019	<0.0025	64	0.75	0.024	0.014
SWFTS-MW05A	BL01	3/30/2017	N	440-181045-7	Alluvium	19.3 - 29.3	0.075	<0.025	<0.025	0.28 J	<0.018	290	0.13	0.38	<0.025
SWFTS-MW05A	EM04	10/10/2017	N	440-193989-2	Alluvium	19.3 - 29.3	0.056	<0.0050	<0.0050	<0.050	<0.0038	210	<0.015	0.37	<0.0050
SWFTS-MW05A	EM06	11/14/2017	N	440-196558-1	Alluvium	19.3 - 29.3	--	--	--	--	--	--	--	--	--
SWFTS-MW05A	EM07	12/13/2017	N	440-198508-3	Alluvium	19.3 - 29.3	--	--	--	--	--	--	--	--	--
SWFTS-MW05A	EM08	2/20/2018	N	440-203841-7	Alluvium	19.3 - 29.3	--	--	--	--	--	--	--	--	--
SWFTS-MW05A	EM09	3/26/2018	N	440-207137-5	Alluvium	19.3 - 29.3	--	--	--	--	--	--	--	--	--
SWFTS-MW05A	EM10	4/30/2018	N	440-210173-8	Alluvium	19.3 - 29.3	--	--	--	--	--	--	--	--	--
SWFTS-MW05A	EM11	7/11/2018	N	440-215585-14	Alluvium	19.3 - 29.3	0.045	<0.0050	<0.0050	<0.050	<0.0038	190	<0.015	0.36	<0.0050
SWFTS-MW05A	EM15	10/10/2018	N	440-221975-14	Alluvium	19.3 - 29.3	0.029	<0.025	<0.025	<0.25	<0.019	230	<0.075	0.38	<0.025
SWFTS-MW05A	EM19	5/21/2019	N	440-242084-17	Alluvium	19.3 - 29.3	0.017	<0.0050	0.054	<0.050	<0.0038	210	<0.015	0.31	0.042
SWFTS-MW05A	EM22	11/5/2019	N	440-253918-1	Alluvium	19.3 - 29.3	0.022 J+	<0.0050	<0.0050	<0.050	<0.0038	210	<0.015	0.25	<0.0050
SWFTS-MW05A	EM26	4/29/2020	N	440-265346-2	Alluvium	19.3 - 29.3	0.021	<0.0050	<0.0050	<0.050	<0.0038	210	<0.015	0.26	<0.0050
SWFTS-MW05A	EM29	10/14/2020	N	440-273303-9	Alluvium	19.3 - 29.3	0.015	<0.0050	0.0061 J	<0.050	<0.0038	240	<0.015	0.36	<0.0050
SWFTS-MW05A	EM33	6/3/2021	N	550-164869-17	Alluvium	19.3 - 29.3	--	--	--	--	--	--	--	--	--
SWFTS-MW05A	EM33	6/3/2021	N	550-164869-18	Alluvium	19.3 - 29.3	0.016	<0.00054	0.0026 J	0.064 J	<0.0025 UJ	240	0.011 J	0.31	<0.0028
SWFTS-MW05A	EM36	11/29/2021	N	550-174897-3	Alluvium	19.3 - 29.3	--	--	--	--	--	--	--	--	--
SWFTS-MW05A	EM36	11/29/2021	N	550-174897-4	Alluvium	19.3 - 29.3	0.011	<0.00054	0.0015 J	0.083 J	<0.0025	260	0.016 J	0.30	<0.0028
SWFTS-MW05B	BL01	3/30/2017	N	440-181045-8	Alluvium	32.3 - 42.0	0.050	<0.0050	<0.0050	0.16	<0.0035	220	<0.010	0.30	<0.0050
SWFTS-MW05B	EM04	10/10/2017	N	440-193989-1	Alluvium	32.3 - 42.0	<0.0025	<0.0050	<0.0050	0.68	<0.0038	210	11	0.10	0.044
SWFTS-MW05B	EM06	11/14/2017	N	440-196558-2	Alluvium	32.3 - 42.0	--	--	--	--	--	--	--	--	--
SWFTS-MW05B	EM07	12/13/2017	N	440-198508-4	Alluvium	32.3 - 42.0	--	--	--	--	--	--	--	--	--
SWFTS-MW05B	EM08	2/20/2018	N	440-203841-8	Alluvium	32.3 - 42.0	--	--	--	--	--	--	--	--	--
SWFTS-MW05B	EM09	3/26/2018	N	440-207137-6	Alluvium	32.3 - 42.0	--	--	--	--	--	--	--	--	--
SWFTS-MW05B	EM10	4/30/2018	N	440-210173-2	Alluvium	32.3 - 42.0	--	--	--	--	--	--	--	--	--
SWFTS-MW05B	EM11	7/10/2018	N	440-215585-10	Alluvium	32.3 - 42.0	<0.0025	<0.0050	<0.0050	2.6	<0.0038	200	2.1	0.22	0.0050 J
SWFTS-MW05B	EM15	10/9/2018	N	440-221855-14	Alluvium	32.3 - 42.0	<0.013	<0.025	<0.025	<0.25	<0.019	210	2.4	0.27	<0.025
SWFTS-MW05B	EM19	5/21/2019	N	440-242084-18	Alluvium	32.3 - 42.0	<0.0025	<0.0050	0.038	<0.050	<0.0038	190	2.1	0.27	0.048
SWFTS-MW05B	EM22	11/5/2019	N	440-253918-2	Alluvium	32.3 - 42.0	0.0041 J	<0.0050	<0.0050	<0.050	<0.0038	200	1.9	0.20	0.015
SWFTS-MW05B	EM26	4/29/2020	N	440-265346-1	Alluvium	32.3 - 42.0	<0.0025	<0.0050	<0.0050	<0.050	<0.0038	210	2.0	0.25	0.011
SWFTS-MW05B	EM29	10/14/2020	N	440-273303-8	Alluvium	32.3 - 42.0	<0.0025	<0.0050	<0.0050	0.050 J	<0.0038	190	2.1	0.21	0.036
SWFTS-MW05B	EM33	6/3/2021	N	550-164869-19	Alluvium	32.3 - 42.0	--	--	--	--	--	--	--	--	--
SWFTS-MW05B	EM33	6/3/2021	N	550-164869-20	Alluvium	32.3 - 42.0	<0.0011	<0.00054	<0.0012	1.1	<0.0025	220	2.3	0.11	0.0044 J
SWFTS-MW05B	EM36	11/30/2021	N	550-174968-15	Alluvium	32.3 - 42.0	--	--	--	--	--	--	--	--	--
SWFTS-MW05B	EM36	11/30/2021	N	550-174968-16	Alluvium	32.3 - 42.0	<0.0011	<0.00054	<0.0012	0.038 J	<0.0025	230	1.6	0.14	0.0087
SWFTS-MW06A	BL01	3/30/2017	N	440-181045-1	Alluvium	11.8 - 21.4	<0.0025	0.0050 J	<0.0050	<0.050	<0.0035	58	0.62	0.026	0.014
SWFTS-MW06A	EM04	10/11/2017	N	440-194090-4	Alluvium	11.8 - 21.4	<0.0025	<0.0050	<0.0050	<0.050	<0.0038	90	1.0	0.025	0.015
SWFTS-MW06A	EM06	11/16/2017	N	440-196786-19	Alluvium	11.8 - 21.4	--	--	--	--	--	--	--	--	--
SWFTS-MW06A	EM07	12/13/2017	N	440-198508-1	Alluvium	11.8 - 21.4	--	--	--	--	--	--	--	--	--
SWFTS-MW06A	EM08	2/22/2018	N	440-204033-1	Alluvium	11.8 - 21.4	--	--	--	--	--	--	--	--	--
SWFTS-MW06A	EM09	3/28/2018	N	440-207497-3	Alluvium	11.8 - 21.4	--	--	--	--	--	--	--	--	--
SWFTS-MW06A	EM10	5/1/2018	N	440-210284-9	Alluvium	11.8 - 21.4	--	--	--	--	--	--	--	--	--
SWFTS-MW06A	EM10	5/1/2018	FD	440-210284-10	Alluvium	11.8 - 21.4	--	--	--	--	--	--	--	--	--
SWFTS-MW06A	EM11	7/11/2018	N	440-215585-2	Alluvium	11.8 - 21.4	<0.0025	<0.0050	<0.0050	<0.050	<0.0038	60	0.68	0.021	0.018
SWFTS-MW06A	EM11	7/11/2018	FD	440-215585-3	Alluvium	11.8 - 21.4	<0.0025	0.0051 J	<0.0050	<0.050	<0.0038	65	0.76	0.025	0.020
SWFTS-MW06A	EM15	10/10/2018	N	440-221975-8	Alluvium	11.8 - 21.4	<0.0025	<0.0050	<0.0050	<0.050	<0.0038	73	0.86	0.023	0.019
SWFTS-MW06A	EM15	10/10/2018	FD	440-221975-10	Alluvium	11.8 - 21.4	<0.0025	<0.0050	<0.0050	0.051 J	<0.0038	66	0.79	0.018 J	0.016
SWFTS-MW06A	EM19	5/20/2019	N	440-242015-1	Alluvium	11.8 - 21.4	<0.0025	0.0052 J	<0.0050	<0.050	<0.0038	67	0.76	0.019 J	0.015
SWFTS-MW06A	EM19	5/20/2019	FD	440-242015-2	Alluvium	11.8 - 21.4	<0.0025	0.0055 J	<0.0050	<0.050	<0.0038	73	0.79	0.021	0.016
SWFTS-MW06A	EM22	11/6/2019	N	440-254027-4	Alluvium	11.8 - 21.4	0.0056 J+	0.0050 J	<0.0050	0.083 J	<0.0038	83	0.94	0.026 J+	0.014
SWFTS-MW06A	EM22	11/6/2019	FD	440-254027-5	Alluvium	11.8 - 21.4	0.0041 J	0.0054 J	<0.0050	0.10	<0.0038	86	0.97	0.027 J+	0.014
SWFTS-MW06A	EM26	4/29/2020	N	440-265346-5	Alluvium	11.8 - 21.4	0.0036 J	0.0055 J	<0.0050	<0.050	<0.0038	54	0.60	0.025	0.015
SWFTS-MW06A	EM26	4/29/2020	FD	440-265346-6	Alluvium	11.8 - 21.4	0.0028 J	<0.0050	<0.0050	<0.050	<0.0038	53	0.57	0.023	0.014
SWFTS-MW06A	EM29	10/13/2020	N	440-273236-7	Alluvium	11.8 - 21.4	<0.0025	<0.0050	<0.0050	<0.050	<0.0038	70	0.85	0.024	0.015
SWFTS-MW06A	EM29	10/13/2020	FD	440-273236-8	Alluvium	11.8 - 21.4	<0.0025	<0.0050	<0.0050	<0.050	<0.0038	70	0.87	0.023	0.014
SWFTS-MW06A	EM33	6/4/2021	N	550-164930-19	Alluvium	11.8 - 21.4	--	--	--	--	--	--	--	--	--
SWFTS-MW06A	EM33	6/4/2021	N	550-164930-20	Alluvium	11.8 - 21.4	<0.0011	0.0037 J	0.0015 J	<0.019	<0.0025	78	0.85	0.014	0.019
SWFTS-MW06A	EM33	6/4/2021	FD	550-164930-21	Alluvium	11.8 - 21.4	--	--	--	--	--	--	--	--	--
SWFTS-MW06A	EM33	6/4/2021	FD	550-164930-22	Alluvium	11.8 - 21.4	<0.0011	0.0038 J	0.0017 J	<0.019	<0.0025	79	0.85	0.014	0.020
SWFTS-MW06A	EM36	12/1/2021	N	550-175045-7	Alluvium	11.8 - 21.4	--	--	--	--	--	--	--	--	--
SWFTS-MW06A	EM36	12/1/2021	N	550-175045-8	Alluvium	11.8 - 21.4	<0.0011	0.0040 J	0.0021 J	0.029 J	<0.0025	64	0.69	0.013	0.017
SWFTS-MW06A	EM36	12/1/2021	FD	550-175045-10	Alluvium	11.8 - 21.4	<0.0011	0.0035 J	0.0023 J	0.030 J	<0.0025	63	0.69	0.013	0.018
SWFTS-MW06A	EM36	12/1/2021	FD	550-175045-9	Alluvium	11.8 - 21.4	--	--	--	--	--	--	--	--	--
SWFTS-MW06A	EM40	12/14/2022	N	550-195015-5	Alluvium	11.8 - 21.4	--	--	--	--	--	--	--	--	--

Table D.2
Groundater Analytical Results Summary - Secondary Parameters
Seep Well Field Area Bioremediation Treatability Study

Well	Event	Sample Date	QC Type	Lab Sample ID	Lithology	Screened Interval (ft bgs)	Dissolved Metals by SW6010	Dissolved Metals by SW6010	Dissolved Metals by SW6010	Dissolved Metals by SW6010	Dissolved Metals by SW6010	Dissolved Metals by SW6010	Dissolved Metals by SW6010	Dissolved Metals by SW6010	Dissolved Metals by SW6010
							Chromium	Cobalt	Copper	Iron	Lead	Magnesium	Manganese	Molybdenum	Nickel
							mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
SWFTS-MW06A	EM40	12/14/2022	N	550-195015-6	Alluvium	11.8 - 21.4	<0.0011	0.0033 J	<0.0012	<0.019	<0.0025	65	0.70	0.011	0.015
SWFTS-MW06A	EM40	12/14/2022	FD	550-195015-7	Alluvium	11.8 - 21.4	--	--	--	--	--	--	--	--	--
SWFTS-MW06A	EM40	12/14/2022	FD	550-195015-8	Alluvium	11.8 - 21.4	<0.0011	0.0039 J	0.0015 J	0.019 J	<0.0025	64	0.69	0.011	0.017
SWFTS-MW06B	BL01	3/30/2017	N	440-181045-2	Alluvium	25.9 - 35.5	<0.0025	0.0061 J	<0.0050	0.090 J	<0.0035	65	0.78	0.029	0.015
SWFTS-MW06B	EM04	10/11/2017	N	440-194090-5	Alluvium	25.9 - 35.5	<0.0025	0.0056 J	<0.0050	<0.050	<0.0038	75	0.97	0.027	0.017
SWFTS-MW06B	EM06	11/16/2017	N	440-196786-20	Alluvium	25.9 - 35.5	--	--	--	--	--	--	--	--	--
SWFTS-MW06B	EM07	12/13/2017	N	440-198508-2	Alluvium	25.9 - 35.5	--	--	--	--	--	--	--	--	--
SWFTS-MW06B	EM08	2/22/2018	N	440-204033-5	Alluvium	25.9 - 35.5	--	--	--	--	--	--	--	--	--
SWFTS-MW06B	EM09	3/28/2018	N	440-207497-2	Alluvium	25.9 - 35.5	--	--	--	--	--	--	--	--	--
SWFTS-MW06B	EM10	5/1/2018	N	440-210284-8	Alluvium	25.9 - 35.5	--	--	--	--	--	--	--	--	--
SWFTS-MW06B	EM11	7/11/2018	N	440-215585-4	Alluvium	25.9 - 35.5	<0.0025	0.0057 J	<0.0050	<0.050	<0.0038	61	0.80	0.026	0.019
SWFTS-MW06B	EM15	10/10/2018	N	440-221975-9	Alluvium	25.9 - 35.5	<0.0025	0.0063 J	<0.0050	<0.050	<0.0038	69	0.86	0.026	0.021
SWFTS-MW06B	EM19	5/21/2019	N	440-242084-5	Alluvium	25.9 - 35.5	<0.0025	<0.0050	0.025	<0.050	<0.0038	67	0.88	0.028	0.031
SWFTS-MW06B	EM22	11/6/2019	N	440-254027-6	Alluvium	25.9 - 35.5	0.0044 J	0.0056 J	<0.0050	0.080 J	<0.0038	84	1.1	0.026 J+	0.014
SWFTS-MW06B	EM26	4/29/2020	N	440-265346-4	Alluvium	25.9 - 35.5	0.0035 J	0.0064 J	<0.0050	<0.050	<0.0038	56	0.74	0.027	0.016
SWFTS-MW06B	EM29	10/13/2020	N	440-273236-6	Alluvium	25.9 - 35.5	<0.0025	<0.0050	<0.0050	<0.050	<0.0038	65	0.88	0.025	0.016
SWFTS-MW06B	EM33	6/4/2021	N	550-164930-23	Alluvium	25.9 - 35.5	--	--	--	--	--	--	--	--	--
SWFTS-MW06B	EM33	6/4/2021	N	550-164930-24	Alluvium	25.9 - 35.5	<0.0011	0.0041 J	0.0015 J	<0.019	<0.0025	72	0.93	0.015	0.020
SWFTS-MW06B	EM36	12/1/2021	N	550-175045-11	Alluvium	25.9 - 35.5	--	--	--	--	--	--	--	--	--
SWFTS-MW06B	EM36	12/1/2021	N	550-175045-12	Alluvium	25.9 - 35.5	<0.0011	0.0042 J	0.0026 J	0.023 J	<0.0025	63	0.78	0.014	0.018
SWFTS-MW06B	EM40	12/14/2022	N	550-195015-10	Alluvium	25.9 - 35.5	<0.0011	0.0042 J	<0.0012	<0.019	<0.0025	64	0.76	0.011	0.014
SWFTS-MW06B	EM40	12/14/2022	N	550-195015-9	Alluvium	25.9 - 35.5	--	--	--	--	--	--	--	--	--
SWFTS-MW07A	BL01	3/30/2017	N	440-181045-3	Alluvium	15.0 - 29.5	<0.0025	<0.0050	<0.0050	<0.050	<0.0035	180	1.1	0.12	<0.0050
SWFTS-MW07A	EM04	10/11/2017	N	440-194242-3	Alluvium	15.0 - 29.5	<0.0025	<0.0050	<0.0050	<0.050	<0.0038	180	1.1	0.11	<0.0050
SWFTS-MW07A	EM06	11/15/2017	N	440-196659-7	Alluvium	15.0 - 29.5	--	--	--	--	--	--	--	--	--
SWFTS-MW07A	EM07	12/14/2017	N	440-198571-3	Alluvium	15.0 - 29.5	--	--	--	--	--	--	--	--	--
SWFTS-MW07A	EM08	2/19/2018	N	440-203775-3	Alluvium	15.0 - 29.5	--	--	--	--	--	--	--	--	--
SWFTS-MW07A	EM09	3/28/2018	N	440-207497-4	Alluvium	15.0 - 29.5	--	--	--	--	--	--	--	--	--
SWFTS-MW07A	EM10	5/2/2018	N	440-210430-2	Alluvium	15.0 - 29.5	--	--	--	--	--	--	--	--	--
SWFTS-MW07A	EM11	7/11/2018	N	440-215585-7	Alluvium	15.0 - 29.5	<0.0025	<0.0050	<0.0050	<0.050	<0.0038	140	0.81	0.11	<0.0050
SWFTS-MW07A	EM15	10/10/2018	N	440-221975-11	Alluvium	15.0 - 29.5	<0.013	<0.025	<0.025	<0.25	<0.019	130	0.80	0.11	<0.025
SWFTS-MW07A	EM19	5/22/2019	N	440-242200-5	Alluvium	15.0 - 29.5	0.0036 J	<0.0050	0.028	<0.050	<0.0038	85	0.63	0.085	0.020
SWFTS-MW07A	EM22	11/7/2019	N	440-254148-4	Alluvium	15.0 - 29.5	0.0050 J+	<0.0050	<0.0050	<0.050	<0.0038	94	0.55	0.11 J+	<0.0050
SWFTS-MW07A	EM26	4/30/2020	N	440-265382-5	Alluvium	15.0 - 29.5	0.0063	<0.0050	0.0064 J	0.061 J	<0.0038	120	0.63	0.093	<0.0050
SWFTS-MW07A	EM29	10/16/2020	N	440-273433-1	Alluvium	15.0 - 29.5	0.0030 J	<0.0050	0.0072 J	<0.050	<0.0038	110	0.68	0.084	<0.0050
SWFTS-MW07A	EM33	6/4/2021	N	550-164930-25	Alluvium	15.0 - 29.5	--	--	--	--	--	--	--	--	--
SWFTS-MW07A	EM33	6/4/2021	N	550-164930-26	Alluvium	15.0 - 29.5	<0.0011	<0.00054	<0.0012	<0.019	<0.0025	110	0.58	0.071	0.0040 J
SWFTS-MW07A	EM36	12/3/2021	N	550-175222-3	Alluvium	15.0 - 29.5	--	--	--	--	--	--	--	--	--
SWFTS-MW07A	EM36	12/3/2021	N	550-175222-4	Alluvium	15.0 - 29.5	<0.0011	<0.00054	<0.0012	0.036 J	<0.0025	130	0.73	0.051	<0.0028
SWFTS-MW07A	EM40	12/14/2022	N	550-195015-11	Alluvium	15.0 - 29.5	--	--	--	--	--	--	--	--	--
SWFTS-MW07A	EM40	12/14/2022	N	550-195015-12	Alluvium	15.0 - 29.5	<0.0011	<0.00054	<0.0012	0.024 J	<0.0025	150	0.91	0.042	<0.0028
SWFTS-MW07B	BL01	3/30/2017	N	440-181045-4	Alluvium	33.8 - 38.3	<0.0025	<0.0050	<0.0050	<0.050	<0.0035	160	1.1	0.12	<0.0050
SWFTS-MW07B	EM04	10/11/2017	N	440-194242-4	Alluvium	33.8 - 38.3	0.0033 J	<0.0050	<0.0050	<0.050	<0.0038	120	0.94	0.098	<0.0050
SWFTS-MW07B	EM06	11/15/2017	N	440-196659-8	Alluvium	33.8 - 38.3	--	--	--	--	--	--	--	--	--
SWFTS-MW07B	EM07	12/14/2017	N	440-198571-4	Alluvium	33.8 - 38.3	--	--	--	--	--	--	--	--	--
SWFTS-MW07B	EM08	2/19/2018	N	440-203775-2	Alluvium	33.8 - 38.3	--	--	--	--	--	--	--	--	--
SWFTS-MW07B	EM09	3/28/2018	N	440-207497-10	Alluvium	33.8 - 38.3	--	--	--	--	--	--	--	--	--
SWFTS-MW07B	EM10	5/2/2018	N	440-210430-1	Alluvium	33.8 - 38.3	--	--	--	--	--	--	--	--	--
SWFTS-MW07B	EM11	7/11/2018	N	440-215585-8	Alluvium	33.8 - 38.3	0.0043 J	<0.0050	<0.0050	0.053 J	<0.0038	100	0.75	0.075	0.0059 J
SWFTS-MW07B	EM15	10/10/2018	N	440-221975-12	Alluvium	33.8 - 38.3	<0.013	<0.025	<0.025	<0.25	<0.019	95	0.66	0.091 J	<0.025
SWFTS-MW07B	EM19	5/22/2019	N	440-242200-6	Alluvium	33.8 - 38.3	<0.0025	<0.0050	0.029	<0.050	<0.0038	100	0.57	0.11	0.020
SWFTS-MW07B	EM22	11/7/2019	N	440-254148-5	Alluvium	33.8 - 38.3	0.0087 J+	<0.0050	<0.0050	<0.050	<0.0038	71	0.51	0.081 J+	0.0050 J
SWFTS-MW07B	EM26	4/30/2020	N	440-265382-4	Alluvium	33.8 - 38.3	0.0049 J	<0.0050	<0.0050	<0.050	<0.0038	120	0.87	0.060	<0.0050
SWFTS-MW07B	EM29	10/16/2020	N	440-273433-2	Alluvium	33.8 - 38.3	0.0038 J	<0.0050	0.0060 J	<0.050	<0.0038	84	0.60	0.075	<0.0050
SWFTS-MW07B	EM33	6/4/2021	N	550-164930-27	Alluvium	33.8 - 38.3	--	--	--	--	--	--	--	--	--
SWFTS-MW07B	EM33	6/4/2021	N	550-164930-28	Alluvium	33.8 - 38.3	0.0018 J	<0.00054	<0.0012	0.021 J	<0.0025	120	0.86	0.050	0.0042 J
SWFTS-MW07B	EM36	12/3/2021	N	550-175222-5	Alluvium	33.8 - 38.3	--	--	--	--	--	--	--	--	--
SWFTS-MW07B	EM36	12/3/2021	N	550-175222-6	Alluvium	33.8 - 38.3	<0.0011	<0.00054	0.0016 J	0.042 J	<0.0025	180	1.2	0.019	0.0056
SWFTS-MW07B	EM40	12/14/2022	N	550-195015-13	Alluvium	33.8 - 38.3	--	--	--	--	--	--	--	--	--
SWFTS-MW07B	EM40	12/14/2022	N	550-195015-14	Alluvium	33.8 - 38.3	0.0022 J	<0.00054	<0.0012	0.050 J	<0.0025	120	0.69	0.062	<0.0028
SWFTS-MW08A	BL01	3/30/2017	N	440-181045-9	Alluvium	20.2 - 34.8	0.043	<0.0050	<0.0050	<0.050	<0.0035	170	<0.010	0.15	<0.0050
SWFTS-MW08A	EM04	10/10/2017	N	440-194094-4	Alluvium	20.2 - 34.8	0.038	<0.0050	0.0051 J	<0.050	<0.0038	140	<0.015	0.14	<0.0050
SWFTS-MW08A	EM06	11/15/2017	N	440-196659-4	Alluvium	20.2 - 34.8	--	--	--	--	--	--	--	--	--
SWFTS-MW08A	EM07	12/14/2017	N	440-198571-1	Alluvium	20.2 - 34.8	--	--	--	--	--	--	--	--	--

Table D.2
Groundater Analytical Results Summary - Secondary Parameters
Seep Well Field Area Bioremediation Treatability Study

Well	Event	Sample Date	QC Type	Lab Sample ID	Lithology	Screened Interval (ft bgs)	Dissolved Metals by SW6010	Dissolved Metals by SW6010	Dissolved Metals by SW6010	Dissolved Metals by SW6010	Dissolved Metals by SW6010	Dissolved Metals by SW6010	Dissolved Metals by SW6010	Dissolved Metals by SW6010	Dissolved Metals by SW6010
							Chromium	Cobalt	Copper	Iron	Lead	Magnesium	Manganese	Molybdenum	Nickel
							mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
SWFTS-MW08A	EM08	2/22/2018	N	440-204033-8	Alluvium	20.2 - 34.8	--	--	--	--	--	--	--	--	--
SWFTS-MW08A	EM09	3/29/2018	N	440-207586-1	Alluvium	20.2 - 34.8	--	--	--	--	--	--	--	--	--
SWFTS-MW08A	EM10	5/3/2018	N	440-210534-5	Alluvium	20.2 - 34.8	--	--	--	--	--	--	--	--	--
SWFTS-MW08A	EM11	7/11/2018	N	440-215717-14	Alluvium	20.2 - 34.8	0.044	<0.0050	<0.0050	<0.050	<0.0038	130	<0.015	0.14	<0.0050
SWFTS-MW08A	EM15	10/10/2018	N	440-221975-13	Alluvium	20.2 - 34.8	0.045	<0.025	<0.025	<0.25	<0.019	130	<0.075	0.16	<0.025
SWFTS-MW08A	EM19	5/22/2019	N	440-242198-4	Alluvium	20.2 - 34.8	0.042	<0.0050	0.031	<0.050	<0.0038	110	<0.015	0.14	0.021
SWFTS-MW08A	EM22	11/7/2019	N	440-254148-6	Alluvium	20.2 - 34.8	0.042 J+	<0.0050	<0.0050	<0.050	<0.0038	110	<0.015	0.13 J+	<0.0050
SWFTS-MW08A	EM26	4/29/2020	N	440-265346-3	Alluvium	20.2 - 34.8	0.052	<0.0050	<0.0050	<0.050	<0.0038	140	<0.015	0.11	<0.0050
SWFTS-MW08A	EM29	10/16/2020	N	440-273433-4	Alluvium	20.2 - 34.8	0.045	<0.0050	0.0059 J	<0.050	<0.0038	110	<0.015	0.12	<0.0050
SWFTS-MW08A	EM33	6/4/2021	N	550-164930-29	Alluvium	20.2 - 34.8	--	--	--	--	--	--	--	--	--
SWFTS-MW08A	EM33	6/4/2021	N	550-164930-30	Alluvium	20.2 - 34.8	0.049	<0.00054	<0.0012	0.021 J	<0.0025	160	<0.0083	0.090	<0.0028
SWFTS-MW08A	EM36	12/2/2021	N	550-175153-23	Alluvium	20.2 - 34.8	--	--	--	--	--	--	--	--	--
SWFTS-MW08A	EM36	12/2/2021	N	550-175153-24	Alluvium	20.2 - 34.8	0.055	<0.00054	<0.0012	0.029 J	<0.0025	200	<0.0083	0.071	<0.0028
SWFTS-MW08C	BL01	3/28/2017	N	440-180820-3	UMCf	49.9 - 69.5	0.056	<0.0050	0.0068 J	<0.050	<0.0035	370	<0.010	0.22	<0.0050
SWFTS-MW08C	EM40	12/14/2022	N	550-195015-15	UMCf	49.9 - 69.5	--	--	--	--	--	--	--	--	--
SWFTS-MW08C	EM40	12/14/2022	N	550-195015-16	UMCf	49.9 - 69.5	0.043	<0.00054	<0.0012	0.040 J	<0.0025	350	<0.0083	0.22	<0.0028
SWFTS-MW09A	BL01	3/29/2017	N	440-180937-3	Alluvium	19.3 - 28.9	0.035	<0.0050	<0.0050	<0.050	<0.0035	180	<0.010	0.16	<0.0050
SWFTS-MW09A	EM04	10/11/2017	N	440-194094-7	Alluvium	19.3 - 28.9	<0.0025	0.0071 J	<0.0050	0.29	<0.0038	180	9.4	1.0	0.014
SWFTS-MW09A	EM06	11/16/2017	N	440-196786-14	Alluvium	19.3 - 28.9	--	--	--	--	--	--	--	--	--
SWFTS-MW09A	EM07	12/12/2017	N	440-198371-6	Alluvium	19.3 - 28.9	--	--	--	--	--	--	--	--	--
SWFTS-MW09A	EM08	2/20/2018	N	440-203841-14	Alluvium	19.3 - 28.9	--	--	--	--	--	--	--	--	--
SWFTS-MW09A	EM09	3/27/2018	N	440-207268-7	Alluvium	19.3 - 28.9	--	--	--	--	--	--	--	--	--
SWFTS-MW09A	EM10	5/1/2018	N	440-210284-13	Alluvium	19.3 - 28.9	--	--	--	--	--	--	--	--	--
SWFTS-MW09A	EM11	7/12/2018	N	440-215717-10	Alluvium	19.3 - 28.9	<0.0025	0.0056 J	<0.0050	<0.050	<0.0038	150	3.8	0.17	0.016
SWFTS-MW09A	EM15	10/9/2018	N	440-221855-7	Alluvium	19.3 - 28.9	<0.013	<0.025	<0.025	<0.25	<0.019	180	4.4	0.22	<0.025
SWFTS-MW09A	EM19	5/22/2019	N	440-242200-1	Alluvium	19.3 - 28.9	<0.0025	0.0059 J	0.032	<0.050	<0.0038	140	3.4	0.16	0.029
SWFTS-MW09A	EM22	11/5/2019	N	440-253891-1	Alluvium	19.3 - 28.9	0.0050 J+	<0.0050	<0.0050	<0.050	<0.0038	120	2.7	0.18	0.0096 J
SWFTS-MW09A	EM26	4/28/2020	N	440-265289-4	Alluvium	19.3 - 28.9	<0.0025	<0.0050	<0.0050	<0.050	<0.0038	140	3.5	0.14	0.0086 J
SWFTS-MW09A	EM29	10/13/2020	N	440-273236-3	Alluvium	19.3 - 28.9	<0.0025	<0.0050	<0.0050	<0.050	<0.0038	130	3.3	0.15	0.0069 J
SWFTS-MW09A	EM33	6/1/2021	N	550-164699-1	Alluvium	19.3 - 28.9	--	--	--	--	--	--	--	--	--
SWFTS-MW09A	EM33	6/1/2021	N	550-164699-2	Alluvium	19.3 - 28.9	<0.0011	0.0030 J	<0.0012	0.028 J	<0.0025	150	3.1	0.12	0.0081
SWFTS-MW09A	EM36	12/2/2021	N	550-175153-10	Alluvium	19.3 - 28.9	<0.0011	0.0032 J	<0.0012	0.037 J	<0.0025	180	3.9	0.099	0.011
SWFTS-MW09A	EM36	12/2/2021	N	550-175153-9	Alluvium	19.3 - 28.9	--	--	--	--	--	--	--	--	--
SWFTS-MW09A	EM40	12/13/2022	N	550-194920-10	Alluvium	19.3 - 28.9	<0.0011	0.0022 J	<0.0012	0.027 J	<0.0025	160	3.0	0.10	0.0053
SWFTS-MW09A	EM40	12/13/2022	N	550-194920-9	Alluvium	19.3 - 28.9	--	--	--	--	--	--	--	--	--
SWFTS-MW09B	BL01	3/29/2017	N	440-180937-4	Alluvium	34.4 - 39.0	0.015	<0.0050	<0.0050	0.068 J	<0.0035	180	0.68	0.10	<0.0050
SWFTS-MW09B	BL01	3/29/2017	FD	440-180937-5	Alluvium	34.4 - 39.0	0.015	<0.0050	0.0061 J	<0.050	<0.0035	170	0.73	0.096	<0.0050
SWFTS-MW09B	EM04	10/11/2017	N	440-194094-5	Alluvium	34.4 - 39.0	<0.0025	0.0061 J	<0.0050	0.35	<0.0038	160	6.8	0.17	0.011
SWFTS-MW09B	EM06	11/16/2017	N	440-196786-15	Alluvium	34.4 - 39.0	--	--	--	--	--	--	--	--	--
SWFTS-MW09B	EM07	12/12/2017	N	440-198371-7	Alluvium	34.4 - 39.0	--	--	--	--	--	--	--	--	--
SWFTS-MW09B	EM08	2/20/2018	N	440-203841-13	Alluvium	34.4 - 39.0	--	--	--	--	--	--	--	--	--
SWFTS-MW09B	EM09	3/27/2018	N	440-207268-6	Alluvium	34.4 - 39.0	--	--	--	--	--	--	--	--	--
SWFTS-MW09B	EM10	4/30/2018	N	440-210173-11	Alluvium	34.4 - 39.0	--	--	--	--	--	--	--	--	--
SWFTS-MW09B	EM11	7/12/2018	N	440-215717-9	Alluvium	34.4 - 39.0	0.0029 J	<0.0050	<0.0050	<0.050	<0.0038	140	2.5	0.13	0.013
SWFTS-MW09B	EM15	10/9/2018	N	440-221855-8	Alluvium	34.4 - 39.0	<0.013	<0.025	<0.025	<0.25	<0.019	150	2.4	0.15	<0.025
SWFTS-MW09B	EM19	5/22/2019	N	440-242200-2	Alluvium	34.4 - 39.0	0.0039 J	<0.0050	0.033	<0.050	<0.0038	120	1.8	0.14	0.028
SWFTS-MW09B	EM22	11/5/2019	N	440-253891-3	Alluvium	34.4 - 39.0	0.0055 J+	<0.0050	<0.0050	<0.050	<0.0038	100	1.7	0.12	0.0088 J
SWFTS-MW09B	EM26	4/28/2020	N	440-265289-3	Alluvium	34.4 - 39.0	0.0052	<0.0050	<0.0050	<0.050	<0.0038	130	1.8	0.097	0.0050 J
SWFTS-MW09B	EM29	10/13/2020	N	440-273236-4	Alluvium	34.4 - 39.0	0.0067	<0.0050	<0.0050	0.14	<0.0038	120	1.6	0.11	0.0056 J
SWFTS-MW09B	EM33	6/2/2021	N	550-164872-1	Alluvium	34.4 - 39.0	--	--	--	--	--	--	--	--	--
SWFTS-MW09B	EM33	6/2/2021	N	550-164872-2	Alluvium	34.4 - 39.0	0.0038 J	0.0014 J	<0.0012	0.026 J	<0.0025	130	1.4	0.084	0.0079
SWFTS-MW09B	EM36	12/2/2021	N	550-175153-11	Alluvium	34.4 - 39.0	--	--	--	--	--	--	--	--	--
SWFTS-MW09B	EM36	12/2/2021	N	550-175153-12	Alluvium	34.4 - 39.0	0.0022 J	0.0017 J	0.0016 J	0.059 J	<0.0025	170	1.6	0.069	0.010
SWFTS-MW09B	EM40	12/13/2022	N	550-194920-13	Alluvium	34.4 - 39.0	--	--	--	--	--	--	--	--	--
SWFTS-MW09B	EM40	12/13/2022	N	550-194920-14	Alluvium	34.4 - 39.0	0.0048 J	0.0013 J	<0.0012	0.027 J	<0.0025	150	1.1	0.069	0.0049 J
SWFTS-MW10A	BL01	3/31/2017	N	440-181122-2	Alluvium	20.4 - 35.0	<0.0025	<0.0050	<0.0050	0.13	<0.0035	150	1.1	0.11	0.013
SWFTS-MW10A	EM04	10/12/2017	N	440-194242-10	Alluvium	20.4 - 35.0	<0.0025	<0.0050	<0.0050	0.37	<0.0038	99	4.3	0.014 J	0.013
SWFTS-MW10A	EM06	11/16/2017	N	440-196786-5	Alluvium	20.4 - 35.0	<0.0025	<0.0050	<0.0050	0.21	<0.0038	89	2.2	0.010 J	0.025
SWFTS-MW10A	EM06	11/16/2017	FD	440-196786-6	Alluvium	20.4 - 35.0	<0.0025	<0.0050	<0.0050	0.21	<0.0038	90	2.2	<0.010	0.024
SWFTS-MW10A	EM07	12/12/2017	N	440-198371-10	Alluvium	20.4 - 35.0	--	--	--	--	--	--	--	--	--
SWFTS-MW10A	EM07	12/12/2017	FD	440-198371-11	Alluvium	20.4 - 35.0	--	--	--	--	--	--	--	--	--
SWFTS-MW10A	EM08	2/20/2018	N	440-203841-4	Alluvium	20.4 - 35.0	<0.0025	<0.0050	<0.0050	0.36	<0.0038	150	2.2	0.044	0.025
SWFTS-MW10A	EM08	2/20/2018	FD	440-203841-5	Alluvium	20.4 - 35.0	<0.0025	<0.0050	<0.0050	0.36	<0.0038	150	2.2	0.043	0.026
SWFTS-MW10A	EM09	3/26/2018	N	440-207137-7	Alluvium	20.4 - 35.0	<0.0025	<0.0050	<0.0050	0.15	<0.0038	170	2.4	0.085	0.011 J

Table D.2
Groundater Analytical Results Summary - Secondary Parameters
Seep Well Field Area Bioremediation Treatability Study

Well	Event	Sample Date	QC Type	Lab Sample ID	Lithology	Screened Interval (ft bgs)	Dissolved Metals by SW6010	Dissolved Metals by SW6010	Dissolved Metals by SW6010	Dissolved Metals by SW6010	Dissolved Metals by SW6010	Dissolved Metals by SW6010	Dissolved Metals by SW6010	Dissolved Metals by SW6010	Dissolved Metals by SW6010
							Chromium	Cobalt	Copper	Iron	Lead	Magnesium	Manganese	Molybdenum	Nickel
							mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
SWFTS-MW10A	EM09	3/26/2018	FD	440-207137-8	Alluvium	20.4 - 35.0	<0.0025	<0.0050	<0.0050	0.13	<0.0038	150	2.2	0.082	0.027 J
SWFTS-MW10A	EM10	5/1/2018	N	440-210284-1	Alluvium	20.4 - 35.0	<0.0025	<0.0050	<0.0050	0.11	<0.0038	190	2.5	0.096	0.016
SWFTS-MW10A	EM11	7/11/2018	N	440-215585-9	Alluvium	20.4 - 35.0	<0.0025	<0.0050	<0.0050	<0.050	<0.0038	160	2.1	0.080	0.012
SWFTS-MW10A	EM13	8/14/2018	N	440-218109-10	Alluvium	20.4 - 35.0	<0.0025	<0.0050	<0.0050	<0.050	<0.0038	140	1.8	0.067	0.014
SWFTS-MW10A	EM14	9/10/2018	N	440-219797-4	Alluvium	20.4 - 35.0	<0.0025	<0.0050	<0.0050	<0.050	<0.0038	140	1.7	0.068	0.019
SWFTS-MW10A	EM15	10/9/2018	N	440-221855-9	Alluvium	20.4 - 35.0	<0.013	<0.025	<0.025	<0.25	<0.019	160	1.9	0.076 J	<0.025
SWFTS-MW10A	EM19	5/21/2019	N	440-242084-2	Alluvium	20.4 - 35.0	<0.0025	<0.0050	0.031	0.071 J	<0.0038	130	1.5	0.083	0.031
SWFTS-MW10A	EM22	11/6/2019	N	440-254051-1	Alluvium	20.4 - 35.0	0.0040 J	<0.0050	<0.0050	0.073 J	<0.0038	130	1.5	0.086 J+	0.0096 J
SWFTS-MW10A	EM26	4/29/2020	N	440-265342-6	Alluvium	20.4 - 35.0	<0.0025	<0.0050	<0.0050	<0.050	<0.0038	150	1.9	0.16	0.0071 J
SWFTS-MW10A	EM29	10/14/2020	N	440-273303-4	Alluvium	20.4 - 35.0	<0.0025	<0.0050	<0.0050	<0.050	<0.0038	140	1.7	0.14	0.0086 J
SWFTS-MW10A	EM33	6/4/2021	N	550-164930-13	Alluvium	20.4 - 35.0	--	--	--	--	--	--	--	--	--
SWFTS-MW10A	EM33	6/4/2021	N	550-164930-14	Alluvium	20.4 - 35.0	<0.0011	0.0027 J	<0.0012	0.030 J	<0.0025	150	1.7	0.13	0.014
SWFTS-MW10A	EM36	11/30/2021	N	550-174968-17	Alluvium	20.4 - 35.0	--	--	--	--	--	--	--	--	--
SWFTS-MW10A	EM36	11/30/2021	N	550-174968-18	Alluvium	20.4 - 35.0	<0.0011	0.0024 J	0.0014 J	0.039 J	<0.0025	150	1.6	0.12	0.010
SWFTS-MW10A	EM40	12/15/2022	N	550-195103-1	Alluvium	20.4 - 35.0	--	--	--	--	--	--	--	--	--
SWFTS-MW10A	EM40	12/15/2022	N	550-195103-2	Alluvium	20.4 - 35.0	<0.0011	0.0032 J	<0.0012	0.027 J	<0.0025	190	1.7	0.097	0.011
SWFTS-MW10C	BL01	3/28/2017	N	440-180820-4	UMCf	43.5 - 63.1	0.0070	<0.0050	<0.0050	<0.050	<0.0035	330	0.024	0.017 J	<0.0050
SWFTS-MW10C	EM40	12/15/2022	N	550-195103-3	UMCf	43.5 - 63.1	--	--	--	--	--	--	--	--	--
SWFTS-MW10C	EM40	12/15/2022	N	550-195103-4	UMCf	43.5 - 63.1	<0.0011	<0.00054	<0.0012	0.041 J	<0.0025	310	0.017 J	0.037	<0.0028
SWFTS-MW11	BL02	7/12/2017	N	440-188244-7	Alluvium	14.8 - 39.6	0.021	<0.0050	<0.0050	<0.050	<0.0076	240	0.17	0.19	<0.0050
SWFTS-MW11	EM04	10/11/2017	N	440-194094-8	Alluvium	14.8 - 39.6	0.018	<0.0050	<0.0050	<0.050	<0.0038	200	0.21	0.14	<0.0050
SWFTS-MW11	EM06	11/16/2017	N	440-196786-3	Alluvium	14.8 - 39.6	--	--	--	--	--	--	--	--	--
SWFTS-MW11	EM07	12/14/2017	N	440-198571-13	Alluvium	14.8 - 39.6	--	--	--	--	--	--	--	--	--
SWFTS-MW11	EM08	2/21/2018	N	440-203937-10	Alluvium	14.8 - 39.6	--	--	--	--	--	--	--	--	--
SWFTS-MW11	EM08	2/21/2018	FD	440-203937-11	Alluvium	14.8 - 39.6	--	--	--	--	--	--	--	--	--
SWFTS-MW11	EM09	3/28/2018	N	440-207497-7	Alluvium	14.8 - 39.6	--	--	--	--	--	--	--	--	--
SWFTS-MW11	EM09	3/28/2018	FD	440-207497-8	Alluvium	14.8 - 39.6	--	--	--	--	--	--	--	--	--
SWFTS-MW11	EM10	5/1/2018	N	440-210284-11	Alluvium	14.8 - 39.6	--	--	--	--	--	--	--	--	--
SWFTS-MW11	EM10	5/1/2018	FD	440-210367-1	Alluvium	14.8 - 39.6	--	--	--	--	--	--	--	--	--
SWFTS-MW11	EM11	7/12/2018	N	440-215717-17	Alluvium	14.8 - 39.6	0.021	<0.0050	<0.0050	<0.050	<0.0038	190	<0.015	0.17	<0.0050
SWFTS-MW11	EM11	7/12/2018	FD	440-215717-18	Alluvium	14.8 - 39.6	0.020	<0.0050	<0.0050	<0.050	<0.0038	190	<0.015	0.17	<0.0050
SWFTS-MW11	EM15	10/11/2018	N	440-222092-10	Alluvium	14.8 - 39.6	0.029	<0.0050	<0.0050	<0.050	<0.0038	210	<0.015	0.23	<0.0050
SWFTS-MW11	EM15	10/11/2018	FD	440-222092-11	Alluvium	14.8 - 39.6	0.024	<0.0050	<0.0050	<0.050	<0.0038	210	<0.015	0.20	<0.0050
SWFTS-MW11	EM19	5/22/2019	N	440-242200-3	Alluvium	14.8 - 39.6	0.018	<0.0050	0.033	<0.050	<0.0038	140	<0.015	0.20	0.022
SWFTS-MW11	EM19	5/22/2019	FD	440-242200-4	Alluvium	14.8 - 39.6	0.017	<0.0050	0.032	<0.050	<0.0038	140	<0.015	0.19	0.021
SWFTS-MW11	EM22	11/7/2019	N	440-254150-3	Alluvium	14.8 - 39.6	0.017 J+	<0.0050	<0.0050	<0.050	<0.0038	120	<0.015	0.19	<0.0050
SWFTS-MW11	EM22	11/7/2019	FD	440-254150-4	Alluvium	14.8 - 39.6	0.017 J+	<0.0050	<0.0050	<0.050	0.0042 J	120	<0.015	0.19	<0.0050
SWFTS-MW11	EM26	4/30/2020	N	440-265383-4	Alluvium	14.8 - 39.6	0.029	<0.0050	<0.0050	0.15	<0.0038	170	<0.015	0.15	<0.0050
SWFTS-MW11	EM26	4/30/2020	FD	440-265383-5	Alluvium	14.8 - 39.6	0.028	<0.0050	<0.0050	<0.050	<0.0038	180	<0.015	0.15	<0.0050
SWFTS-MW11	EM29	10/16/2020	N	440-273433-7	Alluvium	14.8 - 39.6	0.023	<0.0050	0.0066 J	<0.050	<0.0038	160	<0.015	0.16	<0.0050
SWFTS-MW11	EM29	10/16/2020	FD	440-273433-8	Alluvium	14.8 - 39.6	0.022	<0.0050	0.0057 J	<0.050	<0.0038	160	<0.015	0.16	<0.0050
SWFTS-MW11	EM33	6/4/2021	N	550-164930-7	Alluvium	14.8 - 39.6	--	--	--	--	--	--	--	--	--
SWFTS-MW11	EM33	6/4/2021	N	550-164930-8	Alluvium	14.8 - 39.6	0.012	<0.00054	<0.0012	0.020 J	<0.0025	150	<0.0083	0.13	<0.0028
SWFTS-MW11	EM33	6/4/2021	FD	550-164930-10	Alluvium	14.8 - 39.6	0.012	<0.00054	<0.0012	<0.019	<0.0025	150	<0.0083	0.13	<0.0028
SWFTS-MW11	EM33	6/4/2021	FD	550-164930-9	Alluvium	14.8 - 39.6	--	--	--	--	--	--	--	--	--
SWFTS-MW11	EM36	12/3/2021	N	550-175222-7	Alluvium	14.8 - 39.6	--	--	--	--	--	--	--	--	--
SWFTS-MW11	EM36	12/3/2021	N	550-175222-8	Alluvium	14.8 - 39.6	0.0056	<0.00054	<0.0012	0.024 J	<0.0025	170	<0.0083	0.097	<0.0028
SWFTS-MW11	EM36	12/3/2021	FD	550-175222-10	Alluvium	14.8 - 39.6	0.0060	<0.00054	<0.0012	0.030 J	<0.0025	190	<0.0083	0.10	<0.0028
SWFTS-MW11	EM36	12/3/2021	FD	550-175222-9	Alluvium	14.8 - 39.6	--	--	--	--	--	--	--	--	--
SWFTS-MW11	EM40	12/15/2022	N	550-195103-5	Alluvium	14.8 - 39.6	--	--	--	--	--	--	--	--	--
SWFTS-MW11	EM40	12/15/2022	N	550-195103-6	Alluvium	14.8 - 39.6	0.016	<0.00054	<0.0012	0.022 J	<0.0025	140	<0.0083	0.11	<0.0028
SWFTS-MW11	EM40	12/15/2022	FD	550-195103-7	Alluvium	14.8 - 39.6	--	--	--	--	--	--	--	--	--
SWFTS-MW11	EM40	12/15/2022	FD	550-195103-8	Alluvium	14.8 - 39.6	0.017	<0.00054	<0.0012	0.019 J	<0.0025	130	<0.0083	0.11	<0.0028
SWFTS-MW12	BL02	7/13/2017	N	440-188324-6	Alluvium	15.8 - 40.6	0.035	<0.0050	<0.0050	<0.050	<0.0038	280	<0.015	0.46	<0.0050
SWFTS-MW12	EM04	10/11/2017	N	440-194090-1	Alluvium	15.8 - 40.6	0.032	<0.0050	<0.0050	<0.050	<0.0038	250	<0.015	0.47	<0.0050
SWFTS-MW12	EM06	11/14/2017	N	440-196558-5	Alluvium	15.8 - 40.6	--	--	--	--	--	--	--	--	--
SWFTS-MW12	EM07	12/14/2017	N	440-198571-15	Alluvium	15.8 - 40.6	--	--	--	--	--	--	--	--	--
SWFTS-MW12	EM08	2/22/2018	N	440-204033-2	Alluvium	15.8 - 40.6	--	--	--	--	--	--	--	--	--
SWFTS-MW12	EM09	3/28/2018	N	440-207497-5	Alluvium	15.8 - 40.6	--	--	--	--	--	--	--	--	--
SWFTS-MW12	EM10	5/3/2018	N	440-210534-4	Alluvium	15.8 - 40.6	--	--	--	--	--	--	--	--	--
SWFTS-MW12	EM11	7/12/2018	N	440-215717-16	Alluvium	15.8 - 40.6	0.030	<0.0050	<0.0050	<0.050	<0.0038	260	<0.015	0.48	<0.0050
SWFTS-MW12	EM15	10/11/2018	N	440-222092-12	Alluvium	15.8 - 40.6	0.028	<0.0050	<0.0050	<0.050	<0.0038	210	<0.015	0.42	<0.0050
SWFTS-MW12	EM19	5/22/2019	N	440-242198-7	Alluvium	15.8 - 40.6	0.029	<0.0050	0.052	<0.050	<0.0038	250	<0.015	0.49	0.040
SWFTS-MW12	EM22	11/7/2019	N	440-254150-2	Alluvium	15.8 - 40.6	<0.013	<0.025	<0.025	1.3	<0.019	260	44	<0.050	<0.025

Table D.2
Groundater Analytical Results Summary - Secondary Parameters
Seep Well Field Area Bioremediation Treatability Study

Well	Event	Sample Date	QC Type	Lab Sample ID	Lithology	Screened Interval (ft bgs)	Dissolved Metals by SW6010	Dissolved Metals by SW6010	Dissolved Metals by SW6010	Dissolved Metals by SW6010	Dissolved Metals by SW6010	Dissolved Metals by SW6010	Dissolved Metals by SW6010	Dissolved Metals by SW6010	Dissolved Metals by SW6010
							Chromium	Cobalt	Copper	Iron	Lead	Magnesium	Manganese	Molybdenum	Nickel
							mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
SWFTS-MW12	EM22	11/26/2019	N	440-255698-1	Alluvium	15.8 - 40.6	0.0030 J	<0.0050 UJ	<0.0050 UJ	0.088 J	<0.0038 UJ	240 J-	36 J-	<0.010 UJ	<0.0050 UJ
SWFTS-MW12	EM22	11/26/2019	FD	440-255698-2	Alluvium	15.8 - 40.6	0.0027 J	<0.0050 UJ	<0.0050 UJ	0.074 J	<0.0038 UJ	220 J-	32 J-	<0.010 UJ	<0.0050 UJ
SWFTS-MW12	EM26	4/30/2020	N	440-265383-3	Alluvium	15.8 - 40.6	0.0096	<0.0050	<0.0050	1.0	<0.0038	150	1.8	<0.010	<0.0050
SWFTS-MW12	EM29	10/16/2020	N	440-273433-6	Alluvium	15.8 - 40.6	<0.0025	<0.0050	<0.0050	0.48	<0.0038	200	2.2	<0.010	<0.0050
SWFTS-MW12	EM33	6/4/2021	N	550-164930-5	Alluvium	15.8 - 40.6	--	--	--	--	--	--	--	--	--
SWFTS-MW12	EM33	6/4/2021	N	550-164930-6	Alluvium	15.8 - 40.6	<0.0011	<0.00054	<0.0012	0.18 J	<0.0025	220	2.0	0.20	<0.0028
SWFTS-MW12	EM36	12/2/2021	N	550-175153-19	Alluvium	15.8 - 40.6	--	--	--	--	--	--	--	--	--
SWFTS-MW12	EM36	12/2/2021	N	550-175153-20	Alluvium	15.8 - 40.6	<0.0011	<0.00054	<0.0012	1.1	<0.0025	230	0.53	0.38	<0.0028
SWFTS-MW12	EM40	12/15/2022	N	550-195103-10	Alluvium	15.8 - 40.6	<0.0011	<0.00054	<0.0012	0.24 J	<0.0025	160	0.56	0.16	<0.0028
SWFTS-MW12	EM40	12/15/2022	N	550-195103-9	Alluvium	15.8 - 40.6	--	--	--	--	--	--	--	--	--
SWFTS-MW13	BL02	7/12/2017	N	440-188244-6	Alluvium	17.8 - 47.6	0.020	<0.0050	<0.0050	<0.050	<0.0038	250	0.19	0.39	<0.0050
SWFTS-MW13	EM04	10/10/2017	N	440-193989-4	Alluvium	17.8 - 47.6	0.056	<0.0050	<0.0050	<0.050	<0.0038	250	<0.015	0.47	<0.0050
SWFTS-MW13	EM06	11/15/2017	N	440-196659-1	Alluvium	17.8 - 47.6	--	--	--	--	--	--	--	--	--
SWFTS-MW13	EM07	12/14/2017	N	440-198571-14	Alluvium	17.8 - 47.6	--	--	--	--	--	--	--	--	--
SWFTS-MW13	EM08	2/22/2018	N	440-204033-7	Alluvium	17.8 - 47.6	--	--	--	--	--	--	--	--	--
SWFTS-MW13	EM09	3/26/2018	N	440-207137-4	Alluvium	17.8 - 47.6	--	--	--	--	--	--	--	--	--
SWFTS-MW13	EM10	5/3/2018	N	440-210534-1	Alluvium	17.8 - 47.6	--	--	--	--	--	--	--	--	--
SWFTS-MW13	EM11	7/12/2018	N	440-215717-15	Alluvium	17.8 - 47.6	0.055	<0.0050	<0.0050	<0.050	<0.0038	220	<0.015	0.42	<0.0050
SWFTS-MW13	EM15	10/11/2018	N	440-222092-14	Alluvium	17.8 - 47.6	0.062	<0.0050	<0.0050	<0.050	<0.0038	250	<0.015	0.47	<0.025
SWFTS-MW13	EM19	5/22/2019	N	440-242198-5	Alluvium	17.8 - 47.6	0.056	<0.0050	0.056	<0.050	<0.0038	220	<0.015	0.45	0.045
SWFTS-MW13	EM22	11/6/2019	N	440-254051-6	Alluvium	17.8 - 47.6	0.065 J+	<0.025	<0.025	<0.25	<0.019	260	<0.075	0.48	<0.025
SWFTS-MW13	EM26	4/30/2020	N	440-265383-2	Alluvium	17.8 - 47.6	0.050	<0.0050	<0.0050	<0.050	<0.0038	270	<0.015	0.57	<0.0050
SWFTS-MW13	EM29	10/15/2020	N	550-151259-6	Alluvium	17.8 - 47.6	0.046	<0.0050	0.0057 J	<0.050	<0.0038	240	<0.015	0.49	<0.0050
SWFTS-MW13	EM33	6/4/2021	N	550-164930-3	Alluvium	17.8 - 47.6	--	--	--	--	--	--	--	--	--
SWFTS-MW13	EM33	6/4/2021	N	550-164930-4	Alluvium	17.8 - 47.6	0.054	<0.00054	<0.0012	0.046 J	<0.0025	300	<0.0083	0.51	<0.0028
SWFTS-MW13	EM36	12/2/2021	N	550-175153-17	Alluvium	17.8 - 47.6	--	--	--	--	--	--	--	--	--
SWFTS-MW13	EM36	12/2/2021	N	550-175153-18	Alluvium	17.8 - 47.6	0.046	<0.00054	<0.0012	0.049 J	<0.0025	280	<0.0083	0.49	<0.0028
SWFTS-MW13	EM40	12/15/2022	N	550-195106-7	Alluvium	17.8 - 47.6	--	--	--	--	--	--	--	--	--
SWFTS-MW13	EM40	12/15/2022	N	550-195106-8	Alluvium	17.8 - 47.6	0.039	<0.00054	<0.0012	0.034 J	<0.0025	230	<0.0083	0.30	<0.0028
SWFTS-MW14	BL02	7/12/2017	N	440-188244-8	Alluvium	16.8 - 36.6	<0.0025	<0.0050	<0.0050	<0.050	<0.0038	250	1.4	0.13	<0.0050
SWFTS-MW14	BL02	7/12/2017	FD	440-188244-9	Alluvium	16.8 - 36.6	<0.0025	<0.0050	<0.0050	<0.050	<0.0038	260	1.4	0.13	0.0053 J
SWFTS-MW14	EM04	10/11/2017	N	440-194242-8	Alluvium	16.8 - 36.6	<0.0025	<0.0050	<0.0050	1.2	<0.0038	190	4.9	<0.010	<0.0050
SWFTS-MW14	EM06	11/15/2017	N	440-196659-3	Alluvium	16.8 - 36.6	<0.0025	<0.0050	<0.0050	1.1	<0.0038	180	3.3	0.033	0.0052 J
SWFTS-MW14	EM07	12/12/2017	N	440-198371-12	Alluvium	16.8 - 36.6	--	--	--	--	--	--	--	--	--
SWFTS-MW14	EM08	2/20/2018	N	440-203841-11	Alluvium	16.8 - 36.6	<0.0050	<0.010	<0.010	1.6	<0.0076	200	6.7	<0.020	0.039
SWFTS-MW14	EM09	3/26/2018	N	440-207137-9	Alluvium	16.8 - 36.6	<0.013	<0.025	<0.025	<0.25	<0.019	180	1.6	<0.050	0.026 J
SWFTS-MW14	EM10	4/30/2018	N	440-210173-9	Alluvium	16.8 - 36.6	<0.013	<0.025	<0.025	<0.25	<0.019	170	0.64	<0.050	<0.025
SWFTS-MW14	EM11	7/10/2018	N	440-215437-8	Alluvium	16.8 - 36.6	<0.0025	<0.0050	<0.0050	0.062 J	<0.0038	170	0.76	<0.010	<0.0050
SWFTS-MW14	EM13	8/14/2018	N	440-218109-11	Alluvium	16.8 - 36.6	<0.0025	<0.0050	<0.0050	0.087 J	<0.0038	160	0.48	<0.010	<0.0050
SWFTS-MW14	EM14	9/11/2018	N	440-219886-17	Alluvium	16.8 - 36.6	<0.0025	<0.0050	<0.0050	<0.050	<0.0038	190	0.43	<0.010	0.0060 J
SWFTS-MW14	EM15	10/9/2018	N	440-221855-10	Alluvium	16.8 - 36.6	<0.013	<0.025	<0.025	<0.25	<0.019	200	0.43	<0.050	<0.025
SWFTS-MW14	EM19	5/21/2019	N	440-242084-1	Alluvium	16.8 - 36.6	<0.0025	<0.0050	0.026	0.085 J	<0.0038	150	0.33	<0.010	0.019
SWFTS-MW14	EM22	11/6/2019	N	440-254051-2	Alluvium	16.8 - 36.6	0.0058 J+	<0.0050	<0.0050	<0.050	<0.0038	140	0.43	0.012 J	<0.0050
SWFTS-MW14	EM26	5/1/2020	N	440-265414-2	Alluvium	16.8 - 36.6	<0.0025	<0.0050	<0.0050	0.18	<0.0038	140	1.4	0.036	<0.0050
SWFTS-MW14	EM29	10/14/2020	N	440-273303-5	Alluvium	16.8 - 36.6	<0.0025	<0.0050	<0.0050	0.32	<0.0038	130	1.7	0.048	<0.0050
SWFTS-MW14	EM33	6/4/2021	N	550-164930-1	Alluvium	16.8 - 36.6	--	--	--	--	--	--	--	--	--
SWFTS-MW14	EM33	6/4/2021	N	550-164930-2	Alluvium	16.8 - 36.6	<0.0011	<0.00054	<0.0012	0.069 J	<0.0025	130	1.7	0.11	0.0031 J
SWFTS-MW14	EM36	12/3/2021	N	550-175222-1	Alluvium	16.8 - 36.6	--	--	--	--	--	--	--	--	--
SWFTS-MW14	EM36	12/3/2021	N	550-175222-2	Alluvium	16.8 - 36.6	<0.0011	<0.00054	<0.0012	4.6	<0.0025	140	1.7	0.066	<0.0028
SWFTS-MW14	EM40	12/15/2022	N	550-195106-3	Alluvium	16.8 - 36.6	--	--	--	--	--	--	--	--	--
SWFTS-MW14	EM40	12/15/2022	N	550-195106-4	Alluvium	16.8 - 36.6	<0.0011	<0.00054	<0.0012	0.036 J	<0.0025	190	2.4	0.095	<0.0028
SWFTS-MW15	BL02	7/13/2017	N	440-188325-3	Alluvium	14.8 - 34.6	0.032	<0.0050	<0.0050	0.95	<0.0038	160	0.079	0.12	<0.0050
SWFTS-MW15	EM04	10/10/2017	N	440-194094-1	Alluvium	14.8 - 34.6	0.031	<0.0050	<0.0050	<0.050	<0.0038	130	0.038	0.12	<0.0050
SWFTS-MW15	EM06	11/14/2017	N	440-196558-4	Alluvium	14.8 - 34.6	--	--	--	--	--	--	--	--	--
SWFTS-MW15	EM07	12/13/2017	N	440-198508-13	Alluvium	14.8 - 34.6	0.036	<0.0050	0.0082 J	0.12	<0.0038	160	<0.015	0.18	0.026
SWFTS-MW15	EM08	2/19/2018	N	440-203775-4	Alluvium	14.8 - 34.6	--	--	--	--	--	--	--	--	--
SWFTS-MW15	EM09	3/26/2018	N	440-207137-10	Alluvium	14.8 - 34.6	--	--	--	--	--	--	--	--	--
SWFTS-MW15	EM10	5/2/2018	N	440-210430-3	Alluvium	14.8 - 34.6	--	--	--	--	--	--	--	--	--
SWFTS-MW15	EM11	7/11/2018	N	440-215717-1	Alluvium	14.8 - 34.6	0.024	<0.0050	<0.0050	0.17	<0.0038	130	0.64	0.27	<0.0050
SWFTS-MW15	EM15	10/9/2018	N	440-221855-11	Alluvium	14.8 - 34.6	<0.013	<0.025	<0.025	0.30 J	<0.019	140	5.9	0.16	<0.025
SWFTS-MW15	EM19	5/20/2019	N	440-242014-1	Alluvium	14.8 - 34.6	0.028	<0.0050	<0.0050	0.13	<0.0038	110	0.57	0.12	<0.0050
SWFTS-MW15	EM22	11/6/2019	N	440-254051-3	Alluvium	14.8 - 34.6	0.033 J+	<0.0050	<0.0050	0.14	0.0060	100	0.13	0.12 J+	<0.0050
SWFTS-MW15	EM26	4/29/2020	N	440-265342-3	Alluvium	14.8 - 34.6	0.012	<0.0050	<0.0050	<0.050	<0.0038	130	0.49	0.12	<0.0050
SWFTS-MW15	EM29	10/15/2020	N	550-151259-4	Alluvium	14.8 - 34.6	0.0076	<0.0050	0.0067 J	0.71	<0.0038	110	1.6	0.075	<0.0050

Table D.2
Groundater Analytical Results Summary - Secondary Parameters
Seep Well Field Area Bioremediation Treatability Study

Well	Event	Sample Date	QC Type	Lab Sample ID	Lithology	Screened Interval (ft bgs)	Dissolved Metals by SW6010	Dissolved Metals by SW6010	Dissolved Metals by SW6010	Dissolved Metals by SW6010	Dissolved Metals by SW6010	Dissolved Metals by SW6010	Dissolved Metals by SW6010	Dissolved Metals by SW6010	Dissolved Metals by SW6010
							Chromium	Cobalt	Copper	Iron	Lead	Magnesium	Manganese	Molybdenum	Nickel
							mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
SWFTS-MW15	EM33	6/3/2021	N	550-164869-13	Alluvium	14.8 - 34.6	--	--	--	--	--	--	--	--	--
SWFTS-MW15	EM33	6/3/2021	N	550-164869-14	Alluvium	14.8 - 34.6	0.010	<0.00054	<0.0012	0.14 J	<0.0025	130	0.44	0.089	<0.0028
SWFTS-MW15	EM36	11/30/2021	N	550-174968-10	Alluvium	14.8 - 34.6	0.023	0.0010 J	<0.0012	0.34 J	<0.0025	190	0.13	0.071	0.043
SWFTS-MW15	EM36	11/30/2021	N	550-174968-9	Alluvium	14.8 - 34.6	--	--	--	--	--	--	--	--	--
SWFTS-MW15	EM40	12/15/2022	N	550-195106-1	Alluvium	14.8 - 34.6	--	--	--	--	--	--	--	--	--
SWFTS-MW15	EM40	12/15/2022	N	550-195106-2	Alluvium	14.8 - 34.6	<0.0011	0.0059	<0.0012	0.030 J	<0.0025	120	2.1	0.081	0.0052
SWFTS-MW16	BL02	7/13/2017	N	440-188325-2	Alluvium	21.8 - 41.6	0.037	<0.0050	<0.0050	1.5	<0.0038	230	0.055	0.28	<0.0050
SWFTS-MW16	EM04	10/12/2017	N	440-194204-7	Alluvium	21.8 - 41.6	<0.0025	<0.0050	<0.0050	2.3	<0.0038	200	7.9	0.17	0.013
SWFTS-MW16	EM06	11/16/2017	N	440-196786-4	Alluvium	21.8 - 41.6	0.0050	<0.0050	0.0065 J	3.6	<0.0038	130	1.8	0.055 J+	0.025
SWFTS-MW16	EM07	12/12/2017	N	440-198371-4	Alluvium	21.8 - 41.6	--	--	--	--	--	--	--	--	--
SWFTS-MW16	EM08	2/21/2018	N	440-203937-6	Alluvium	21.8 - 41.6	<0.0025	<0.0050	<0.0050	3.0	<0.0038	190	7.6	0.077	0.025
SWFTS-MW16	EM09	3/27/2018	N	440-207268-13	Alluvium	21.8 - 41.6	0.025	<0.0050	<0.0050	0.18	<0.0038	150	0.27	0.15	<0.0050
SWFTS-MW16	EM10	5/2/2018	N	440-210430-13	Alluvium	21.8 - 41.6	<0.0050	<0.010	<0.010	1.1	<0.0076	210	3.1	0.13	<0.010
SWFTS-MW16	EM11	7/11/2018	N	440-215585-12	Alluvium	21.8 - 41.6	<0.0025	<0.0050	<0.0050	0.85	<0.0038	190	4.5	<0.010	<0.0050
SWFTS-MW16	EM13	8/15/2018	N	440-218208-13	Alluvium	21.8 - 41.6	<0.0025	<0.0050	<0.0050	3.3	<0.0038	160	1.7	0.014 J	<0.0050
SWFTS-MW16	EM14	9/10/2018	N	440-219797-6	Alluvium	21.8 - 41.6	<0.0025	<0.0050	<0.0050	2.9	<0.0038	170	2.5	0.044	<0.0050
SWFTS-MW16	EM15	10/11/2018	N	440-222092-3	Alluvium	21.8 - 41.6	<0.0025	<0.0050	<0.0050	4.5	<0.0038	190	3.2	0.057	0.0064 J
SWFTS-MW16	EM19	5/20/2019	N	440-242014-3	Alluvium	21.8 - 41.6	<0.0025	<0.0050	<0.0050	4.3	<0.0038	170	2.0	0.013 J	<0.0050
SWFTS-MW16	EM22	11/6/2019	N	440-254051-5	Alluvium	21.8 - 41.6	0.022 J+	<0.0050	<0.0050	2.8	<0.0038	130	1.3	<0.010	0.016
SWFTS-MW16	EM26	4/30/2020	N	440-265383-1	Alluvium	21.8 - 41.6	<0.0025	<0.0050	<0.0050	4.4	<0.0038	180	2.3	0.040	<0.0050
SWFTS-MW16	EM29	10/15/2020	N	550-151259-1	Alluvium	21.8 - 41.6	<0.0025	<0.0050	0.0058 J	3.6	<0.0038	130	1.2	0.037	<0.0050
SWFTS-MW16	EM33	6/3/2021	N	550-164869-11	Alluvium	21.8 - 41.6	--	--	--	--	--	--	--	--	--
SWFTS-MW16	EM33	6/3/2021	N	550-164869-12	Alluvium	21.8 - 41.6	<0.0011	<0.00054	<0.0012	0.87	<0.0025	150	1.6	0.090	<0.0028
SWFTS-MW16	EM36	11/30/2021	N	550-174968-11	Alluvium	21.8 - 41.6	--	--	--	--	--	--	--	--	--
SWFTS-MW16	EM36	11/30/2021	N	550-174968-12	Alluvium	21.8 - 41.6	<0.0011	<0.00054	<0.0012	0.64	<0.0025	180	1.7	0.054	<0.0028
SWFTS-MW16	EM40	12/14/2022	N	550-195013-15	Alluvium	21.8 - 41.6	--	--	--	--	--	--	--	--	--
SWFTS-MW16	EM40	12/14/2022	N	550-195013-16	Alluvium	21.8 - 41.6	<0.0011	<0.00054	<0.0012	2.2	<0.0025	180	1.4	0.063	<0.0028
SWFTS-MW17	BL02	7/12/2017	N	440-188244-1	Alluvium	22.8 - 52.6	0.023	<0.0050	<0.0050	<0.050	<0.0038	210	<0.015	0.23	<0.0050
SWFTS-MW17	EM04	10/10/2017	N	440-193989-3	Alluvium	22.8 - 52.6	0.018	<0.0050	0.0051 J	<0.050	<0.0038	180	<0.015	0.28	<0.0050
SWFTS-MW17	EM06	11/15/2017	N	440-196659-5	Alluvium	22.8 - 52.6	--	--	--	--	--	--	--	--	--
SWFTS-MW17	EM06	11/15/2017	FD	440-196659-6	Alluvium	22.8 - 52.6	--	--	--	--	--	--	--	--	--
SWFTS-MW17	EM07	12/13/2017	N	440-198508-6	Alluvium	22.8 - 52.6	--	--	--	--	--	--	--	--	--
SWFTS-MW17	EM07	12/13/2017	FD	440-198508-7	Alluvium	22.8 - 52.6	--	--	--	--	--	--	--	--	--
SWFTS-MW17	EM08	2/22/2018	N	440-204033-11	Alluvium	22.8 - 52.6	--	--	--	--	--	--	--	--	--
SWFTS-MW17	EM09	3/28/2018	N	440-207497-11	Alluvium	22.8 - 52.6	--	--	--	--	--	--	--	--	--
SWFTS-MW17	EM10	5/3/2018	N	440-210534-3	Alluvium	22.8 - 52.6	--	--	--	--	--	--	--	--	--
SWFTS-MW17	EM11	7/11/2018	N	440-215585-13	Alluvium	22.8 - 52.6	0.011	<0.0050	<0.0050	<0.050	<0.0038	150	<0.015	0.22	<0.0050
SWFTS-MW17	EM15	10/11/2018	N	440-222092-4	Alluvium	22.8 - 52.6	0.015	<0.0050	<0.0050	<0.050	<0.0038	160	<0.015	0.21	<0.0050
SWFTS-MW17	EM19	5/22/2019	N	440-242198-6	Alluvium	22.8 - 52.6	0.012	<0.0050	0.049	<0.050	<0.0038	150	<0.015	0.22	0.036
SWFTS-MW17	EM22	11/7/2019	N	440-254150-1	Alluvium	22.8 - 52.6	0.018 J+	<0.0050	<0.0050	<0.050	<0.0038	160	<0.015	0.23	<0.0050
SWFTS-MW17	EM26	4/30/2020	N	440-265383-6	Alluvium	22.8 - 52.6	0.020	<0.0050	<0.0050	<0.050	<0.0038	150	<0.015	0.25	<0.0050
SWFTS-MW17	EM29	10/15/2020	N	550-151259-5	Alluvium	22.8 - 52.6	0.014	<0.0050	0.0083 J	<0.050	<0.0038	140	<0.015	0.19	<0.0050
SWFTS-MW17	EM33	6/3/2021	N	550-164869-10	Alluvium	22.8 - 52.6	0.013	<0.00054	0.0042 J	0.044 J	<0.0025	160	<0.0083	0.20	<0.0028
SWFTS-MW17	EM33	6/3/2021	N	550-164869-9	Alluvium	22.8 - 52.6	--	--	--	--	--	--	--	--	--
SWFTS-MW17	EM36	12/2/2021	N	550-175153-21	Alluvium	22.8 - 52.6	--	--	--	--	--	--	--	--	--
SWFTS-MW17	EM36	12/2/2021	N	550-175153-22	Alluvium	22.8 - 52.6	0.011	<0.00054	0.0039 J	0.039 J	<0.0025	170	<0.0083	0.26	<0.0028
SWFTS-MW17	EM40	12/14/2022	N	550-195013-13	Alluvium	22.8 - 52.6	--	--	--	--	--	--	--	--	--
SWFTS-MW17	EM40	12/14/2022	N	550-195013-14	Alluvium	22.8 - 52.6	0.015	<0.00054	0.0023 J	0.029 J	<0.0025	140	<0.0083	0.17	<0.0028
SWFTS-MW18	BL02	7/11/2017	N	440-188133-17	Alluvium	16.8 - 36.6	0.042	<0.0050	0.0064 J	<0.050	<0.0038	210	<0.015	0.17	0.0050 J
SWFTS-MW18	EM04	10/10/2017	N	440-194094-3	Alluvium	16.8 - 36.6	0.023	<0.0050	<0.0050	<0.050	<0.0038	170	0.81	0.20	0.0060 J
SWFTS-MW18	EM06	11/15/2017	N	440-196690-11	Alluvium	16.8 - 36.6	--	--	--	--	--	--	--	--	--
SWFTS-MW18	EM07	12/13/2017	N	440-198508-5	Alluvium	16.8 - 36.6	0.026	<0.0050	0.0090 J	<0.050	<0.0038	190	0.44	0.23	0.032
SWFTS-MW18	EM08	2/22/2018	N	440-204033-4	Alluvium	16.8 - 36.6	--	--	--	--	--	--	--	--	--
SWFTS-MW18	EM09	3/27/2018	N	440-207268-11	Alluvium	16.8 - 36.6	--	--	--	--	--	--	--	--	--
SWFTS-MW18	EM09	3/27/2018	FD	440-207268-12	Alluvium	16.8 - 36.6	--	--	--	--	--	--	--	--	--
SWFTS-MW18	EM10	5/1/2018	N	440-210284-6	Alluvium	16.8 - 36.6	--	--	--	--	--	--	--	--	--
SWFTS-MW18	EM11	7/11/2018	N	440-215717-2	Alluvium	16.8 - 36.6	0.028	<0.0050	<0.0050	<0.050	<0.0038	160	0.16	0.22	0.0053 J
SWFTS-MW18	EM15	10/11/2018	N	440-222092-5	Alluvium	16.8 - 36.6	0.027	<0.0050	<0.0050	<0.050	<0.0038	140	0.096	0.20	<0.025
SWFTS-MW18	EM19	5/21/2019	N	440-242084-15	Alluvium	16.8 - 36.6	0.014	<0.0050	0.031	<0.050	<0.0038	150	0.95	0.24	0.028
SWFTS-MW18	EM22	11/6/2019	N	440-254051-4	Alluvium	16.8 - 36.6	0.0057 J+	0.0098 J	<0.0050	0.052 J	<0.0038	160	2.8	0.29	0.013
SWFTS-MW18	EM26	4/29/2020	N	440-265342-2	Alluvium	16.8 - 36.6	0.0038 J	0.0059 J	<0.0050	<0.050	<0.0038	150	1.6	0.15	0.0068 J
SWFTS-MW18	EM29	10/15/2020	N	550-151259-2	Alluvium	16.8 - 36.6	<0.0025	0.0054 J	0.0074 J	<0.050	<0.0038	140	1.3	0.16	0.011
SWFTS-MW18	EM33	6/3/2021	N	550-164869-7	Alluvium	16.8 - 36.6	--	--	--	--	--	--	--	--	--
SWFTS-MW18	EM33	6/3/2021	N	550-164869-8	Alluvium	16.8 - 36.6	<0.0011	0.0035 J	<0.0012	0.037 J	<0.0025	180	1.8	0.18	0.0083

Table D.2
Groundater Analytical Results Summary - Secondary Parameters
Seep Well Field Area Bioremediation Treatability Study

Well	Event	Sample Date	QC Type	Lab Sample ID	Lithology	Screened Interval (ft bgs)	Dissolved Metals by SW6010	Dissolved Metals by SW6010	Dissolved Metals by SW6010	Dissolved Metals by SW6010	Dissolved Metals by SW6010	Dissolved Metals by SW6010	Dissolved Metals by SW6010	Dissolved Metals by SW6010	Dissolved Metals by SW6010
							Chromium	Cobalt	Copper	Iron	Lead	Magnesium	Manganese	Molybdenum	Nickel
							mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
SWFTS-MW18	EM36	12/1/2021	N	550-175045-5	Alluvium	16.8 - 36.6	--	--	--	--	--	--	--	--	--
SWFTS-MW18	EM36	12/1/2021	N	550-175045-6	Alluvium	16.8 - 36.6	<0.0011	0.0017 J	<0.0012	0.31 J	<0.0025	180	3.2	0.058	0.0038 J
SWFTS-MW18	EM40	12/14/2022	N	550-195013-11	Alluvium	16.8 - 36.6	--	--	--	--	--	--	--	--	--
SWFTS-MW18	EM40	12/14/2022	N	550-195013-12	Alluvium	16.8 - 36.6	<0.0011	0.0023 J	<0.0012	0.032 J	<0.0025	180	0.81	0.17	<0.0028
SWFTS-MW19	BL02	7/12/2017	N	440-188244-2	Alluvium	11.3 - 31.1	<0.0025	0.0054 J	<0.0050	<0.050	<0.0038	65	<0.015	0.051	0.014
SWFTS-MW19	EM04	10/12/2017	N	440-194204-1	Alluvium	11.3 - 31.1	<0.0025	<0.0050	<0.0050	<0.050	<0.0038	68	<0.015	0.050	0.012
SWFTS-MW19	EM06	11/16/2017	N	440-196786-12	Alluvium	11.3 - 31.1	--	--	--	--	--	--	--	--	--
SWFTS-MW19	EM07	12/12/2017	N	440-198371-8	Alluvium	11.3 - 31.1	--	--	--	--	--	--	--	--	--
SWFTS-MW19	EM08	2/20/2018	N	440-203841-6	Alluvium	11.3 - 31.1	--	--	--	--	--	--	--	--	--
SWFTS-MW19	EM09	3/27/2018	N	440-207268-3	Alluvium	11.3 - 31.1	--	--	--	--	--	--	--	--	--
SWFTS-MW19	EM10	4/30/2018	N	440-210173-4	Alluvium	11.3 - 31.1	--	--	--	--	--	--	--	--	--
SWFTS-MW19	EM10	4/30/2018	FD	440-210173-5	Alluvium	11.3 - 31.1	--	--	--	--	--	--	--	--	--
SWFTS-MW19	EM11	7/10/2018	N	440-215437-10	Alluvium	11.3 - 31.1	<0.0025	<0.0050	<0.0050	<0.050	<0.0038	70	<0.015	0.049	0.014
SWFTS-MW19	EM11	7/10/2018	FD	440-215437-11	Alluvium	11.3 - 31.1	<0.0025	0.0052 J	<0.0050	<0.050	<0.0038	74	<0.015	0.050	0.014
SWFTS-MW19	EM15	10/9/2018	N	440-221855-4	Alluvium	11.3 - 31.1	<0.0025	0.0052 J	<0.0050	<0.050	<0.0038	70	<0.015	0.061	0.016
SWFTS-MW19	EM15	10/9/2018	FD	440-221855-5	Alluvium	11.3 - 31.1	<0.0025	0.0052 J	<0.0050	<0.050	<0.0038	73	<0.015	0.061	0.015
SWFTS-MW19	EM19	5/21/2019	N	440-242084-6	Alluvium	11.3 - 31.1	<0.0025	<0.0050	0.023	<0.050	<0.0038	67	<0.015	0.064	0.026
SWFTS-MW19	EM19	5/21/2019	FD	440-242084-7	Alluvium	11.3 - 31.1	<0.0025	<0.0050	0.022	0.058 J	<0.0038	69	<0.015	0.063	0.027
SWFTS-MW19	EM22	11/5/2019	N	440-253891-6	Alluvium	11.3 - 31.1	0.0056 J+	0.0053 J	<0.0050	<0.050	<0.0038	68	<0.015	0.066 J+	0.012
SWFTS-MW19	EM22	11/5/2019	FD	440-253891-7	Alluvium	11.3 - 31.1	0.0052 J+	0.0055 J	<0.0050	<0.050	0.0040 J	65	<0.015	0.062 J+	0.012
SWFTS-MW19	EM26	4/28/2020	N	440-265288-4	Alluvium	11.3 - 31.1	<0.0025	<0.0050	<0.0050	<0.050	<0.0038	110	<0.015	0.043	0.010
SWFTS-MW19	EM26	4/28/2020	FD	440-265288-7	Alluvium	11.3 - 31.1	<0.0025	<0.0050	<0.0050	<0.050	<0.0038	120	<0.015	0.044	0.0088 J
SWFTS-MW19	EM29	10/14/2020	N	440-273303-2	Alluvium	11.3 - 31.1	<0.0025	<0.0050	<0.0050	<0.050	<0.0038	71	<0.015	0.070	0.011
SWFTS-MW19	EM29	10/14/2020	FD	440-273303-3	Alluvium	11.3 - 31.1	<0.0025	<0.0050	<0.0050	<0.050	<0.0038	80	<0.015	0.068	0.010
SWFTS-MW19	EM33	6/3/2021	N	550-164869-3	Alluvium	11.3 - 31.1	--	--	--	--	--	--	--	--	--
SWFTS-MW19	EM33	6/3/2021	N	550-164869-4	Alluvium	11.3 - 31.1	<0.0011	0.0030 J	0.0017 J	0.023 J	<0.0025	90	<0.0083	0.049	0.015
SWFTS-MW19	EM33	6/3/2021	FD	550-164869-5	Alluvium	11.3 - 31.1	--	--	--	--	--	--	--	--	--
SWFTS-MW19	EM33	6/3/2021	FD	550-164869-6	Alluvium	11.3 - 31.1	<0.0011	0.0030 J	<0.0012	0.025 J	<0.0025	90	<0.0083	0.050	0.016
SWFTS-MW19	EM36	12/1/2021	N	550-175045-13	Alluvium	11.3 - 31.1	--	--	--	--	--	--	--	--	--
SWFTS-MW19	EM36	12/1/2021	N	550-175045-14	Alluvium	11.3 - 31.1	<0.0011	0.0031 J	0.0014 J	0.019 J	<0.0025	81	<0.0083	0.059	0.012
SWFTS-MW19	EM36	12/1/2021	FD	550-175045-15	Alluvium	11.3 - 31.1	--	--	--	--	--	--	--	--	--
SWFTS-MW19	EM36	12/1/2021	FD	550-175045-16	Alluvium	11.3 - 31.1	<0.0011	0.0026 J	<0.0012	0.027 J	<0.0025	84	<0.0083	0.061	0.012
SWFTS-MW19	EM40	12/14/2022	N	550-195013-3	Alluvium	11.3 - 31.1	--	--	--	--	--	--	--	--	--
SWFTS-MW19	EM40	12/14/2022	N	550-195013-4	Alluvium	11.3 - 31.1	<0.0011	0.0030 J	<0.0012	0.019 J	<0.0025	100	<0.0083	0.090	0.0051
SWFTS-MW19	EM40	12/14/2022	FD	550-195013-5	Alluvium	11.3 - 31.1	--	--	--	--	--	--	--	--	--
SWFTS-MW19	EM40	12/14/2022	FD	550-195013-6	Alluvium	11.3 - 31.1	<0.0011	0.0031 J	<0.0012	<0.019	<0.0025	96	<0.0083	0.089	0.0066
SWFTS-MW20	BL02	7/12/2017	N	440-188244-5	Alluvium	12.8 - 37.6	<0.0025	<0.0050	0.0074 J	<0.050	<0.0038	290	0.27	0.22	<0.0050
SWFTS-MW20	EM04	10/12/2017	N	440-194202-1	Alluvium	12.8 - 37.6	0.018 J	<0.0050	<0.0050	0.057 J	<0.0038	260	2.0	0.27	0.015
SWFTS-MW20	EM04	10/12/2017	FD	440-194202-2	Alluvium	12.8 - 37.6	<0.0025 UJ	<0.0050	<0.0050	<0.050	<0.0038	270	1.7	0.28	0.0072 J
SWFTS-MW20	EM06	11/16/2017	N	440-196786-7	Alluvium	12.8 - 37.6	--	--	--	--	--	--	--	--	--
SWFTS-MW20	EM07	12/12/2017	N	440-198371-3	Alluvium	12.8 - 37.6	--	--	--	--	--	--	--	--	--
SWFTS-MW20	EM08	2/19/2018	N	440-203775-5	Alluvium	12.8 - 37.6	--	--	--	--	--	--	--	--	--
SWFTS-MW20	EM09	3/27/2018	N	440-207268-9	Alluvium	12.8 - 37.6	--	--	--	--	--	--	--	--	--
SWFTS-MW20	EM10	4/30/2018	N	440-210173-10	Alluvium	12.8 - 37.6	--	--	--	--	--	--	--	--	--
SWFTS-MW20	EM11	7/11/2018	N	440-215717-8	Alluvium	12.8 - 37.6	<0.0025	<0.0050	<0.0050	<0.050	<0.0038	210	2.1	0.16	0.013
SWFTS-MW20	EM15	10/9/2018	N	440-221855-1	Alluvium	12.8 - 37.6	<0.013	<0.025	<0.025	<0.25	<0.019	240	2.7	0.16	<0.025
SWFTS-MW20	EM19	5/21/2019	N	440-242084-3	Alluvium	12.8 - 37.6	<0.0025	<0.0050	0.041	0.060 J	<0.0038	200	5.6	0.19	0.057
SWFTS-MW20	EM22	11/5/2019	N	440-253918-6	Alluvium	12.8 - 37.6	0.0051 J+	0.0054 J	<0.0050	0.068 J	<0.0038	210	3.7	0.14	0.036
SWFTS-MW20	EM26	4/29/2020	N	440-265342-5	Alluvium	12.8 - 37.6	<0.0025	0.0063 J	<0.0050	<0.050	<0.0038	190	3.8	0.16	0.036
SWFTS-MW20	EM29	10/14/2020	N	440-273303-6	Alluvium	12.8 - 37.6	<0.0025	<0.0050	<0.0050	0.070 J	<0.0038	230	2.4	0.29	0.013
SWFTS-MW20	EM33	6/3/2021	N	550-164869-1	Alluvium	12.8 - 37.6	--	--	--	--	--	--	--	--	--
SWFTS-MW20	EM33	6/3/2021	N	550-164869-2	Alluvium	12.8 - 37.6	<0.0011	0.0071	<0.0012	0.13 J	<0.0025	210	3.5	0.20	0.025
SWFTS-MW20	EM36	11/29/2021	N	550-174897-1	Alluvium	12.8 - 37.6	--	--	--	--	--	--	--	--	--
SWFTS-MW20	EM36	11/29/2021	N	550-174897-2	Alluvium	12.8 - 37.6	<0.0011	0.014	<0.0012	0.51	<0.0025	180	4.4	0.14	0.024
SWFTS-MW20	EM40	12/13/2022	N	550-194919-7	Alluvium	12.8 - 37.6	--	--	--	--	--	--	--	--	--
SWFTS-MW20	EM40	12/13/2022	N	550-194919-8	Alluvium	12.8 - 37.6	<0.0011	0.0085	<0.0012	0.32 J	<0.0025	310	5.4	0.29	0.013
SWFTS-MW21	BL02	7/13/2017	N	440-188324-5	Alluvium	14.8 - 39.6	0.053	<0.010	<0.010	0.64	<0.0038	300	0.060	0.43	<0.010
SWFTS-MW21	EM04	10/11/2017	N	440-194090-8	Alluvium	14.8 - 39.6	<0.0025	0.015	<0.0050	0.12	<0.0038	240	2.2	0.64	0.0078 J
SWFTS-MW21	EM06	11/15/2017	N	440-196665-5	Alluvium	14.8 - 39.6	--	--	--	--	--	--	--	--	--
SWFTS-MW21	EM07	12/13/2017	N	440-198508-10	Alluvium	14.8 - 39.6	<0.0050	<0.010	0.014 J	<0.10	<0.0076	290	1.5	0.47	0.050
SWFTS-MW21	EM08	2/20/2018	N	440-203841-9	Alluvium	14.8 - 39.6	--	--	--	--	--	--	--	--	--
SWFTS-MW21	EM08	2/20/2018	FD	440-203841-10	Alluvium	14.8 - 39.6	--	--	--	--	--	--	--	--	--
SWFTS-MW21	EM09	3/27/2018	N	440-207268-14	Alluvium	14.8 - 39.6	--	--	--	--	--	--	--	--	--
SWFTS-MW21	EM10	4/30/2018	N	440-210173-7	Alluvium	14.8 - 39.6	--	--	--	--	--	--	--	--	--

Table D.2
Groundater Analytical Results Summary - Secondary Parameters
Seep Well Field Area Bioremediation Treatability Study

Well	Event	Sample Date	QC Type	Lab Sample ID	Lithology	Screened Interval (ft bgs)	Dissolved Metals by SW6010	Dissolved Metals by SW6010	Dissolved Metals by SW6010	Dissolved Metals by SW6010	Dissolved Metals by SW6010	Dissolved Metals by SW6010	Dissolved Metals by SW6010	Dissolved Metals by SW6010	Dissolved Metals by SW6010
							Chromium	Cobalt	Copper	Iron	Lead	Magnesium	Manganese	Molybdenum	Nickel
							mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
SWFTS-MW21	EM11	7/12/2018	N	440-215717-3	Alluvium	14.8 - 39.6	<0.0025	0.0054 J	<0.0050	<0.050	<0.0038	260	2.3	0.26	0.0055 J
SWFTS-MW21	EM15	10/9/2018	N	440-221855-3	Alluvium	14.8 - 39.6	<0.013	<0.025	<0.025	<0.25	<0.019	260	3.3	0.33	<0.025
SWFTS-MW21	EM19	5/22/2019	N	440-242198-3	Alluvium	14.8 - 39.6	0.0073	<0.0050	0.052	<0.050	<0.0038	240	5.8	0.38	0.045
SWFTS-MW21	EM22	11/4/2019	N	440-253773-3	Alluvium	14.8 - 39.6	0.0053 J+	0.0067 J	<0.0050	0.059 J	<0.0038	230	5.3	0.24	<0.0050
SWFTS-MW21	EM26	4/29/2020	N	440-265342-1	Alluvium	14.8 - 39.6	<0.0025	<0.0050	<0.0050	<0.050	<0.0038	170	1.5	0.26	<0.0050
SWFTS-MW21	EM29	10/14/2020	N	440-273303-7	Alluvium	14.8 - 39.6	<0.0025	0.0051 J	<0.0050	0.63	<0.0038	230	5.6	0.37	<0.0050
SWFTS-MW21	EM33	6/2/2021	N	550-164872-15	Alluvium	14.8 - 39.6	--	--	--	--	--	--	--	--	--
SWFTS-MW21	EM33	6/2/2021	N	550-164872-16	Alluvium	14.8 - 39.6	<0.0011	0.0029 J	0.0021 J	0.046 J	<0.0025	230	4.5	0.19	<0.0028
SWFTS-MW21	EM36	12/1/2021	N	550-175045-3	Alluvium	14.8 - 39.6	--	--	--	--	--	--	--	--	--
SWFTS-MW21	EM36	12/1/2021	N	550-175045-4	Alluvium	14.8 - 39.6	<0.0011	0.0034 J	<0.0012	0.072 J	<0.0025	240	4.4	0.31	<0.0028
SWFTS-MW21	EM40	12/15/2022	N	550-195106-5	Alluvium	14.8 - 39.6	--	--	--	--	--	--	--	--	--
SWFTS-MW21	EM40	12/15/2022	N	550-195106-6	Alluvium	14.8 - 39.6	<0.0011	0.0026 J	<0.0012	0.036 J	<0.0025	250	3.9	0.27	<0.0028
SWFTS-MW22	BL02	7/13/2017	N	440-188324-1	Alluvium	11.8 - 31.6	0.016	0.013	0.016	15	<0.0038	110	0.79	0.15	0.027
SWFTS-MW22	EM04	10/12/2017	N	440-194242-9	Alluvium	11.8 - 31.6	<0.0025	0.0057 J	<0.0050	<0.050	<0.0038	98	0.96	0.13	0.014
SWFTS-MW22	EM06	11/16/2017	N	440-196786-18	Alluvium	11.8 - 31.6	--	--	--	--	--	--	--	--	--
SWFTS-MW22	EM07	12/14/2017	N	440-198571-17	Alluvium	11.8 - 31.6	--	--	--	--	--	--	--	--	--
SWFTS-MW22	EM08	2/21/2018	N	440-203937-1	Alluvium	11.8 - 31.6	--	--	--	--	--	--	--	--	--
SWFTS-MW22	EM09	3/28/2018	N	440-207497-1	Alluvium	11.8 - 31.6	--	--	--	--	--	--	--	--	--
SWFTS-MW22	EM10	4/30/2018	N	440-210173-6	Alluvium	11.8 - 31.6	--	--	--	--	--	--	--	--	--
SWFTS-MW22	EM11	7/10/2018	N	440-215437-9	Alluvium	11.8 - 31.6	<0.0025	<0.0050	<0.0050	<0.050	<0.0038	110	0.69	0.10	0.016
SWFTS-MW22	EM15	10/9/2018	N	440-221855-2	Alluvium	11.8 - 31.6	<0.013	<0.025	<0.025	<0.25	<0.019	110	0.29	0.12	<0.025
SWFTS-MW22	EM19	5/21/2019	N	440-242084-4	Alluvium	11.8 - 31.6	<0.0025	<0.0050	0.026	<0.050	<0.0038	90	0.14	0.13	0.025
SWFTS-MW22	EM22	11/5/2019	N	440-253891-4	Alluvium	11.8 - 31.6	0.0054 J+	0.0051 J	<0.0050	0.15	<0.0038	88	0.20	0.12	0.014
SWFTS-MW22	EM26	4/28/2020	N	440-265288-5	Alluvium	11.8 - 31.6	<0.0025	<0.0050	<0.0050	<0.050	<0.0038	95	0.29	0.097	0.0090 J
SWFTS-MW22	EM29	10/14/2020	N	440-273303-1	Alluvium	11.8 - 31.6	<0.0025	<0.0050	<0.0050	0.15	<0.0038	110	0.24	0.12	0.0086 J
SWFTS-MW22	EM33	6/2/2021	N	550-164872-11	Alluvium	11.8 - 31.6	--	--	--	--	--	--	--	--	--
SWFTS-MW22	EM33	6/2/2021	N	550-164872-12	Alluvium	11.8 - 31.6	<0.0011	0.0035 J	0.0028 J	0.029 J	<0.0025	110	0.29	0.074	0.012
SWFTS-MW22	EM36	12/2/2021	N	550-175153-1	Alluvium	11.8 - 31.6	--	--	--	--	--	--	--	--	--
SWFTS-MW22	EM36	12/2/2021	N	550-175153-2	Alluvium	11.8 - 31.6	<0.0011	0.0035 J	<0.0012	0.045 J	<0.0025	110	0.22	0.085	0.010
SWFTS-MW22	EM40	12/14/2022	N	550-195013-1	Alluvium	11.8 - 31.6	--	--	--	--	--	--	--	--	--
SWFTS-MW22	EM40	12/14/2022	N	550-195013-2	Alluvium	11.8 - 31.6	<0.0011	0.0010 J	<0.0012	0.028 J	<0.0025	180	0.55	0.048	<0.0028
SWFTS-MW23	BL02	7/13/2017	N	440-188325-7	Alluvium	13.8 - 33.6	<0.0025	<0.0050	<0.0050	<0.050	<0.0038	63	0.083	0.025	0.013
SWFTS-MW23	EM04	10/11/2017	N	440-194090-7	Alluvium	13.8 - 33.6	<0.0025	<0.0050	0.0055 J	<0.050	<0.0038	72	0.10	0.028	0.015
SWFTS-MW23	EM06	11/15/2017	N	440-196665-3	Alluvium	13.8 - 33.6	--	--	--	--	--	--	--	--	--
SWFTS-MW23	EM07	12/12/2017	N	440-198371-2	Alluvium	13.8 - 33.6	--	--	--	--	--	--	--	--	--
SWFTS-MW23	EM08	2/21/2018	N	440-203937-14	Alluvium	13.8 - 33.6	--	--	--	--	--	--	--	--	--
SWFTS-MW23	EM09	3/28/2018	N	440-207497-9	Alluvium	13.8 - 33.6	--	--	--	--	--	--	--	--	--
SWFTS-MW23	EM10	5/2/2018	N	440-210430-5	Alluvium	13.8 - 33.6	--	--	--	--	--	--	--	--	--
SWFTS-MW23	EM11	7/10/2018	N	440-215437-7	Alluvium	13.8 - 33.6	<0.0025	<0.0050	<0.0050	<0.050	<0.0038	60	0.088	0.027	0.015
SWFTS-MW23	EM15	10/11/2018	N	440-222092-7	Alluvium	13.8 - 33.6	<0.0025	0.0051 J	<0.0050	<0.050	<0.0038	66	0.10	0.030	0.018
SWFTS-MW23	EM19	5/22/2019	N	440-242201-7	Alluvium	13.8 - 33.6	<0.0025	<0.0050	0.024	<0.050	<0.0038	63	0.11	0.030	0.030
SWFTS-MW23	EM22	11/5/2019	N	440-253891-5	Alluvium	13.8 - 33.6	0.0052 J+	<0.0050	<0.0050	<0.050	<0.0038	74	0.13	0.026 J+	0.012
SWFTS-MW23	EM26	4/28/2020	N	440-265288-3	Alluvium	13.8 - 33.6	<0.0025	<0.0050	<0.0050	<0.050	<0.0038	61	0.12	0.027	0.012
SWFTS-MW23	EM29	10/13/2020	N	440-273236-1	Alluvium	13.8 - 33.6	<0.0025	<0.0050	<0.0050	<0.050	<0.0038	62	0.14	0.025	0.011
SWFTS-MW23	EM33	6/2/2021	N	550-164872-3	Alluvium	13.8 - 33.6	--	--	--	--	--	--	--	--	--
SWFTS-MW23	EM33	6/2/2021	N	550-164872-4	Alluvium	13.8 - 33.6	<0.0011	0.0030 J	0.0024 J	0.027 J	<0.0025	68	0.16	0.015	0.014
SWFTS-MW23	EM36	12/2/2021	N	550-175153-15	Alluvium	13.8 - 33.6	--	--	--	--	--	--	--	--	--
SWFTS-MW23	EM36	12/2/2021	N	550-175153-16	Alluvium	13.8 - 33.6	<0.0011	0.0032 J	0.0030 J	<0.019	<0.0025	63	0.15	0.016	0.015
SWFTS-MW23	EM40	12/13/2022	N	550-194919-5	Alluvium	13.8 - 33.6	--	--	--	--	--	--	--	--	--
SWFTS-MW23	EM40	12/13/2022	N	550-194919-6	Alluvium	13.8 - 33.6	<0.0011	0.0038 J	0.0024 J	0.019 J	<0.0025	63	0.15	0.010	0.011
SWFTS-MW24	BL02	7/13/2017	N	440-188324-2	Alluvium	12.8 - 37.6	0.038	<0.0050	<0.0050	<0.050	<0.0038	210	<0.015	0.22	<0.0050
SWFTS-MW24	EM04	10/11/2017	N	440-194242-2	Alluvium	12.8 - 37.6	0.015	<0.0050	0.013 J+	<0.050	<0.0038	190	<0.015	0.60	<0.0050
SWFTS-MW24	EM06	11/15/2017	N	440-196665-1	Alluvium	12.8 - 37.6	--	--	--	--	--	--	--	--	--
SWFTS-MW24	EM07	12/12/2017	N	440-198371-5	Alluvium	12.8 - 37.6	--	--	--	--	--	--	--	--	--
SWFTS-MW24	EM08	2/21/2018	N	440-203937-8	Alluvium	12.8 - 37.6	--	--	--	--	--	--	--	--	--
SWFTS-MW24	EM09	3/28/2018	N	440-207497-12	Alluvium	12.8 - 37.6	--	--	--	--	--	--	--	--	--
SWFTS-MW24	EM10	5/2/2018	N	440-210430-7	Alluvium	12.8 - 37.6	--	--	--	--	--	--	--	--	--
SWFTS-MW24	EM11	7/12/2018	N	440-215717-5	Alluvium	12.8 - 37.6	<0.0025	<0.0050	<0.0050	<0.050	<0.0038	170	0.65	0.24	0.0088 J
SWFTS-MW24	EM15	10/10/2018	N	440-221975-7	Alluvium	12.8 - 37.6	<0.0025	<0.0050	<0.0050	<0.050	<0.0038	180	0.68	0.27	0.010
SWFTS-MW24	EM19	5/22/2019	N	440-242198-1	Alluvium	12.8 - 37.6	<0.0025	<0.0050	0.040	<0.050	<0.0038	160	0.27	0.24	0.030
SWFTS-MW24	EM22	11/5/2019	N	440-253891-2	Alluvium	12.8 - 37.6	0.0061 J+	<0.0050	<0.0050	<0.050	<0.0038	150	<0.015	0.25	<0.0050
SWFTS-MW24	EM26	4/28/2020	N	440-265288-1	Alluvium	12.8 - 37.6	<0.0025	<0.0050	<0.0050	<0.050	<0.0038	160	1.5	0.20	0.0099 J
SWFTS-MW24	EM29	10/12/2020	N	440-273153-1	Alluvium	12.8 - 37.6	0.0027 J	<0.0050	<0.0050	<0.050	<0.0038	150	<0.015	0.22	<0.0050
SWFTS-MW24	EM33	6/2/2021	N	550-164872-7	Alluvium	12.8 - 37.6	--	--	--	--	--	--	--	--	--

Table D.2
Groundater Analytical Results Summary - Secondary Parameters
Seep Well Field Area Bioremediation Treatability Study

Well	Event	Sample Date	QC Type	Lab Sample ID	Lithology	Screened Interval (ft bgs)	Dissolved Metals by SW6010	Dissolved Metals by SW6010	Dissolved Metals by SW6010	Dissolved Metals by SW6010	Dissolved Metals by SW6010	Dissolved Metals by SW6010	Dissolved Metals by SW6010	Dissolved Metals by SW6010	Dissolved Metals by SW6010
							Chromium	Cobalt	Copper	Iron	Lead	Magnesium	Manganese	Molybdenum	Nickel
							mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
SWFTS-MW24	EM33	6/2/2021	N	550-164872-8	Alluvium	12.8 - 37.6	<0.0011	<0.00054	<0.0012	0.041 J	<0.0025	160	0.081	0.18	<0.0028
SWFTS-MW24	EM36	12/1/2021	N	550-175045-17	Alluvium	12.8 - 37.6	--	--	--	--	--	--	--	--	--
SWFTS-MW24	EM36	12/1/2021	N	550-175045-18	Alluvium	12.8 - 37.6	<0.0011	<0.00054	<0.0012	0.033 J	<0.0025	180	0.11	0.17	<0.0028
SWFTS-MW24	EM40	12/13/2022	N	550-194919-3	Alluvium	12.8 - 37.6	--	--	--	--	--	--	--	--	--
SWFTS-MW24	EM40	12/13/2022	N	550-194919-4	Alluvium	12.8 - 37.6	<0.0011	<0.00054	<0.0012	0.031 J	<0.0025	190	0.96	0.15	0.0054
SWFTS-MW25	BL02	7/13/2017	N	440-188324-4	Alluvium	12.8 - 42.6	0.0050	<0.0050	<0.0050	<0.050	<0.0038	210	0.96	0.11	<0.0050
SWFTS-MW25	EM04	10/11/2017	N	440-194242-1	Alluvium	12.8 - 42.6	<0.0025	0.0060 J	<0.0050	<0.050	<0.0038	180	4.2	0.13	0.011
SWFTS-MW25	EM06	11/15/2017	N	440-196665-2	Alluvium	12.8 - 42.6	<0.0025	0.0055 J	<0.0050	1.6	<0.0038	160	5.5	0.080	0.014
SWFTS-MW25	EM07	12/12/2017	N	440-198371-1	Alluvium	12.8 - 42.6	<0.0025	0.0066 J	0.0082 J	0.19	<0.0038	190	7.3	0.11	0.038
SWFTS-MW25	EM08	2/21/2018	N	440-203937-7	Alluvium	12.8 - 42.6	0.011	0.010	0.016	4.3	0.0055	170	6.7	0.074	0.041
SWFTS-MW25	EM09	3/28/2018	N	440-207497-13	Alluvium	12.8 - 42.6	<0.0025	<0.0050	<0.0050	0.10	<0.0038	170	5.7	0.11	0.031
SWFTS-MW25	EM10	5/3/2018	N	440-210534-2	Alluvium	12.8 - 42.6	<0.0025	0.0051 J	<0.0050	0.057 J	<0.0038	180	5.2	0.11	0.013
SWFTS-MW25	EM11	7/10/2018	N	440-215437-12	Alluvium	12.8 - 42.6	<0.0025	<0.0050	<0.0050	0.29	<0.0038	160	4.3	0.090	0.012
SWFTS-MW25	EM13	8/15/2018	N	440-218208-10	Alluvium	12.8 - 42.6	<0.0025	<0.0050	<0.0050	0.25	<0.0038	150	3.9	0.086	0.012
SWFTS-MW25	EM14	9/12/2018	N	440-220031-2	Alluvium	12.8 - 42.6	<0.0025	<0.0050	<0.0050	<0.050	<0.0038	150 J	3.7 J	0.093	0.012
SWFTS-MW25	EM15	10/11/2018	N	440-222092-6	Alluvium	12.8 - 42.6	<0.0025	<0.0050	<0.0050	<0.050	<0.0038	160	3.5	0.11	<0.025
SWFTS-MW25	EM19	5/22/2019	N	440-242201-6	Alluvium	12.8 - 42.6	<0.0025	<0.0050	0.032	0.19	<0.0038	120	2.4	0.11	0.027
SWFTS-MW25	EM22	11/5/2019	N	440-253918-4	Alluvium	12.8 - 42.6	0.0046 J	<0.0050	<0.0050	0.25	<0.0038	120	2.2	0.13	0.0072 J
SWFTS-MW25	EM26	4/28/2020	N	440-265288-2	Alluvium	12.8 - 42.6	<0.0025	<0.0050	<0.0050	<0.050	<0.0038	140	2.4	0.11	0.0051 J
SWFTS-MW25	EM29	10/13/2020	N	440-273236-2	Alluvium	12.8 - 42.6	<0.0025	<0.0050	<0.0050	<0.050	<0.0038	120	2.2	0.11	<0.0050
SWFTS-MW25	EM33	6/2/2021	N	550-164872-5	Alluvium	12.8 - 42.6	--	--	--	--	--	--	--	--	--
SWFTS-MW25	EM33	6/2/2021	N	550-164872-6	Alluvium	12.8 - 42.6	<0.0011	0.0012 J	<0.0012	0.057 J	<0.0025	130	1.9	0.075	0.0071
SWFTS-MW25	EM36	12/1/2021	N	550-175045-19	Alluvium	12.8 - 42.6	--	--	--	--	--	--	--	--	--
SWFTS-MW25	EM36	12/1/2021	N	550-175045-20	Alluvium	12.8 - 42.6	<0.0011	0.0020 J	<0.0012	0.094 J	<0.0025	150	2.1	0.061	0.0060
SWFTS-MW25	EM40	12/13/2022	N	550-194919-1	Alluvium	12.8 - 42.6	--	--	--	--	--	--	--	--	--
SWFTS-MW25	EM40	12/13/2022	N	550-194919-2	Alluvium	12.8 - 42.6	<0.0011	0.0021 J	<0.0012	0.036 J	<0.0025	160	2.0	0.071	0.0043 J

Notes:
1. Lithology of monitoring well COH-2B1 was inferred from state records of well construction and generalized stratigraphy.
FD - Field duplicate
J The result is an estimated quantity. The associated numerical value is the approximate concentration of the analyte.
J- The result is an estimated quantity, but the result may be biased low.
J+ The result is an estimated quantity, but the result may be biased high.
mg/L - milligrams per liter
µg/L - micrograms per liter
N - Normal field sample
UMCf- Upper Muddy Creek Formation
R The data are unusable. The sample results are rejected due to serious deficiencies in meeting QC criteria. The
< The analyte was analyzed for, but was not detected above the level of the reported sample quantitation limit.
--- Not tested.

Table D.2
Groundater Analytical Results Summary - Secondary Parameters
Seep Well Field Area Bioremediation Treatability Study

Well	Event	Sample Date	QC Type	Lab Sample ID	Lithology	Screened Interval (ft bgs)	Dissolved Metals by SW6010	Dissolved Metals by SW6010	Dissolved Metals by SW6010	Dissolved Metals by SW6010	Dissolved Metals by SW6010	Dissolved Metals by SW6010	Dissolved Metals by SW6010	Dissolved Metals by SW6010	Dissolved Metals by SW6010
							Phosphorus	Potassium	Silicon	Silver	Sodium	Strontium	Tin	Titanium	Tungsten
							mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
COH-2B1	BL02	8/9/2017	N	440-189933-1	Alluvium/UMCf	36.0 - 66.0	<0.10	23	28	<0.0050	600	4.0 J+	<0.050	<0.0025	<0.050
COH-2B1	EM04	10/12/2017	N	440-194204-2	Alluvium/UMCf	36.0 - 66.0	<0.10	24	32	<0.0050	550	3.9	<0.050	<0.0025	<0.050
COH-2B1	EM07	12/14/2017	N	440-198571-5	Alluvium/UMCf	36.0 - 66.0	--	--	--	--	--	--	--	--	--
COH-2B1	EM08	2/22/2018	N	440-204033-6	Alluvium/UMCf	36.0 - 66.0	--	--	--	--	--	--	--	--	--
COH-2B1	EM09	3/29/2018	N	440-207586-2	Alluvium/UMCf	36.0 - 66.0	--	--	--	--	--	--	--	--	--
COH-2B1	EM10	5/2/2018	N	440-210430-11	Alluvium/UMCf	36.0 - 66.0	--	--	--	--	--	--	--	--	--
COH-2B1	EM11	7/10/2018	N	440-215437-6	Alluvium/UMCf	36.0 - 66.0	<0.10	30	33	<0.0050	530	4.8	<0.050	<0.0025	<0.050
COH-2B1	EM15	10/11/2018	N	440-222092-1	Alluvium/UMCf	36.0 - 66.0	<0.50	22	36	<0.025	590	4.0	<0.25	<0.013	<0.25
COH-2B1	EM19	5/22/2019	N	440-242201-5	Alluvium/UMCf	36.0 - 66.0	<0.10	24	35	<0.0050	530	3.6	<0.050	<0.0025	<0.050
COH-2B1	EM22	11/4/2019	N	440-253773-1	Alluvium/UMCf	36.0 - 66.0	<0.10	32	35	<0.0050	600	5.2	<0.050	0.014 J+	<0.050
COH-2B1	EM26	4/27/2020	N	440-265243-1	Alluvium/UMCf	36.0 - 66.0	<0.10	21	32	<0.0050	500	3.4	<0.050	<0.0025	<0.050
COH-2B1	EM29	10/13/2020	N	440-273236-9	Alluvium/UMCf	36.0 - 66.0	<0.10	43	35	<0.0050	610	6.5	<0.050	<0.0025	<0.050
PC-58	BL01	3/28/2017	N	440-180820-1	Alluvium	7.8 - 32.8	<0.10	48	36	<0.0050	590	6.5	<0.050	<0.0025	<0.050
PC-58	BL02	7/13/2017	N	440-188324-3	Alluvium	7.8 - 32.8	<0.10	43	35	<0.0050	600	6.4	<0.050	<0.0025	<0.050
PC-58	EM04	10/11/2017	N	440-194094-6	Alluvium	7.8 - 32.8	<0.10	39	35	<0.0050	450	4.6	<0.050	<0.0025	<0.050
PC-58	EM06	11/16/2017	N	440-196786-11	Alluvium	7.8 - 32.8	--	--	--	--	--	--	--	--	--
PC-58	EM07	12/14/2017	N	440-198571-9	Alluvium	7.8 - 32.8	--	--	--	--	--	--	--	--	--
PC-58	EM08	2/21/2018	N	440-203937-13	Alluvium	7.8 - 32.8	--	--	--	--	--	--	--	--	--
PC-58	EM09	3/28/2018	N	440-207497-6	Alluvium	7.8 - 32.8	--	--	--	--	--	--	--	--	--
PC-58	EM10	5/2/2018	N	440-210430-10	Alluvium	7.8 - 32.8	--	--	--	--	--	--	--	--	--
PC-58	EM11	7/11/2018	N	440-215717-7	Alluvium	7.8 - 32.8	<0.10	39	35	<0.0050	490	5.6	<0.050	<0.0025	<0.050
PC-58	EM15	10/11/2018	N	440-222092-19	Alluvium	7.8 - 32.8	<0.10	35	38	<0.0050	410	4.3	<0.050	<0.0025	<0.050
PC-58	EM19	5/22/2019	N	440-242200-7	Alluvium	7.8 - 32.8	<0.10	42	37	<0.0050	550	5.4	<0.050	<0.0025	<0.050
PC-58	EM22	11/7/2019	N	440-254148-1	Alluvium	7.8 - 32.8	<0.10	33	36	<0.0050	410	4.1	<0.050	<0.0025	<0.050
PC-58	EM26	5/1/2020	N	440-265414-3	Alluvium	7.8 - 32.8	<0.10	36	38	<0.0050	480	4.7	<0.050	<0.0025	<0.050
PC-58	EM29	10/16/2020	N	440-273433-5	Alluvium	7.8 - 32.8	<0.10	31	38	<0.0050	400	2.8	<0.050	<0.0025	<0.050
PC-58	EM33	6/2/2021	N	550-164872-23	Alluvium	7.8 - 32.8	--	--	--	--	--	--	--	--	--
PC-58	EM33	6/2/2021	N	550-164872-24	Alluvium	7.8 - 32.8	<0.011	31	38	<0.00049	410	3.6	<0.0034	<0.00028	<0.0021
PC-58	EM36	12/3/2021	N	550-175222-11	Alluvium	7.8 - 32.8	--	--	--	--	--	--	--	--	--
PC-58	EM36	12/3/2021	N	550-175222-12	Alluvium	7.8 - 32.8	<0.011	35	40	<0.00049	460	3.8	<0.0034	<0.00028	0.0027 J
PC-58	EM40	12/12/2022	N	550-194841-5	Alluvium	7.8 - 32.8	--	--	--	--	--	--	--	--	--
PC-58	EM40	12/12/2022	N	550-194841-6	Alluvium	7.8 - 32.8	0.016 J	38	44	<0.00049	490	5.2	<0.0034	0.032	<0.0021
PC-88	EM04	10/11/2017	N	440-194090-2	Alluvium	40.0 - 50.0	<0.10	21	35	<0.0050	760	4.3	<0.050	<0.0025	<0.050
PC-88	EM04	10/11/2017	FD	440-194090-3	Alluvium	40.0 - 50.0	<0.10	21	35	<0.0050	760	4.4	<0.050	<0.0025	<0.050
PC-88	EM06	11/15/2017	N	440-196690-9	Alluvium	40.0 - 50.0	--	--	--	--	--	--	--	--	--
PC-88	EM06	11/15/2017	FD	440-196690-10	Alluvium	40.0 - 50.0	--	--	--	--	--	--	--	--	--
PC-88	EM07	12/14/2017	N	440-198571-11	Alluvium	40.0 - 50.0	--	--	--	--	--	--	--	--	--
PC-88	EM08	2/22/2018	N	440-204033-10	Alluvium	40.0 - 50.0	--	--	--	--	--	--	--	--	--
PC-88	EM09	3/29/2018	N	440-207586-3	Alluvium	40.0 - 50.0	--	--	--	--	--	--	--	--	--
PC-88	EM10	5/2/2018	N	440-210430-8	Alluvium	40.0 - 50.0	--	--	--	--	--	--	--	--	--
PC-88	EM10	5/2/2018	FD	440-210430-9	Alluvium	40.0 - 50.0	--	--	--	--	--	--	--	--	--
PC-88	EM11	7/12/2018	N	440-215717-11	Alluvium	40.0 - 50.0	<0.10	18	34	<0.0050	650	3.7	<0.050	<0.0025	<0.050
PC-88	EM11	7/12/2018	FD	440-215717-12	Alluvium	40.0 - 50.0	<0.10	18	34	<0.0050	650	3.7	<0.050	<0.0025	<0.050
PC-88	EM15	10/11/2018	N	440-222092-15	Alluvium	40.0 - 50.0	<0.10	19	37	<0.0050	770	4.3	<0.050	<0.0025	<0.050
PC-88	EM15	10/11/2018	FD	440-222092-16	Alluvium	40.0 - 50.0	<0.10	19	36	<0.0050	740	4.3	<0.050	<0.0025	<0.050
PC-88	EM19	5/22/2019	N	440-242201-2	Alluvium	40.0 - 50.0	<0.10	18	39	<0.0050	650	3.1	<0.050	<0.0025	<0.050
PC-88	EM19	5/22/2019	FD	440-242201-3	Alluvium	40.0 - 50.0	<0.10	17	35	<0.0050	600	2.8	<0.050	<0.0025	<0.050
PC-88	EM22	11/7/2019	N	440-254148-2	Alluvium	40.0 - 50.0	<0.10	15	31	<0.0050	600	3.2	<0.050	<0.0025	<0.050
PC-88	EM22	11/7/2019	FD	440-254148-3	Alluvium	40.0 - 50.0	<0.10	15	33	<0.0050	630	2.9	<0.050	<0.0025	<0.050
PC-88	EM26	5/1/2020	N	440-265412-2	Alluvium	40.0 - 50.0	<0.10	16	37	<0.0050	650	3.4	<0.050	<0.0025	<0.050
PC-88	EM26	5/1/2020	FD	440-265412-3	Alluvium	40.0 - 50.0	<0.10	16	36	<0.0050	620	3.3	<0.050	<0.0025	<0.050
PC-88	EM29	10/15/2020	N	550-151259-10	Alluvium	40.0 - 50.0	<0.10	15	31	<0.0050	590	3.7	<0.050	<0.0025	<0.050
PC-88	EM29	10/15/2020	FD	550-151259-11	Alluvium	40.0 - 50.0	<0.10	15	31	<0.0050	590	3.7	<0.050	<0.0025	<0.050
PC-88	EM33	6/3/2021	N	550-164869-25	Alluvium	40.0 - 50.0	--	--	--	--	--	--	--	--	--
PC-88	EM33	6/3/2021	N	550-164869-26	Alluvium	40.0 - 50.0	0.042 J	11	36	<0.00049	430	1.8	<0.0034	<0.00028	0.0035 J
PC-88	EM33	6/3/2021	FD	550-164869-27	Alluvium	40.0 - 50.0	--	--	--	--	--	--	--	--	--
PC-88	EM33	6/3/2021	FD	550-164869-28	Alluvium	40.0 - 50.0	0.047 J	11	36	<0.00049	430	1.8	<0.0034	<0.00028	0.0030 J
PC-88	EM36	12/2/2021	N	550-175153-5	Alluvium	40.0 - 50.0	--	--	--	--	--	--	--	--	--
PC-88	EM36	12/2/2021	N	550-175153-6	Alluvium	40.0 - 50.0	0.049 J	12	35	<0.00049	450	2.2	<0.0034	<0.00028	0.0033 J
PC-88	EM36	12/2/2021	FD	550-175153-7	Alluvium	40.0 - 50.0	--	--	--	--	--	--	--	--	--
PC-88	EM36	12/2/2021	FD	550-175153-8	Alluvium	40.0 - 50.0	0.054 J	12	36	<0.00049	450	2.2	<0.0034	<0.00028	0.0043 J
PC-88	EM40	12/12/2022	N	550-194841-1	Alluvium	40.0 - 50.0	--	--	--	--	--	--	--	--	--
PC-88	EM40	12/12/2022	N	550-194841-2	Alluvium	40.0 - 50.0	0.045 J	15	38	<0.00049	540	4.9	<0.0034	0.028 J	0.0022 J
PC-88	EM40	12/12/2022	FD	550-194841-3	Alluvium	40.0 - 50.0	--	--	--	--	--	--	--	--	--

Table D.2
Groundater Analytical Results Summary - Secondary Parameters
Seep Well Field Area Bioremediation Treatability Study

Well	Event	Sample Date	QC Type	Lab Sample ID	Lithology	Screened Interval (ft bgs)	Dissolved Metals by SW6010	Dissolved Metals by SW6010	Dissolved Metals by SW6010	Dissolved Metals by SW6010	Dissolved Metals by SW6010	Dissolved Metals by SW6010	Dissolved Metals by SW6010	Dissolved Metals by SW6010	Dissolved Metals by SW6010
							Phosphorus	Potassium	Silicon	Silver	Sodium	Strontium	Tin	Titanium	Tungsten
							mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
PC-88	EM40	12/12/2022	FD	550-194841-4	Alluvium	40.0 - 50.0	0.045 J	15	38	<0.00049	550	4.9	<0.0034	0.020 J	0.0024 J
PC-91	BL01	3/29/2017	N	440-180937-1	Alluvium	11.5 - 21.5	<0.10	25	35	<0.0050	550	3.8	<0.050	<0.0025	<0.050
PC-91	BL02	7/12/2017	N	440-188247-5	Alluvium	11.5 - 21.5	<0.10	26	36	<0.0050	600	3.8	<0.050	<0.0025	<0.050
PC-91	BL02	7/12/2017	FD	440-188244-4	Alluvium	11.5 - 21.5	<0.10	25	36	<0.0050	570	3.6	<0.050	<0.0025	<0.050
PC-91	EM04	10/12/2017	N	440-194204-3	Alluvium	11.5 - 21.5	<0.10	25	35	<0.0050	470	3.1	<0.050	<0.0025	<0.050
PC-91	EM06	11/16/2017	N	440-196786-8	Alluvium	11.5 - 21.5	--	--	--	--	--	--	--	--	--
PC-91	EM07	12/13/2017	N	440-198508-9	Alluvium	11.5 - 21.5	<0.10	27	40	<0.0050	540	3.6	<0.050	<0.0025	<0.050
PC-91	EM08	2/20/2018	N	440-203841-1	Alluvium	11.5 - 21.5	--	--	--	--	--	--	--	--	--
PC-91	EM09	3/26/2018	N	440-207137-1	Alluvium	11.5 - 21.5	--	--	--	--	--	--	--	--	--
PC-91	EM10	5/1/2018	N	440-210284-3	Alluvium	11.5 - 21.5	--	--	--	--	--	--	--	--	--
PC-91	EM11	7/11/2018	N	440-215585-6	Alluvium	11.5 - 21.5	<0.10	28	38	<0.0050	530	4.1	<0.050	<0.0025	<0.050
PC-91	EM15	10/10/2018	N	440-221975-16	Alluvium	11.5 - 21.5	<0.50	30	45	<0.025	610	4.8	<0.25	<0.013	<0.25
PC-91	EM19	5/21/2019	N	440-242084-9	Alluvium	11.5 - 21.5	<0.10	29	45	<0.0050	600	4.7	<0.050	<0.0025	<0.050
PC-91	EM22	11/6/2019	N	440-254027-3	Alluvium	11.5 - 21.5	<0.10	32	43	<0.0050	680	6.0	<0.050	<0.0025	<0.050
PC-91	EM26	4/30/2020	N	440-265382-2	Alluvium	11.5 - 21.5	<0.10	24	38	<0.0050	520	3.4	<0.050	<0.0025	<0.050
PC-91	EM29	10/14/2020	N	440-273303-11	Alluvium	11.5 - 21.5	<0.10	25	48	<0.0050	600	4.1	<0.050	<0.0025	<0.050
PC-91	EM33	6/2/2021	N	550-164872-17	Alluvium	11.5 - 21.5	--	--	--	--	--	--	--	--	--
PC-91	EM33	6/2/2021	N	550-164872-18	Alluvium	11.5 - 21.5	0.11 J	24	55	<0.00049	650	5.2	<0.0034	<0.00028	<0.0021
PC-91	EM36	11/30/2021	N	550-174968-1	Alluvium	11.5 - 21.5	--	--	--	--	--	--	--	--	--
PC-91	EM36	11/30/2021	N	550-174968-2	Alluvium	11.5 - 21.5	0.60	20	67	<0.00049	520	3.0	<0.0034	<0.00028	<0.0021
PC-91	EM40	12/12/2022	N	550-194841-7	Alluvium	11.5 - 21.5	--	--	--	--	--	--	--	--	--
PC-91	EM40	12/12/2022	N	550-194841-8	Alluvium	11.5 - 21.5	0.077 J	23	55	<0.00049	600	4.8	<0.0034	0.015	0.0056 J
PC-92	BL01	3/29/2017	N	440-180937-2	Alluvium	26.5 - 36.5	<0.10	31	34	<0.0050	840	7.1	<0.050	0.0028 J	<0.050
PC-92	BL02	7/12/2017	N	440-188247-6	Alluvium	26.5 - 36.5	<0.10	23	32	<0.0050	610	4.9	<0.050	<0.0025	<0.050
PC-92	EM04	10/12/2017	N	440-194204-4	Alluvium	26.5 - 36.5	<0.10	25	32	<0.0050	510	4.9	<0.050	<0.0025	<0.050
PC-92	EM04	10/12/2017	FD	440-194204-5	Alluvium	26.5 - 36.5	<0.10	26	34	<0.0050	530	5.0	<0.050	<0.0025	<0.050
PC-92	EM06	11/16/2017	N	440-196786-9	Alluvium	26.5 - 36.5	--	--	--	--	--	--	--	--	--
PC-92	EM06	11/16/2017	FD	440-196786-10	Alluvium	26.5 - 36.5	--	--	--	--	--	--	--	--	--
PC-92	EM07	12/14/2017	N	440-198571-7	Alluvium	26.5 - 36.5	<0.10	28	40	<0.0050	600	6.0	<0.050	<0.0025	<0.050
PC-92	EM07	12/14/2017	FD	440-198571-8	Alluvium	26.5 - 36.5	<0.10	26	37	<0.0050	560	5.5	<0.050	<0.0025	<0.050
PC-92	EM08	2/20/2018	N	440-203841-2	Alluvium	26.5 - 36.5	--	--	--	--	--	--	--	--	--
PC-92	EM08	2/20/2018	FD	440-203841-3	Alluvium	26.5 - 36.5	--	--	--	--	--	--	--	--	--
PC-92	EM09	3/26/2018	N	440-207137-2	Alluvium	26.5 - 36.5	--	--	--	--	--	--	--	--	--
PC-92	EM09	3/26/2018	FD	440-207137-3	Alluvium	26.5 - 36.5	--	--	--	--	--	--	--	--	--
PC-92	EM10	5/1/2018	N	440-210284-4	Alluvium	26.5 - 36.5	--	--	--	--	--	--	--	--	--
PC-92	EM11	7/11/2018	N	440-215585-5	Alluvium	26.5 - 36.5	<0.10	26	35	<0.0050	620	5.9	<0.050	<0.0025	<0.050
PC-92	EM15	10/11/2018	N	440-222092-17	Alluvium	26.5 - 36.5	<0.10	27	37	<0.0050	600	5.4	<0.050	<0.0025	<0.050
PC-92	EM19	5/21/2019	N	440-242084-10	Alluvium	26.5 - 36.5	<0.10	18	35	<0.0050	450	3.8	<0.050	<0.0025	<0.050
PC-92	EM22	11/6/2019	N	440-254027-2	Alluvium	26.5 - 36.5	<0.10	24	34	<0.0050	510	5.4	<0.050	<0.0025	<0.050
PC-92	EM26	4/30/2020	N	440-265382-1	Alluvium	26.5 - 36.5	<0.10	21	34	<0.0050	470	4.5	<0.050	<0.0025	<0.050
PC-92	EM29	10/14/2020	N	440-273303-10	Alluvium	26.5 - 36.5	<0.10	26	34	<0.0050	590	5.4	<0.050	<0.0025	<0.050
PC-92	EM33	6/2/2021	N	550-164872-19	Alluvium	26.5 - 36.5	--	--	--	--	--	--	--	--	--
PC-92	EM33	6/2/2021	N	550-164872-20	Alluvium	26.5 - 36.5	<0.011	26	35	<0.00049	620	6.2	<0.0034	<0.00028	0.0073 J
PC-92	EM36	11/30/2021	N	550-174968-3	Alluvium	26.5 - 36.5	--	--	--	--	--	--	--	--	--
PC-92	EM36	11/30/2021	N	550-174968-4	Alluvium	26.5 - 36.5	<0.011	27	38	<0.00049	630	7.0	<0.0034	<0.00028	0.0072 J
PC-92	EM40	12/13/2022	N	550-194920-1	Alluvium	26.5 - 36.5	--	--	--	--	--	--	--	--	--
PC-92	EM40	12/13/2022	N	550-194920-2	Alluvium	26.5 - 36.5	<0.011 UJ	21	35	<0.00049	550	4.9	<0.0034	0.00034 J	0.0094 J
PC-94	BL01	3/28/2017	N	440-180820-2	Alluvium	9.5 - 19.5	<0.10	60	34	<0.0050	1,000	10	<0.050	<0.0025	<0.050
PC-94	BL02	7/13/2017	N	440-188325-1	Alluvium	9.5 - 19.5	<0.10	62	35	<0.0050	1,100	11	<0.050	0.018	<0.050
PC-94	EM04	10/11/2017	N	440-194090-6	Alluvium	9.5 - 19.5	<0.10	61	34	<0.0050	890	9.7	<0.050	0.0092	<0.050
PC-94	EM06	11/16/2017	N	440-196786-17	Alluvium	9.5 - 19.5	0.13 J	58	28	<0.0050	860	8.6	<0.050	<0.0025	<0.050
PC-94	EM07	12/12/2017	N	440-198371-14	Alluvium	9.5 - 19.5	--	--	--	--	--	--	--	--	--
PC-94	EM08	2/21/2018	N	440-203937-12	Alluvium	9.5 - 19.5	<0.10	57	35	<0.0050	850	8.8	<0.050	<0.0025	<0.050
PC-94	EM09	3/27/2018	N	440-207268-8	Alluvium	9.5 - 19.5	0.21	52	42	<0.0050	790	7.5	<0.050	0.21	<0.050
PC-94	EM10	5/1/2018	N	440-210284-14	Alluvium	9.5 - 19.5	<0.10	57	33	<0.0050	940	8.1	<0.050	0.0031 J	<0.050
PC-94	EM11	7/10/2018	N	440-215437-1	Alluvium	9.5 - 19.5	<0.10	53	31	<0.0050	750	8.0	<0.050	<0.0025	<0.050
PC-94	EM13	8/15/2018	N	440-218208-2	Alluvium	9.5 - 19.5	<0.10	55	36	<0.0050	810	8.5	<0.050	0.013	<0.050
PC-94	EM14	9/11/2018	N	440-219886-9	Alluvium	9.5 - 19.5	<0.10	53	34	<0.0050	740	8.0	<0.050	<0.0025	<0.050
PC-94	EM15	10/11/2018	N	440-222092-18	Alluvium	9.5 - 19.5	<0.10	57	35	<0.0050	850	8.4	<0.050	<0.0025	<0.050
PC-94	EM19	5/22/2019	N	440-242201-4	Alluvium	9.5 - 19.5	<0.10	52	33	<0.0050	720	7.2	<0.050	0.0041 J	<0.050
PC-94	EM22	11/6/2019	N	440-254027-1	Alluvium	9.5 - 19.5	<0.10	46	32	<0.0050	650	6.4	<0.050	<0.0025	<0.050
PC-94	EM26	4/28/2020	N	440-265289-2	Alluvium	9.5 - 19.5	<0.10	57	34	<0.0050	770	7.9	<0.050	<0.0025	<0.050
PC-94	EM29	10/15/2020	N	550-151259-7	Alluvium	9.5 - 19.5	<0.10	43	29	<0.0050	620	6.3	<0.050	<0.0025	<0.050
PC-94	EM33	6/2/2021	N	550-164872-21	Alluvium	9.5 - 19.5	--	--	--	--	--	--	--	--	--

Table D.2
Groundater Analytical Results Summary - Secondary Parameters
Seep Well Field Area Bioremediation Treatability Study

Well	Event	Sample Date	QC Type	Lab Sample ID	Lithology	Screened Interval (ft bgs)	Dissolved Metals by SW6010	Dissolved Metals by SW6010	Dissolved Metals by SW6010	Dissolved Metals by SW6010	Dissolved Metals by SW6010	Dissolved Metals by SW6010	Dissolved Metals by SW6010	Dissolved Metals by SW6010	Dissolved Metals by SW6010
							Phosphorus	Potassium	Silicon	Silver	Sodium	Strontium	Tin	Titanium	Tungsten
							mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
PC-94	EM33	6/2/2021	N	550-164872-22	Alluvium	9.5 - 19.5	<0.011	51	35	<0.00049	680	7.5	<0.0034	<0.00028	0.0042 J
PC-94	EM36	11/30/2021	N	550-174968-5	Alluvium	9.5 - 19.5	--	--	--	--	--	--	--	--	--
PC-94	EM36	11/30/2021	N	550-174968-6	Alluvium	9.5 - 19.5	<0.011	55	35	<0.00049	670	9.3	<0.0034	<0.00028	0.0035 J
PC-94	EM40	12/13/2022	N	550-194920-7	Alluvium	9.5 - 19.5	--	--	--	--	--	--	--	--	--
PC-94	EM40	12/13/2022	N	550-194920-8	Alluvium	9.5 - 19.5	<0.011 UJ	54	32	<0.00049	620	8.9	<0.0034	<0.00028	0.0055 J
PC-97	BL02	7/13/2017	N	440-188325-8	Alluvium	23.0 - 33.0	<0.10	24	34	<0.0050	410	4.8	<0.050	0.0031 J	<0.050
PC-97	EM04	10/11/2017	N	440-194242-5	Alluvium	23.0 - 33.0	<0.10	23	33	<0.0050	410	5.2	<0.050	<0.0025	<0.050
PC-97	EM04	10/11/2017	FD	440-194242-6	Alluvium	23.0 - 33.0	<0.10	26	37	<0.0050	460	5.9	<0.050	<0.0025	<0.050
PC-97	EM06	11/16/2017	N	440-196786-13	Alluvium	23.0 - 33.0	--	--	--	--	--	--	--	--	--
PC-97	EM07	12/13/2017	N	440-198508-11	Alluvium	23.0 - 33.0	--	--	--	--	--	--	--	--	--
PC-97	EM07	12/13/2017	FD	440-198508-12	Alluvium	23.0 - 33.0	--	--	--	--	--	--	--	--	--
PC-97	EM08	2/21/2018	N	440-203937-4	Alluvium	23.0 - 33.0	--	--	--	--	--	--	--	--	--
PC-97	EM09	3/27/2018	N	440-207268-4	Alluvium	23.0 - 33.0	--	--	--	--	--	--	--	--	--
PC-97	EM10	5/1/2018	N	440-210284-7	Alluvium	23.0 - 33.0	--	--	--	--	--	--	--	--	--
PC-97	EM11	7/10/2018	N	440-215437-3	Alluvium	23.0 - 33.0	<0.10	20	37	<0.0050	370	3.8	<0.050	<0.0025	<0.050
PC-97	EM15	10/11/2018	N	440-222092-13	Alluvium	23.0 - 33.0	<0.10	21	39	<0.0050	380	4.1	<0.050	<0.0025	<0.050
PC-97	EM19	5/22/2019	N	440-242201-1	Alluvium	23.0 - 33.0	<0.10	22	35	<0.0050	390	4.4	<0.050	<0.0025	<0.050
PC-97	EM22	11/6/2019	N	440-254027-7	Alluvium	23.0 - 33.0	<0.10	19	37	<0.0050	360	3.7	<0.050	<0.0025	<0.050
PC-97	EM26	4/30/2020	N	440-265383-7	Alluvium	23.0 - 33.0	<0.10	18	37	<0.0050	350	3.1	<0.050	<0.0025	<0.050
PC-97	EM29	10/15/2020	N	550-151259-9	Alluvium	23.0 - 33.0	<0.10	17	32	<0.0050	340	3.4	<0.050	<0.0025	<0.050
SWFTS-IW01A	BL02	7/11/2017	N	440-188133-3	Alluvium	15.8 - 25.6	--	--	--	--	--	--	--	--	--
SWFTS-IW01B	BL02	7/11/2017	N	440-188133-13	Alluvium	26.9 - 36.7	--	--	--	--	--	--	--	--	--
SWFTS-IW02A	BL02	7/11/2017	N	440-188133-14	Alluvium	16.8 - 26.6	--	--	--	--	--	--	--	--	--
SWFTS-IW02B	BL02	7/11/2017	N	440-188133-2	Alluvium	26.3 - 36.1	--	--	--	--	--	--	--	--	--
SWFTS-IW03	BL02	7/11/2017	N	440-188133-4	Alluvium	16.8 - 36.6	--	--	--	--	--	--	--	--	--
SWFTS-IW03	BL02	7/11/2017	FD	440-188133-5	Alluvium	16.8 - 36.6	--	--	--	--	--	--	--	--	--
SWFTS-IW04	BL02	7/11/2017	N	440-188133-11	Alluvium	19.8 - 34.6	--	--	--	--	--	--	--	--	--
SWFTS-IW04	BL02	7/11/2017	FD	440-188133-12	Alluvium	19.8 - 34.6	--	--	--	--	--	--	--	--	--
SWFTS-IW05	BL02	7/11/2017	N	440-188133-16	Alluvium	14.6 - 34.4	--	--	--	--	--	--	--	--	--
SWFTS-IW06A	BL02	7/11/2017	N	440-188133-10	Alluvium	16.8 - 26.6	--	--	--	--	--	--	--	--	--
SWFTS-IW06B	BL02	7/11/2017	N	440-188133-6	Alluvium	28.8 - 33.6	--	--	--	--	--	--	--	--	--
SWFTS-IW07	BL02	7/11/2017	N	440-188133-7	Alluvium	17.3 - 37.1	--	--	--	--	--	--	--	--	--
SWFTS-IW08	BL02	7/12/2017	N	440-188247-7	Alluvium	17.5 - 37.3	--	--	--	--	--	--	--	--	--
SWFTS-IW09	BL02	7/12/2017	N	440-188247-8	Alluvium	26.6 - 46.4	--	--	--	--	--	--	--	--	--
SWFTS-IW09	BL02	7/12/2017	FD	440-188244-3	Alluvium	26.6 - 46.4	--	--	--	--	--	--	--	--	--
SWFTS-IW10	BL02	7/12/2017	N	440-188247-9	Alluvium	26.8 - 46.6	--	--	--	--	--	--	--	--	--
SWFTS-IW11	BL02	7/12/2017	N	440-188247-3	Alluvium	17.3 - 37.1	--	--	--	--	--	--	--	--	--
SWFTS-IW12	BL02	7/12/2017	N	440-188247-4	Alluvium	14.3 - 39.1	--	--	--	--	--	--	--	--	--
SWFTS-IW13A	BL02	7/11/2017	N	440-188133-1	Alluvium	15.8 - 25.6	--	--	--	--	--	--	--	--	--
SWFTS-IW13B	BL02	7/11/2017	N	440-188133-15	Alluvium	27.8 - 37.6	--	--	--	--	--	--	--	--	--
SWFTS-IW14	BL02	7/12/2017	N	440-188247-1	Alluvium	16.2 - 36.1	--	--	--	--	--	--	--	--	--
SWFTS-IW15	BL02	7/12/2017	N	440-188247-2	Alluvium	16.4 - 36.2	--	--	--	--	--	--	--	--	--
SWFTS-IW16A	BL02	7/11/2017	N	440-188133-9	Alluvium	17.3 - 27.1	--	--	--	--	--	--	--	--	--
SWFTS-IW16B	BL02	7/11/2017	N	440-188133-8	Alluvium	26.5 - 36.3	--	--	--	--	--	--	--	--	--
SWFTS-IW17	BL02	7/13/2017	N	440-188325-6	Alluvium	17.3 - 37.1	--	--	--	--	--	--	--	--	--
SWFTS-IW18	BL02	7/13/2017	N	440-188325-4	Alluvium	18.1 - 38.1	--	--	--	--	--	--	--	--	--
SWFTS-IW19	BL02	7/13/2017	N	440-188325-5	Alluvium	24.3 - 44.1	--	--	--	--	--	--	--	--	--
SWFTS-IW20	BL02	7/12/2017	N	440-188247-10	Alluvium	30.8 - 50.6	--	--	--	--	--	--	--	--	--
SWFTS-MW01	BL01	3/29/2017	N	440-180937-6	Alluvium	24.2 - 38.9	<0.10	57	35	<0.0050	1,100	10	<0.050	<0.0025	<0.050
SWFTS-MW01	EM04	10/10/2017	N	440-194094-2	Alluvium	24.2 - 38.9	<0.10	54	32	<0.0050	890	9.0	<0.050	<0.0025	<0.050
SWFTS-MW01	EM06	11/15/2017	N	440-196665-4	Alluvium	24.2 - 38.9	--	--	--	--	--	--	--	--	--
SWFTS-MW01	EM07	12/14/2017	N	440-198571-10	Alluvium	24.2 - 38.9	--	--	--	--	--	--	--	--	--
SWFTS-MW01	EM08	2/20/2018	N	440-203841-12	Alluvium	24.2 - 38.9	--	--	--	--	--	--	--	--	--
SWFTS-MW01	EM09	3/27/2018	N	440-207268-10	Alluvium	24.2 - 38.9	--	--	--	--	--	--	--	--	--
SWFTS-MW01	EM10	4/30/2018	N	440-210173-1	Alluvium	24.2 - 38.9	--	--	--	--	--	--	--	--	--
SWFTS-MW01	EM11	7/10/2018	N	440-215437-2	Alluvium	24.2 - 38.9	<0.10	51	33	<0.0050	820	7.9	<0.050	<0.0025	<0.050
SWFTS-MW01	EM14	9/10/2018	N	440-219797-1	Alluvium	24.2 - 38.9	--	--	--	--	--	--	--	--	--
SWFTS-MW01	EM15	10/9/2018	N	440-221855-12	Alluvium	24.2 - 38.9	<0.50	52	37	<0.025	970	8.1	<0.25	<0.013	<0.25
SWFTS-MW01	EM19	5/21/2019	N	440-242084-14	Alluvium	24.2 - 38.9	<0.10	46	35	<0.0050	810	6.9	<0.050	<0.0025	<0.050
SWFTS-MW01	EM22	11/5/2019	N	440-253918-3	Alluvium	24.2 - 38.9	<0.10	43	34	<0.0050	760	5.6	<0.050	<0.0025	<0.050
SWFTS-MW01	EM26	4/28/2020	N	440-265289-5	Alluvium	24.2 - 38.9	<0.10	52	30	<0.0050	830	7.4	<0.050	<0.0025	<0.050
SWFTS-MW01	EM29	10/13/2020	N	440-273236-11	Alluvium	24.2 - 38.9	<0.10	50	35	<0.0050	830	7.2	<0.050	<0.0025	<0.050
SWFTS-MW01	EM33	6/4/2021	N	550-164930-17	Alluvium	24.2 - 38.9	--	--	--	--	--	--	--	--	--
SWFTS-MW01	EM33	6/4/2021	N	550-164930-18	Alluvium	24.2 - 38.9	<0.011	48	34	<0.00049	750	7.0	<0.0034	<0.00028	0.0032 J

Table D.2
Groundater Analytical Results Summary - Secondary Parameters
Seep Well Field Area Bioremediation Treatability Study

Well	Event	Sample Date	QC Type	Lab Sample ID	Lithology	Screened Interval (ft bgs)	Dissolved Metals by SW6010	Dissolved Metals by SW6010	Dissolved Metals by SW6010	Dissolved Metals by SW6010	Dissolved Metals by SW6010	Dissolved Metals by SW6010	Dissolved Metals by SW6010	Dissolved Metals by SW6010	Dissolved Metals by SW6010
							Phosphorus	Potassium	Silicon	Silver	Sodium	Strontium	Tin	Titanium	Tungsten
							mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
SWFTS-MW01	EM36	11/30/2021	N	550-174968-19	Alluvium	24.2 - 38.9	--	--	--	--	--	--	--	--	--
SWFTS-MW01	EM36	11/30/2021	N	550-174968-20	Alluvium	24.2 - 38.9	<0.011	53	38	<0.00049	760	9.4	<0.0034	<0.00028	0.0026 J
SWFTS-MW01	EM40	12/13/2022	N	550-194920-3	Alluvium	24.2 - 38.9	--	--	--	--	--	--	--	--	--
SWFTS-MW01	EM40	12/13/2022	N	550-194920-4	Alluvium	24.2 - 38.9	<0.011 UJ	47	34	<0.00049	660	7.8	<0.0034	<0.00028	0.0042 J
SWFTS-MW02	BL01	3/29/2017	N	440-180937-7	Alluvium	18.4 - 33.1	<0.10	48	35	<0.0050	1,300	12	<0.050	<0.0025	<0.050
SWFTS-MW02	EM04	10/12/2017	N	440-194204-6	Alluvium	18.4 - 33.1	<0.10	46	34	<0.0050	1,000	11	<0.050	<0.0025	<0.050
SWFTS-MW02	EM06	11/14/2017	N	440-196558-3	Alluvium	18.4 - 33.1	--	--	--	--	--	--	--	--	--
SWFTS-MW02	EM07	12/13/2017	N	440-198508-8	Alluvium	18.4 - 33.1	--	--	--	--	--	--	--	--	--
SWFTS-MW02	EM08	2/19/2018	N	440-203775-1	Alluvium	18.4 - 33.1	--	--	--	--	--	--	--	--	--
SWFTS-MW02	EM09	3/27/2018	N	440-207268-1	Alluvium	18.4 - 33.1	--	--	--	--	--	--	--	--	--
SWFTS-MW02	EM10	4/30/2018	N	440-210173-3	Alluvium	18.4 - 33.1	--	--	--	--	--	--	--	--	--
SWFTS-MW02	EM11	7/11/2018	N	440-215717-13	Alluvium	18.4 - 33.1	<0.10	40	36	<0.0050	900	8.7	<0.050	<0.0025	<0.050
SWFTS-MW02	EM14	9/10/2018	N	440-219797-2	Alluvium	18.4 - 33.1	--	--	--	--	--	--	--	--	--
SWFTS-MW02	EM15	10/10/2018	N	440-221975-15	Alluvium	18.4 - 33.1	<0.50	38	41	<0.025	1,100	9.3	<0.25	0.015 J	<0.25
SWFTS-MW02	EM19	5/21/2019	N	440-242084-8	Alluvium	18.4 - 33.1	<0.10	40	37	<0.0050	1,100	9.2	<0.050	<0.0025	<0.050
SWFTS-MW02	EM22	11/7/2019	N	440-254148-7	Alluvium	18.4 - 33.1	<0.10	37	29	<0.0050	940	7.9	<0.050	<0.0025	<0.050
SWFTS-MW02	EM26	4/30/2020	N	440-265382-3	Alluvium	18.4 - 33.1	<0.10	39	28	<0.0050	910	7.4	<0.050	<0.0025	<0.050
SWFTS-MW02	EM29	10/15/2020	N	550-151259-8	Alluvium	18.4 - 33.1	<0.10	32	28	<0.0050	860	6.9	<0.050	<0.0025	<0.050
SWFTS-MW02	EM33	6/3/2021	N	550-164869-21	Alluvium	18.4 - 33.1	--	--	--	--	--	--	--	--	--
SWFTS-MW02	EM33	6/3/2021	N	550-164869-22	Alluvium	18.4 - 33.1	<0.011	37	35	<0.00049	1,000	8.0	<0.0034	0.00049 J	0.0061 J
SWFTS-MW02	EM36	11/30/2021	N	550-174968-7	Alluvium	18.4 - 33.1	--	--	--	--	--	--	--	--	--
SWFTS-MW02	EM36	11/30/2021	N	550-174968-8	Alluvium	18.4 - 33.1	<0.011	36	37	<0.00049	980	7.8	<0.0034	<0.00028	0.0045 J
SWFTS-MW02	EM40	12/14/2022	N	550-195015-3	Alluvium	18.4 - 33.1	--	--	--	--	--	--	--	--	--
SWFTS-MW02	EM40	12/14/2022	N	550-195015-4	Alluvium	18.4 - 33.1	<0.011 UJ	39	33	<0.00049	980	9.7	<0.0034	<0.00028	0.0075 J
SWFTS-MW03	BL01	3/30/2017	N	440-181045-5	Alluvium	27.2 - 42.1	<0.10	63	35	<0.0050	900	11	<0.050	<0.0025 UJ	<0.050
SWFTS-MW03	BL01	3/30/2017	FD	440-181045-6	Alluvium	27.2 - 42.1	<0.10	63	36	<0.0050	840	11	<0.050	0.015 J	<0.050
SWFTS-MW03	EM04	10/12/2017	N	440-194204-8	Alluvium	27.2 - 42.1	<0.10	69	33	<0.0050	760	11	<0.050	<0.0025	<0.050
SWFTS-MW03	EM06	11/16/2017	N	440-196786-16	Alluvium	27.2 - 42.1	<0.10	62	29	<0.0050	730	9.9	<0.050	<0.0025	<0.050
SWFTS-MW03	EM07	12/12/2017	N	440-198371-13	Alluvium	27.2 - 42.1	--	--	--	--	--	--	--	--	--
SWFTS-MW03	EM08	2/21/2018	N	440-203937-5	Alluvium	27.2 - 42.1	<0.10	64	36 J+	<0.0050	780	9.7	<0.050	0.014 J+	<0.050
SWFTS-MW03	EM09	3/27/2018	N	440-207268-15	Alluvium	27.2 - 42.1	<0.10	57	31	<0.0050	670	8.5	<0.050	<0.0025	<0.050
SWFTS-MW03	EM10	5/2/2018	N	440-210430-6	Alluvium	27.2 - 42.1	<0.10	72	36	<0.0050	880	11	<0.050	0.0046 J	<0.050
SWFTS-MW03	EM11	7/10/2018	N	440-215437-5	Alluvium	27.2 - 42.1	<0.10	60	33	<0.0050	670	9.6	<0.050	<0.0025	<0.050
SWFTS-MW03	EM13	8/15/2018	N	440-218208-4	Alluvium	27.2 - 42.1	<0.10	60	35	<0.0050	730	9.8	<0.050	0.0068	<0.050
SWFTS-MW03	EM14	9/11/2018	N	440-219886-11	Alluvium	27.2 - 42.1	<0.10	60	35	<0.0050	680	9.8	<0.050	<0.0025	<0.050
SWFTS-MW03	EM15	10/9/2018	N	440-221855-13	Alluvium	27.2 - 42.1	<0.50	62	37	<0.025	790	10	<0.25	<0.013	<0.25
SWFTS-MW03	EM19	5/21/2019	N	440-242084-12	Alluvium	27.2 - 42.1	<0.10	60	37	<0.0050	740	10	<0.050	<0.0025	<0.050
SWFTS-MW03	EM22	11/4/2019	N	440-253773-2	Alluvium	27.2 - 42.1	<0.10	54	34	<0.0050	700	8.7	<0.050	<0.0025	<0.050
SWFTS-MW03	EM26	4/28/2020	N	440-265289-1	Alluvium	27.2 - 42.1	<0.10	56	32	<0.0050	650	8.3	<0.050	<0.0025	<0.050
SWFTS-MW03	EM29	10/13/2020	N	440-273236-10	Alluvium	27.2 - 42.1	<0.10	59	36	<0.0050	690	9.4	<0.050	<0.0025	<0.050
SWFTS-MW03	EM33	6/3/2021	N	550-164869-15	Alluvium	27.2 - 42.1	--	--	--	--	--	--	--	--	--
SWFTS-MW03	EM33	6/3/2021	N	550-164869-16	Alluvium	27.2 - 42.1	<0.011	59	38	<0.00049	700	9.9	<0.0034	<0.00028	0.0071 J
SWFTS-MW03	EM36	12/1/2021	N	550-175045-1	Alluvium	27.2 - 42.1	--	--	--	--	--	--	--	--	--
SWFTS-MW03	EM36	12/1/2021	N	550-175045-2	Alluvium	27.2 - 42.1	<0.011	60	38	<0.00049	670	9.9	<0.0034	<0.00028	0.0070 J
SWFTS-MW03	EM40	12/13/2022	N	550-194920-15	Alluvium	27.2 - 42.1	--	--	--	--	--	--	--	--	--
SWFTS-MW03	EM40	12/13/2022	N	550-194920-16	Alluvium	27.2 - 42.1	<0.011 UJ	60	34	<0.00049	670	10	<0.0034	0.0012 J	0.012 J
SWFTS-MW04	BL01	3/31/2017	N	440-181122-1	Alluvium	25.8 - 40.4	<0.10	29	35	<0.0050	1,100	8.1	<0.050	<0.0025	<0.050
SWFTS-MW04	EM04	10/11/2017	N	440-194242-7	Alluvium	25.8 - 40.4	<0.10	19	34	<0.0050	520	3.7	<0.050	<0.0025	<0.050
SWFTS-MW04	EM06	11/15/2017	N	440-196659-2	Alluvium	25.8 - 40.4	--	--	--	--	--	--	--	--	--
SWFTS-MW04	EM07	12/14/2017	N	440-198571-12	Alluvium	25.8 - 40.4	--	--	--	--	--	--	--	--	--
SWFTS-MW04	EM08	2/21/2018	N	440-203937-2	Alluvium	25.8 - 40.4	--	--	--	--	--	--	--	--	--
SWFTS-MW04	EM09	3/27/2018	N	440-207268-5	Alluvium	25.8 - 40.4	--	--	--	--	--	--	--	--	--
SWFTS-MW04	EM10	5/1/2018	N	440-210284-5	Alluvium	25.8 - 40.4	--	--	--	--	--	--	--	--	--
SWFTS-MW04	EM11	7/10/2018	N	440-215437-4	Alluvium	25.8 - 40.4	<0.10	20	33	<0.0050	580	4.3	<0.050	<0.0025	<0.050
SWFTS-MW04	EM15	10/11/2018	N	440-222092-9	Alluvium	25.8 - 40.4	<0.10	21	39	<0.0050	620	4.3	<0.050	<0.0025	<0.050
SWFTS-MW04	EM19	5/21/2019	N	440-242084-11	Alluvium	25.8 - 40.4	<0.10	18	38	<0.0050	490	3.8	<0.050	<0.0025	<0.050
SWFTS-MW04	EM22	11/7/2019	N	440-254150-6	Alluvium	25.8 - 40.4	<0.10	18	32	<0.0050	410	3.8	<0.050	<0.0025	<0.050
SWFTS-MW04	EM26	5/1/2020	N	440-265412-1	Alluvium	25.8 - 40.4	<0.10	24	37	<0.0050	680	6.2	<0.050	<0.0025	<0.050
SWFTS-MW04	EM29	10/14/2020	N	440-273303-12	Alluvium	25.8 - 40.4	<0.10	20	35	<0.0050	570	4.4	<0.050	<0.0025	<0.050
SWFTS-MW04	EM33	6/3/2021	N	550-164869-23	Alluvium	25.8 - 40.4	--	--	--	--	--	--	--	--	--
SWFTS-MW04	EM33	6/3/2021	N	550-164869-24	Alluvium	25.8 - 40.4	<0.011	19	36	<0.00049	560	4.7	<0.0034	<0.00028	0.0058 J
SWFTS-MW04	EM36	12/2/2021	N	550-175153-3	Alluvium	25.8 - 40.4	--	--	--	--	--	--	--	--	--
SWFTS-MW04	EM36	12/2/2021	N	550-175153-4	Alluvium	25.8 - 40.4	<0.011	21	36	<0.00049	590	5.0	<0.0034	<0.00028	0.0089 J
SWFTS-MW04	EM40	12/14/2022	N	550-195015-1	Alluvium	25.8 - 40.4	--	--	--	--	--	--	--	--	--

Table D.2
Groundater Analytical Results Summary - Secondary Parameters
Seep Well Field Area Bioremediation Treatability Study

Well	Event	Sample Date	QC Type	Lab Sample ID	Lithology	Screened Interval (ft bgs)	Dissolved Metals by SW6010	Dissolved Metals by SW6010	Dissolved Metals by SW6010	Dissolved Metals by SW6010	Dissolved Metals by SW6010	Dissolved Metals by SW6010	Dissolved Metals by SW6010	Dissolved Metals by SW6010	Dissolved Metals by SW6010
							Phosphorus	Potassium	Silicon	Silver	Sodium	Strontium	Tin	Titanium	Tungsten
							mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
SWFTS-MW04	EM40	12/14/2022	N	550-195015-2	Alluvium	25.8 - 40.4	<0.011 UJ	19	35	<0.00049	490	4.3	<0.0034	<0.00028	0.0064 J
SWFTS-MW05A	BL01	3/30/2017	N	440-181045-7	Alluvium	19.3 - 29.3	<0.50	87	35	<0.025	840	18	<0.25	<0.013	<0.25
SWFTS-MW05A	EM04	10/10/2017	N	440-193989-2	Alluvium	19.3 - 29.3	<0.10	80	33	<0.0050	730	15	<0.050	<0.0025	<0.050
SWFTS-MW05A	EM06	11/14/2017	N	440-196558-1	Alluvium	19.3 - 29.3	--	--	--	--	--	--	--	--	--
SWFTS-MW05A	EM07	12/13/2017	N	440-198508-3	Alluvium	19.3 - 29.3	--	--	--	--	--	--	--	--	--
SWFTS-MW05A	EM08	2/20/2018	N	440-203841-7	Alluvium	19.3 - 29.3	--	--	--	--	--	--	--	--	--
SWFTS-MW05A	EM09	3/26/2018	N	440-207137-5	Alluvium	19.3 - 29.3	--	--	--	--	--	--	--	--	--
SWFTS-MW05A	EM10	4/30/2018	N	440-210173-8	Alluvium	19.3 - 29.3	--	--	--	--	--	--	--	--	--
SWFTS-MW05A	EM11	7/11/2018	N	440-215585-14	Alluvium	19.3 - 29.3	<0.10	75	33	<0.0050	700	14	<0.050	<0.0025	<0.050
SWFTS-MW05A	EM15	10/10/2018	N	440-221975-14	Alluvium	19.3 - 29.3	<0.50	76	40	<0.025	790	15	<0.25	<0.013	<0.25
SWFTS-MW05A	EM19	5/21/2019	N	440-242084-17	Alluvium	19.3 - 29.3	<0.10	73	38	0.0050 J	740	14	<0.050	<0.0025	<0.050
SWFTS-MW05A	EM22	11/5/2019	N	440-253918-1	Alluvium	19.3 - 29.3	<0.10	66	35	<0.0050	650	13	<0.050	<0.0025	<0.050
SWFTS-MW05A	EM26	4/29/2020	N	440-265346-2	Alluvium	19.3 - 29.3	<0.10	76	34	<0.0050	730	15	<0.050	<0.0025	<0.050
SWFTS-MW05A	EM29	10/14/2020	N	440-273303-9	Alluvium	19.3 - 29.3	<0.10	83	40	<0.0050	830	15	<0.050	<0.0025	<0.050
SWFTS-MW05A	EM33	6/3/2021	N	550-164869-17	Alluvium	19.3 - 29.3	--	--	--	--	--	--	--	--	--
SWFTS-MW05A	EM33	6/3/2021	N	550-164869-18	Alluvium	19.3 - 29.3	<0.011	71 J+	38	<0.00049	750	14	<0.0034	0.0042 J	0.0067 J
SWFTS-MW05A	EM36	11/29/2021	N	550-174897-3	Alluvium	19.3 - 29.3	--	--	--	--	--	--	--	--	--
SWFTS-MW05A	EM36	11/29/2021	N	550-174897-4	Alluvium	19.3 - 29.3	<0.011	78 J+	41	<0.00049	790	15	<0.0034	<0.00028	0.0078 J
SWFTS-MW05B	BL01	3/30/2017	N	440-181045-8	Alluvium	32.3 - 42.0	<0.10	78	37	<0.0050	870	12	<0.050	0.0067	<0.050
SWFTS-MW05B	EM04	10/10/2017	N	440-193989-1	Alluvium	32.3 - 42.0	<0.10	70	38	<0.0050	700	11	<0.050	<0.0025	<0.050
SWFTS-MW05B	EM06	11/14/2017	N	440-196558-2	Alluvium	32.3 - 42.0	--	--	--	--	--	--	--	--	--
SWFTS-MW05B	EM07	12/13/2017	N	440-198508-4	Alluvium	32.3 - 42.0	--	--	--	--	--	--	--	--	--
SWFTS-MW05B	EM08	2/20/2018	N	440-203841-8	Alluvium	32.3 - 42.0	--	--	--	--	--	--	--	--	--
SWFTS-MW05B	EM09	3/26/2018	N	440-207137-6	Alluvium	32.3 - 42.0	--	--	--	--	--	--	--	--	--
SWFTS-MW05B	EM10	4/30/2018	N	440-210173-2	Alluvium	32.3 - 42.0	--	--	--	--	--	--	--	--	--
SWFTS-MW05B	EM11	7/10/2018	N	440-215585-10	Alluvium	32.3 - 42.0	<0.10	64	47	<0.0050	690	10	<0.050	<0.0025	<0.050
SWFTS-MW05B	EM15	10/9/2018	N	440-221855-14	Alluvium	32.3 - 42.0	<0.50	64	38	<0.025	700	11	<0.25	<0.013	<0.25
SWFTS-MW05B	EM19	5/21/2019	N	440-242084-18	Alluvium	32.3 - 42.0	<0.10	63	37	<0.0050	680	9.9	<0.050	0.0063	<0.050
SWFTS-MW05B	EM22	11/5/2019	N	440-253918-2	Alluvium	32.3 - 42.0	<0.10	60	38	<0.0050	640	10	<0.050	0.0030 J	<0.050
SWFTS-MW05B	EM26	4/29/2020	N	440-265346-1	Alluvium	32.3 - 42.0	<0.10	68	33	<0.0050	720	12	<0.050	<0.0025	<0.050
SWFTS-MW05B	EM29	10/14/2020	N	440-273303-8	Alluvium	32.3 - 42.0	<0.10	62	36	<0.0050	660	9.7	<0.050	<0.0025	<0.050
SWFTS-MW05B	EM33	6/3/2021	N	550-164869-19	Alluvium	32.3 - 42.0	--	--	--	--	--	--	--	--	--
SWFTS-MW05B	EM33	6/3/2021	N	550-164869-20	Alluvium	32.3 - 42.0	<0.011	65	45	<0.00049	730	11	<0.0034	<0.00028	0.014 J
SWFTS-MW05B	EM36	11/30/2021	N	550-174968-15	Alluvium	32.3 - 42.0	--	--	--	--	--	--	--	--	--
SWFTS-MW05B	EM36	11/30/2021	N	550-174968-16	Alluvium	32.3 - 42.0	<0.011	66	40	<0.00049	660	12	<0.0034	<0.00028	0.0084 J
SWFTS-MW06A	BL01	3/30/2017	N	440-181045-1	Alluvium	11.8 - 21.4	<0.10	21	36	<0.0050	410	3.4	<0.050	<0.0025	<0.050
SWFTS-MW06A	EM04	10/11/2017	N	440-194090-4	Alluvium	11.8 - 21.4	<0.10	24	37	<0.0050	430	5.3	<0.050	<0.0025	<0.050
SWFTS-MW06A	EM06	11/16/2017	N	440-196786-19	Alluvium	11.8 - 21.4	--	--	--	--	--	--	--	--	--
SWFTS-MW06A	EM07	12/13/2017	N	440-198508-1	Alluvium	11.8 - 21.4	--	--	--	--	--	--	--	--	--
SWFTS-MW06A	EM08	2/22/2018	N	440-204033-1	Alluvium	11.8 - 21.4	--	--	--	--	--	--	--	--	--
SWFTS-MW06A	EM09	3/28/2018	N	440-207497-3	Alluvium	11.8 - 21.4	--	--	--	--	--	--	--	--	--
SWFTS-MW06A	EM10	5/1/2018	N	440-210284-9	Alluvium	11.8 - 21.4	--	--	--	--	--	--	--	--	--
SWFTS-MW06A	EM10	5/1/2018	FD	440-210284-10	Alluvium	11.8 - 21.4	--	--	--	--	--	--	--	--	--
SWFTS-MW06A	EM11	7/11/2018	N	440-215585-2	Alluvium	11.8 - 21.4	<0.10	18	33	<0.0050	350	3.5	<0.050	<0.0025	<0.050
SWFTS-MW06A	EM11	7/11/2018	FD	440-215585-3	Alluvium	11.8 - 21.4	<0.10	20	38	<0.0050	390	3.9	<0.050	<0.0025	<0.050
SWFTS-MW06A	EM15	10/10/2018	N	440-221975-8	Alluvium	11.8 - 21.4	<0.10	21 J+	40	<0.0050	390	4.4 J+	<0.050	<0.0025	<0.050
SWFTS-MW06A	EM15	10/10/2018	FD	440-221975-10	Alluvium	11.8 - 21.4	<0.10	19 J+	36	<0.0050	350	3.9 J+	<0.050	<0.0025	<0.050
SWFTS-MW06A	EM19	5/20/2019	N	440-242015-1	Alluvium	11.8 - 21.4	<0.10	19	34	<0.0050	380	4.0	<0.050	<0.0025	<0.050
SWFTS-MW06A	EM19	5/20/2019	FD	440-242015-2	Alluvium	11.8 - 21.4	<0.10	19	35	<0.0050	360	3.6	<0.050	<0.0025	<0.050
SWFTS-MW06A	EM22	11/6/2019	N	440-254027-4	Alluvium	11.8 - 21.4	<0.10	21	27	<0.0050	400	4.7	<0.050	<0.0025	<0.050
SWFTS-MW06A	EM22	11/6/2019	FD	440-254027-5	Alluvium	11.8 - 21.4	<0.10	22	39	<0.0050	410	4.7	<0.050	0.0067	<0.050
SWFTS-MW06A	EM26	4/29/2020	N	440-265346-5	Alluvium	11.8 - 21.4	<0.10	18	35	<0.0050	340	3.1	<0.050	<0.0025	<0.050
SWFTS-MW06A	EM26	4/29/2020	FD	440-265346-6	Alluvium	11.8 - 21.4	<0.10	17	33	<0.0050	320	2.9	<0.050	<0.0025	<0.050
SWFTS-MW06A	EM29	10/13/2020	N	440-273236-7	Alluvium	11.8 - 21.4	<0.10	21	40	<0.0050	400	4.2	<0.050	<0.0025	<0.050
SWFTS-MW06A	EM29	10/13/2020	FD	440-273236-8	Alluvium	11.8 - 21.4	<0.10	21	41	<0.0050	410	4.3	<0.050	<0.0025	<0.050
SWFTS-MW06A	EM33	6/4/2021	N	550-164930-19	Alluvium	11.8 - 21.4	--	--	--	--	--	--	--	--	--
SWFTS-MW06A	EM33	6/4/2021	N	550-164930-20	Alluvium	11.8 - 21.4	<0.011	20	38	<0.00049	420	4.3	<0.0034	<0.00028	0.0064 J
SWFTS-MW06A	EM33	6/4/2021	FD	550-164930-21	Alluvium	11.8 - 21.4	--	--	--	--	--	--	--	--	--
SWFTS-MW06A	EM33	6/4/2021	FD	550-164930-22	Alluvium	11.8 - 21.4	<0.011	20	40	<0.00049	430	4.4	<0.0034	0.00043 J	0.0089 J
SWFTS-MW06A	EM36	12/1/2021	N	550-175045-7	Alluvium	11.8 - 21.4	--	--	--	--	--	--	--	--	--
SWFTS-MW06A	EM36	12/1/2021	N	550-175045-8	Alluvium	11.8 - 21.4	<0.011	18	39	<0.00049	360	3.6	<0.0034	<0.00028	0.0071 J
SWFTS-MW06A	EM36	12/1/2021	FD	550-175045-10	Alluvium	11.8 - 21.4	<0.011	18	38	<0.00049	350	3.5	<0.0034	<0.00028	0.0086 J
SWFTS-MW06A	EM36	12/1/2021	FD	550-175045-9	Alluvium	11.8 - 21.4	--	--	--	--	--	--	--	--	--
SWFTS-MW06A	EM40	12/14/2022	N	550-195015-5	Alluvium	11.8 - 21.4	--	--	--	--	--	--	--	--	--

Table D.2
Groundater Analytical Results Summary - Secondary Parameters
Seep Well Field Area Bioremediation Treatability Study

Well	Event	Sample Date	QC Type	Lab Sample ID	Lithology	Screened Interval (ft bgs)	Dissolved Metals by SW6010	Dissolved Metals by SW6010	Dissolved Metals by SW6010	Dissolved Metals by SW6010	Dissolved Metals by SW6010	Dissolved Metals by SW6010	Dissolved Metals by SW6010	Dissolved Metals by SW6010	Dissolved Metals by SW6010
							Phosphorus	Potassium	Silicon	Silver	Sodium	Strontium	Tin	Titanium	Tungsten
							mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
SWFTS-MW06A	EM40	12/14/2022	N	550-195015-6	Alluvium	11.8 - 21.4	<0.011 UJ	18	33	<0.00049	370	3.7	<0.0034	<0.00028	0.0080 J
SWFTS-MW06A	EM40	12/14/2022	FD	550-195015-7	Alluvium	11.8 - 21.4	--	--	--	--	--	--	--	--	--
SWFTS-MW06A	EM40	12/14/2022	FD	550-195015-8	Alluvium	11.8 - 21.4	<0.011 UJ	18	33	<0.00049	360	3.6	<0.0034	<0.00028	0.0061 J
SWFTS-MW06B	BL01	3/30/2017	N	440-181045-2	Alluvium	25.9 - 35.5	<0.10	17	37	<0.0050	390	4.1	<0.050	<0.0025	<0.050
SWFTS-MW06B	EM04	10/11/2017	N	440-194090-5	Alluvium	25.9 - 35.5	<0.10	20	35	<0.0050	400	4.5	<0.050	<0.0025	<0.050
SWFTS-MW06B	EM06	11/16/2017	N	440-196786-20	Alluvium	25.9 - 35.5	--	--	--	--	--	--	--	--	--
SWFTS-MW06B	EM07	12/13/2017	N	440-198508-2	Alluvium	25.9 - 35.5	--	--	--	--	--	--	--	--	--
SWFTS-MW06B	EM08	2/22/2018	N	440-204033-5	Alluvium	25.9 - 35.5	--	--	--	--	--	--	--	--	--
SWFTS-MW06B	EM09	3/28/2018	N	440-207497-2	Alluvium	25.9 - 35.5	--	--	--	--	--	--	--	--	--
SWFTS-MW06B	EM10	5/1/2018	N	440-210284-8	Alluvium	25.9 - 35.5	--	--	--	--	--	--	--	--	--
SWFTS-MW06B	EM11	7/11/2018	N	440-215585-4	Alluvium	25.9 - 35.5	<0.10	18	36	<0.0050	370	3.7	<0.050	<0.0025	<0.050
SWFTS-MW06B	EM15	10/10/2018	N	440-221975-9	Alluvium	25.9 - 35.5	<0.10	20	39	<0.0050	390	4.3	<0.050	<0.0025	<0.050
SWFTS-MW06B	EM19	5/21/2019	N	440-242084-5	Alluvium	25.9 - 35.5	<0.10	19	39	<0.0050	390	4.2	<0.050	<0.0025	<0.050
SWFTS-MW06B	EM22	11/6/2019	N	440-254027-6	Alluvium	25.9 - 35.5	<0.10	20	36	<0.0050	410	5.0	<0.050	<0.0025	<0.050
SWFTS-MW06B	EM26	4/29/2020	N	440-265346-4	Alluvium	25.9 - 35.5	<0.10	18	36	<0.0050	360	3.4	<0.050	<0.0025	<0.050
SWFTS-MW06B	EM29	10/13/2020	N	440-273236-6	Alluvium	25.9 - 35.5	<0.10	19	38	<0.0050	390	4.0	<0.050	<0.0025	<0.050
SWFTS-MW06B	EM33	6/4/2021	N	550-164930-23	Alluvium	25.9 - 35.5	--	--	--	--	--	--	--	--	--
SWFTS-MW06B	EM33	6/4/2021	N	550-164930-24	Alluvium	25.9 - 35.5	<0.011	19	38	<0.00049	410	4.2	<0.0034	<0.00028	0.0073 J
SWFTS-MW06B	EM36	12/1/2021	N	550-175045-11	Alluvium	25.9 - 35.5	--	--	--	--	--	--	--	--	--
SWFTS-MW06B	EM36	12/1/2021	N	550-175045-12	Alluvium	25.9 - 35.5	<0.011	18	38	<0.00049	360	3.7	<0.0034	<0.00028	0.0083 J
SWFTS-MW06B	EM40	12/14/2022	N	550-195015-10	Alluvium	25.9 - 35.5	<0.011 UJ	17	33	<0.00049	370	3.5	<0.0034	<0.00028	0.0080 J
SWFTS-MW06B	EM40	12/14/2022	N	550-195015-9	Alluvium	25.9 - 35.5	--	--	--	--	--	--	--	--	--
SWFTS-MW07A	BL01	3/30/2017	N	440-181045-3	Alluvium	15.0 - 29.5	<0.10	42	36	<0.0050	1,000	9.3	<0.050	<0.0025	<0.050
SWFTS-MW07A	EM04	10/11/2017	N	440-194242-3	Alluvium	15.0 - 29.5	<0.10	43	36	<0.0050	870	9.4	<0.050	<0.0025	<0.050
SWFTS-MW07A	EM06	11/15/2017	N	440-196659-7	Alluvium	15.0 - 29.5	--	--	--	--	--	--	--	--	--
SWFTS-MW07A	EM07	12/14/2017	N	440-198571-3	Alluvium	15.0 - 29.5	--	--	--	--	--	--	--	--	--
SWFTS-MW07A	EM08	2/19/2018	N	440-203775-3	Alluvium	15.0 - 29.5	--	--	--	--	--	--	--	--	--
SWFTS-MW07A	EM09	3/28/2018	N	440-207497-4	Alluvium	15.0 - 29.5	--	--	--	--	--	--	--	--	--
SWFTS-MW07A	EM10	5/2/2018	N	440-210430-2	Alluvium	15.0 - 29.5	--	--	--	--	--	--	--	--	--
SWFTS-MW07A	EM11	7/11/2018	N	440-215585-7	Alluvium	15.0 - 29.5	<0.10	39	36	<0.0050	820	7.5	<0.050	<0.0025	<0.050
SWFTS-MW07A	EM15	10/10/2018	N	440-221975-11	Alluvium	15.0 - 29.5	<0.50	34	37	<0.025	840	7.0	<0.25	<0.013	<0.25
SWFTS-MW07A	EM19	5/22/2019	N	440-242200-5	Alluvium	15.0 - 29.5	<0.10	34	40	<0.0050	670	5.6	<0.050	<0.0025	<0.050
SWFTS-MW07A	EM22	11/7/2019	N	440-254148-4	Alluvium	15.0 - 29.5	<0.10	29	34	<0.0050	680	5.1	<0.050	<0.0025	<0.050
SWFTS-MW07A	EM26	4/30/2020	N	440-265382-5	Alluvium	15.0 - 29.5	<0.10	34	35	<0.0050	740	6.2	<0.050	<0.0025	<0.050
SWFTS-MW07A	EM29	10/16/2020	N	440-273433-1	Alluvium	15.0 - 29.5	<0.10	33	36	<0.0050	730	6.1	<0.050	<0.0025	<0.050
SWFTS-MW07A	EM33	6/4/2021	N	550-164930-25	Alluvium	15.0 - 29.5	--	--	--	--	--	--	--	--	--
SWFTS-MW07A	EM33	6/4/2021	N	550-164930-26	Alluvium	15.0 - 29.5	<0.011	32	40	<0.00049	710	5.9	<0.0034	<0.00028	0.0022 J
SWFTS-MW07A	EM36	12/3/2021	N	550-175222-3	Alluvium	15.0 - 29.5	--	--	--	--	--	--	--	--	--
SWFTS-MW07A	EM36	12/3/2021	N	550-175222-4	Alluvium	15.0 - 29.5	<0.011	34	39	<0.00049	700	7.4	<0.0034	<0.00028	0.0030 J
SWFTS-MW07A	EM40	12/14/2022	N	550-195015-11	Alluvium	15.0 - 29.5	--	--	--	--	--	--	--	--	--
SWFTS-MW07A	EM40	12/14/2022	N	550-195015-12	Alluvium	15.0 - 29.5	<0.011 UJ	33	36	<0.00049	670	8.5	<0.0034	<0.00028	0.0023 J
SWFTS-MW07B	BL01	3/30/2017	N	440-181045-4	Alluvium	33.8 - 38.3	<0.10	45	38	<0.0050	1,000	9.0	<0.050	<0.0025	<0.050
SWFTS-MW07B	EM04	10/11/2017	N	440-194242-4	Alluvium	33.8 - 38.3	<0.10	39	38	<0.0050	810	7.4	<0.050	<0.0025	<0.050
SWFTS-MW07B	EM06	11/15/2017	N	440-196659-8	Alluvium	33.8 - 38.3	--	--	--	--	--	--	--	--	--
SWFTS-MW07B	EM07	12/14/2017	N	440-198571-4	Alluvium	33.8 - 38.3	--	--	--	--	--	--	--	--	--
SWFTS-MW07B	EM08	2/19/2018	N	440-203775-2	Alluvium	33.8 - 38.3	--	--	--	--	--	--	--	--	--
SWFTS-MW07B	EM09	3/28/2018	N	440-207497-10	Alluvium	33.8 - 38.3	--	--	--	--	--	--	--	--	--
SWFTS-MW07B	EM10	5/2/2018	N	440-210430-1	Alluvium	33.8 - 38.3	--	--	--	--	--	--	--	--	--
SWFTS-MW07B	EM11	7/11/2018	N	440-215585-8	Alluvium	33.8 - 38.3	<0.10	36	35	<0.0050	750	6.7	<0.050	<0.0025	<0.050
SWFTS-MW07B	EM15	10/10/2018	N	440-221975-12	Alluvium	33.8 - 38.3	<0.50	31	40	<0.025	740	5.7	<0.25	<0.013	<0.25
SWFTS-MW07B	EM19	5/22/2019	N	440-242200-6	Alluvium	33.8 - 38.3	<0.10	35	36	<0.0050	760	5.7	<0.050	<0.0025	<0.050
SWFTS-MW07B	EM22	11/7/2019	N	440-254148-5	Alluvium	33.8 - 38.3	<0.10	27	35	<0.0050	580	4.7	<0.050	<0.0025	<0.050
SWFTS-MW07B	EM26	4/30/2020	N	440-265382-4	Alluvium	33.8 - 38.3	<0.10	35	37	<0.0050	710	7.8	<0.050	<0.0025	<0.050
SWFTS-MW07B	EM29	10/16/2020	N	440-273433-2	Alluvium	33.8 - 38.3	<0.10	30	39	<0.0050	580	5.2	<0.050	<0.0050	<0.050
SWFTS-MW07B	EM33	6/4/2021	N	550-164930-27	Alluvium	33.8 - 38.3	--	--	--	--	--	--	--	--	--
SWFTS-MW07B	EM33	6/4/2021	N	550-164930-28	Alluvium	33.8 - 38.3	<0.011	33	41	<0.00049	650	7.3	<0.0034	<0.00028	0.0032 J
SWFTS-MW07B	EM36	12/3/2021	N	550-175222-5	Alluvium	33.8 - 38.3	--	--	--	--	--	--	--	--	--
SWFTS-MW07B	EM36	12/3/2021	N	550-175222-6	Alluvium	33.8 - 38.3	<0.011	39	43	<0.00049	700	11	<0.0034	<0.00028	0.0051 J
SWFTS-MW07B	EM40	12/14/2022	N	550-195015-13	Alluvium	33.8 - 38.3	--	--	--	--	--	--	--	--	--
SWFTS-MW07B	EM40	12/14/2022	N	550-195015-14	Alluvium	33.8 - 38.3	<0.011 UJ	30	39	<0.00049	570	7.3	<0.0034	<0.00028	<0.0021
SWFTS-MW08A	BL01	3/30/2017	N	440-181045-9	Alluvium	20.2 - 34.8	<0.10	83	36	<0.0050	1,000	9.6	<0.050	<0.0025	<0.050
SWFTS-MW08A	EM04	10/10/2017	N	440-194094-4	Alluvium	20.2 - 34.8	<0.10	74	36	<0.0050	800	8.1	<0.050	<0.0025	<0.050
SWFTS-MW08A	EM06	11/15/2017	N	440-196659-4	Alluvium	20.2 - 34.8	--	--	--	--	--	--	--	--	--
SWFTS-MW08A	EM07	12/14/2017	N	440-198571-1	Alluvium	20.2 - 34.8	--	--	--	--	--	--	--	--	--

Table D.2
Groundater Analytical Results Summary - Secondary Parameters
Seep Well Field Area Bioremediation Treatability Study

Well	Event	Sample Date	QC Type	Lab Sample ID	Lithology	Screened Interval (ft bgs)	Dissolved Metals by SW6010	Dissolved Metals by SW6010	Dissolved Metals by SW6010	Dissolved Metals by SW6010	Dissolved Metals by SW6010	Dissolved Metals by SW6010	Dissolved Metals by SW6010	Dissolved Metals by SW6010	Dissolved Metals by SW6010
							Phosphorus	Potassium	Silicon	Silver	Sodium	Strontium	Tin	Titanium	Tungsten
							mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
SWFTS-MW08A	EM08	2/22/2018	N	440-204033-8	Alluvium	20.2 - 34.8	--	--	--	--	--	--	--	--	--
SWFTS-MW08A	EM09	3/29/2018	N	440-207586-1	Alluvium	20.2 - 34.8	--	--	--	--	--	--	--	--	--
SWFTS-MW08A	EM10	5/3/2018	N	440-210534-5	Alluvium	20.2 - 34.8	--	--	--	--	--	--	--	--	--
SWFTS-MW08A	EM11	7/11/2018	N	440-215717-14	Alluvium	20.2 - 34.8	<0.10	67	35	<0.0050	700	7.2	<0.050	<0.0025	<0.050
SWFTS-MW08A	EM15	10/10/2018	N	440-221975-13	Alluvium	20.2 - 34.8	<0.50	61	37	<0.025	730	6.8	<0.25	<0.013	<0.25
SWFTS-MW08A	EM19	5/22/2019	N	440-242198-4	Alluvium	20.2 - 34.8	<0.10	59	35	<0.0050	630	6.5	<0.050	<0.0025	<0.050
SWFTS-MW08A	EM22	11/7/2019	N	440-254148-6	Alluvium	20.2 - 34.8	<0.10	52	32	<0.0050	580	6.0	<0.050	<0.0025	<0.050
SWFTS-MW08A	EM26	4/29/2020	N	440-265346-3	Alluvium	20.2 - 34.8	<0.10	65	34	<0.0050	700	8.2	<0.050	<0.0025	<0.050
SWFTS-MW08A	EM29	10/16/2020	N	440-273433-4	Alluvium	20.2 - 34.8	<0.10	57	37	<0.0050	600	6.4	<0.050	<0.0025	<0.050
SWFTS-MW08A	EM33	6/4/2021	N	550-164930-29	Alluvium	20.2 - 34.8	--	--	--	--	--	--	--	--	--
SWFTS-MW08A	EM33	6/4/2021	N	550-164930-30	Alluvium	20.2 - 34.8	<0.011	64	39	<0.00049	650	8.4	<0.0034	<0.00028	<0.0021
SWFTS-MW08A	EM36	12/2/2021	N	550-175153-23	Alluvium	20.2 - 34.8	--	--	--	--	--	--	--	--	--
SWFTS-MW08A	EM36	12/2/2021	N	550-175153-24	Alluvium	20.2 - 34.8	<0.011	69	38	<0.00049	670	10	<0.0034	<0.00028	0.0033 J
SWFTS-MW08C	BL01	3/28/2017	N	440-180820-3	UMCf	49.9 - 69.5	<0.10	64	31	<0.0050	920	15	<0.050	<0.0025	<0.050
SWFTS-MW08C	EM40	12/14/2022	N	550-195015-15	UMCf	49.9 - 69.5	--	--	--	--	--	--	--	--	--
SWFTS-MW08C	EM40	12/14/2022	N	550-195015-16	UMCf	49.9 - 69.5	<0.011 UJ	55	30	<0.00049	830	13	<0.0034	<0.00028	0.0025 J
SWFTS-MW09A	BL01	3/29/2017	N	440-180937-3	Alluvium	19.3 - 28.9	<0.10	54	34	<0.0050	890	8.7	<0.050	<0.0025	<0.050
SWFTS-MW09A	EM04	10/11/2017	N	440-194094-7	Alluvium	19.3 - 28.9	<0.10	61	28	<0.0050	870	9.2	<0.050	<0.0025	<0.050
SWFTS-MW09A	EM06	11/16/2017	N	440-196786-14	Alluvium	19.3 - 28.9	--	--	--	--	--	--	--	--	--
SWFTS-MW09A	EM07	12/12/2017	N	440-198371-6	Alluvium	19.3 - 28.9	--	--	--	--	--	--	--	--	--
SWFTS-MW09A	EM08	2/20/2018	N	440-203841-14	Alluvium	19.3 - 28.9	--	--	--	--	--	--	--	--	--
SWFTS-MW09A	EM09	3/27/2018	N	440-207268-7	Alluvium	19.3 - 28.9	--	--	--	--	--	--	--	--	--
SWFTS-MW09A	EM10	5/1/2018	N	440-210284-13	Alluvium	19.3 - 28.9	--	--	--	--	--	--	--	--	--
SWFTS-MW09A	EM11	7/12/2018	N	440-215717-10	Alluvium	19.3 - 28.9	<0.10	54	30	<0.0050	720	7.6	<0.050	<0.0025	<0.050
SWFTS-MW09A	EM15	10/9/2018	N	440-221855-7	Alluvium	19.3 - 28.9	<0.50	54	38	<0.025	830	8.0	<0.25	<0.013	<0.25
SWFTS-MW09A	EM19	5/22/2019	N	440-242200-1	Alluvium	19.3 - 28.9	<0.10	52	30	<0.0050	680	7.1	<0.050	<0.0025	<0.050
SWFTS-MW09A	EM22	11/5/2019	N	440-253891-1	Alluvium	19.3 - 28.9	<0.10	47	32	<0.0050	700	6.4	<0.050	<0.0025	<0.050
SWFTS-MW09A	EM26	4/28/2020	N	440-265289-4	Alluvium	19.3 - 28.9	<0.10	59	32	<0.0050	770	8.1	<0.050	<0.0025	<0.050
SWFTS-MW09A	EM29	10/13/2020	N	440-273236-3	Alluvium	19.3 - 28.9	<0.10	55	33	<0.0050	700	7.4	<0.050	<0.0025	<0.050
SWFTS-MW09A	EM33	6/1/2021	N	550-164699-1	Alluvium	19.3 - 28.9	--	--	--	--	--	--	--	--	--
SWFTS-MW09A	EM33	6/1/2021	N	550-164699-2	Alluvium	19.3 - 28.9	<0.011	55	34	<0.00049	640	7.7	<0.0034	<0.00028	0.0032 J
SWFTS-MW09A	EM36	12/2/2021	N	550-175153-10	Alluvium	19.3 - 28.9	<0.011	59	36	<0.00049	680	9.2	<0.0034	<0.00028	0.0047 J
SWFTS-MW09A	EM36	12/2/2021	N	550-175153-9	Alluvium	19.3 - 28.9	--	--	--	--	--	--	--	--	--
SWFTS-MW09A	EM40	12/13/2022	N	550-194920-10	Alluvium	19.3 - 28.9	<0.011 UJ	56	32	<0.00049	630	8.7	<0.0034	<0.00028	0.0047 J
SWFTS-MW09A	EM40	12/13/2022	N	550-194920-9	Alluvium	19.3 - 28.9	--	--	--	--	--	--	--	--	--
SWFTS-MW09B	BL01	3/29/2017	N	440-180937-4	Alluvium	34.4 - 39.0	<0.10	51	36	<0.0050	1,100	9.6	<0.050	0.0034 J	<0.050
SWFTS-MW09B	BL01	3/29/2017	FD	440-180937-5	Alluvium	34.4 - 39.0	<0.10	52	35	<0.0050	960	9.9	<0.050	<0.0025	<0.050
SWFTS-MW09B	EM04	10/11/2017	N	440-194094-5	Alluvium	34.4 - 39.0	<0.10	56	30	<0.0050	860	8.8	<0.050	<0.0025	<0.050
SWFTS-MW09B	EM06	11/16/2017	N	440-196786-15	Alluvium	34.4 - 39.0	--	--	--	--	--	--	--	--	--
SWFTS-MW09B	EM07	12/12/2017	N	440-198371-7	Alluvium	34.4 - 39.0	--	--	--	--	--	--	--	--	--
SWFTS-MW09B	EM08	2/20/2018	N	440-203841-13	Alluvium	34.4 - 39.0	--	--	--	--	--	--	--	--	--
SWFTS-MW09B	EM09	3/27/2018	N	440-207268-6	Alluvium	34.4 - 39.0	--	--	--	--	--	--	--	--	--
SWFTS-MW09B	EM10	4/30/2018	N	440-210173-11	Alluvium	34.4 - 39.0	--	--	--	--	--	--	--	--	--
SWFTS-MW09B	EM11	7/12/2018	N	440-215717-9	Alluvium	34.4 - 39.0	<0.10	53	33	<0.0050	780	7.7	<0.050	<0.0025	<0.050
SWFTS-MW09B	EM15	10/9/2018	N	440-221855-8	Alluvium	34.4 - 39.0	<0.50	54	37	<0.025	910	8.0	<0.25	<0.013	<0.25
SWFTS-MW09B	EM19	5/22/2019	N	440-242200-2	Alluvium	34.4 - 39.0	<0.10	53	35	<0.0050	760	6.8	<0.050	<0.0025	<0.050
SWFTS-MW09B	EM22	11/5/2019	N	440-253891-3	Alluvium	34.4 - 39.0	<0.10	39	33	<0.0050	740	5.8	<0.050	<0.0025	<0.050
SWFTS-MW09B	EM26	4/28/2020	N	440-265289-3	Alluvium	34.4 - 39.0	<0.10	50	34	<0.0050	770	7.6	<0.050	<0.0025	<0.050
SWFTS-MW09B	EM29	10/13/2020	N	440-273236-4	Alluvium	34.4 - 39.0	<0.10	49	37	<0.0050	750	7.2	<0.050	<0.0025	<0.050
SWFTS-MW09B	EM33	6/2/2021	N	550-164872-1	Alluvium	34.4 - 39.0	--	--	--	--	--	--	--	--	--
SWFTS-MW09B	EM33	6/2/2021	N	550-164872-2	Alluvium	34.4 - 39.0	<0.011	48	37	<0.00049	700	7.6	<0.0034	0.00051 J	0.0060 J
SWFTS-MW09B	EM36	12/2/2021	N	550-175153-11	Alluvium	34.4 - 39.0	--	--	--	--	--	--	--	--	--
SWFTS-MW09B	EM36	12/2/2021	N	550-175153-12	Alluvium	34.4 - 39.0	<0.011	57	39	<0.00049	730	9.8	<0.0034	<0.00028	0.0058 J
SWFTS-MW09B	EM40	12/13/2022	N	550-194920-13	Alluvium	34.4 - 39.0	--	--	--	--	--	--	--	--	--
SWFTS-MW09B	EM40	12/13/2022	N	550-194920-14	Alluvium	34.4 - 39.0	<0.011 UJ	48	35	<0.00049	620	8.4	<0.0034	<0.00028	0.0050 J
SWFTS-MW10A	BL01	3/31/2017	N	440-181122-2	Alluvium	20.4 - 35.0	<0.10	35	35	<0.0050	950	8.4	<0.050	0.0077	<0.050
SWFTS-MW10A	EM04	10/12/2017	N	440-194242-10	Alluvium	20.4 - 35.0	<0.10	24	37	<0.0050	590	5.1	<0.050	<0.0025	<0.050
SWFTS-MW10A	EM06	11/16/2017	N	440-196786-5	Alluvium	20.4 - 35.0	<0.10	23	36	<0.0050	660	4.7	<0.050	<0.0025	<0.050
SWFTS-MW10A	EM06	11/16/2017	FD	440-196786-6	Alluvium	20.4 - 35.0	<0.10	23	37	<0.0050	700	4.7	<0.050	<0.0025	<0.050
SWFTS-MW10A	EM07	12/12/2017	N	440-198371-10	Alluvium	20.4 - 35.0	--	--	--	--	--	--	--	--	--
SWFTS-MW10A	EM07	12/12/2017	FD	440-198371-11	Alluvium	20.4 - 35.0	--	--	--	--	--	--	--	--	--
SWFTS-MW10A	EM08	2/20/2018	N	440-203841-4	Alluvium	20.4 - 35.0	<0.10	32	41	<0.0050	800	7.3	<0.050	<0.0025	<0.050
SWFTS-MW10A	EM08	2/20/2018	FD	440-203841-5	Alluvium	20.4 - 35.0	<0.10	32	41	<0.0050	790	7.2	<0.050	<0.0025	<0.050
SWFTS-MW10A	EM09	3/26/2018	N	440-207137-7	Alluvium	20.4 - 35.0	<0.10	35	37	<0.0050	850	8.3	<0.050	<0.0025	<0.050

Table D.2
Groundater Analytical Results Summary - Secondary Parameters
Seep Well Field Area Bioremediation Treatability Study

Well	Event	Sample Date	QC Type	Lab Sample ID	Lithology	Screened Interval (ft bgs)	Dissolved Metals by SW6010	Dissolved Metals by SW6010	Dissolved Metals by SW6010	Dissolved Metals by SW6010	Dissolved Metals by SW6010	Dissolved Metals by SW6010	Dissolved Metals by SW6010	Dissolved Metals by SW6010	Dissolved Metals by SW6010
							Phosphorus	Potassium	Silicon	Silver	Sodium	Strontium	Tin	Titanium	Tungsten
							mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
SWFTS-MW10A	EM09	3/26/2018	FD	440-207137-8	Alluvium	20.4 - 35.0	<0.10	34	35	<0.0050	820	7.7	<0.050	<0.0025	<0.050
SWFTS-MW10A	EM10	5/1/2018	N	440-210284-1	Alluvium	20.4 - 35.0	<0.10	45	40	<0.0050	1,100	9.1	<0.050	<0.0025	<0.050
SWFTS-MW10A	EM11	7/11/2018	N	440-215585-9	Alluvium	20.4 - 35.0	<0.10	37	32	<0.0050	820	7.9	<0.050	<0.0025	<0.050
SWFTS-MW10A	EM13	8/14/2018	N	440-218109-10	Alluvium	20.4 - 35.0	<0.10	34	37	<0.0050	790	7.2	<0.050	<0.0025	<0.050
SWFTS-MW10A	EM14	9/10/2018	N	440-219797-4	Alluvium	20.4 - 35.0	<0.10	33	37 J+	<0.0050	710	6.9	<0.050	<0.0025	<0.050
SWFTS-MW10A	EM15	10/9/2018	N	440-221855-9	Alluvium	20.4 - 35.0	<0.50	34 J+	38	<0.025	860	7.6	<0.25	<0.013	<0.25
SWFTS-MW10A	EM19	5/21/2019	N	440-242084-2	Alluvium	20.4 - 35.0	<0.10	32	37	0.0060 J	760	6.3	<0.050	<0.0025	<0.050
SWFTS-MW10A	EM22	11/6/2019	N	440-254051-1	Alluvium	20.4 - 35.0	<0.10	32	35	<0.0050	740	6.7	<0.050	<0.0025	<0.050
SWFTS-MW10A	EM26	4/29/2020	N	440-265342-6	Alluvium	20.4 - 35.0	<0.10	41	34	<0.0050	930	7.8	<0.050	<0.0025	<0.050
SWFTS-MW10A	EM29	10/14/2020	N	440-273303-4	Alluvium	20.4 - 35.0	<0.10	39	36	<0.0050	950	7.4	<0.050	<0.0025	<0.050
SWFTS-MW10A	EM33	6/4/2021	N	550-164930-13	Alluvium	20.4 - 35.0	--	--	--	--	--	--	--	--	--
SWFTS-MW10A	EM33	6/4/2021	N	550-164930-14	Alluvium	20.4 - 35.0	<0.011	38	35	<0.00049	880	7.3	<0.0034	0.0040 J	0.0058 J
SWFTS-MW10A	EM36	11/30/2021	N	550-174968-17	Alluvium	20.4 - 35.0	--	--	--	--	--	--	--	--	--
SWFTS-MW10A	EM36	11/30/2021	N	550-174968-18	Alluvium	20.4 - 35.0	<0.011	37	40	<0.00049	820	7.6	<0.0034	<0.00028	0.010 J
SWFTS-MW10A	EM40	12/15/2022	N	550-195103-1	Alluvium	20.4 - 35.0	--	--	--	--	--	--	--	--	--
SWFTS-MW10A	EM40	12/15/2022	N	550-195103-2	Alluvium	20.4 - 35.0	<0.011 UJ	39	37	<0.00049	940	9.6	<0.0034	<0.00028	0.0098 J
SWFTS-MW10C	BL01	3/28/2017	N	440-180820-4	UMCf	43.5 - 63.1	<0.10	60	27	<0.0050	950	13	<0.050	<0.0025	<0.050
SWFTS-MW10C	EM40	12/15/2022	N	550-195103-3	UMCf	43.5 - 63.1	--	--	--	--	--	--	--	--	--
SWFTS-MW10C	EM40	12/15/2022	N	550-195103-4	UMCf	43.5 - 63.1	<0.011 UJ	55	29	<0.00049	930	13	<0.0034	<0.00028	0.0043 J
SWFTS-MW11	BL02	7/12/2017	N	440-188244-7	Alluvium	14.8 - 39.6	<0.10	59	35	<0.0050	1,000 J	9.4 J	<0.050	<0.0025	<0.050
SWFTS-MW11	EM04	10/11/2017	N	440-194094-8	Alluvium	14.8 - 39.6	<0.10	52	37	<0.0050	880	9.5	<0.050	<0.0025	<0.050
SWFTS-MW11	EM06	11/16/2017	N	440-196786-3	Alluvium	14.8 - 39.6	--	--	--	--	--	--	--	--	--
SWFTS-MW11	EM07	12/14/2017	N	440-198571-13	Alluvium	14.8 - 39.6	--	--	--	--	--	--	--	--	--
SWFTS-MW11	EM08	2/21/2018	N	440-203937-10	Alluvium	14.8 - 39.6	--	--	--	--	--	--	--	--	--
SWFTS-MW11	EM08	2/21/2018	FD	440-203937-11	Alluvium	14.8 - 39.6	--	--	--	--	--	--	--	--	--
SWFTS-MW11	EM09	3/28/2018	N	440-207497-7	Alluvium	14.8 - 39.6	--	--	--	--	--	--	--	--	--
SWFTS-MW11	EM09	3/28/2018	FD	440-207497-8	Alluvium	14.8 - 39.6	--	--	--	--	--	--	--	--	--
SWFTS-MW11	EM10	5/1/2018	N	440-210284-11	Alluvium	14.8 - 39.6	--	--	--	--	--	--	--	--	--
SWFTS-MW11	EM10	5/1/2018	FD	440-210367-1	Alluvium	14.8 - 39.6	--	--	--	--	--	--	--	--	--
SWFTS-MW11	EM11	7/12/2018	N	440-215717-17	Alluvium	14.8 - 39.6	<0.10	48	38	<0.0050	790	8.3	<0.050	<0.0025	<0.050
SWFTS-MW11	EM11	7/12/2018	FD	440-215717-18	Alluvium	14.8 - 39.6	<0.10	48	38	<0.0050	790	8.3	<0.050	<0.0025	<0.050
SWFTS-MW11	EM15	10/11/2018	N	440-222092-10	Alluvium	14.8 - 39.6	<0.10	57	46	<0.0050	920	8.8	<0.050	<0.0025	<0.050
SWFTS-MW11	EM15	10/11/2018	FD	440-222092-11	Alluvium	14.8 - 39.6	<0.10	49	41	<0.0050	920	8.8	<0.050	<0.0025	<0.050
SWFTS-MW11	EM19	5/22/2019	N	440-242200-3	Alluvium	14.8 - 39.6	<0.10	45	39	<0.0050	780	6.5	<0.050	<0.0025	<0.050
SWFTS-MW11	EM19	5/22/2019	FD	440-242200-4	Alluvium	14.8 - 39.6	<0.10	44	39	<0.0050	750	6.4	<0.050	<0.0025	<0.050
SWFTS-MW11	EM22	11/7/2019	N	440-254150-3	Alluvium	14.8 - 39.6	<0.10	37	35	<0.0050	690	5.7	<0.050	<0.0025	<0.050
SWFTS-MW11	EM22	11/7/2019	FD	440-254150-4	Alluvium	14.8 - 39.6	<0.10	37	35	<0.0050	700	5.6	<0.050	<0.0025	<0.050
SWFTS-MW11	EM26	4/30/2020	N	440-265383-4	Alluvium	14.8 - 39.6	<0.10	45	35	<0.0050	800	8.7	<0.050	<0.0025	<0.050
SWFTS-MW11	EM26	4/30/2020	FD	440-265383-5	Alluvium	14.8 - 39.6	<0.10	45	35	<0.0050	790	8.6	<0.050	<0.0025	<0.050
SWFTS-MW11	EM29	10/16/2020	N	440-273433-7	Alluvium	14.8 - 39.6	<0.10	45	38	<0.0050	780	7.8	<0.050	<0.0025	<0.050
SWFTS-MW11	EM29	10/16/2020	FD	440-273433-8	Alluvium	14.8 - 39.6	<0.10	46	38	<0.0050	780	7.9	<0.050	<0.0025	<0.050
SWFTS-MW11	EM33	6/4/2021	N	550-164930-7	Alluvium	14.8 - 39.6	--	--	--	--	--	--	--	--	--
SWFTS-MW11	EM33	6/4/2021	N	550-164930-8	Alluvium	14.8 - 39.6	<0.011	41	40	<0.00049	710	7.5	<0.0034	<0.00028	0.0021 J
SWFTS-MW11	EM33	6/4/2021	FD	550-164930-10	Alluvium	14.8 - 39.6	<0.011	42	42	<0.00049	710	7.3	<0.0034	<0.00028	0.0032 J
SWFTS-MW11	EM33	6/4/2021	FD	550-164930-9	Alluvium	14.8 - 39.6	--	--	--	--	--	--	--	--	--
SWFTS-MW11	EM36	12/3/2021	N	550-175222-7	Alluvium	14.8 - 39.6	--	--	--	--	--	--	--	--	--
SWFTS-MW11	EM36	12/3/2021	N	550-175222-8	Alluvium	14.8 - 39.6	<0.011	45	40	<0.00049	710	9.4	<0.0034	<0.00028	0.0026 J
SWFTS-MW11	EM36	12/3/2021	FD	550-175222-10	Alluvium	14.8 - 39.6	<0.011	49	43	<0.00049	760	10	<0.0034	<0.00028	0.0041 J
SWFTS-MW11	EM36	12/3/2021	FD	550-175222-9	Alluvium	14.8 - 39.6	--	--	--	--	--	--	--	--	--
SWFTS-MW11	EM40	12/15/2022	N	550-195103-5	Alluvium	14.8 - 39.6	--	--	--	--	--	--	--	--	--
SWFTS-MW11	EM40	12/15/2022	N	550-195103-6	Alluvium	14.8 - 39.6	<0.011 UJ	40	40	<0.00049	620	7.8	<0.0034	<0.00028	<0.0021
SWFTS-MW11	EM40	12/15/2022	FD	550-195103-7	Alluvium	14.8 - 39.6	--	--	--	--	--	--	--	--	--
SWFTS-MW11	EM40	12/15/2022	FD	550-195103-8	Alluvium	14.8 - 39.6	<0.011 UJ	40	39	<0.00049	620	7.7	<0.0034	<0.00028	0.0021 J
SWFTS-MW12	BL02	7/13/2017	N	440-188324-6	Alluvium	15.8 - 40.6	<0.10	50	35	<0.0050	710	11	<0.050	<0.0025	<0.050
SWFTS-MW12	EM04	10/11/2017	N	440-194090-1	Alluvium	15.8 - 40.6	<0.10	56	33	<0.0050	700	12	<0.050	<0.0025	<0.050
SWFTS-MW12	EM06	11/14/2017	N	440-196558-5	Alluvium	15.8 - 40.6	--	--	--	--	--	--	--	--	--
SWFTS-MW12	EM07	12/14/2017	N	440-198571-15	Alluvium	15.8 - 40.6	--	--	--	--	--	--	--	--	--
SWFTS-MW12	EM08	2/22/2018	N	440-204033-2	Alluvium	15.8 - 40.6	--	--	--	--	--	--	--	--	--
SWFTS-MW12	EM09	3/28/2018	N	440-207497-5	Alluvium	15.8 - 40.6	--	--	--	--	--	--	--	--	--
SWFTS-MW12	EM10	5/3/2018	N	440-210534-4	Alluvium	15.8 - 40.6	--	--	--	--	--	--	--	--	--
SWFTS-MW12	EM11	7/12/2018	N	440-215717-16	Alluvium	15.8 - 40.6	<0.10	56	35	<0.0050	700	11	<0.050	<0.0025	<0.050
SWFTS-MW12	EM15	10/11/2018	N	440-222092-12	Alluvium	15.8 - 40.6	<0.10	54	36	<0.0050	720	10	<0.050	<0.0025	<0.050
SWFTS-MW12	EM19	5/22/2019	N	440-242198-7	Alluvium	15.8 - 40.6	<0.10	59	35	0.0060 J	750	12	<0.050	<0.0025	<0.050
SWFTS-MW12	EM22	11/7/2019	N	440-254150-2	Alluvium	15.8 - 40.6	1.9	53	47	<0.025	710	10	<0.25	<0.013	<0.25

Table D.2
Groundater Analytical Results Summary - Secondary Parameters
Seep Well Field Area Bioremediation Treatability Study

Well	Event	Sample Date	QC Type	Lab Sample ID	Lithology	Screened Interval (ft bgs)	Dissolved Metals by SW6010	Dissolved Metals by SW6010	Dissolved Metals by SW6010	Dissolved Metals by SW6010	Dissolved Metals by SW6010	Dissolved Metals by SW6010	Dissolved Metals by SW6010	Dissolved Metals by SW6010	Dissolved Metals by SW6010
							Phosphorus	Potassium	Silicon	Silver	Sodium	Strontium	Tin	Titanium	Tungsten
							mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
SWFTS-MW12	EM22	11/26/2019	N	440-255698-1	Alluvium	15.8 - 40.6	1.6 J-	51 J-	34 J-	<0.0050 UJ	670 J-	10 J-	<0.050 UJ	<0.0025 UJ	<0.050 UJ
SWFTS-MW12	EM22	11/26/2019	FD	440-255698-2	Alluvium	15.8 - 40.6	1.4 J-	46 J-	31 J-	<0.0050 UJ	610 J-	9.0 J-	<0.050 UJ	<0.0025 UJ	<0.050 UJ
SWFTS-MW12	EM26	4/30/2020	N	440-265383-3	Alluvium	15.8 - 40.6	0.73	51	39	<0.0050	560	7.3	<0.050	<0.0025	<0.050
SWFTS-MW12	EM29	10/16/2020	N	440-273433-6	Alluvium	15.8 - 40.6	0.37	50	35	<0.0050	670	9.5	<0.050	<0.0025	<0.050
SWFTS-MW12	EM33	6/4/2021	N	550-164930-5	Alluvium	15.8 - 40.6	--	--	--	--	--	--	--	--	--
SWFTS-MW12	EM33	6/4/2021	N	550-164930-6	Alluvium	15.8 - 40.6	<0.011	51	36	<0.00049	690	9.8	<0.0034	<0.00028	0.0056 J
SWFTS-MW12	EM36	12/2/2021	N	550-175153-19	Alluvium	15.8 - 40.6	--	--	--	--	--	--	--	--	--
SWFTS-MW12	EM36	12/2/2021	N	550-175153-20	Alluvium	15.8 - 40.6	<0.011	53	35	<0.00049	680	10	<0.0034	<0.00028	0.0073 J
SWFTS-MW12	EM40	12/15/2022	N	550-195103-10	Alluvium	15.8 - 40.6	<0.011 UJ	42	32	<0.00049	560	7.7	<0.0034	<0.00028	<0.0021
SWFTS-MW12	EM40	12/15/2022	N	550-195103-9	Alluvium	15.8 - 40.6	--	--	--	--	--	--	--	--	--
SWFTS-MW13	BL02	7/12/2017	N	440-188244-6	Alluvium	17.8 - 47.6	<0.10	70	24	<0.0050	850	12	<0.050	<0.0025	<0.050
SWFTS-MW13	EM04	10/10/2017	N	440-193989-4	Alluvium	17.8 - 47.6	<0.10	72	33	<0.0050	790	14	<0.050	<0.0025	<0.050
SWFTS-MW13	EM06	11/15/2017	N	440-196659-1	Alluvium	17.8 - 47.6	--	--	--	--	--	--	--	--	--
SWFTS-MW13	EM07	12/14/2017	N	440-198571-14	Alluvium	17.8 - 47.6	--	--	--	--	--	--	--	--	--
SWFTS-MW13	EM08	2/22/2018	N	440-204033-7	Alluvium	17.8 - 47.6	--	--	--	--	--	--	--	--	--
SWFTS-MW13	EM09	3/26/2018	N	440-207137-4	Alluvium	17.8 - 47.6	--	--	--	--	--	--	--	--	--
SWFTS-MW13	EM10	5/3/2018	N	440-210534-1	Alluvium	17.8 - 47.6	--	--	--	--	--	--	--	--	--
SWFTS-MW13	EM11	7/12/2018	N	440-215717-15	Alluvium	17.8 - 47.6	<0.10	70	34	<0.0050	710	13	<0.050	<0.0025	<0.050
SWFTS-MW13	EM15	10/11/2018	N	440-222092-14	Alluvium	17.8 - 47.6	<0.10	75	37	<0.0050	830	15	<0.050	<0.0025	<0.050
SWFTS-MW13	EM19	5/22/2019	N	440-242198-5	Alluvium	17.8 - 47.6	<0.10	71	37	0.0058 J	750	13	<0.050	<0.0025	<0.050
SWFTS-MW13	EM22	11/6/2019	N	440-254051-6	Alluvium	17.8 - 47.6	<0.50	62	26	<0.025	770	13	<0.25	<0.013	<0.25
SWFTS-MW13	EM26	4/30/2020	N	440-265383-2	Alluvium	17.8 - 47.6	<0.10	68	35	<0.0050	810	13	<0.050	<0.0025	<0.050
SWFTS-MW13	EM29	10/15/2020	N	550-151259-6	Alluvium	17.8 - 47.6	<0.10	57	31	<0.0050	750	12	<0.050	<0.0025	<0.050
SWFTS-MW13	EM33	6/4/2021	N	550-164930-3	Alluvium	17.8 - 47.6	--	--	--	--	--	--	--	--	--
SWFTS-MW13	EM33	6/4/2021	N	550-164930-4	Alluvium	17.8 - 47.6	<0.011	71	35	<0.00049	820	14	<0.0034	<0.00028	0.0071 J
SWFTS-MW13	EM36	12/2/2021	N	550-175153-17	Alluvium	17.8 - 47.6	--	--	--	--	--	--	--	--	--
SWFTS-MW13	EM36	12/2/2021	N	550-175153-18	Alluvium	17.8 - 47.6	<0.011	69	39	<0.00049	870	14	<0.0034	<0.00028	0.0075 J
SWFTS-MW13	EM40	12/15/2022	N	550-195106-7	Alluvium	17.8 - 47.6	--	--	--	--	--	--	--	--	--
SWFTS-MW13	EM40	12/15/2022	N	550-195106-8	Alluvium	17.8 - 47.6	<0.011 UJ	65	36	<0.00049	670	13	<0.0034	<0.00028	0.0035 J
SWFTS-MW14	BL02	7/12/2017	N	440-188244-8	Alluvium	16.8 - 36.6	<0.10	50	36	<0.0050	1,100	11	<0.050	<0.0025	<0.050
SWFTS-MW14	BL02	7/12/2017	FD	440-188244-9	Alluvium	16.8 - 36.6	<0.10	50	37	<0.0050	1,100	12	<0.050	<0.0025	<0.050
SWFTS-MW14	EM04	10/11/2017	N	440-194242-8	Alluvium	16.8 - 36.6	<0.10	39	39	<0.0050	890	8.9	<0.050	<0.0025	<0.050
SWFTS-MW14	EM06	11/15/2017	N	440-196659-3	Alluvium	16.8 - 36.6	<0.10	36	38	<0.0050	900	7.7	<0.050	0.014	<0.050
SWFTS-MW14	EM07	12/12/2017	N	440-198371-12	Alluvium	16.8 - 36.6	--	--	--	--	--	--	--	--	--
SWFTS-MW14	EM08	2/20/2018	N	440-203841-11	Alluvium	16.8 - 36.6	2.7	41	52	<0.010	900	9.6	<0.10	<0.0050	<0.10
SWFTS-MW14	EM09	3/26/2018	N	440-207137-9	Alluvium	16.8 - 36.6	<0.50	35 J+	46	<0.025	980	8.2	<0.25	<0.013	<0.25
SWFTS-MW14	EM10	4/30/2018	N	440-210173-9	Alluvium	16.8 - 36.6	<0.50	37 J+	43	<0.025	1,000	7.4	<0.25	<0.013	<0.25
SWFTS-MW14	EM11	7/10/2018	N	440-215437-8	Alluvium	16.8 - 36.6	0.47	36	43	<0.0050	840	7.5	<0.050	<0.0025	<0.050
SWFTS-MW14	EM13	8/14/2018	N	440-218109-11	Alluvium	16.8 - 36.6	0.30	34	40	<0.0050	850	7.5	<0.050	<0.0025	<0.050
SWFTS-MW14	EM14	9/11/2018	N	440-219886-17	Alluvium	16.8 - 36.6	0.29	38	44	<0.0050	830	8.0	<0.050	<0.0025	<0.050
SWFTS-MW14	EM15	10/9/2018	N	440-221855-10	Alluvium	16.8 - 36.6	<0.50	37	43	<0.025	980	8.9	<0.25	<0.013	<0.25
SWFTS-MW14	EM19	5/21/2019	N	440-242084-1	Alluvium	16.8 - 36.6	0.20	37	36	<0.0050	860	7.1	<0.050	0.0032 J	<0.050
SWFTS-MW14	EM22	11/6/2019	N	440-254051-2	Alluvium	16.8 - 36.6	0.16 J	34	30	<0.0050	710	6.1	<0.050	<0.0025	<0.050
SWFTS-MW14	EM26	5/1/2020	N	440-265414-2	Alluvium	16.8 - 36.6	<0.10	38	32	<0.0050	830	7.2	<0.050	<0.0025	<0.050
SWFTS-MW14	EM29	10/14/2020	N	440-273303-5	Alluvium	16.8 - 36.6	<0.10	38	30	<0.0050	780	7.1	<0.050	<0.0025	<0.050
SWFTS-MW14	EM33	6/4/2021	N	550-164930-1	Alluvium	16.8 - 36.6	--	--	--	--	--	--	--	--	--
SWFTS-MW14	EM33	6/4/2021	N	550-164930-2	Alluvium	16.8 - 36.6	<0.011	35	30	<0.00049	780	6.6	<0.0034	0.00093 J	0.0062 J
SWFTS-MW14	EM36	12/3/2021	N	550-175222-1	Alluvium	16.8 - 36.6	--	--	--	--	--	--	--	--	--
SWFTS-MW14	EM36	12/3/2021	N	550-175222-2	Alluvium	16.8 - 36.6	0.064 J	35	37	<0.00049	760	6.9	<0.0034	<0.00028	0.0055 J
SWFTS-MW14	EM40	12/15/2022	N	550-195106-3	Alluvium	16.8 - 36.6	--	--	--	--	--	--	--	--	--
SWFTS-MW14	EM40	12/15/2022	N	550-195106-4	Alluvium	16.8 - 36.6	<0.011 UJ	39	29	<0.00049	840	9.6	<0.0034	<0.00028	0.0052 J
SWFTS-MW15	BL02	7/13/2017	N	440-188325-3	Alluvium	14.8 - 34.6	<0.10	69	39	<0.0050	1,200	9.9	<0.050	0.056	<0.050
SWFTS-MW15	EM04	10/10/2017	N	440-194094-1	Alluvium	14.8 - 34.6	<0.10	61	36	<0.0050	860	7.9	<0.050	<0.0025	<0.050
SWFTS-MW15	EM06	11/14/2017	N	440-196558-4	Alluvium	14.8 - 34.6	--	--	--	--	--	--	--	--	--
SWFTS-MW15	EM07	12/13/2017	N	440-198508-13	Alluvium	14.8 - 34.6	<0.10	62	39	<0.0050	990	9.3	<0.050	0.0072	<0.050
SWFTS-MW15	EM08	2/19/2018	N	440-203775-4	Alluvium	14.8 - 34.6	--	--	--	--	--	--	--	--	--
SWFTS-MW15	EM09	3/26/2018	N	440-207137-10	Alluvium	14.8 - 34.6	--	--	--	--	--	--	--	--	--
SWFTS-MW15	EM10	5/2/2018	N	440-210430-3	Alluvium	14.8 - 34.6	--	--	--	--	--	--	--	--	--
SWFTS-MW15	EM11	7/11/2018	N	440-215717-1	Alluvium	14.8 - 34.6	<0.10	53	36	<0.0050	790	7.5	<0.050	<0.0025	<0.050
SWFTS-MW15	EM15	10/9/2018	N	440-221855-11	Alluvium	14.8 - 34.6	<0.50	50	36	<0.025	940	7.7	<0.25	<0.013	<0.25
SWFTS-MW15	EM19	5/20/2019	N	440-242014-1	Alluvium	14.8 - 34.6	<0.10	50	35	<0.0050	810	6.9	<0.050	<0.0025	<0.050
SWFTS-MW15	EM22	11/6/2019	N	440-254051-3	Alluvium	14.8 - 34.6	<0.10	46	34	<0.0050	740	6.3	<0.050	0.0046 J	<0.050
SWFTS-MW15	EM26	4/29/2020	N	440-265342-3	Alluvium	14.8 - 34.6	<0.10	48	34	<0.0050	780	7.4	<0.050	<0.0025	<0.050
SWFTS-MW15	EM29	10/15/2020	N	550-151259-4	Alluvium	14.8 - 34.6	<0.10	42	31	<0.0050	660	6.1	<0.050	<0.0025	<0.050

Table D.2
Groundater Analytical Results Summary - Secondary Parameters
Seep Well Field Area Bioremediation Treatability Study

Well	Event	Sample Date	QC Type	Lab Sample ID	Lithology	Screened Interval (ft bgs)	Dissolved Metals by SW6010	Dissolved Metals by SW6010	Dissolved Metals by SW6010	Dissolved Metals by SW6010	Dissolved Metals by SW6010	Dissolved Metals by SW6010	Dissolved Metals by SW6010	Dissolved Metals by SW6010	Dissolved Metals by SW6010
							Phosphorus	Potassium	Silicon	Silver	Sodium	Strontium	Tin	Titanium	Tungsten
							mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
SWFTS-MW15	EM33	6/3/2021	N	550-164869-13	Alluvium	14.8 - 34.6	--	--	--	--	--	--	--	--	--
SWFTS-MW15	EM33	6/3/2021	N	550-164869-14	Alluvium	14.8 - 34.6	<0.011	52	37	<0.00049	720	8.3	<0.0034	<0.00028	0.0035 J
SWFTS-MW15	EM36	11/30/2021	N	550-174968-10	Alluvium	14.8 - 34.6	<0.011	60	39	<0.00049	750	11	<0.0034	<0.00028	0.0042 J
SWFTS-MW15	EM36	11/30/2021	N	550-174968-9	Alluvium	14.8 - 34.6	--	--	--	--	--	--	--	--	--
SWFTS-MW15	EM40	12/15/2022	N	550-195106-1	Alluvium	14.8 - 34.6	--	--	--	--	--	--	--	--	--
SWFTS-MW15	EM40	12/15/2022	N	550-195106-2	Alluvium	14.8 - 34.6	<0.011 UJ	39	34	<0.00049	570	6.1	<0.0034	<0.00028	<0.0021
SWFTS-MW16	BL02	7/13/2017	N	440-188325-2	Alluvium	21.8 - 41.6	<0.10	72	42	<0.0050	910	11	<0.050	0.083	<0.050
SWFTS-MW16	EM04	10/12/2017	N	440-194204-7	Alluvium	21.8 - 41.6	<0.10	65	33	<0.0050	700	8.8	<0.050	<0.0025	<0.050
SWFTS-MW16	EM06	11/16/2017	N	440-196786-4	Alluvium	21.8 - 41.6	0.24	53	42	<0.0050	810	6.7	<0.050	0.12	<0.050
SWFTS-MW16	EM07	12/12/2017	N	440-198371-4	Alluvium	21.8 - 41.6	--	--	--	--	--	--	--	--	--
SWFTS-MW16	EM08	2/21/2018	N	440-203937-6	Alluvium	21.8 - 41.6	0.12 J	55	40 J+	<0.0050	740	7.9	<0.050	0.021 J+	<0.050
SWFTS-MW16	EM09	3/27/2018	N	440-207268-13	Alluvium	21.8 - 41.6	<0.10	52	33	<0.0050	710	7.8	<0.050	0.0099	<0.050
SWFTS-MW16	EM10	5/2/2018	N	440-210430-13	Alluvium	21.8 - 41.6	<0.20	61	41	<0.010	850	9.2	<0.10	<0.0050	<0.10
SWFTS-MW16	EM11	7/11/2018	N	440-215585-12	Alluvium	21.8 - 41.6	<0.10	53	43	<0.0050	690	7.3	<0.050	<0.0025	<0.050
SWFTS-MW16	EM13	8/15/2018	N	440-218208-13	Alluvium	21.8 - 41.6	<0.10	55	42	<0.0050	690	7.6	<0.050	0.0060	<0.050
SWFTS-MW16	EM14	9/10/2018	N	440-219797-6	Alluvium	21.8 - 41.6	<0.10	52	37 J+	<0.0050	620	7.7	<0.050	<0.0025	<0.050
SWFTS-MW16	EM15	10/11/2018	N	440-222092-3	Alluvium	21.8 - 41.6	<0.10	60	40	<0.0050	760	8.9	<0.050	<0.0025	<0.050
SWFTS-MW16	EM19	5/20/2019	N	440-242014-3	Alluvium	21.8 - 41.6	<0.10	51	35	<0.0050	680	7.8	<0.050	0.012	<0.050
SWFTS-MW16	EM22	11/6/2019	N	440-254051-5	Alluvium	21.8 - 41.6	<0.10	48	36	<0.0050	580	6.4	<0.050	0.0026 J	<0.050
SWFTS-MW16	EM26	4/30/2020	N	440-265383-1	Alluvium	21.8 - 41.6	<0.10	52	31	<0.0050	600	8.0	<0.050	<0.0025	<0.050
SWFTS-MW16	EM29	10/15/2020	N	550-151259-1	Alluvium	21.8 - 41.6	<0.10	45	30	<0.0050	520	6.2	<0.050	<0.0025	<0.050
SWFTS-MW16	EM33	6/3/2021	N	550-164869-11	Alluvium	21.8 - 41.6	--	--	--	--	--	--	--	--	--
SWFTS-MW16	EM33	6/3/2021	N	550-164869-12	Alluvium	21.8 - 41.6	<0.011	55	33	<0.00049	590	7.7	<0.0034	<0.00028	0.0054 J
SWFTS-MW16	EM36	11/30/2021	N	550-174968-11	Alluvium	21.8 - 41.6	--	--	--	--	--	--	--	--	--
SWFTS-MW16	EM36	11/30/2021	N	550-174968-12	Alluvium	21.8 - 41.6	<0.011	63	37	<0.00049	610	9.1	<0.0034	<0.00028	0.0033 J
SWFTS-MW16	EM40	12/14/2022	N	550-195013-15	Alluvium	21.8 - 41.6	--	--	--	--	--	--	--	--	--
SWFTS-MW16	EM40	12/14/2022	N	550-195013-16	Alluvium	21.8 - 41.6	<0.011 UJ	59	34	<0.00049	590	9.0	<0.0034	<0.00028	0.0046 J
SWFTS-MW17	BL02	7/12/2017	N	440-188244-1	Alluvium	22.8 - 52.6	<0.10	85	36	<0.0050	500	11	<0.050	<0.0025	<0.050
SWFTS-MW17	EM04	10/10/2017	N	440-193989-3	Alluvium	22.8 - 52.6	<0.10	89	35	<0.0050	460	11	<0.050	<0.0025	<0.050
SWFTS-MW17	EM06	11/15/2017	N	440-196659-5	Alluvium	22.8 - 52.6	--	--	--	--	--	--	--	--	--
SWFTS-MW17	EM06	11/15/2017	FD	440-196659-6	Alluvium	22.8 - 52.6	--	--	--	--	--	--	--	--	--
SWFTS-MW17	EM07	12/13/2017	N	440-198508-6	Alluvium	22.8 - 52.6	--	--	--	--	--	--	--	--	--
SWFTS-MW17	EM07	12/13/2017	FD	440-198508-7	Alluvium	22.8 - 52.6	--	--	--	--	--	--	--	--	--
SWFTS-MW17	EM08	2/22/2018	N	440-204033-11	Alluvium	22.8 - 52.6	--	--	--	--	--	--	--	--	--
SWFTS-MW17	EM09	3/28/2018	N	440-207497-11	Alluvium	22.8 - 52.6	--	--	--	--	--	--	--	--	--
SWFTS-MW17	EM10	5/3/2018	N	440-210534-3	Alluvium	22.8 - 52.6	--	--	--	--	--	--	--	--	--
SWFTS-MW17	EM11	7/11/2018	N	440-215585-13	Alluvium	22.8 - 52.6	<0.10	79	36	<0.0050	410	9.5	<0.050	<0.0025	<0.050
SWFTS-MW17	EM15	10/11/2018	N	440-222092-4	Alluvium	22.8 - 52.6	<0.10	76	36	<0.0050	390	9.8	<0.050	<0.0025	<0.050
SWFTS-MW17	EM19	5/22/2019	N	440-242198-6	Alluvium	22.8 - 52.6	<0.10	78	36	<0.0050	390	9.3	<0.050	<0.0025	<0.050
SWFTS-MW17	EM22	11/7/2019	N	440-254150-1	Alluvium	22.8 - 52.6	<0.10	77	33	<0.0050	390	9.9	<0.050	<0.0025	<0.050
SWFTS-MW17	EM26	4/30/2020	N	440-265383-6	Alluvium	22.8 - 52.6	<0.10	81	35	<0.0050	430	10	<0.050	<0.013	<0.050
SWFTS-MW17	EM29	10/15/2020	N	550-151259-5	Alluvium	22.8 - 52.6	<0.10	71	31	<0.0050	380	8.9	<0.050	<0.0025	<0.050
SWFTS-MW17	EM33	6/3/2021	N	550-164869-10	Alluvium	22.8 - 52.6	<0.011	80	37	<0.00049	440	10	<0.0034	0.00075 J	0.0050 J
SWFTS-MW17	EM33	6/3/2021	N	550-164869-9	Alluvium	22.8 - 52.6	--	--	--	--	--	--	--	--	--
SWFTS-MW17	EM36	12/2/2021	N	550-175153-21	Alluvium	22.8 - 52.6	--	--	--	--	--	--	--	--	--
SWFTS-MW17	EM36	12/2/2021	N	550-175153-22	Alluvium	22.8 - 52.6	<0.011	89	37	<0.00049	470	9.9	<0.0034	<0.00028	0.0044 J
SWFTS-MW17	EM40	12/14/2022	N	550-195013-13	Alluvium	22.8 - 52.6	--	--	--	--	--	--	--	--	--
SWFTS-MW17	EM40	12/14/2022	N	550-195013-14	Alluvium	22.8 - 52.6	<0.011 UJ	75	34	<0.00049	420	9.8	<0.0034	<0.00028	0.0052 J
SWFTS-MW18	BL02	7/11/2017	N	440-188133-17	Alluvium	16.8 - 36.6	<0.10	76	32	<0.0050	910	11	<0.050	0.0031 J	<0.050
SWFTS-MW18	EM04	10/10/2017	N	440-194094-3	Alluvium	16.8 - 36.6	<0.10	59	33	<0.0050	740	9.0	<0.050	<0.0025	<0.050
SWFTS-MW18	EM06	11/15/2017	N	440-196690-11	Alluvium	16.8 - 36.6	--	--	--	--	--	--	--	--	--
SWFTS-MW18	EM07	12/13/2017	N	440-198508-5	Alluvium	16.8 - 36.6	<0.10	60	38	<0.0050	870	9.7	<0.050	<0.0025	<0.050
SWFTS-MW18	EM08	2/22/2018	N	440-204033-4	Alluvium	16.8 - 36.6	--	--	--	--	--	--	--	--	--
SWFTS-MW18	EM09	3/27/2018	N	440-207268-11	Alluvium	16.8 - 36.6	--	--	--	--	--	--	--	--	--
SWFTS-MW18	EM09	3/27/2018	FD	440-207268-12	Alluvium	16.8 - 36.6	--	--	--	--	--	--	--	--	--
SWFTS-MW18	EM10	5/1/2018	N	440-210284-6	Alluvium	16.8 - 36.6	--	--	--	--	--	--	--	--	--
SWFTS-MW18	EM11	7/11/2018	N	440-215717-2	Alluvium	16.8 - 36.6	<0.10	53	34	<0.0050	690	8.3	<0.050	<0.0025	<0.050
SWFTS-MW18	EM15	10/11/2018	N	440-222092-5	Alluvium	16.8 - 36.6	<0.10	51	36	<0.0050	710	7.5	<0.050	<0.0025	<0.050
SWFTS-MW18	EM19	5/21/2019	N	440-242084-15	Alluvium	16.8 - 36.6	<0.10	48	36	<0.0050	660	8.0	<0.050	0.0029 J	<0.050
SWFTS-MW18	EM22	11/6/2019	N	440-254051-4	Alluvium	16.8 - 36.6	<0.10	42	33	<0.0050	690	7.8	<0.050	<0.0025	<0.050
SWFTS-MW18	EM26	4/29/2020	N	440-265342-2	Alluvium	16.8 - 36.6	<0.10	51	34	<0.0050	690	7.9	<0.050	<0.0025	<0.050
SWFTS-MW18	EM29	10/15/2020	N	550-151259-2	Alluvium	16.8 - 36.6	<0.10	41	32	<0.0050	590	6.9	<0.050	<0.0025	<0.050
SWFTS-MW18	EM33	6/3/2021	N	550-164869-7	Alluvium	16.8 - 36.6	--	--	--	--	--	--	--	--	--
SWFTS-MW18	EM33	6/3/2021	N	550-164869-8	Alluvium	16.8 - 36.6	<0.011	49	37	<0.00049	670	8.7	<0.0034	<0.00028	0.0053 J

Table D.2
Groundater Analytical Results Summary - Secondary Parameters
Seep Well Field Area Bioremediation Treatability Study

Well	Event	Sample Date	QC Type	Lab Sample ID	Lithology	Screened Interval (ft bgs)	Dissolved Metals by SW6010	Dissolved Metals by SW6010	Dissolved Metals by SW6010	Dissolved Metals by SW6010	Dissolved Metals by SW6010	Dissolved Metals by SW6010	Dissolved Metals by SW6010	Dissolved Metals by SW6010	Dissolved Metals by SW6010
							Phosphorus	Potassium	Silicon	Silver	Sodium	Strontium	Tin	Titanium	Tungsten
							mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
SWFTS-MW18	EM36	12/1/2021	N	550-175045-5	Alluvium	16.8 - 36.6	--	--	--	--	--	--	--	--	--
SWFTS-MW18	EM36	12/1/2021	N	550-175045-6	Alluvium	16.8 - 36.6	<0.011	42	43	<0.00049	670	8.3	<0.0034	<0.00028	0.0062 J
SWFTS-MW18	EM40	12/14/2022	N	550-195013-11	Alluvium	16.8 - 36.6	--	--	--	--	--	--	--	--	--
SWFTS-MW18	EM40	12/14/2022	N	550-195013-12	Alluvium	16.8 - 36.6	<0.011 UJ	45	33	<0.00049	590	8.4	<0.0034	<0.00028	0.0054 J
SWFTS-MW19	BL02	7/12/2017	N	440-188244-2	Alluvium	11.3 - 31.1	<0.10	19	36	<0.0050	430	3.7	<0.050	<0.0025	<0.050
SWFTS-MW19	EM04	10/12/2017	N	440-194204-1	Alluvium	11.3 - 31.1	<0.10	23	38	<0.0050	420	4.1	<0.050	<0.0025	<0.050
SWFTS-MW19	EM06	11/16/2017	N	440-196786-12	Alluvium	11.3 - 31.1	--	--	--	--	--	--	--	--	--
SWFTS-MW19	EM07	12/12/2017	N	440-198371-8	Alluvium	11.3 - 31.1	--	--	--	--	--	--	--	--	--
SWFTS-MW19	EM08	2/20/2018	N	440-203841-6	Alluvium	11.3 - 31.1	--	--	--	--	--	--	--	--	--
SWFTS-MW19	EM09	3/27/2018	N	440-207268-3	Alluvium	11.3 - 31.1	--	--	--	--	--	--	--	--	--
SWFTS-MW19	EM10	4/30/2018	N	440-210173-4	Alluvium	11.3 - 31.1	--	--	--	--	--	--	--	--	--
SWFTS-MW19	EM10	4/30/2018	FD	440-210173-5	Alluvium	11.3 - 31.1	--	--	--	--	--	--	--	--	--
SWFTS-MW19	EM11	7/10/2018	N	440-215437-10	Alluvium	11.3 - 31.1	<0.10	21	34	<0.0050	420	4.2	<0.050	<0.0025	<0.050
SWFTS-MW19	EM11	7/10/2018	FD	440-215437-11	Alluvium	11.3 - 31.1	<0.10	21	34	<0.0050	420	4.2	<0.050	<0.0025	<0.050
SWFTS-MW19	EM15	10/9/2018	N	440-221855-4	Alluvium	11.3 - 31.1	<0.10	22	38	<0.0050	450	4.3	<0.050	<0.0025	<0.050
SWFTS-MW19	EM15	10/9/2018	FD	440-221855-5	Alluvium	11.3 - 31.1	<0.10	23	40	<0.0050	480	4.5	<0.050	<0.0025	<0.050
SWFTS-MW19	EM19	5/21/2019	N	440-242084-6	Alluvium	11.3 - 31.1	<0.10	19	35	<0.0050	430	4.1	<0.050	<0.0025	<0.050
SWFTS-MW19	EM19	5/21/2019	FD	440-242084-7	Alluvium	11.3 - 31.1	<0.10	19	36	<0.0050	420	4.1	<0.050	<0.0025	<0.050
SWFTS-MW19	EM22	11/5/2019	N	440-253891-6	Alluvium	11.3 - 31.1	<0.10	21	37	<0.0050	430	4.1	<0.050	<0.0025	<0.050
SWFTS-MW19	EM22	11/5/2019	FD	440-253891-7	Alluvium	11.3 - 31.1	<0.10	20	36	<0.0050	410	3.9	<0.050	<0.0025	<0.050
SWFTS-MW19	EM26	4/28/2020	N	440-265288-4	Alluvium	11.3 - 31.1	<0.10	26	34	<0.0050	550	6.9	<0.050	<0.0025	<0.050
SWFTS-MW19	EM26	4/28/2020	FD	440-265288-7	Alluvium	11.3 - 31.1	<0.10	27	30	<0.0050	560	7.0	<0.050	<0.0025	<0.050
SWFTS-MW19	EM29	10/14/2020	N	440-273303-2	Alluvium	11.3 - 31.1	<0.10	23	38	<0.0050	450	4.9	<0.050	<0.0025	<0.050
SWFTS-MW19	EM29	10/14/2020	FD	440-273303-3	Alluvium	11.3 - 31.1	<0.10	23	38	<0.0050	470	5.0	<0.050	<0.0025	<0.050
SWFTS-MW19	EM33	6/3/2021	N	550-164869-3	Alluvium	11.3 - 31.1	--	--	--	--	--	--	--	--	--
SWFTS-MW19	EM33	6/3/2021	N	550-164869-4	Alluvium	11.3 - 31.1	<0.011	22	37	<0.00049	510	6.0	<0.0034	0.00037 J	0.0021 J
SWFTS-MW19	EM33	6/3/2021	FD	550-164869-5	Alluvium	11.3 - 31.1	--	--	--	--	--	--	--	--	--
SWFTS-MW19	EM33	6/3/2021	FD	550-164869-6	Alluvium	11.3 - 31.1	<0.011	22	38	<0.00049	520	6.1	<0.0034	<0.00028	0.0023 J
SWFTS-MW19	EM36	12/1/2021	N	550-175045-13	Alluvium	11.3 - 31.1	--	--	--	--	--	--	--	--	--
SWFTS-MW19	EM36	12/1/2021	N	550-175045-14	Alluvium	11.3 - 31.1	<0.011	23	41	<0.00049	470	5.4	<0.0034	<0.00028	<0.0021
SWFTS-MW19	EM36	12/1/2021	FD	550-175045-15	Alluvium	11.3 - 31.1	--	--	--	--	--	--	--	--	--
SWFTS-MW19	EM36	12/1/2021	FD	550-175045-16	Alluvium	11.3 - 31.1	<0.011	24	43	<0.00049	500	5.6	<0.0034	0.00039 J	<0.0021
SWFTS-MW19	EM40	12/14/2022	N	550-195013-3	Alluvium	11.3 - 31.1	--	--	--	--	--	--	--	--	--
SWFTS-MW19	EM40	12/14/2022	N	550-195013-4	Alluvium	11.3 - 31.1	<0.011 UJ	25	38	<0.00049	570	5.9	<0.0034	<0.00028	0.0033 J
SWFTS-MW19	EM40	12/14/2022	FD	550-195013-5	Alluvium	11.3 - 31.1	--	--	--	--	--	--	--	--	--
SWFTS-MW19	EM40	12/14/2022	FD	550-195013-6	Alluvium	11.3 - 31.1	<0.011 UJ	24	36	<0.00049	550	5.8	<0.0034	<0.00028	0.0025 J
SWFTS-MW20	BL02	7/12/2017	N	440-188244-5	Alluvium	12.8 - 37.6	<0.10	41	38	<0.0050	1,100	13	<0.050	<0.0025	<0.050
SWFTS-MW20	EM04	10/12/2017	N	440-194202-1	Alluvium	12.8 - 37.6	<0.10	47	33	<0.0050	1,100	12	<0.050	<0.0025	<0.050
SWFTS-MW20	EM04	10/12/2017	FD	440-194202-2	Alluvium	12.8 - 37.6	<0.10	50	40	<0.0050	1,100	13	<0.050	<0.0025	<0.050
SWFTS-MW20	EM06	11/16/2017	N	440-196786-7	Alluvium	12.8 - 37.6	--	--	--	--	--	--	--	--	--
SWFTS-MW20	EM07	12/12/2017	N	440-198371-3	Alluvium	12.8 - 37.6	--	--	--	--	--	--	--	--	--
SWFTS-MW20	EM08	2/19/2018	N	440-203775-5	Alluvium	12.8 - 37.6	--	--	--	--	--	--	--	--	--
SWFTS-MW20	EM09	3/27/2018	N	440-207268-9	Alluvium	12.8 - 37.6	--	--	--	--	--	--	--	--	--
SWFTS-MW20	EM10	4/30/2018	N	440-210173-10	Alluvium	12.8 - 37.6	--	--	--	--	--	--	--	--	--
SWFTS-MW20	EM11	7/11/2018	N	440-215717-8	Alluvium	12.8 - 37.6	<0.10	40	38	<0.0050	860	10	<0.050	<0.0025	<0.050
SWFTS-MW20	EM15	10/9/2018	N	440-221855-1	Alluvium	12.8 - 37.6	<0.50	41	43	<0.025	1,000	10	<0.25	<0.013	<0.25
SWFTS-MW20	EM19	5/21/2019	N	440-242084-3	Alluvium	12.8 - 37.6	<0.10	37	40	0.0066 J	900	9.1	<0.050	0.0060	<0.050
SWFTS-MW20	EM22	11/5/2019	N	440-253918-6	Alluvium	12.8 - 37.6	<0.10	38	45	<0.0050	940	10	<0.050	<0.0025	<0.050
SWFTS-MW20	EM26	4/29/2020	N	440-265342-5	Alluvium	12.8 - 37.6	<0.10	36	38	<0.0050	880	8.9	<0.050	<0.0025	<0.050
SWFTS-MW20	EM29	10/14/2020	N	440-273303-6	Alluvium	12.8 - 37.6	<0.10	41	50	<0.0050	980	11	<0.050	<0.0025	<0.050
SWFTS-MW20	EM33	6/3/2021	N	550-164869-1	Alluvium	12.8 - 37.6	--	--	--	--	--	--	--	--	--
SWFTS-MW20	EM33	6/3/2021	N	550-164869-2	Alluvium	12.8 - 37.6	<0.011	35	46	<0.00049	950	9.7	<0.0034	0.00068 J	0.016 J
SWFTS-MW20	EM36	11/29/2021	N	550-174897-1	Alluvium	12.8 - 37.6	--	--	--	--	--	--	--	--	--
SWFTS-MW20	EM36	11/29/2021	N	550-174897-2	Alluvium	12.8 - 37.6	<0.011	34	44	<0.00049	840	8.1	0.043	<0.00028	0.017 J
SWFTS-MW20	EM40	12/13/2022	N	550-194919-7	Alluvium	12.8 - 37.6	--	--	--	--	--	--	--	--	--
SWFTS-MW20	EM40	12/13/2022	N	550-194919-8	Alluvium	12.8 - 37.6	<0.011 UJ	38	50	<0.00049	1,000	13	<0.0034	<0.00028	0.010 J
SWFTS-MW21	BL02	7/13/2017	N	440-188324-5	Alluvium	14.8 - 39.6	<0.20	65	38	<0.010	890	14	<0.10	0.032	<0.10
SWFTS-MW21	EM04	10/11/2017	N	440-194090-8	Alluvium	14.8 - 39.6	<0.10	62	30	<0.0050	740	13	<0.050	<0.0025	<0.050
SWFTS-MW21	EM06	11/15/2017	N	440-196665-5	Alluvium	14.8 - 39.6	--	--	--	--	--	--	--	--	--
SWFTS-MW21	EM07	12/13/2017	N	440-198508-10	Alluvium	14.8 - 39.6	<0.20	70	36	<0.010	940	15	<0.10	<0.0050	<0.10
SWFTS-MW21	EM08	2/20/2018	N	440-203841-9	Alluvium	14.8 - 39.6	--	--	--	--	--	--	--	--	--
SWFTS-MW21	EM08	2/20/2018	FD	440-203841-10	Alluvium	14.8 - 39.6	--	--	--	--	--	--	--	--	--
SWFTS-MW21	EM09	3/27/2018	N	440-207268-14	Alluvium	14.8 - 39.6	--	--	--	--	--	--	--	--	--
SWFTS-MW21	EM10	4/30/2018	N	440-210173-7	Alluvium	14.8 - 39.6	--	--	--	--	--	--	--	--	--

Table D.2
Groundater Analytical Results Summary - Secondary Parameters
Seep Well Field Area Bioremediation Treatability Study

Well	Event	Sample Date	QC Type	Lab Sample ID	Lithology	Screened Interval (ft bgs)	Dissolved Metals by SW6010	Dissolved Metals by SW6010	Dissolved Metals by SW6010	Dissolved Metals by SW6010	Dissolved Metals by SW6010	Dissolved Metals by SW6010	Dissolved Metals by SW6010	Dissolved Metals by SW6010	Dissolved Metals by SW6010
							Phosphorus	Potassium	Silicon	Silver	Sodium	Strontium	Tin	Titanium	Tungsten
							mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
SWFTS-MW21	EM11	7/12/2018	N	440-215717-3	Alluvium	14.8 - 39.6	<0.10	59	33	<0.0050	750	12	<0.050	<0.0025	<0.050
SWFTS-MW21	EM15	10/9/2018	N	440-221855-3	Alluvium	14.8 - 39.6	<0.50	57	32	<0.025	810	12	<0.25	<0.013	<0.25
SWFTS-MW21	EM19	5/22/2019	N	440-242198-3	Alluvium	14.8 - 39.6	<0.10	57	32	0.0055 J	770	12	<0.050	<0.0025	<0.050
SWFTS-MW21	EM22	11/4/2019	N	440-253773-3	Alluvium	14.8 - 39.6	<0.10	53	34	<0.0050	760	11	<0.050	<0.0025	<0.050
SWFTS-MW21	EM26	4/29/2020	N	440-265342-1	Alluvium	14.8 - 39.6	<0.10	56	32	<0.0050	660	9.0	<0.050	<0.0025	<0.050
SWFTS-MW21	EM29	10/14/2020	N	440-273303-7	Alluvium	14.8 - 39.6	<0.10	55	33	<0.0050	760	11	<0.050	0.012	<0.050
SWFTS-MW21	EM33	6/2/2021	N	550-164872-15	Alluvium	14.8 - 39.6	--	--	--	--	--	--	--	--	--
SWFTS-MW21	EM33	6/2/2021	N	550-164872-16	Alluvium	14.8 - 39.6	<0.011	53	33	<0.00049	760	11	<0.0034	<0.00028	0.0053 J
SWFTS-MW21	EM36	12/1/2021	N	550-175045-3	Alluvium	14.8 - 39.6	--	--	--	--	--	--	--	--	--
SWFTS-MW21	EM36	12/1/2021	N	550-175045-4	Alluvium	14.8 - 39.6	<0.011	54	37	<0.00049	740	11	<0.0034	<0.00028	0.0046 J
SWFTS-MW21	EM40	12/15/2022	N	550-195106-5	Alluvium	14.8 - 39.6	--	--	--	--	--	--	--	--	--
SWFTS-MW21	EM40	12/15/2022	N	550-195106-6	Alluvium	14.8 - 39.6	<0.011 UJ	52	33	<0.00049	740	11	<0.0034	<0.00028	0.0039 J
SWFTS-MW22	BL02	7/13/2017	N	440-188324-1	Alluvium	11.8 - 31.6	0.77	29 J+	59	<0.0050	630	4.8	<0.050	0.82	<0.050
SWFTS-MW22	EM04	10/12/2017	N	440-194242-9	Alluvium	11.8 - 31.6	<0.10	27	36	<0.0050	570	4.6	<0.050	<0.0025	<0.050
SWFTS-MW22	EM06	11/16/2017	N	440-196786-18	Alluvium	11.8 - 31.6	--	--	--	--	--	--	--	--	--
SWFTS-MW22	EM07	12/14/2017	N	440-198571-17	Alluvium	11.8 - 31.6	--	--	--	--	--	--	--	--	--
SWFTS-MW22	EM08	2/21/2018	N	440-203937-1	Alluvium	11.8 - 31.6	--	--	--	--	--	--	--	--	--
SWFTS-MW22	EM09	3/28/2018	N	440-207497-1	Alluvium	11.8 - 31.6	--	--	--	--	--	--	--	--	--
SWFTS-MW22	EM10	4/30/2018	N	440-210173-6	Alluvium	11.8 - 31.6	--	--	--	--	--	--	--	--	--
SWFTS-MW22	EM11	7/10/2018	N	440-215437-9	Alluvium	11.8 - 31.6	<0.10	28	36	<0.0050	590	5.1	<0.050	<0.0025	<0.050
SWFTS-MW22	EM15	10/9/2018	N	440-221855-2	Alluvium	11.8 - 31.6	<0.50	26	38	<0.025	620	4.9	<0.25	<0.013	<0.25
SWFTS-MW22	EM19	5/21/2019	N	440-242084-4	Alluvium	11.8 - 31.6	<0.10	24	37	0.0052 J	540	4.4	<0.050	<0.0025	<0.050
SWFTS-MW22	EM22	11/5/2019	N	440-253891-4	Alluvium	11.8 - 31.6	<0.10	24	38	<0.0050	570	3.9	<0.050	0.0069 J+	<0.050
SWFTS-MW22	EM26	4/28/2020	N	440-265288-5	Alluvium	11.8 - 31.6	<0.10	27	37	<0.0050	590	4.5	<0.050	<0.0025	<0.050
SWFTS-MW22	EM29	10/14/2020	N	440-273303-1	Alluvium	11.8 - 31.6	<0.10	28	40	<0.0050	620	5.0	<0.050	<0.0025	<0.050
SWFTS-MW22	EM33	6/2/2021	N	550-164872-11	Alluvium	11.8 - 31.6	--	--	--	--	--	--	--	--	--
SWFTS-MW22	EM33	6/2/2021	N	550-164872-12	Alluvium	11.8 - 31.6	<0.011	27	36	<0.00049	640	5.4	<0.0034	0.0055 J+	<0.0021
SWFTS-MW22	EM36	12/2/2021	N	550-175153-1	Alluvium	11.8 - 31.6	--	--	--	--	--	--	--	--	--
SWFTS-MW22	EM36	12/2/2021	N	550-175153-2	Alluvium	11.8 - 31.6	<0.011	28	41	<0.00049	620	5.0	<0.0034	0.00035 J	0.0036 J
SWFTS-MW22	EM40	12/14/2022	N	550-195013-1	Alluvium	11.8 - 31.6	--	--	--	--	--	--	--	--	--
SWFTS-MW22	EM40	12/14/2022	N	550-195013-2	Alluvium	11.8 - 31.6	<0.011 UJ	37	41	<0.00049	790	8.6	<0.0034	0.00032 J	0.0047 J
SWFTS-MW23	BL02	7/13/2017	N	440-188325-7	Alluvium	13.8 - 33.6	<0.10	19	37	<0.0050	410	4.1	<0.050	<0.0025	<0.050
SWFTS-MW23	EM04	10/11/2017	N	440-194090-7	Alluvium	13.8 - 33.6	<0.10	21	39	<0.0050	400	4.8	<0.050	<0.0025	<0.050
SWFTS-MW23	EM06	11/15/2017	N	440-196665-3	Alluvium	13.8 - 33.6	--	--	--	--	--	--	--	--	--
SWFTS-MW23	EM07	12/12/2017	N	440-198371-2	Alluvium	13.8 - 33.6	--	--	--	--	--	--	--	--	--
SWFTS-MW23	EM08	2/21/2018	N	440-203937-14	Alluvium	13.8 - 33.6	--	--	--	--	--	--	--	--	--
SWFTS-MW23	EM09	3/28/2018	N	440-207497-9	Alluvium	13.8 - 33.6	--	--	--	--	--	--	--	--	--
SWFTS-MW23	EM10	5/2/2018	N	440-210430-5	Alluvium	13.8 - 33.6	--	--	--	--	--	--	--	--	--
SWFTS-MW23	EM11	7/10/2018	N	440-215437-7	Alluvium	13.8 - 33.6	<0.10	18	36	<0.0050	350	3.8	<0.050	<0.0025	<0.050
SWFTS-MW23	EM15	10/11/2018	N	440-222092-7	Alluvium	13.8 - 33.6	<0.10	20	42	<0.0050	390	4.6	<0.050	<0.0025	<0.050
SWFTS-MW23	EM19	5/22/2019	N	440-242201-7	Alluvium	13.8 - 33.6	<0.10	18	29 J	<0.0050	360	4.2	<0.050	0.0025 J	<0.050
SWFTS-MW23	EM22	11/5/2019	N	440-253891-5	Alluvium	13.8 - 33.6	<0.10	19	36	<0.0050	380	4.8	<0.050	<0.0025	<0.050
SWFTS-MW23	EM26	4/28/2020	N	440-265288-3	Alluvium	13.8 - 33.6	<0.10	18	38	<0.0050	380	4.0	<0.050	<0.0025	<0.050
SWFTS-MW23	EM29	10/13/2020	N	440-273236-1	Alluvium	13.8 - 33.6	<0.10	19	39	<0.0050	370	3.9	<0.050	<0.0025	<0.050
SWFTS-MW23	EM33	6/2/2021	N	550-164872-3	Alluvium	13.8 - 33.6	--	--	--	--	--	--	--	--	--
SWFTS-MW23	EM33	6/2/2021	N	550-164872-4	Alluvium	13.8 - 33.6	<0.011	18	38	<0.00049	390	4.5	<0.0034	<0.00028	0.0044 J
SWFTS-MW23	EM36	12/2/2021	N	550-175153-15	Alluvium	13.8 - 33.6	--	--	--	--	--	--	--	--	--
SWFTS-MW23	EM36	12/2/2021	N	550-175153-16	Alluvium	13.8 - 33.6	<0.011	18	42	<0.00049	370	4.1	<0.0034	<0.00028	0.0053 J
SWFTS-MW23	EM40	12/13/2022	N	550-194919-5	Alluvium	13.8 - 33.6	--	--	--	--	--	--	--	--	--
SWFTS-MW23	EM40	12/13/2022	N	550-194919-6	Alluvium	13.8 - 33.6	<0.011 UJ	19	39	<0.00049	400	4.3	<0.0034	<0.00028	0.0037 J
SWFTS-MW24	BL02	7/13/2017	N	440-188324-2	Alluvium	12.8 - 37.6	<0.10	55	34	<0.0050	920	11	<0.050	<0.0025	<0.050
SWFTS-MW24	EM04	10/11/2017	N	440-194242-2	Alluvium	12.8 - 37.6	<0.10	57	33	<0.0050	810	10	<0.050	<0.0025	<0.050
SWFTS-MW24	EM06	11/15/2017	N	440-196665-1	Alluvium	12.8 - 37.6	--	--	--	--	--	--	--	--	--
SWFTS-MW24	EM07	12/12/2017	N	440-198371-5	Alluvium	12.8 - 37.6	--	--	--	--	--	--	--	--	--
SWFTS-MW24	EM08	2/21/2018	N	440-203937-8	Alluvium	12.8 - 37.6	--	--	--	--	--	--	--	--	--
SWFTS-MW24	EM09	3/28/2018	N	440-207497-12	Alluvium	12.8 - 37.6	--	--	--	--	--	--	--	--	--
SWFTS-MW24	EM10	5/2/2018	N	440-210430-7	Alluvium	12.8 - 37.6	--	--	--	--	--	--	--	--	--
SWFTS-MW24	EM11	7/12/2018	N	440-215717-5	Alluvium	12.8 - 37.6	<0.10	48	34	<0.0050	710	8.3	<0.050	<0.0025	<0.050
SWFTS-MW24	EM15	10/10/2018	N	440-221975-7	Alluvium	12.8 - 37.6	<0.10	57	40	<0.0050	910	9.6	<0.050	<0.0025	<0.050
SWFTS-MW24	EM19	5/22/2019	N	440-242198-1	Alluvium	12.8 - 37.6	<0.10	49	37	0.0055 J	740	8.6	<0.050	0.0030 J	<0.050
SWFTS-MW24	EM22	11/5/2019	N	440-253891-2	Alluvium	12.8 - 37.6	<0.10	44	36	<0.0050	720	7.9	<0.050	<0.0025	<0.050
SWFTS-MW24	EM26	4/28/2020	N	440-265288-1	Alluvium	12.8 - 37.6	<0.10	54	34	<0.0050	740	8.1	<0.050	<0.0025	<0.050
SWFTS-MW24	EM29	10/12/2020	N	440-273153-1	Alluvium	12.8 - 37.6	<0.10	49	39	<0.0050	740	8.2	<0.050	<0.0025	<0.050
SWFTS-MW24	EM33	6/2/2021	N	550-164872-7	Alluvium	12.8 - 37.6	--	--	--	--	--	--	--	--	--

Table D.2
Groundater Analytical Results Summary - Secondary Parameters
Seep Well Field Area Bioremediation Treatability Study

Well	Event	Sample Date	QC Type	Lab Sample ID	Lithology	Screened Interval (ft bgs)	Dissolved Metals by SW6010	Dissolved Metals by SW6010	Dissolved Metals by SW6010	Dissolved Metals by SW6010	Dissolved Metals by SW6010	Dissolved Metals by SW6010	Dissolved Metals by SW6010	Dissolved Metals by SW6010	Dissolved Metals by SW6010
							Phosphorus	Potassium	Silicon	Silver	Sodium	Strontium	Tin	Titanium	Tungsten
							mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
SWFTS-MW24	EM33	6/2/2021	N	550-164872-8	Alluvium	12.8 - 37.6	<0.011	45	37	<0.00049	700	8.3	<0.0034	<0.00028	0.0037 J
SWFTS-MW24	EM36	12/1/2021	N	550-175045-17	Alluvium	12.8 - 37.6	--	--	--	--	--	--	--	--	--
SWFTS-MW24	EM36	12/1/2021	N	550-175045-18	Alluvium	12.8 - 37.6	<0.011	50	41	<0.00049	690	8.9	<0.0034	<0.00028	0.0039 J
SWFTS-MW24	EM40	12/13/2022	N	550-194919-3	Alluvium	12.8 - 37.6	--	--	--	--	--	--	--	--	--
SWFTS-MW24	EM40	12/13/2022	N	550-194919-4	Alluvium	12.8 - 37.6	<0.011 UJ	54	35	<0.00049	680	9.8	<0.0034	<0.00028	0.0043 J
SWFTS-MW25	BL02	7/13/2017	N	440-188324-4	Alluvium	12.8 - 42.6	<0.10	46	37	<0.0050	1,000	10	<0.050	<0.0025	<0.050
SWFTS-MW25	EM04	10/11/2017	N	440-194242-1	Alluvium	12.8 - 42.6	<0.10	43	32	<0.0050	860	9.1	<0.050	<0.0025	<0.050
SWFTS-MW25	EM06	11/15/2017	N	440-196665-2	Alluvium	12.8 - 42.6	0.10 J	40	30	<0.0050	830	8.2	<0.050	0.085	<0.050
SWFTS-MW25	EM07	12/12/2017	N	440-198371-1	Alluvium	12.8 - 42.6	<0.10	47	37	<0.0050	1,000	9.3	<0.050	0.010	<0.050
SWFTS-MW25	EM08	2/21/2018	N	440-203937-7	Alluvium	12.8 - 42.6	1.5	40	49	<0.0050	830	7.6	<0.050	0.13	<0.050
SWFTS-MW25	EM09	3/28/2018	N	440-207497-13	Alluvium	12.8 - 42.6	<0.10	43	36	<0.0050	930	8.5	<0.050	0.0058	<0.050
SWFTS-MW25	EM10	5/3/2018	N	440-210534-2	Alluvium	12.8 - 42.6	<0.10	48	36	<0.0050	1,100	8.6	<0.050	0.0037 J	<0.050
SWFTS-MW25	EM11	7/10/2018	N	440-215437-12	Alluvium	12.8 - 42.6	<0.10	39	33	<0.0050	780	7.5	<0.050	0.012	<0.050
SWFTS-MW25	EM13	8/15/2018	N	440-218208-10	Alluvium	12.8 - 42.6	<0.10	39	35	<0.0050	830	7.8	<0.050	0.0090	<0.050
SWFTS-MW25	EM14	9/12/2018	N	440-220031-2	Alluvium	12.8 - 42.6	<0.10	38	35 J	<0.0050	780 J	7.3 J	<0.050	<0.0025	<0.050
SWFTS-MW25	EM15	10/11/2018	N	440-222092-6	Alluvium	12.8 - 42.6	<0.10	42	38	<0.0050	930	8.1	<0.050	<0.0025	<0.050
SWFTS-MW25	EM19	5/22/2019	N	440-242201-6	Alluvium	12.8 - 42.6	<0.10	38	35	<0.0050	760	6.4	<0.050	0.0096	<0.050
SWFTS-MW25	EM22	11/5/2019	N	440-253918-4	Alluvium	12.8 - 42.6	<0.10	34	35	<0.0050	760	6.1	<0.050	0.012	<0.050
SWFTS-MW25	EM26	4/28/2020	N	440-265288-2	Alluvium	12.8 - 42.6	<0.10	40	36	<0.0050	830	7.3	<0.050	<0.0025	<0.050
SWFTS-MW25	EM29	10/13/2020	N	440-273236-2	Alluvium	12.8 - 42.6	<0.10	37	37	<0.0050	780	6.8	<0.050	<0.0025	<0.050
SWFTS-MW25	EM33	6/2/2021	N	550-164872-5	Alluvium	12.8 - 42.6	--	--	--	--	--	--	--	--	--
SWFTS-MW25	EM33	6/2/2021	N	550-164872-6	Alluvium	12.8 - 42.6	<0.011	36	39	<0.00049	760	6.9	<0.0034	<0.00028	0.0068 J
SWFTS-MW25	EM36	12/1/2021	N	550-175045-19	Alluvium	12.8 - 42.6	--	--	--	--	--	--	--	--	--
SWFTS-MW25	EM36	12/1/2021	N	550-175045-20	Alluvium	12.8 - 42.6	<0.011	39	41	<0.00049	740	8.3	<0.0034	0.0043 J	0.0045 J
SWFTS-MW25	EM40	12/13/2022	N	550-194919-1	Alluvium	12.8 - 42.6	--	--	--	--	--	--	--	--	--
SWFTS-MW25	EM40	12/13/2022	N	550-194919-2	Alluvium	12.8 - 42.6	<0.011 UJ	38	36	<0.00049	720	9.0	<0.0034	<0.00028	0.0080 J

Notes:
1. Lithology of monitoring well COH-2B1 was inferred from state records of well construction and generalized stratigraphy.
FD - Field duplicate
J The result is an estimated quantity. The associated numerical value is the approximate concentration of the analyte.
J- The result is an estimated quantity, but the result may be biased low.
J+ The result is an estimated quantity, but the result may be biased high.
mg/L - milligrams per liter
µg/L - micrograms per liter
N - Normal field sample
UMCf- Upper Muddy Creek Formation
R The data are unusable. The sample results are rejected due to serious deficiencies in meeting QC criteria. The
< The analyte was analyzed for, but was not detected above the level of the reported sample quantitation limit.
--- Not tested.

Table D.2
Groundater Analytical Results Summary - Secondary Parameters
Seep Well Field Area Bioremediation Treatability Study

Well	Event	Sample Date	QC Type	Lab Sample ID	Lithology	Screened Interval (ft bgs)	Dissolved Metals by SW6010	Dissolved Metals by SW6010	Dissolved Metals by SW6020	Dissolved Metals by SW6020	Dissolved Metals by SW6020	Dissolved Metals by SW6020	EPA 300.1B	EPA 351.2	EPA 365.3
							Vanadium	Zinc	Antimony	Arsenic	Selenium	Thallium	Chlorite	Total Kjeldahl Nitrogen (TKN)	Phosphorus
							mg/L	mg/L	µg/L	µg/L	µg/L	µg/L	µg/L	mg/L	mg/L
COH-2B1	BL02	8/9/2017	N	440-189933-1	Alluvium/UMCf	36.0 - 66.0	0.035	<0.012	<0.50	61	7.0	<0.50	<50	--	--
COH-2B1	EM04	10/12/2017	N	440-194204-2	Alluvium/UMCf	36.0 - 66.0	0.029	<0.012	<0.50	63	7.0	<0.50	--	--	--
COH-2B1	EM07	12/14/2017	N	440-198571-5	Alluvium/UMCf	36.0 - 66.0	--	--	--	--	--	--	--	--	--
COH-2B1	EM08	2/22/2018	N	440-204033-6	Alluvium/UMCf	36.0 - 66.0	--	--	--	--	--	--	--	--	--
COH-2B1	EM09	3/29/2018	N	440-207586-2	Alluvium/UMCf	36.0 - 66.0	--	--	--	--	--	--	--	--	--
COH-2B1	EM10	5/2/2018	N	440-210430-11	Alluvium/UMCf	36.0 - 66.0	--	--	--	--	--	--	--	--	--
COH-2B1	EM11	7/10/2018	N	440-215437-6	Alluvium/UMCf	36.0 - 66.0	0.025	<0.012	<5.0	63	10 J	<5.0	--	--	0.25
COH-2B1	EM15	10/11/2018	N	440-222092-1	Alluvium/UMCf	36.0 - 66.0	0.035 J	<0.060	<2.5	60	6.9 J	<2.5	--	--	0.025 R
COH-2B1	EM19	5/22/2019	N	440-242201-5	Alluvium/UMCf	36.0 - 66.0	0.036	<0.012	<5.0	55	<5.0	<2.0	--	--	--
COH-2B1	EM22	11/4/2019	N	440-253773-1	Alluvium/UMCf	36.0 - 66.0	0.032	<0.012	<0.50	75	15	<0.20	--	--	--
COH-2B1	EM26	4/27/2020	N	440-265243-1	Alluvium/UMCf	36.0 - 66.0	0.028	<0.012	<0.50	64	5.8	<0.20	--	--	--
COH-2B1	EM29	10/13/2020	N	440-273236-9	Alluvium/UMCf	36.0 - 66.0	0.028	<0.012	<2.5	84	16	<1.0	--	--	--
PC-58	BL01	3/28/2017	N	440-180820-1	Alluvium	7.8 - 32.8	0.066	<0.012	<0.50	89	51	<0.50	--	--	--
PC-58	BL02	7/13/2017	N	440-188324-3	Alluvium	7.8 - 32.8	0.064	<0.012	<1.0	100	69	<1.0	<500	--	--
PC-58	EM04	10/11/2017	N	440-194094-6	Alluvium	7.8 - 32.8	0.058	<0.012	<2.5	110	56	<2.5	--	--	--
PC-58	EM06	11/16/2017	N	440-196786-11	Alluvium	7.8 - 32.8	--	--	--	--	--	--	--	--	--
PC-58	EM07	12/14/2017	N	440-198571-9	Alluvium	7.8 - 32.8	--	--	--	--	--	--	--	--	--
PC-58	EM08	2/21/2018	N	440-203937-13	Alluvium	7.8 - 32.8	--	--	--	--	--	--	--	--	--
PC-58	EM09	3/28/2018	N	440-207497-6	Alluvium	7.8 - 32.8	--	--	--	--	--	--	--	--	--
PC-58	EM10	5/2/2018	N	440-210430-10	Alluvium	7.8 - 32.8	--	--	--	--	--	--	--	--	--
PC-58	EM11	7/11/2018	N	440-215717-7	Alluvium	7.8 - 32.8	0.053	<0.012	<5.0	100	73	<5.0	--	--	0.045 J
PC-58	EM15	10/11/2018	N	440-222092-19	Alluvium	7.8 - 32.8	0.059	<0.012	<2.5	100	43	<2.5	--	--	<0.025
PC-58	EM19	5/22/2019	N	440-242200-7	Alluvium	7.8 - 32.8	0.069	<0.012	<5.0	94	68	<2.0	--	--	--
PC-58	EM22	11/7/2019	N	440-254148-1	Alluvium	7.8 - 32.8	0.061	0.013 J	<0.50	100	54	<0.20	--	--	--
PC-58	EM26	5/1/2020	N	440-265414-3	Alluvium	7.8 - 32.8	0.064	<0.012	<2.5	120	68	<1.0	--	--	--
PC-58	EM29	10/16/2020	N	440-273433-5	Alluvium	7.8 - 32.8	0.080	<0.012	<0.50	120	39	<0.20	--	--	--
PC-58	EM33	6/2/2021	N	550-164872-23	Alluvium	7.8 - 32.8	--	--	--	--	--	--	--	--	--
PC-58	EM33	6/2/2021	N	550-164872-24	Alluvium	7.8 - 32.8	0.074	0.0085 J	0.19 J	120	49	0.022 J	--	--	--
PC-58	EM36	12/3/2021	N	550-175222-11	Alluvium	7.8 - 32.8	--	--	--	--	--	--	--	--	--
PC-58	EM36	12/3/2021	N	550-175222-12	Alluvium	7.8 - 32.8	0.078	0.0069 J	0.17 J	130	58	0.037 J	--	--	--
PC-58	EM40	12/12/2022	N	550-194841-5	Alluvium	7.8 - 32.8	--	--	--	--	--	--	--	--	--
PC-58	EM40	12/12/2022	N	550-194841-6	Alluvium	7.8 - 32.8	0.070	<0.0023	0.28 J	130	84	0.038 J	--	--	--
PC-88	EM04	10/11/2017	N	440-194090-2	Alluvium	40.0 - 50.0	0.082	<0.012	<0.50	120	7.5	<0.50	--	--	--
PC-88	EM04	10/11/2017	FD	440-194090-3	Alluvium	40.0 - 50.0	0.084	<0.012	<0.50	120	7.0	<0.50	--	--	--
PC-88	EM06	11/15/2017	N	440-196690-9	Alluvium	40.0 - 50.0	--	--	--	--	--	--	--	--	--
PC-88	EM06	11/15/2017	FD	440-196690-10	Alluvium	40.0 - 50.0	--	--	--	--	--	--	--	--	--
PC-88	EM07	12/14/2017	N	440-198571-11	Alluvium	40.0 - 50.0	--	--	--	--	--	--	--	--	--
PC-88	EM08	2/22/2018	N	440-204033-10	Alluvium	40.0 - 50.0	--	--	--	--	--	--	--	--	--
PC-88	EM09	3/29/2018	N	440-207586-3	Alluvium	40.0 - 50.0	--	--	--	--	--	--	--	--	--
PC-88	EM10	5/2/2018	N	440-210430-8	Alluvium	40.0 - 50.0	--	--	--	--	--	--	--	--	--
PC-88	EM10	5/2/2018	FD	440-210430-9	Alluvium	40.0 - 50.0	--	--	--	--	--	--	--	--	--
PC-88	EM11	7/12/2018	N	440-215717-11	Alluvium	40.0 - 50.0	0.078	<0.012	<5.0	120	11 J	<5.0	--	--	0.092
PC-88	EM11	7/12/2018	FD	440-215717-12	Alluvium	40.0 - 50.0	0.078	<0.012	<5.0	130	10 J	<5.0	--	--	0.11
PC-88	EM15	10/11/2018	N	440-222092-15	Alluvium	40.0 - 50.0	0.081	<0.012	<2.5	130	7.0 J	<2.5	--	--	<0.025
PC-88	EM15	10/11/2018	FD	440-222092-16	Alluvium	40.0 - 50.0	0.079	<0.012	<2.5	130	6.0 J	<2.5	--	--	<0.025
PC-88	EM19	5/22/2019	N	440-242201-2	Alluvium	40.0 - 50.0	0.11	<0.012	<5.0	130	5.7 J	<2.0	--	--	--
PC-88	EM19	5/22/2019	FD	440-242201-3	Alluvium	40.0 - 50.0	0.099	<0.012	<5.0	130	5.6 J	<2.0	--	--	--
PC-88	EM22	11/7/2019	N	440-254148-2	Alluvium	40.0 - 50.0	0.084	<0.012	<0.50	130	7.7	<0.20	--	--	--
PC-88	EM22	11/7/2019	FD	440-254148-3	Alluvium	40.0 - 50.0	0.089	<0.012	<0.50	130	8.4	<0.20	--	--	--
PC-88	EM26	5/1/2020	N	440-265412-2	Alluvium	40.0 - 50.0	0.092	<0.012	<2.5	120	18	<1.0	--	--	--
PC-88	EM26	5/1/2020	FD	440-265412-3	Alluvium	40.0 - 50.0	0.088	<0.012	<2.5	130	13	<1.0	--	--	--
PC-88	EM29	10/15/2020	N	550-151259-10	Alluvium	40.0 - 50.0	0.069	<0.012	<2.5	100	7.3 J	<1.0	--	--	--
PC-88	EM29	10/15/2020	FD	550-151259-11	Alluvium	40.0 - 50.0	0.070	<0.012	<2.5	110	6.9 J	<1.0	--	--	--
PC-88	EM33	6/3/2021	N	550-164869-25	Alluvium	40.0 - 50.0	--	--	--	--	--	--	--	--	--
PC-88	EM33	6/3/2021	N	550-164869-26	Alluvium	40.0 - 50.0	0.11	0.0055 J	0.25 J	130	1.9	0.16	--	--	--
PC-88	EM33	6/3/2021	FD	550-164869-27	Alluvium	40.0 - 50.0	--	--	--	--	--	--	--	--	--
PC-88	EM33	6/3/2021	FD	550-164869-28	Alluvium	40.0 - 50.0	0.11	0.0057 J	0.43 J	130	2.2	0.12	--	--	--
PC-88	EM36	12/2/2021	N	550-175153-5	Alluvium	40.0 - 50.0	--	--	--	--	--	--	--	--	--
PC-88	EM36	12/2/2021	N	550-175153-6	Alluvium	40.0 - 50.0	0.10	0.0036 J	0.19 J	120	1.8	0.18 J+	--	--	--
PC-88	EM36	12/2/2021	FD	550-175153-7	Alluvium	40.0 - 50.0	--	--	--	--	--	--	--	--	--
PC-88	EM36	12/2/2021	FD	550-175153-8	Alluvium	40.0 - 50.0	0.10	0.0079 J	0.18 J	130	2.7	0.18 J+	--	--	--
PC-88	EM40	12/12/2022	N	550-194841-1	Alluvium	40.0 - 50.0	--	--	--	--	--	--	--	--	--
PC-88	EM40	12/12/2022	N	550-194841-2	Alluvium	40.0 - 50.0	0.069	<0.0023	0.39 J	110 J+	7.2	0.19	--	--	--
PC-88	EM40	12/12/2022	FD	550-194841-3	Alluvium	40.0 - 50.0	--	--	--	--	--	--	--	--	--

Table D.2
Groundater Analytical Results Summary - Secondary Parameters
Seep Well Field Area Bioremediation Treatability Study

Well	Event	Sample Date	QC Type	Lab Sample ID	Lithology	Screened Interval (ft bgs)	Dissolved Metals by SW6010	Dissolved Metals by SW6010	Dissolved Metals by SW6020	Dissolved Metals by SW6020	Dissolved Metals by SW6020	Dissolved Metals by SW6020	EPA 300.1B	EPA 351.2	EPA 365.3
							Vanadium	Zinc	Antimony	Arsenic	Selenium	Thallium	Chlorite	Total Kjeldahl Nitrogen (TKN)	Phosphorus
							mg/L	mg/L	µg/L	µg/L	µg/L	µg/L	µg/L	mg/L	mg/L
PC-88	EM40	12/12/2022	FD	550-194841-4	Alluvium	40.0 - 50.0	0.070	<0.0023	0.29 J	100 J+	7.1	0.19	--	--	--
PC-91	BL01	3/29/2017	N	440-180937-1	Alluvium	11.5 - 21.5	0.055	<0.012	<0.50	75	26	<0.50	--	--	0.025 J
PC-91	BL02	7/12/2017	N	440-188247-5	Alluvium	11.5 - 21.5	0.052	<0.012	<1.0	78	21	<1.0	<500	--	--
PC-91	BL02	7/12/2017	FD	440-188244-4	Alluvium	11.5 - 21.5	0.053	<0.012	<0.50	75	19	<0.50	<500	--	--
PC-91	EM04	10/12/2017	N	440-194204-3	Alluvium	11.5 - 21.5	0.049	<0.012	<0.50	80	9.4	<0.50	--	--	--
PC-91	EM06	11/16/2017	N	440-196786-8	Alluvium	11.5 - 21.5	--	--	--	--	--	--	--	--	--
PC-91	EM07	12/13/2017	N	440-198508-9	Alluvium	11.5 - 21.5	0.059	<0.012	<0.50	92	13	<0.50	--	0.10 J	<0.025
PC-91	EM08	2/20/2018	N	440-203841-1	Alluvium	11.5 - 21.5	--	--	--	--	--	--	--	--	--
PC-91	EM09	3/26/2018	N	440-207137-1	Alluvium	11.5 - 21.5	--	--	--	--	--	--	--	--	--
PC-91	EM10	5/1/2018	N	440-210284-3	Alluvium	11.5 - 21.5	--	--	--	--	--	--	--	--	--
PC-91	EM11	7/11/2018	N	440-215585-6	Alluvium	11.5 - 21.5	0.022	<0.012	<5.0	78	<5.0	<5.0	--	--	0.049 J
PC-91	EM15	10/10/2018	N	440-221975-16	Alluvium	11.5 - 21.5	0.031 J	<0.060	<2.5	64	<2.5	<2.5	--	--	<0.025
PC-91	EM19	5/21/2019	N	440-242084-9	Alluvium	11.5 - 21.5	0.017	<0.012	<0.50	100	1.1 J	<0.20	--	--	--
PC-91	EM22	11/6/2019	N	440-254027-3	Alluvium	11.5 - 21.5	0.022	<0.012	0.75 J	130	1.1 J	<0.20	--	--	--
PC-91	EM26	4/30/2020	N	440-265382-2	Alluvium	11.5 - 21.5	0.0074 J	<0.012	<2.5	130	<2.5	<1.0	--	--	--
PC-91	EM29	10/14/2020	N	440-273303-11	Alluvium	11.5 - 21.5	<0.0050	<0.012	<1.0	130	1.2 J	<0.40	--	--	--
PC-91	EM33	6/2/2021	N	550-164872-17	Alluvium	11.5 - 21.5	--	--	--	--	--	--	--	--	--
PC-91	EM33	6/2/2021	N	550-164872-18	Alluvium	11.5 - 21.5	0.0030 J	0.0089 J	0.12 J	22	0.39 J	<0.013	--	--	--
PC-91	EM36	11/30/2021	N	550-174968-1	Alluvium	11.5 - 21.5	--	--	--	--	--	--	--	--	--
PC-91	EM36	11/30/2021	N	550-174968-2	Alluvium	11.5 - 21.5	0.0015 J	0.0082 J	0.16 J	3.9	0.45 J	0.22	--	--	--
PC-91	EM40	12/12/2022	N	550-194841-7	Alluvium	11.5 - 21.5	--	--	--	--	--	--	--	--	--
PC-91	EM40	12/12/2022	N	550-194841-8	Alluvium	11.5 - 21.5	0.0039 J	<0.0023	0.17 J	8.9	0.38 J	<0.013	--	--	--
PC-92	BL01	3/29/2017	N	440-180937-2	Alluvium	26.5 - 36.5	0.050	<0.012	<0.50	85	8.4	0.66 J	--	--	0.052
PC-92	BL02	7/12/2017	N	440-188247-6	Alluvium	26.5 - 36.5	0.048	<0.012	<5.0	87	7.0 J	<5.0	<500	--	--
PC-92	EM04	10/12/2017	N	440-194204-4	Alluvium	26.5 - 36.5	0.038	<0.012	<0.50	88	7.2	<0.50	--	0.40	0.035 J
PC-92	EM04	10/12/2017	FD	440-194204-5	Alluvium	26.5 - 36.5	0.039	<0.012	<0.50	80	6.5	<0.50	--	0.38	0.038 J
PC-92	EM06	11/16/2017	N	440-196786-9	Alluvium	26.5 - 36.5	--	--	--	--	--	--	--	--	--
PC-92	EM06	11/16/2017	FD	440-196786-10	Alluvium	26.5 - 36.5	--	--	--	--	--	--	--	--	--
PC-92	EM07	12/14/2017	N	440-198571-7	Alluvium	26.5 - 36.5	0.047	<0.012	<0.50	85	5.6	<0.50	--	0.41	0.062
PC-92	EM07	12/14/2017	FD	440-198571-8	Alluvium	26.5 - 36.5	0.044	<0.012	<0.50	84	6.2	<0.50	--	0.35	0.064
PC-92	EM08	2/20/2018	N	440-203841-2	Alluvium	26.5 - 36.5	--	--	--	--	--	--	--	--	--
PC-92	EM08	2/20/2018	FD	440-203841-3	Alluvium	26.5 - 36.5	--	--	--	--	--	--	--	--	--
PC-92	EM09	3/26/2018	N	440-207137-2	Alluvium	26.5 - 36.5	--	--	--	--	--	--	--	--	--
PC-92	EM09	3/26/2018	FD	440-207137-3	Alluvium	26.5 - 36.5	--	--	--	--	--	--	--	--	--
PC-92	EM10	5/1/2018	N	440-210284-4	Alluvium	26.5 - 36.5	--	--	--	--	--	--	--	--	--
PC-92	EM11	7/11/2018	N	440-215585-5	Alluvium	26.5 - 36.5	0.036	<0.012	<5.0	83	7.9 J	<5.0	--	--	0.076
PC-92	EM15	10/11/2018	N	440-222092-17	Alluvium	26.5 - 36.5	0.039	0.16	<2.5	76	8.9 J	<2.5	--	--	<0.025
PC-92	EM19	5/21/2019	N	440-242084-10	Alluvium	26.5 - 36.5	0.048	<0.012	<0.50	86	4.5	0.48 J	--	--	--
PC-92	EM22	11/6/2019	N	440-254027-2	Alluvium	26.5 - 36.5	0.026	<0.012	<0.50	71	6.0	0.36 J	--	--	--
PC-92	EM26	4/30/2020	N	440-265382-1	Alluvium	26.5 - 36.5	0.035	<0.012	<2.5	78	7.5 J	<1.0	--	--	--
PC-92	EM29	10/14/2020	N	440-273303-10	Alluvium	26.5 - 36.5	0.036	<0.012	<1.0	73	11	0.43 J	--	--	--
PC-92	EM33	6/2/2021	N	550-164872-19	Alluvium	26.5 - 36.5	--	--	--	--	--	--	--	--	--
PC-92	EM33	6/2/2021	N	550-164872-20	Alluvium	26.5 - 36.5	0.042	0.0040 J	0.25 J	78	15	0.44	--	--	--
PC-92	EM36	11/30/2021	N	550-174968-3	Alluvium	26.5 - 36.5	--	--	--	--	--	--	--	--	--
PC-92	EM36	11/30/2021	N	550-174968-4	Alluvium	26.5 - 36.5	0.011	0.0023 J	0.32 J	58	7.0	0.46	--	--	--
PC-92	EM40	12/13/2022	N	550-194920-1	Alluvium	26.5 - 36.5	--	--	--	--	--	--	--	--	--
PC-92	EM40	12/13/2022	N	550-194920-2	Alluvium	26.5 - 36.5	0.048	<0.0023	0.023 J	8.5	0.90	0.061	--	--	--
PC-94	BL01	3/28/2017	N	440-180820-2	Alluvium	9.5 - 19.5	0.034	<0.012	<0.50	62	27	<0.50	--	--	0.053
PC-94	BL02	7/13/2017	N	440-188325-1	Alluvium	9.5 - 19.5	0.035	<0.012	<0.50	66	30	<0.50	<500	--	--
PC-94	EM04	10/11/2017	N	440-194090-6	Alluvium	9.5 - 19.5	<0.0050	<0.012	<0.50	76	3.3	<0.50	--	0.37	0.098
PC-94	EM06	11/16/2017	N	440-196786-17	Alluvium	9.5 - 19.5	0.0077 J	<0.012	<2.5	52	<2.5	<2.5	--	0.24	0.096
PC-94	EM07	12/12/2017	N	440-198371-14	Alluvium	9.5 - 19.5	--	--	--	--	--	--	--	--	--
PC-94	EM08	2/21/2018	N	440-203937-12	Alluvium	9.5 - 19.5	0.029	<0.012	<1.0	55	14	<1.0	--	<0.10	0.11
PC-94	EM09	3/27/2018	N	440-207268-8	Alluvium	9.5 - 19.5	0.029	<0.012	<0.50	50	13	<0.50	--	0.14 J	0.23
PC-94	EM10	5/1/2018	N	440-210284-14	Alluvium	9.5 - 19.5	0.030	<0.012	<5.0	60	22	<5.0	--	<0.10 UJ	0.070
PC-94	EM11	7/10/2018	N	440-215437-1	Alluvium	9.5 - 19.5	0.016	0.034	<5.0	44	19 J	<5.0	--	0.33	2.1
PC-94	EM13	8/15/2018	N	440-218208-2	Alluvium	9.5 - 19.5	0.021	<0.012	<0.50	49	4.6	<0.50	--	<0.10	0.11
PC-94	EM14	9/11/2018	N	440-219886-9	Alluvium	9.5 - 19.5	0.019	<0.012	<5.0	54	6.0 J	<5.0	--	0.14 J	0.10
PC-94	EM15	10/11/2018	N	440-222092-18	Alluvium	9.5 - 19.5	0.020	<0.012	<2.5	45	11	<2.5	--	<0.10	0.045 J
PC-94	EM19	5/22/2019	N	440-242201-4	Alluvium	9.5 - 19.5	0.032	<0.012	<5.0	42	9.2 J	<2.0	--	--	--
PC-94	EM22	11/6/2019	N	440-254027-1	Alluvium	9.5 - 19.5	0.024	<0.012	<0.50	46	15	<0.20	--	--	--
PC-94	EM26	4/28/2020	N	440-265289-2	Alluvium	9.5 - 19.5	0.021	<0.012	<0.50	41	15	<0.20	--	--	--
PC-94	EM29	10/15/2020	N	550-151259-7	Alluvium	9.5 - 19.5	0.021	<0.012	<2.5	43	14	<1.0	--	--	--
PC-94	EM33	6/2/2021	N	550-164872-21	Alluvium	9.5 - 19.5	--	--	--	--	--	--	--	--	--

Table D.2
Groundater Analytical Results Summary - Secondary Parameters
Seep Well Field Area Bioremediation Treatability Study

Well	Event	Sample Date	QC Type	Lab Sample ID	Lithology	Screened Interval (ft bgs)	Dissolved Metals by SW6010	Dissolved Metals by SW6010	Dissolved Metals by SW6020	Dissolved Metals by SW6020	Dissolved Metals by SW6020	Dissolved Metals by SW6020	EPA 300.1B	EPA 351.2	EPA 365.3
							Vanadium	Zinc	Antimony	Arsenic	Selenium	Thallium	Chlorite	Total Kjeldahl Nitrogen (TKN)	Phosphorus
							mg/L	mg/L	µg/L	µg/L	µg/L	µg/L	µg/L	mg/L	mg/L
PC-94	EM33	6/2/2021	N	550-164872-22	Alluvium	9.5 - 19.5	0.031	0.0058 J	0.20 J	43	14	0.13	--	--	--
PC-94	EM36	11/30/2021	N	550-174968-5	Alluvium	9.5 - 19.5	--	--	--	--	--	--	--	--	--
PC-94	EM36	11/30/2021	N	550-174968-6	Alluvium	9.5 - 19.5	0.026	<0.0023	0.24 J	40	16	0.24	--	--	--
PC-94	EM40	12/13/2022	N	550-194920-7	Alluvium	9.5 - 19.5	--	--	--	--	--	--	--	--	--
PC-94	EM40	12/13/2022	N	550-194920-8	Alluvium	9.5 - 19.5	0.028	<0.0023	0.017 J	4.3	3.8	0.026	--	--	--
PC-97	BL02	7/13/2017	N	440-188325-8	Alluvium	23.0 - 33.0	0.048	<0.012	<0.50	86	1.0 J	<0.50	<20	--	--
PC-97	EM04	10/11/2017	N	440-194242-5	Alluvium	23.0 - 33.0	0.034	<0.012	<0.50	85	3.0	<0.50	--	--	--
PC-97	EM04	10/11/2017	FD	440-194242-6	Alluvium	23.0 - 33.0	0.037	<0.012	<0.50	84	2.5	<0.50	--	--	--
PC-97	EM06	11/16/2017	N	440-196786-13	Alluvium	23.0 - 33.0	--	--	--	--	--	--	--	--	--
PC-97	EM07	12/13/2017	N	440-198508-11	Alluvium	23.0 - 33.0	--	--	--	--	--	--	--	--	--
PC-97	EM07	12/13/2017	FD	440-198508-12	Alluvium	23.0 - 33.0	--	--	--	--	--	--	--	--	--
PC-97	EM08	2/21/2018	N	440-203937-4	Alluvium	23.0 - 33.0	--	--	--	--	--	--	--	--	--
PC-97	EM09	3/27/2018	N	440-207268-4	Alluvium	23.0 - 33.0	--	--	--	--	--	--	--	--	--
PC-97	EM10	5/1/2018	N	440-210284-7	Alluvium	23.0 - 33.0	--	--	--	--	--	--	--	--	--
PC-97	EM11	7/10/2018	N	440-215437-3	Alluvium	23.0 - 33.0	0.040	<0.012	<5.0	84	<5.0	<5.0	--	--	0.10
PC-97	EM15	10/11/2018	N	440-222092-13	Alluvium	23.0 - 33.0	0.040	<0.012	<2.5	85	<2.5	<2.5	--	--	<0.025
PC-97	EM19	5/22/2019	N	440-242201-1	Alluvium	23.0 - 33.0	0.045	<0.012	<5.0	85	<5.0	<2.0	--	--	--
PC-97	EM22	11/6/2019	N	440-254027-7	Alluvium	23.0 - 33.0	0.040	<0.012	<0.50	91	<0.50	0.25 J	--	--	--
PC-97	EM26	4/30/2020	N	440-265383-7	Alluvium	23.0 - 33.0	0.044	<0.012	<2.5	93	<2.5	<1.0	--	--	--
PC-97	EM29	10/15/2020	N	550-151259-9	Alluvium	23.0 - 33.0	0.036	<0.012	<2.5	90	<2.5	<1.0	--	--	--
SWFTS-IW01A	BL02	7/11/2017	N	440-188133-3	Alluvium	15.8 - 25.6	--	--	--	--	--	--	<500	--	--
SWFTS-IW01B	BL02	7/11/2017	N	440-188133-13	Alluvium	26.9 - 36.7	--	--	--	--	--	--	<500	--	--
SWFTS-IW02A	BL02	7/11/2017	N	440-188133-14	Alluvium	16.8 - 26.6	--	--	--	--	--	--	<500	--	--
SWFTS-IW02B	BL02	7/11/2017	N	440-188133-2	Alluvium	26.3 - 36.1	--	--	--	--	--	--	<100	--	--
SWFTS-IW03	BL02	7/11/2017	N	440-188133-4	Alluvium	16.8 - 36.6	--	--	--	--	--	--	<500	--	--
SWFTS-IW03	BL02	7/11/2017	FD	440-188133-5	Alluvium	16.8 - 36.6	--	--	--	--	--	--	<500	--	--
SWFTS-IW04	BL02	7/11/2017	N	440-188133-11	Alluvium	19.8 - 34.6	--	--	--	--	--	--	<1,000	--	--
SWFTS-IW04	BL02	7/11/2017	FD	440-188133-12	Alluvium	19.8 - 34.6	--	--	--	--	--	--	<1,000	--	--
SWFTS-IW05	BL02	7/11/2017	N	440-188133-16	Alluvium	14.6 - 34.4	--	--	--	--	--	--	<500	--	--
SWFTS-IW06A	BL02	7/11/2017	N	440-188133-10	Alluvium	16.8 - 26.6	--	--	--	--	--	--	<500	--	--
SWFTS-IW06B	BL02	7/11/2017	N	440-188133-6	Alluvium	28.8 - 33.6	--	--	--	--	--	--	<500	--	--
SWFTS-IW07	BL02	7/11/2017	N	440-188133-7	Alluvium	17.3 - 37.1	--	--	--	--	--	--	<500	--	--
SWFTS-IW08	BL02	7/12/2017	N	440-188247-7	Alluvium	17.5 - 37.3	--	--	--	--	--	--	<500	--	--
SWFTS-IW09	BL02	7/12/2017	N	440-188247-8	Alluvium	26.6 - 46.4	--	--	--	--	--	--	<500	--	--
SWFTS-IW09	BL02	7/12/2017	FD	440-188244-3	Alluvium	26.6 - 46.4	--	--	--	--	--	--	<500	--	--
SWFTS-IW10	BL02	7/12/2017	N	440-188247-9	Alluvium	26.8 - 46.6	--	--	--	--	--	--	<500	--	--
SWFTS-IW11	BL02	7/12/2017	N	440-188247-3	Alluvium	17.3 - 37.1	--	--	--	--	--	--	<500	--	--
SWFTS-IW12	BL02	7/12/2017	N	440-188247-4	Alluvium	14.3 - 39.1	--	--	--	--	--	--	<500	--	--
SWFTS-IW13A	BL02	7/11/2017	N	440-188133-1	Alluvium	15.8 - 25.6	--	--	--	--	--	--	<100	--	--
SWFTS-IW13B	BL02	7/11/2017	N	440-188133-15	Alluvium	27.8 - 37.6	--	--	--	--	--	--	<500	--	--
SWFTS-IW14	BL02	7/12/2017	N	440-188247-1	Alluvium	16.2 - 36.1	--	--	--	--	--	--	<500	--	--
SWFTS-IW15	BL02	7/12/2017	N	440-188247-2	Alluvium	16.4 - 36.2	--	--	--	--	--	--	<500	--	--
SWFTS-IW16A	BL02	7/11/2017	N	440-188133-9	Alluvium	17.3 - 27.1	--	--	--	--	--	--	<500	--	--
SWFTS-IW16B	BL02	7/11/2017	N	440-188133-8	Alluvium	26.5 - 36.3	--	--	--	--	--	--	<500	--	--
SWFTS-IW17	BL02	7/13/2017	N	440-188325-6	Alluvium	17.3 - 37.1	--	--	--	--	--	--	<500	--	--
SWFTS-IW18	BL02	7/13/2017	N	440-188325-4	Alluvium	18.1 - 38.1	--	--	--	--	--	--	<500	--	--
SWFTS-IW19	BL02	7/13/2017	N	440-188325-5	Alluvium	24.3 - 44.1	--	--	--	--	--	--	<500	--	--
SWFTS-IW20	BL02	7/12/2017	N	440-188247-10	Alluvium	30.8 - 50.6	--	--	--	--	--	--	<500	--	--
SWFTS-MW01	BL01	3/29/2017	N	440-180937-6	Alluvium	24.2 - 38.9	0.038	<0.012	<0.50	66	30	<0.50	--	--	<0.025
SWFTS-MW01	EM04	10/10/2017	N	440-194094-2	Alluvium	24.2 - 38.9	0.0098 J	<0.012	<0.50	70	12	<0.50	--	0.28	0.035 J
SWFTS-MW01	EM06	11/15/2017	N	440-196665-4	Alluvium	24.2 - 38.9	--	--	--	--	--	--	--	--	--
SWFTS-MW01	EM07	12/14/2017	N	440-198571-10	Alluvium	24.2 - 38.9	--	--	--	--	--	--	--	--	--
SWFTS-MW01	EM08	2/20/2018	N	440-203841-12	Alluvium	24.2 - 38.9	--	--	--	--	--	--	--	--	--
SWFTS-MW01	EM09	3/27/2018	N	440-207268-10	Alluvium	24.2 - 38.9	--	--	--	--	--	--	--	--	--
SWFTS-MW01	EM10	4/30/2018	N	440-210173-1	Alluvium	24.2 - 38.9	--	--	--	--	--	--	--	--	--
SWFTS-MW01	EM11	7/10/2018	N	440-215437-2	Alluvium	24.2 - 38.9	0.011	<0.012	<5.0	69	<5.0	<5.0	--	--	0.046 J
SWFTS-MW01	EM14	9/10/2018	N	440-219797-1	Alluvium	24.2 - 38.9	--	--	--	--	--	--	--	<0.10 UJ	--
SWFTS-MW01	EM15	10/9/2018	N	440-221855-12	Alluvium	24.2 - 38.9	<0.025	<0.060	<2.5	53	23	<2.5	--	--	0.028 J
SWFTS-MW01	EM19	5/21/2019	N	440-242084-14	Alluvium	24.2 - 38.9	0.016	<0.012	<0.50	43	4.8	<0.20	--	--	--
SWFTS-MW01	EM22	11/5/2019	N	440-253918-3	Alluvium	24.2 - 38.9	0.010	<0.012	<0.50	82	1.4 J	<0.20	--	--	--
SWFTS-MW01	EM26	4/28/2020	N	440-265289-5	Alluvium	24.2 - 38.9	<0.0050	<0.012	<0.50	35	13	<0.20	--	--	--
SWFTS-MW01	EM29	10/13/2020	N	440-273236-11	Alluvium	24.2 - 38.9	<0.0050	<0.012	<2.5	35	5.9 J	<1.0	--	--	--
SWFTS-MW01	EM33	6/4/2021	N	550-164930-17	Alluvium	24.2 - 38.9	--	--	--	--	--	--	--	--	--
SWFTS-MW01	EM33	6/4/2021	N	550-164930-18	Alluvium	24.2 - 38.9	0.014	0.0033 J	0.25 J	34	9.6	0.14	--	--	--

Table D.2
Groundater Analytical Results Summary - Secondary Parameters
Seep Well Field Area Bioremediation Treatability Study

Well	Event	Sample Date	QC Type	Lab Sample ID	Lithology	Screened Interval (ft bgs)	Dissolved Metals by SW6010	Dissolved Metals by SW6010	Dissolved Metals by SW6020	Dissolved Metals by SW6020	Dissolved Metals by SW6020	Dissolved Metals by SW6020	EPA 300.1B	EPA 351.2	EPA 365.3
							Vanadium	Zinc	Antimony	Arsenic	Selenium	Thallium	Chlorite	Total Kjeldahl Nitrogen (TKN)	Phosphorus
							mg/L	mg/L	µg/L	µg/L	µg/L	µg/L	µg/L	mg/L	mg/L
SWFTS-MW01	EM36	11/30/2021	N	550-174968-19	Alluvium	24.2 - 38.9	--	--	--	--	--	--	--	--	--
SWFTS-MW01	EM36	11/30/2021	N	550-174968-20	Alluvium	24.2 - 38.9	0.017	<0.0023	0.24 J	44	14	0.24	--	--	--
SWFTS-MW01	EM40	12/13/2022	N	550-194920-3	Alluvium	24.2 - 38.9	--	--	--	--	--	--	--	--	--
SWFTS-MW01	EM40	12/13/2022	N	550-194920-4	Alluvium	24.2 - 38.9	0.018	<0.0023	0.018 J	4.3	1.8	0.015	--	--	--
SWFTS-MW02	BL01	3/29/2017	N	440-180937-7	Alluvium	18.4 - 33.1	0.043	<0.012	<0.50	51	41	<0.50	--	--	--
SWFTS-MW02	EM04	10/12/2017	N	440-194204-6	Alluvium	18.4 - 33.1	0.021	<0.012	0.51 J	57	36	1.1	--	<0.10 UJ	<0.025 UJ
SWFTS-MW02	EM06	11/14/2017	N	440-196558-3	Alluvium	18.4 - 33.1	--	--	--	--	--	--	--	--	--
SWFTS-MW02	EM07	12/13/2017	N	440-198508-8	Alluvium	18.4 - 33.1	--	--	--	--	--	--	--	--	--
SWFTS-MW02	EM08	2/19/2018	N	440-203775-1	Alluvium	18.4 - 33.1	--	--	--	--	--	--	--	--	--
SWFTS-MW02	EM09	3/27/2018	N	440-207268-1	Alluvium	18.4 - 33.1	--	--	--	--	--	--	--	--	--
SWFTS-MW02	EM10	4/30/2018	N	440-210173-3	Alluvium	18.4 - 33.1	--	--	--	--	--	--	--	--	--
SWFTS-MW02	EM11	7/11/2018	N	440-215717-13	Alluvium	18.4 - 33.1	0.025	<0.012	<5.0	60	7.4 J	<5.0	--	--	<0.025
SWFTS-MW02	EM14	9/10/2018	N	440-219797-2	Alluvium	18.4 - 33.1	--	--	--	--	--	--	--	<0.10 UJ	--
SWFTS-MW02	EM15	10/10/2018	N	440-221975-15	Alluvium	18.4 - 33.1	0.031 J	<0.060	<2.5	57	4.0 J	<2.5	--	--	<0.025
SWFTS-MW02	EM19	5/21/2019	N	440-242084-8	Alluvium	18.4 - 33.1	0.033	<0.012	<0.50	52	2.0	0.26 J	--	--	--
SWFTS-MW02	EM22	11/7/2019	N	440-254148-7	Alluvium	18.4 - 33.1	0.011	<0.012	<0.50	53	0.99 J	0.26 J	--	--	--
SWFTS-MW02	EM26	4/30/2020	N	440-265382-3	Alluvium	18.4 - 33.1	0.017	<0.012	<2.5	31	9.1 J	<1.0	--	--	--
SWFTS-MW02	EM29	10/15/2020	N	550-151259-8	Alluvium	18.4 - 33.1	0.022	<0.012	<2.5	32	11	<1.0	--	--	--
SWFTS-MW02	EM33	6/3/2021	N	550-164869-21	Alluvium	18.4 - 33.1	--	--	--	--	--	--	--	--	--
SWFTS-MW02	EM33	6/3/2021	N	550-164869-22	Alluvium	18.4 - 33.1	0.032	0.0068 J	0.57 J	32	7.3	0.30	--	--	--
SWFTS-MW02	EM36	11/30/2021	N	550-174968-7	Alluvium	18.4 - 33.1	--	--	--	--	--	--	--	--	--
SWFTS-MW02	EM36	11/30/2021	N	550-174968-8	Alluvium	18.4 - 33.1	0.030	<0.0023	0.26 J	42	5.9	0.38	--	--	--
SWFTS-MW02	EM40	12/14/2022	N	550-195015-3	Alluvium	18.4 - 33.1	--	--	--	--	--	--	--	--	--
SWFTS-MW02	EM40	12/14/2022	N	550-195015-4	Alluvium	18.4 - 33.1	0.036	<0.0023	0.25 J	62	47	0.29	--	--	--
SWFTS-MW03	BL01	3/30/2017	N	440-181045-5	Alluvium	27.2 - 42.1	0.035	<0.012	<0.50	61	46	<0.50	--	--	--
SWFTS-MW03	BL01	3/30/2017	FD	440-181045-6	Alluvium	27.2 - 42.1	0.033	<0.012	<0.50	62	46	<0.50	--	--	--
SWFTS-MW03	EM04	10/12/2017	N	440-194204-8	Alluvium	27.2 - 42.1	<0.0050	<0.012	0.70 J	82	5.0	1.4	--	0.35	0.082
SWFTS-MW03	EM06	11/16/2017	N	440-196786-16	Alluvium	27.2 - 42.1	0.021	<0.012	<2.5	56	14	<2.5	--	0.18 J	0.075
SWFTS-MW03	EM07	12/12/2017	N	440-198371-13	Alluvium	27.2 - 42.1	--	--	--	--	--	--	--	--	--
SWFTS-MW03	EM08	2/21/2018	N	440-203937-5	Alluvium	27.2 - 42.1	0.029	<0.012	<1.0	56	15	1.6 J	--	0.47	0.061
SWFTS-MW03	EM09	3/27/2018	N	440-207268-15	Alluvium	27.2 - 42.1	0.012	<0.012	0.58 J	50	24	1.4	--	<0.10	0.056
SWFTS-MW03	EM10	5/2/2018	N	440-210430-6	Alluvium	27.2 - 42.1	0.028	<0.012	<0.50	55	39	0.91 J	--	<0.10	0.031 J
SWFTS-MW03	EM11	7/10/2018	N	440-215437-5	Alluvium	27.2 - 42.1	0.0089 J	<0.012	6.1 J	54	9.1 J-	<5.0	--	0.13 J	0.038 J
SWFTS-MW03	EM13	8/15/2018	N	440-218208-4	Alluvium	27.2 - 42.1	0.0074 J	<0.012	<0.50	48	8.5	1.0	--	<0.10	0.080
SWFTS-MW03	EM14	9/11/2018	N	440-219886-11	Alluvium	27.2 - 42.1	0.0056 J	<0.012	<5.0	50	24	<5.0	--	<0.10	0.044 J
SWFTS-MW03	EM15	10/9/2018	N	440-221855-13	Alluvium	27.2 - 42.1	<0.025	<0.060	<2.5	48	20	<2.5	--	--	<0.025
SWFTS-MW03	EM19	5/21/2019	N	440-242084-12	Alluvium	27.2 - 42.1	0.030	<0.012	<0.50	47	19	0.89 J	--	--	--
SWFTS-MW03	EM22	11/4/2019	N	440-253773-2	Alluvium	27.2 - 42.1	0.015	<0.012	<0.50	50	26	0.77 J	--	--	--
SWFTS-MW03	EM26	4/28/2020	N	440-265289-1	Alluvium	27.2 - 42.1	0.014	<0.012	<0.50	43	30	0.77 J	--	--	--
SWFTS-MW03	EM29	10/13/2020	N	440-273236-10	Alluvium	27.2 - 42.1	0.012	<0.012	<2.5	45	28	<1.0	--	--	--
SWFTS-MW03	EM33	6/3/2021	N	550-164869-15	Alluvium	27.2 - 42.1	--	--	--	--	--	--	--	--	--
SWFTS-MW03	EM33	6/3/2021	N	550-164869-16	Alluvium	27.2 - 42.1	0.029	0.0034 J	0.55 J	47	29	0.72	--	--	--
SWFTS-MW03	EM36	12/1/2021	N	550-175045-1	Alluvium	27.2 - 42.1	--	--	--	--	--	--	--	--	--
SWFTS-MW03	EM36	12/1/2021	N	550-175045-2	Alluvium	27.2 - 42.1	0.026	<0.0023	0.23 J	49	27	0.93	--	--	--
SWFTS-MW03	EM40	12/13/2022	N	550-194920-15	Alluvium	27.2 - 42.1	--	--	--	--	--	--	--	--	--
SWFTS-MW03	EM40	12/13/2022	N	550-194920-16	Alluvium	27.2 - 42.1	0.029	<0.0023	0.023 J	4.8 J+	4.6 J+	0.080	--	--	--
SWFTS-MW04	BL01	3/31/2017	N	440-181122-1	Alluvium	25.8 - 40.4	0.050	<0.012	<2.5	110	10	<2.5	--	--	--
SWFTS-MW04	EM04	10/11/2017	N	440-194242-7	Alluvium	25.8 - 40.4	0.050	<0.012	<0.50	90	3.0	0.53 J	--	0.29	<0.025
SWFTS-MW04	EM06	11/15/2017	N	440-196659-2	Alluvium	25.8 - 40.4	--	--	--	--	--	--	--	--	--
SWFTS-MW04	EM07	12/14/2017	N	440-198571-12	Alluvium	25.8 - 40.4	--	--	--	--	--	--	--	--	--
SWFTS-MW04	EM08	2/21/2018	N	440-203937-2	Alluvium	25.8 - 40.4	--	--	--	--	--	--	--	--	--
SWFTS-MW04	EM09	3/27/2018	N	440-207268-5	Alluvium	25.8 - 40.4	--	--	--	--	--	--	--	--	--
SWFTS-MW04	EM10	5/1/2018	N	440-210284-5	Alluvium	25.8 - 40.4	--	--	--	--	--	--	--	--	--
SWFTS-MW04	EM11	7/10/2018	N	440-215437-4	Alluvium	25.8 - 40.4	0.041	<0.012	<5.0	85	6.5 J	<5.0	--	--	0.078
SWFTS-MW04	EM15	10/11/2018	N	440-222092-9	Alluvium	25.8 - 40.4	0.045	<0.012	<2.5	89	4.6 J	<2.5	--	--	<0.025
SWFTS-MW04	EM19	5/21/2019	N	440-242084-11	Alluvium	25.8 - 40.4	0.054	<0.012	<0.50	91	3.4	0.62 J	--	--	--
SWFTS-MW04	EM22	11/7/2019	N	440-254150-6	Alluvium	25.8 - 40.4	0.040	0.016 J	<0.50	87	2.8	0.63 J	--	--	--
SWFTS-MW04	EM26	5/1/2020	N	440-265412-1	Alluvium	25.8 - 40.4	0.035	<0.012	<2.5	80	26	<1.0	--	--	--
SWFTS-MW04	EM29	10/14/2020	N	440-273303-12	Alluvium	25.8 - 40.4	0.038	<0.012	<1.0	77	7.1	0.61 J	--	--	--
SWFTS-MW04	EM33	6/3/2021	N	550-164869-23	Alluvium	25.8 - 40.4	--	--	--	--	--	--	--	--	--
SWFTS-MW04	EM33	6/3/2021	N	550-164869-24	Alluvium	25.8 - 40.4	0.045	0.0037 J	0.41 J	83	6.8	0.70	--	--	--
SWFTS-MW04	EM36	12/2/2021	N	550-175153-3	Alluvium	25.8 - 40.4	--	--	--	--	--	--	--	--	--
SWFTS-MW04	EM36	12/2/2021	N	550-175153-4	Alluvium	25.8 - 40.4	0.046	0.0045 J	0.20 J	85	7.8	0.86	--	--	--
SWFTS-MW04	EM40	12/14/2022	N	550-195015-1	Alluvium	25.8 - 40.4	--	--	--	--	--	--	--	--	--

Table D.2
Groundater Analytical Results Summary - Secondary Parameters
Seep Well Field Area Bioremediation Treatability Study

Well	Event	Sample Date	QC Type	Lab Sample ID	Lithology	Screened Interval (ft bgs)	Dissolved Metals by SW6010	Dissolved Metals by SW6010	Dissolved Metals by SW6020	Dissolved Metals by SW6020	Dissolved Metals by SW6020	Dissolved Metals by SW6020	EPA 300.1B	EPA 351.2	EPA 365.3
							Vanadium	Zinc	Antimony	Arsenic	Selenium	Thallium	Chlorite	Total Kjeldahl Nitrogen (TKN)	Phosphorus
							mg/L	mg/L	µg/L	µg/L	µg/L	µg/L	µg/L	mg/L	mg/L
SWFTS-MW04	EM40	12/14/2022	N	550-195015-2	Alluvium	25.8 - 40.4	0.047	<0.0023	0.17 J	88	5.7	0.69	--	--	--
SWFTS-MW05A	BL01	3/30/2017	N	440-181045-7	Alluvium	19.3 - 29.3	0.030 J	<0.060	<0.50	24	50	<0.50	--	--	--
SWFTS-MW05A	EM04	10/10/2017	N	440-193989-2	Alluvium	19.3 - 29.3	<0.0050	0.017 J	<2.5	31	41	<2.5	--	--	--
SWFTS-MW05A	EM06	11/14/2017	N	440-196558-1	Alluvium	19.3 - 29.3	--	--	--	--	--	--	--	--	--
SWFTS-MW05A	EM07	12/13/2017	N	440-198508-3	Alluvium	19.3 - 29.3	--	--	--	--	--	--	--	--	--
SWFTS-MW05A	EM08	2/20/2018	N	440-203841-7	Alluvium	19.3 - 29.3	--	--	--	--	--	--	--	--	--
SWFTS-MW05A	EM09	3/26/2018	N	440-207137-5	Alluvium	19.3 - 29.3	--	--	--	--	--	--	--	--	--
SWFTS-MW05A	EM10	4/30/2018	N	440-210173-8	Alluvium	19.3 - 29.3	--	--	--	--	--	--	--	--	--
SWFTS-MW05A	EM11	7/11/2018	N	440-215585-14	Alluvium	19.3 - 29.3	<0.0050	<0.012	<5.0	35	46	<5.0	--	--	<0.025
SWFTS-MW05A	EM15	10/10/2018	N	440-221975-14	Alluvium	19.3 - 29.3	<0.025	<0.060	<2.5	33	25	<2.5	--	--	0.059
SWFTS-MW05A	EM19	5/21/2019	N	440-242084-17	Alluvium	19.3 - 29.3	0.022	<0.012	<0.50	32	33	<0.20	--	--	--
SWFTS-MW05A	EM22	11/5/2019	N	440-253918-1	Alluvium	19.3 - 29.3	<0.0050	<0.012	2.4 J+	32	27	0.41 J	--	--	--
SWFTS-MW05A	EM26	4/29/2020	N	440-265346-2	Alluvium	19.3 - 29.3	<0.0050	<0.012	<5.0	33	43	<2.0	--	--	--
SWFTS-MW05A	EM29	10/14/2020	N	440-273303-9	Alluvium	19.3 - 29.3	0.016	0.019 J	<1.0	31	23	<0.40	--	--	--
SWFTS-MW05A	EM33	6/3/2021	N	550-164869-17	Alluvium	19.3 - 29.3	--	--	--	--	--	--	--	--	--
SWFTS-MW05A	EM33	6/3/2021	N	550-164869-18	Alluvium	19.3 - 29.3	0.025	0.0072 J	0.70 J	35	42	0.11	--	--	--
SWFTS-MW05A	EM36	11/29/2021	N	550-174897-3	Alluvium	19.3 - 29.3	--	--	--	--	--	--	--	--	--
SWFTS-MW05A	EM36	11/29/2021	N	550-174897-4	Alluvium	19.3 - 29.3	0.022	0.010 J	0.31 J	33	41	0.25	--	--	--
SWFTS-MW05B	BL01	3/30/2017	N	440-181045-8	Alluvium	32.3 - 42.0	0.037	<0.012	<0.50	56	47	<0.50	--	--	--
SWFTS-MW05B	EM04	10/10/2017	N	440-193989-1	Alluvium	32.3 - 42.0	<0.0050	0.043	<2.5	59	<2.5 UJ	<2.5	--	--	--
SWFTS-MW05B	EM06	11/14/2017	N	440-196558-2	Alluvium	32.3 - 42.0	--	--	--	--	--	--	--	--	--
SWFTS-MW05B	EM07	12/13/2017	N	440-198508-4	Alluvium	32.3 - 42.0	--	--	--	--	--	--	--	--	--
SWFTS-MW05B	EM08	2/20/2018	N	440-203841-8	Alluvium	32.3 - 42.0	--	--	--	--	--	--	--	--	--
SWFTS-MW05B	EM09	3/26/2018	N	440-207137-6	Alluvium	32.3 - 42.0	--	--	--	--	--	--	--	--	--
SWFTS-MW05B	EM10	4/30/2018	N	440-210173-2	Alluvium	32.3 - 42.0	--	--	--	--	--	--	--	--	--
SWFTS-MW05B	EM11	7/10/2018	N	440-215585-10	Alluvium	32.3 - 42.0	<0.0050	<0.012	<5.0	80	<5.0	<5.0	--	--	0.14
SWFTS-MW05B	EM15	10/9/2018	N	440-221855-14	Alluvium	32.3 - 42.0	<0.025	<0.060	<2.5	25	14	<2.5	--	--	<0.025
SWFTS-MW05B	EM19	5/21/2019	N	440-242084-18	Alluvium	32.3 - 42.0	0.015	<0.012	<0.50	36	6.8	<0.20	--	--	--
SWFTS-MW05B	EM22	11/5/2019	N	440-253918-2	Alluvium	32.3 - 42.0	<0.0050	<0.012	<0.50	61	7.6	<0.20	--	--	--
SWFTS-MW05B	EM26	4/29/2020	N	440-265346-1	Alluvium	32.3 - 42.0	<0.0050	<0.012	<2.5	35	17	<1.0	--	--	--
SWFTS-MW05B	EM29	10/14/2020	N	440-273303-8	Alluvium	32.3 - 42.0	<0.0050	<0.012	<1.0	41	19	<0.40	--	--	--
SWFTS-MW05B	EM33	6/3/2021	N	550-164869-19	Alluvium	32.3 - 42.0	--	--	--	--	--	--	--	--	--
SWFTS-MW05B	EM33	6/3/2021	N	550-164869-20	Alluvium	32.3 - 42.0	0.0028 J	0.0028 J	0.71 J	30	1.2	<0.013	--	--	--
SWFTS-MW05B	EM36	11/30/2021	N	550-174968-15	Alluvium	32.3 - 42.0	--	--	--	--	--	--	--	--	--
SWFTS-MW05B	EM36	11/30/2021	N	550-174968-16	Alluvium	32.3 - 42.0	0.0064	<0.0023	0.24 J	33	2.6	0.027 J	--	--	--
SWFTS-MW06A	BL01	3/30/2017	N	440-181045-1	Alluvium	11.8 - 21.4	0.044	<0.012	<0.50	86	0.50 J	<0.50	--	--	--
SWFTS-MW06A	EM04	10/11/2017	N	440-194090-4	Alluvium	11.8 - 21.4	0.045	<0.012	<0.50	86	1.4 J	<0.50	--	--	--
SWFTS-MW06A	EM06	11/16/2017	N	440-196786-19	Alluvium	11.8 - 21.4	--	--	--	--	--	--	--	--	--
SWFTS-MW06A	EM07	12/13/2017	N	440-198508-1	Alluvium	11.8 - 21.4	--	--	--	--	--	--	--	--	--
SWFTS-MW06A	EM08	2/22/2018	N	440-204033-1	Alluvium	11.8 - 21.4	--	--	--	--	--	--	--	--	--
SWFTS-MW06A	EM09	3/28/2018	N	440-207497-3	Alluvium	11.8 - 21.4	--	--	--	--	--	--	--	--	--
SWFTS-MW06A	EM10	5/1/2018	N	440-210284-9	Alluvium	11.8 - 21.4	--	--	--	--	--	--	--	--	--
SWFTS-MW06A	EM10	5/1/2018	FD	440-210284-10	Alluvium	11.8 - 21.4	--	--	--	--	--	--	--	--	--
SWFTS-MW06A	EM11	7/11/2018	N	440-215585-2	Alluvium	11.8 - 21.4	0.045	<0.012	<5.0	90	<5.0	<5.0	--	--	0.064
SWFTS-MW06A	EM11	7/11/2018	FD	440-215585-3	Alluvium	11.8 - 21.4	0.050	<0.012	<5.0	88	<5.0	<5.0	--	--	0.047 J
SWFTS-MW06A	EM15	10/10/2018	N	440-221975-8	Alluvium	11.8 - 21.4	0.037	<0.012	<2.5	76	6.7 J	<2.5	--	--	0.037 J
SWFTS-MW06A	EM15	10/10/2018	FD	440-221975-10	Alluvium	11.8 - 21.4	0.030	<0.012	<2.5	72	9.2 J	<2.5	--	--	<0.025
SWFTS-MW06A	EM19	5/20/2019	N	440-242015-1	Alluvium	11.8 - 21.4	0.042	<0.012	<0.50	92	0.92 J	0.34 J	--	--	--
SWFTS-MW06A	EM19	5/20/2019	FD	440-242015-2	Alluvium	11.8 - 21.4	0.045	<0.012	<0.50	92	0.72 J	0.33 J	--	--	--
SWFTS-MW06A	EM22	11/6/2019	N	440-254027-4	Alluvium	11.8 - 21.4	0.045	<0.012	<0.50	93	0.89 J	0.32 J	--	--	--
SWFTS-MW06A	EM22	11/6/2019	FD	440-254027-5	Alluvium	11.8 - 21.4	0.047	<0.012	<0.50	93	<0.50	0.33 J	--	--	--
SWFTS-MW06A	EM26	4/29/2020	N	440-265346-5	Alluvium	11.8 - 21.4	0.048	<0.012	<0.50	86	0.90 J	0.27 J	--	--	--
SWFTS-MW06A	EM26	4/29/2020	FD	440-265346-6	Alluvium	11.8 - 21.4	0.046	<0.012	<0.50	84	<0.50	0.27 J	--	--	--
SWFTS-MW06A	EM29	10/13/2020	N	440-273236-7	Alluvium	11.8 - 21.4	0.047	<0.012	<1.0	86	1.1 J	<0.40	--	--	--
SWFTS-MW06A	EM29	10/13/2020	FD	440-273236-8	Alluvium	11.8 - 21.4	0.048	<0.012	<1.0	86	<1.0	<0.40	--	--	--
SWFTS-MW06A	EM33	6/4/2021	N	550-164930-19	Alluvium	11.8 - 21.4	--	--	--	--	--	--	--	--	--
SWFTS-MW06A	EM33	6/4/2021	N	550-164930-20	Alluvium	11.8 - 21.4	0.051	0.010 J	0.15 J	91	0.87	0.31	--	--	--
SWFTS-MW06A	EM33	6/4/2021	FD	550-164930-21	Alluvium	11.8 - 21.4	--	--	--	--	--	--	--	--	--
SWFTS-MW06A	EM33	6/4/2021	FD	550-164930-22	Alluvium	11.8 - 21.4	0.052	0.0091 J	0.15 J	91	0.57	0.33	--	--	--
SWFTS-MW06A	EM36	12/1/2021	N	550-175045-7	Alluvium	11.8 - 21.4	--	--	--	--	--	--	--	--	--
SWFTS-MW06A	EM36	12/1/2021	N	550-175045-8	Alluvium	11.8 - 21.4	0.051	0.0042 J	0.21 J	98	0.87	0.41	--	--	--
SWFTS-MW06A	EM36	12/1/2021	FD	550-175045-10	Alluvium	11.8 - 21.4	0.051	<0.0023	0.19 J	91	0.85	0.42	--	--	--
SWFTS-MW06A	EM36	12/1/2021	FD	550-175045-9	Alluvium	11.8 - 21.4	--	--	--	--	--	--	--	--	--
SWFTS-MW06A	EM40	12/14/2022	N	550-195015-5	Alluvium	11.8 - 21.4	--	--	--	--	--	--	--	--	--

Table D.2
Groundater Analytical Results Summary - Secondary Parameters
Seep Well Field Area Bioremediation Treatability Study

Well	Event	Sample Date	QC Type	Lab Sample ID	Lithology	Screened Interval (ft bgs)	Dissolved Metals by SW6010	Dissolved Metals by SW6010	Dissolved Metals by SW6020	Dissolved Metals by SW6020	Dissolved Metals by SW6020	Dissolved Metals by SW6020	EPA 300.1B	EPA 351.2	EPA 365.3
							Vanadium	Zinc	Antimony	Arsenic	Selenium	Thallium	Chlorite	Total Kjeldahl Nitrogen (TKN)	Phosphorus
							mg/L	mg/L	µg/L	µg/L	µg/L	µg/L	µg/L	mg/L	mg/L
SWFTS-MW06A	EM40	12/14/2022	N	550-195015-6	Alluvium	11.8 - 21.4	0.051	<0.0023	0.18 J	93	0.88	0.36	--	--	--
SWFTS-MW06A	EM40	12/14/2022	FD	550-195015-7	Alluvium	11.8 - 21.4	--	--	--	--	--	--	--	--	--
SWFTS-MW06A	EM40	12/14/2022	FD	550-195015-8	Alluvium	11.8 - 21.4	0.050	<0.0023	0.16 J	95	0.59	0.38	--	--	--
SWFTS-MW06B	BL01	3/30/2017	N	440-181045-2	Alluvium	25.9 - 35.5	0.047	<0.012	<0.50	86	1.1 J	<0.50	--	--	--
SWFTS-MW06B	EM04	10/11/2017	N	440-194090-5	Alluvium	25.9 - 35.5	0.043	<0.012	<0.50	87	1.3 J	<0.50	--	--	--
SWFTS-MW06B	EM06	11/16/2017	N	440-196786-20	Alluvium	25.9 - 35.5	--	--	--	--	--	--	--	--	--
SWFTS-MW06B	EM07	12/13/2017	N	440-198508-2	Alluvium	25.9 - 35.5	--	--	--	--	--	--	--	--	--
SWFTS-MW06B	EM08	2/22/2018	N	440-204033-5	Alluvium	25.9 - 35.5	--	--	--	--	--	--	--	--	--
SWFTS-MW06B	EM09	3/28/2018	N	440-207497-2	Alluvium	25.9 - 35.5	--	--	--	--	--	--	--	--	--
SWFTS-MW06B	EM10	5/1/2018	N	440-210284-8	Alluvium	25.9 - 35.5	--	--	--	--	--	--	--	--	--
SWFTS-MW06B	EM11	7/11/2018	N	440-215585-4	Alluvium	25.9 - 35.5	0.048	<0.012	<5.0	90	<5.0	<5.0	--	--	0.084
SWFTS-MW06B	EM15	10/10/2018	N	440-221975-9	Alluvium	25.9 - 35.5	0.046	<0.012	<2.5	86	<2.5	<2.5	--	--	0.027 J
SWFTS-MW06B	EM19	5/21/2019	N	440-242084-5	Alluvium	25.9 - 35.5	0.057	<0.012	<0.50	93	1.2 J	0.39 J	--	--	--
SWFTS-MW06B	EM22	11/6/2019	N	440-254027-6	Alluvium	25.9 - 35.5	0.041	<0.012	<0.50	91	0.81 J	0.36 J	--	--	--
SWFTS-MW06B	EM26	4/29/2020	N	440-265346-4	Alluvium	25.9 - 35.5	0.051	<0.012	<0.50	90	1.1 J	0.31 J	--	--	--
SWFTS-MW06B	EM29	10/13/2020	N	440-273236-6	Alluvium	25.9 - 35.5	0.047	<0.012	<1.0	89	<1.0	<0.40	--	--	--
SWFTS-MW06B	EM33	6/4/2021	N	550-164930-23	Alluvium	25.9 - 35.5	--	--	--	--	--	--	--	--	--
SWFTS-MW06B	EM33	6/4/2021	N	550-164930-24	Alluvium	25.9 - 35.5	0.054	0.0049 J	0.17 J	90	1.3	0.37	--	--	--
SWFTS-MW06B	EM36	12/1/2021	N	550-175045-11	Alluvium	25.9 - 35.5	--	--	--	--	--	--	--	--	--
SWFTS-MW06B	EM36	12/1/2021	N	550-175045-12	Alluvium	25.9 - 35.5	0.051	0.0050 J	0.20 J	93	1.0	0.45	--	--	--
SWFTS-MW06B	EM40	12/14/2022	N	550-195015-10	Alluvium	25.9 - 35.5	0.052	<0.0023	0.30 J	95	0.78	0.41	--	--	--
SWFTS-MW06B	EM40	12/14/2022	N	550-195015-9	Alluvium	25.9 - 35.5	--	--	--	--	--	--	--	--	--
SWFTS-MW07A	BL01	3/30/2017	N	440-181045-3	Alluvium	15.0 - 29.5	0.027	<0.012	<0.50	56	43	<0.50	--	--	--
SWFTS-MW07A	EM04	10/11/2017	N	440-194242-3	Alluvium	15.0 - 29.5	0.015	<0.012	<0.50	64	51	<0.50	--	--	--
SWFTS-MW07A	EM06	11/15/2017	N	440-196659-7	Alluvium	15.0 - 29.5	--	--	--	--	--	--	--	--	--
SWFTS-MW07A	EM07	12/14/2017	N	440-198571-3	Alluvium	15.0 - 29.5	--	--	--	--	--	--	--	--	--
SWFTS-MW07A	EM08	2/19/2018	N	440-203775-3	Alluvium	15.0 - 29.5	--	--	--	--	--	--	--	--	--
SWFTS-MW07A	EM09	3/28/2018	N	440-207497-4	Alluvium	15.0 - 29.5	--	--	--	--	--	--	--	--	--
SWFTS-MW07A	EM10	5/2/2018	N	440-210430-2	Alluvium	15.0 - 29.5	--	--	--	--	--	--	--	--	--
SWFTS-MW07A	EM11	7/11/2018	N	440-215585-7	Alluvium	15.0 - 29.5	0.020	<0.012	<5.0	73	46	<5.0	--	--	<0.025
SWFTS-MW07A	EM15	10/10/2018	N	440-221975-11	Alluvium	15.0 - 29.5	<0.025	<0.060	<2.5	73	47	<2.5	--	--	<0.025
SWFTS-MW07A	EM19	5/22/2019	N	440-242200-5	Alluvium	15.0 - 29.5	0.044	<0.012	<5.0	88	36	<2.0	--	--	--
SWFTS-MW07A	EM22	11/7/2019	N	440-254148-4	Alluvium	15.0 - 29.5	0.027	<0.012	<0.50	79	40	<0.20	--	--	--
SWFTS-MW07A	EM26	4/30/2020	N	440-265382-5	Alluvium	15.0 - 29.5	0.024	<0.012	<2.5	73	40	<1.0	--	--	--
SWFTS-MW07A	EM29	10/16/2020	N	440-273433-1	Alluvium	15.0 - 29.5	0.030	<0.012	0.52 J	76	47	<0.20	--	--	--
SWFTS-MW07A	EM33	6/4/2021	N	550-164930-25	Alluvium	15.0 - 29.5	--	--	--	--	--	--	--	--	--
SWFTS-MW07A	EM33	6/4/2021	N	550-164930-26	Alluvium	15.0 - 29.5	0.035	0.010 J	0.15 J	78	34	0.15	--	--	--
SWFTS-MW07A	EM36	12/3/2021	N	550-175222-3	Alluvium	15.0 - 29.5	--	--	--	--	--	--	--	--	--
SWFTS-MW07A	EM36	12/3/2021	N	550-175222-4	Alluvium	15.0 - 29.5	0.032	0.020 J	0.14 J	79	28	0.25	--	--	--
SWFTS-MW07A	EM40	12/14/2022	N	550-195015-11	Alluvium	15.0 - 29.5	--	--	--	--	--	--	--	--	--
SWFTS-MW07A	EM40	12/14/2022	N	550-195015-12	Alluvium	15.0 - 29.5	0.031	<0.0023	0.11 J	79	63	0.27	--	--	--
SWFTS-MW07B	BL01	3/30/2017	N	440-181045-4	Alluvium	33.8 - 38.3	0.041	<0.012	<0.50	73	59	<0.50	--	--	--
SWFTS-MW07B	EM04	10/11/2017	N	440-194242-4	Alluvium	33.8 - 38.3	0.030	<0.012	<0.50	79	48	<0.50	--	--	--
SWFTS-MW07B	EM06	11/15/2017	N	440-196659-8	Alluvium	33.8 - 38.3	--	--	--	--	--	--	--	--	--
SWFTS-MW07B	EM07	12/14/2017	N	440-198571-4	Alluvium	33.8 - 38.3	--	--	--	--	--	--	--	--	--
SWFTS-MW07B	EM08	2/19/2018	N	440-203775-2	Alluvium	33.8 - 38.3	--	--	--	--	--	--	--	--	--
SWFTS-MW07B	EM09	3/28/2018	N	440-207497-10	Alluvium	33.8 - 38.3	--	--	--	--	--	--	--	--	--
SWFTS-MW07B	EM10	5/2/2018	N	440-210430-1	Alluvium	33.8 - 38.3	--	--	--	--	--	--	--	--	--
SWFTS-MW07B	EM11	7/11/2018	N	440-215585-8	Alluvium	33.8 - 38.3	0.031	<0.012	<5.0	83	52	<5.0	--	--	0.025 J
SWFTS-MW07B	EM15	10/10/2018	N	440-221975-12	Alluvium	33.8 - 38.3	0.040 J	<0.060	<2.5	83	45	<2.5	--	--	0.10
SWFTS-MW07B	EM19	5/22/2019	N	440-242200-6	Alluvium	33.8 - 38.3	0.034	<0.012	<5.0	73	44	<2.0	--	--	--
SWFTS-MW07B	EM22	11/7/2019	N	440-254148-5	Alluvium	33.8 - 38.3	0.035	0.013 J	<0.50	87	36	0.24 J	--	--	--
SWFTS-MW07B	EM26	4/30/2020	N	440-265382-4	Alluvium	33.8 - 38.3	0.028	<0.012	<2.5	76	56	<1.0	--	--	--
SWFTS-MW07B	EM29	10/16/2020	N	440-273433-2	Alluvium	33.8 - 38.3	0.040	<0.012	<0.50	82	35	0.22 J	--	--	--
SWFTS-MW07B	EM33	6/4/2021	N	550-164930-27	Alluvium	33.8 - 38.3	--	--	--	--	--	--	--	--	--
SWFTS-MW07B	EM33	6/4/2021	N	550-164930-28	Alluvium	33.8 - 38.3	0.039	0.0072 J	0.17 J	77	26	0.28	--	--	--
SWFTS-MW07B	EM36	12/3/2021	N	550-175222-5	Alluvium	33.8 - 38.3	--	--	--	--	--	--	--	--	--
SWFTS-MW07B	EM36	12/3/2021	N	550-175222-6	Alluvium	33.8 - 38.3	0.035	0.0071 J	0.15 J	76	26	0.41	--	--	--
SWFTS-MW07B	EM40	12/14/2022	N	550-195015-13	Alluvium	33.8 - 38.3	--	--	--	--	--	--	--	--	--
SWFTS-MW07B	EM40	12/14/2022	N	550-195015-14	Alluvium	33.8 - 38.3	0.039	<0.0023	0.14 J	83	42	0.29	--	--	--
SWFTS-MW08A	BL01	3/30/2017	N	440-181045-9	Alluvium	20.2 - 34.8	0.040	<0.012	<0.50	66	27	<0.50	--	--	<0.025 UJ
SWFTS-MW08A	EM04	10/10/2017	N	440-194094-4	Alluvium	20.2 - 34.8	0.023	<0.012	<2.5	70	31	<2.5	--	--	--
SWFTS-MW08A	EM06	11/15/2017	N	440-196659-4	Alluvium	20.2 - 34.8	--	--	--	--	--	--	--	--	--
SWFTS-MW08A	EM07	12/14/2017	N	440-198571-1	Alluvium	20.2 - 34.8	--	--	--	--	--	--	--	--	--

Table D.2
Groundater Analytical Results Summary - Secondary Parameters
Seep Well Field Area Bioremediation Treatability Study

Well	Event	Sample Date	QC Type	Lab Sample ID	Lithology	Screened Interval (ft bgs)	Dissolved Metals by SW6010	Dissolved Metals by SW6010	Dissolved Metals by SW6020	Dissolved Metals by SW6020	Dissolved Metals by SW6020	Dissolved Metals by SW6020	EPA 300.1B	EPA 351.2	EPA 365.3
							Vanadium	Zinc	Antimony	Arsenic	Selenium	Thallium	Chlorite	Total Kjeldahl Nitrogen (TKN)	Phosphorus
							mg/L	mg/L	µg/L	µg/L	µg/L	µg/L	µg/L	mg/L	mg/L
SWFTS-MW08A	EM08	2/22/2018	N	440-204033-8	Alluvium	20.2 - 34.8	--	--	--	--	--	--	--	--	--
SWFTS-MW08A	EM09	3/29/2018	N	440-207586-1	Alluvium	20.2 - 34.8	--	--	--	--	--	--	--	--	--
SWFTS-MW08A	EM10	5/3/2018	N	440-210534-5	Alluvium	20.2 - 34.8	--	--	--	--	--	--	--	--	--
SWFTS-MW08A	EM11	7/11/2018	N	440-215717-14	Alluvium	20.2 - 34.8	0.024	<0.012	<5.0	68	37	<5.0	--	--	<0.025
SWFTS-MW08A	EM15	10/10/2018	N	440-221975-13	Alluvium	20.2 - 34.8	0.032 J	<0.060	<2.5	67	31	<2.5	--	--	<0.025
SWFTS-MW08A	EM19	5/22/2019	N	440-242198-4	Alluvium	20.2 - 34.8	0.038	<0.012	<5.0	69	26	<2.0	--	--	--
SWFTS-MW08A	EM22	11/7/2019	N	440-254148-6	Alluvium	20.2 - 34.8	0.026	<0.012	<0.50	69	30	<0.20	--	--	--
SWFTS-MW08A	EM26	4/29/2020	N	440-265346-3	Alluvium	20.2 - 34.8	0.022	<0.012	<2.5	60	24	<1.0	--	--	--
SWFTS-MW08A	EM29	10/16/2020	N	440-273433-4	Alluvium	20.2 - 34.8	0.034	<0.012	<0.50	67	27	<0.20	--	--	--
SWFTS-MW08A	EM33	6/4/2021	N	550-164930-29	Alluvium	20.2 - 34.8	--	--	--	--	--	--	--	--	--
SWFTS-MW08A	EM33	6/4/2021	N	550-164930-30	Alluvium	20.2 - 34.8	0.035	0.0033 J	0.096 J	66	26	0.13	--	--	--
SWFTS-MW08A	EM36	12/2/2021	N	550-175153-23	Alluvium	20.2 - 34.8	--	--	--	--	--	--	--	--	--
SWFTS-MW08A	EM36	12/2/2021	N	550-175153-24	Alluvium	20.2 - 34.8	0.033	0.0084 J	0.13 J	66	25	0.19 J+	--	--	--
SWFTS-MW08C	BL01	3/28/2017	N	440-180820-3	UMCf	49.9 - 69.5	0.028	<0.012	0.56 J	37	55	<0.50	--	--	0.093
SWFTS-MW08C	EM40	12/14/2022	N	550-195015-15	UMCf	49.9 - 69.5	--	--	--	--	--	--	--	--	--
SWFTS-MW08C	EM40	12/14/2022	N	550-195015-16	UMCf	49.9 - 69.5	0.025	<0.0023	0.094 J	46	66	0.047 J	--	--	--
SWFTS-MW09A	BL01	3/29/2017	N	440-180937-3	Alluvium	19.3 - 28.9	0.036	<0.012	<0.50	66	29	<0.50	--	--	0.043 J
SWFTS-MW09A	EM04	10/11/2017	N	440-194094-7	Alluvium	19.3 - 28.9	<0.0050	<0.012	<0.50	50	1.8 J	<0.50	--	--	--
SWFTS-MW09A	EM06	11/16/2017	N	440-196786-14	Alluvium	19.3 - 28.9	--	--	--	--	--	--	--	--	--
SWFTS-MW09A	EM07	12/12/2017	N	440-198371-6	Alluvium	19.3 - 28.9	--	--	--	--	--	--	--	--	--
SWFTS-MW09A	EM08	2/20/2018	N	440-203841-14	Alluvium	19.3 - 28.9	--	--	--	--	--	--	--	--	--
SWFTS-MW09A	EM09	3/27/2018	N	440-207268-7	Alluvium	19.3 - 28.9	--	--	--	--	--	--	--	--	--
SWFTS-MW09A	EM10	5/1/2018	N	440-210284-13	Alluvium	19.3 - 28.9	--	--	--	--	--	--	--	--	--
SWFTS-MW09A	EM11	7/12/2018	N	440-215717-10	Alluvium	19.3 - 28.9	0.014	<0.012	<5.0	39	8.2 J	<5.0	--	--	0.025 J
SWFTS-MW09A	EM15	10/9/2018	N	440-221855-7	Alluvium	19.3 - 28.9	<0.025	<0.060	<2.5	35	12	<2.5	--	--	0.33
SWFTS-MW09A	EM19	5/22/2019	N	440-242200-1	Alluvium	19.3 - 28.9	0.019	<0.012	<5.0	26	8.6 J	<2.0	--	--	--
SWFTS-MW09A	EM22	11/5/2019	N	440-253891-1	Alluvium	19.3 - 28.9	0.019	<0.012	1.1 J	45	10	0.41 J	--	--	--
SWFTS-MW09A	EM26	4/28/2020	N	440-265289-4	Alluvium	19.3 - 28.9	0.015	<0.012	<0.50	37	16	0.47 J	--	--	--
SWFTS-MW09A	EM29	10/13/2020	N	440-273236-3	Alluvium	19.3 - 28.9	0.014	<0.012	<2.5	37	16	<1.0	--	--	--
SWFTS-MW09A	EM33	6/1/2021	N	550-164699-1	Alluvium	19.3 - 28.9	--	--	--	--	--	--	--	--	--
SWFTS-MW09A	EM33	6/1/2021	N	550-164699-2	Alluvium	19.3 - 28.9	0.026	0.0079 J	0.22 J	37	15	0.29	--	--	--
SWFTS-MW09A	EM36	12/2/2021	N	550-175153-10	Alluvium	19.3 - 28.9	0.026	0.0075 J	0.23 J	44	11	0.55 J+	--	--	--
SWFTS-MW09A	EM36	12/2/2021	N	550-175153-9	Alluvium	19.3 - 28.9	--	--	--	--	--	--	--	--	--
SWFTS-MW09A	EM40	12/13/2022	N	550-194920-10	Alluvium	19.3 - 28.9	0.024	<0.0023	0.015 J	4.1	3.7	0.039	--	--	--
SWFTS-MW09A	EM40	12/13/2022	N	550-194920-9	Alluvium	19.3 - 28.9	--	--	--	--	--	--	--	--	--
SWFTS-MW09B	BL01	3/29/2017	N	440-180937-4	Alluvium	34.4 - 39.0	0.035	<0.012	<0.50	66	40	<0.50	--	--	0.068
SWFTS-MW09B	BL01	3/29/2017	FD	440-180937-5	Alluvium	34.4 - 39.0	0.034	<0.012	<0.50	58	37	<0.50	--	--	0.064
SWFTS-MW09B	EM04	10/11/2017	N	440-194094-5	Alluvium	34.4 - 39.0	<0.0050	<0.012	<2.5	57	5.0 J	<2.5	--	--	--
SWFTS-MW09B	EM06	11/16/2017	N	440-196786-15	Alluvium	34.4 - 39.0	--	--	--	--	--	--	--	--	--
SWFTS-MW09B	EM07	12/12/2017	N	440-198371-7	Alluvium	34.4 - 39.0	--	--	--	--	--	--	--	--	--
SWFTS-MW09B	EM08	2/20/2018	N	440-203841-13	Alluvium	34.4 - 39.0	--	--	--	--	--	--	--	--	--
SWFTS-MW09B	EM09	3/27/2018	N	440-207268-6	Alluvium	34.4 - 39.0	--	--	--	--	--	--	--	--	--
SWFTS-MW09B	EM10	4/30/2018	N	440-210173-11	Alluvium	34.4 - 39.0	--	--	--	--	--	--	--	--	--
SWFTS-MW09B	EM11	7/12/2018	N	440-215717-9	Alluvium	34.4 - 39.0	0.012	<0.012	<5.0	50	15 J	<5.0	--	--	<0.025
SWFTS-MW09B	EM15	10/9/2018	N	440-221855-8	Alluvium	34.4 - 39.0	<0.025	<0.060	<2.5	50	21	<2.5	--	--	<0.025
SWFTS-MW09B	EM19	5/22/2019	N	440-242200-2	Alluvium	34.4 - 39.0	0.030	<0.012	<5.0	63	21	<2.0	--	--	--
SWFTS-MW09B	EM22	11/5/2019	N	440-253891-3	Alluvium	34.4 - 39.0	0.021	<0.012	<0.50	57	25	0.39 J	--	--	--
SWFTS-MW09B	EM26	4/28/2020	N	440-265289-3	Alluvium	34.4 - 39.0	0.019	<0.012	<0.50	53	31	0.39 J	--	--	--
SWFTS-MW09B	EM29	10/13/2020	N	440-273236-4	Alluvium	34.4 - 39.0	0.024	<0.012	<2.5	60	28	<1.0	--	--	--
SWFTS-MW09B	EM33	6/2/2021	N	550-164872-1	Alluvium	34.4 - 39.0	--	--	--	--	--	--	--	--	--
SWFTS-MW09B	EM33	6/2/2021	N	550-164872-2	Alluvium	34.4 - 39.0	0.038	0.0055 J	0.33 J	62	27	0.48	--	--	--
SWFTS-MW09B	EM36	12/2/2021	N	550-175153-11	Alluvium	34.4 - 39.0	--	--	--	--	--	--	--	--	--
SWFTS-MW09B	EM36	12/2/2021	N	550-175153-12	Alluvium	34.4 - 39.0	0.035	0.0073 J	0.23 J	64	26	0.42 J+	--	--	--
SWFTS-MW09B	EM40	12/13/2022	N	550-194920-13	Alluvium	34.4 - 39.0	--	--	--	--	--	--	--	--	--
SWFTS-MW09B	EM40	12/13/2022	N	550-194920-14	Alluvium	34.4 - 39.0	0.038	<0.0023	0.020 J	6.8	4.9	0.032	--	--	--
SWFTS-MW10A	BL01	3/31/2017	N	440-181122-2	Alluvium	20.4 - 35.0	0.044	<0.012	<2.5	93	28	<2.5	--	--	0.059
SWFTS-MW10A	EM04	10/12/2017	N	440-194242-10	Alluvium	20.4 - 35.0	<0.0050	<0.012	<0.50	100	2.0	<0.50	--	--	--
SWFTS-MW10A	EM06	11/16/2017	N	440-196786-5	Alluvium	20.4 - 35.0	<0.0050	<0.012	<2.5	64	<2.5	<2.5	--	0.19 J	0.14
SWFTS-MW10A	EM06	11/16/2017	FD	440-196786-6	Alluvium	20.4 - 35.0	<0.0050	<0.012	<2.5	59	<2.5	<2.5	--	0.28	0.13 J
SWFTS-MW10A	EM07	12/12/2017	N	440-198371-10	Alluvium	20.4 - 35.0	--	--	--	--	--	--	--	--	--
SWFTS-MW10A	EM07	12/12/2017	FD	440-198371-11	Alluvium	20.4 - 35.0	--	--	--	--	--	--	--	--	--
SWFTS-MW10A	EM08	2/20/2018	N	440-203841-4	Alluvium	20.4 - 35.0	<0.0050	<0.012	1.0 J	20	2.2	<0.50	--	0.15 J	<0.025
SWFTS-MW10A	EM08	2/20/2018	FD	440-203841-5	Alluvium	20.4 - 35.0	<0.0050	<0.012	<0.50	18	1.9 J	<0.50	--	0.20	<0.025
SWFTS-MW10A	EM09	3/26/2018	N	440-207137-7	Alluvium	20.4 - 35.0	<0.0050	<0.012	<0.50	15	8.3	<0.50	--	<0.10	<0.025

Table D.2
Groundater Analytical Results Summary - Secondary Parameters
Seep Well Field Area Bioremediation Treatability Study

Well	Event	Sample Date	QC Type	Lab Sample ID	Lithology	Screened Interval (ft bgs)	Dissolved Metals by SW6010	Dissolved Metals by SW6010	Dissolved Metals by SW6020	Dissolved Metals by SW6020	Dissolved Metals by SW6020	Dissolved Metals by SW6020	EPA 300.1B	EPA 351.2	EPA 365.3
							Vanadium	Zinc	Antimony	Arsenic	Selenium	Thallium	Chlorite	Total Kjeldahl Nitrogen (TKN)	Phosphorus
							mg/L	mg/L	µg/L	µg/L	µg/L	µg/L	µg/L	mg/L	mg/L
SWFTS-MW10A	EM09	3/26/2018	FD	440-207137-8	Alluvium	20.4 - 35.0	<0.0050	<0.012	0.50 J	16	10	<0.50	--	<0.10	<0.025
SWFTS-MW10A	EM10	5/1/2018	N	440-210284-1	Alluvium	20.4 - 35.0	0.0050 J	<0.012	<5.0	20	10 J	<5.0	--	<0.10	<0.025
SWFTS-MW10A	EM11	7/11/2018	N	440-215585-9	Alluvium	20.4 - 35.0	<0.0050	<0.012	6.9 J	28	18 J	<5.0	--	0.10 J	<0.025
SWFTS-MW10A	EM13	8/14/2018	N	440-218109-10	Alluvium	20.4 - 35.0	<0.0050	<0.012	<5.0	25	8.0 J	<5.0	--	<0.10	<0.025
SWFTS-MW10A	EM14	9/10/2018	N	440-219797-4	Alluvium	20.4 - 35.0	<0.0050	<0.012	<5.0	28	7.6 J	<5.0	--	0.19 J	<0.025
SWFTS-MW10A	EM15	10/9/2018	N	440-221855-9	Alluvium	20.4 - 35.0	<0.025	<0.060	<2.5	26	4.5 J	<2.5	--	0.32	<0.025
SWFTS-MW10A	EM19	5/21/2019	N	440-242084-2	Alluvium	20.4 - 35.0	0.013	<0.012	0.61 J	43	8.9	<0.20	--	--	--
SWFTS-MW10A	EM22	11/6/2019	N	440-254051-1	Alluvium	20.4 - 35.0	<0.0050	<0.012	1.1 J	39	8.4	<0.20	--	--	--
SWFTS-MW10A	EM26	4/29/2020	N	440-265342-6	Alluvium	20.4 - 35.0	0.012	<0.012	1.3 J	46	41	<0.20	--	--	--
SWFTS-MW10A	EM29	10/14/2020	N	440-273303-4	Alluvium	20.4 - 35.0	0.020	<0.012	2.6 J+	53	38	<0.20	--	--	--
SWFTS-MW10A	EM33	6/4/2021	N	550-164930-13	Alluvium	20.4 - 35.0	--	--	--	--	--	--	--	--	--
SWFTS-MW10A	EM33	6/4/2021	N	550-164930-14	Alluvium	20.4 - 35.0	0.043	0.0069 J	0.40 J	65	49	0.20	--	--	--
SWFTS-MW10A	EM36	11/30/2021	N	550-174968-17	Alluvium	20.4 - 35.0	--	--	--	--	--	--	--	--	--
SWFTS-MW10A	EM36	11/30/2021	N	550-174968-18	Alluvium	20.4 - 35.0	0.029	0.0036 J	0.36 J	56	32	0.096 J	--	--	--
SWFTS-MW10A	EM40	12/15/2022	N	550-195103-1	Alluvium	20.4 - 35.0	--	--	--	--	--	--	--	--	--
SWFTS-MW10A	EM40	12/15/2022	N	550-195103-2	Alluvium	20.4 - 35.0	0.043	<0.0023	0.31 J	72	100	0.50	--	--	--
SWFTS-MW10C	BL01	3/28/2017	N	440-180820-4	UMCf	43.5 - 63.1	0.018	<0.012	<0.50	26	37	<0.50	--	--	0.059
SWFTS-MW10C	EM40	12/15/2022	N	550-195103-3	UMCf	43.5 - 63.1	--	--	--	--	--	--	--	--	--
SWFTS-MW10C	EM40	12/15/2022	N	550-195103-4	UMCf	43.5 - 63.1	0.022	<0.0023	0.13 J	44	44	0.24	--	--	--
SWFTS-MW11	BL02	7/12/2017	N	440-188244-7	Alluvium	14.8 - 39.6	0.025	<0.012	<0.50	34	65	<0.50	<1,000	<0.10 UJ	0.059 J-
SWFTS-MW11	EM04	10/11/2017	N	440-194094-8	Alluvium	14.8 - 39.6	0.016	<0.012	<2.5	64	68	<2.5	--	<0.10	<0.025
SWFTS-MW11	EM06	11/16/2017	N	440-196786-3	Alluvium	14.8 - 39.6	--	--	--	--	--	--	--	--	--
SWFTS-MW11	EM07	12/14/2017	N	440-198571-13	Alluvium	14.8 - 39.6	--	--	--	--	--	--	--	--	--
SWFTS-MW11	EM08	2/21/2018	N	440-203937-10	Alluvium	14.8 - 39.6	--	--	--	--	--	--	--	--	--
SWFTS-MW11	EM08	2/21/2018	FD	440-203937-11	Alluvium	14.8 - 39.6	--	--	--	--	--	--	--	--	--
SWFTS-MW11	EM09	3/28/2018	N	440-207497-7	Alluvium	14.8 - 39.6	--	--	--	--	--	--	--	--	--
SWFTS-MW11	EM09	3/28/2018	FD	440-207497-8	Alluvium	14.8 - 39.6	--	--	--	--	--	--	--	--	--
SWFTS-MW11	EM10	5/1/2018	N	440-210284-11	Alluvium	14.8 - 39.6	--	--	--	--	--	--	--	--	--
SWFTS-MW11	EM10	5/1/2018	FD	440-210367-1	Alluvium	14.8 - 39.6	--	--	--	--	--	--	--	--	--
SWFTS-MW11	EM11	7/12/2018	N	440-215717-17	Alluvium	14.8 - 39.6	0.024	<0.012	<5.0	72	55	<5.0	--	<0.10	<0.025
SWFTS-MW11	EM11	7/12/2018	FD	440-215717-18	Alluvium	14.8 - 39.6	0.023	<0.012	<5.0	76	56	<5.0	--	<0.10	<0.025
SWFTS-MW11	EM15	10/11/2018	N	440-222092-10	Alluvium	14.8 - 39.6	0.030	<0.012	<2.5	77	61	<2.5	--	<0.10	<0.025
SWFTS-MW11	EM15	10/11/2018	FD	440-222092-11	Alluvium	14.8 - 39.6	0.026	<0.012	<2.5	75	61	<2.5	--	0.19 J	<0.025
SWFTS-MW11	EM19	5/22/2019	N	440-242200-3	Alluvium	14.8 - 39.6	0.046	<0.012	<5.0	87	53	<2.0	--	--	--
SWFTS-MW11	EM19	5/22/2019	FD	440-242200-4	Alluvium	14.8 - 39.6	0.045	<0.012	<5.0	100	58	<2.0	--	--	--
SWFTS-MW11	EM22	11/7/2019	N	440-254150-3	Alluvium	14.8 - 39.6	0.036	<0.012	<0.50	91	48	<0.20	--	--	--
SWFTS-MW11	EM22	11/7/2019	FD	440-254150-4	Alluvium	14.8 - 39.6	0.036	<0.012	<0.50	91	46	<0.20	--	--	--
SWFTS-MW11	EM26	4/30/2020	N	440-265383-4	Alluvium	14.8 - 39.6	0.031	<0.012	<2.5	96	78	<1.0	--	--	--
SWFTS-MW11	EM26	4/30/2020	FD	440-265383-5	Alluvium	14.8 - 39.6	0.031	<0.012	<2.5	94	71	<1.0	--	--	--
SWFTS-MW11	EM29	10/16/2020	N	440-273433-7	Alluvium	14.8 - 39.6	0.042	0.015 J	<0.50	97	54	<0.20	--	--	--
SWFTS-MW11	EM29	10/16/2020	FD	440-273433-8	Alluvium	14.8 - 39.6	0.043	0.014 J	<0.50	100	57	<0.20	--	--	--
SWFTS-MW11	EM33	6/4/2021	N	550-164930-7	Alluvium	14.8 - 39.6	--	--	--	--	--	--	--	--	--
SWFTS-MW11	EM33	6/4/2021	N	550-164930-8	Alluvium	14.8 - 39.6	0.047	0.0067 J	0.15 J	96	37	0.027 J	--	--	--
SWFTS-MW11	EM33	6/4/2021	FD	550-164930-10	Alluvium	14.8 - 39.6	0.047	0.0067 J	0.15 J	95	40	0.033 J	--	--	--
SWFTS-MW11	EM33	6/4/2021	FD	550-164930-9	Alluvium	14.8 - 39.6	--	--	--	--	--	--	--	--	--
SWFTS-MW11	EM36	12/3/2021	N	550-175222-7	Alluvium	14.8 - 39.6	--	--	--	--	--	--	--	--	--
SWFTS-MW11	EM36	12/3/2021	N	550-175222-8	Alluvium	14.8 - 39.6	0.044	0.0092 J	0.17 J	96	34	0.075 J	--	--	--
SWFTS-MW11	EM36	12/3/2021	FD	550-175222-10	Alluvium	14.8 - 39.6	0.046	0.0065 J	0.17 J	95	33	0.060 J	--	--	--
SWFTS-MW11	EM36	12/3/2021	FD	550-175222-9	Alluvium	14.8 - 39.6	--	--	--	--	--	--	--	--	--
SWFTS-MW11	EM40	12/15/2022	N	550-195103-5	Alluvium	14.8 - 39.6	--	--	--	--	--	--	--	--	--
SWFTS-MW11	EM40	12/15/2022	N	550-195103-6	Alluvium	14.8 - 39.6	0.052	<0.0023	0.16 J	100	49	0.048 J	--	--	--
SWFTS-MW11	EM40	12/15/2022	FD	550-195103-7	Alluvium	14.8 - 39.6	--	--	--	--	--	--	--	--	--
SWFTS-MW11	EM40	12/15/2022	FD	550-195103-8	Alluvium	14.8 - 39.6	0.052	<0.0023	0.18 J	100	49	0.045 J	--	--	--
SWFTS-MW12	BL02	7/13/2017	N	440-188324-6	Alluvium	15.8 - 40.6	0.039	<0.012	<0.50	62	51	<0.50	<500	--	--
SWFTS-MW12	EM04	10/11/2017	N	440-194090-1	Alluvium	15.8 - 40.6	0.015	<0.012	<0.50	66	61	<0.50	--	<0.10	<0.025
SWFTS-MW12	EM06	11/14/2017	N	440-196558-5	Alluvium	15.8 - 40.6	--	--	--	--	--	--	--	--	--
SWFTS-MW12	EM07	12/14/2017	N	440-198571-15	Alluvium	15.8 - 40.6	--	--	--	--	--	--	--	--	--
SWFTS-MW12	EM08	2/22/2018	N	440-204033-2	Alluvium	15.8 - 40.6	--	--	--	--	--	--	--	--	--
SWFTS-MW12	EM09	3/28/2018	N	440-207497-5	Alluvium	15.8 - 40.6	--	--	--	--	--	--	--	--	--
SWFTS-MW12	EM10	5/3/2018	N	440-210534-4	Alluvium	15.8 - 40.6	--	--	--	--	--	--	--	--	--
SWFTS-MW12	EM11	7/12/2018	N	440-215717-16	Alluvium	15.8 - 40.6	0.017	<0.012	<5.0	69	48	<5.0	--	--	<0.025
SWFTS-MW12	EM15	10/11/2018	N	440-222092-12	Alluvium	15.8 - 40.6	0.017	<0.012	<2.5	62	47	<2.5	--	--	<0.025
SWFTS-MW12	EM19	5/22/2019	N	440-242198-7	Alluvium	15.8 - 40.6	0.039	<0.012	<5.0	70	52	<2.0	--	--	--
SWFTS-MW12	EM22	11/7/2019	N	440-254150-2	Alluvium	15.8 - 40.6	<0.025	<0.060	<0.50	100	2.8	<0.20	--	--	--

Table D.2
Groundater Analytical Results Summary - Secondary Parameters
Seep Well Field Area Bioremediation Treatability Study

Well	Event	Sample Date	QC Type	Lab Sample ID	Lithology	Screened Interval (ft bgs)	Dissolved Metals by SW6010	Dissolved Metals by SW6010	Dissolved Metals by SW6020	Dissolved Metals by SW6020	Dissolved Metals by SW6020	Dissolved Metals by SW6020	EPA 300.1B	EPA 351.2	EPA 365.3
							Vanadium	Zinc	Antimony	Arsenic	Selenium	Thallium	Chlorite	Total Kjeldahl Nitrogen (TKN)	Phosphorus
							mg/L	mg/L	µg/L	µg/L	µg/L	µg/L	µg/L	mg/L	mg/L
SWFTS-MW12	EM22	11/26/2019	N	440-255698-1	Alluvium	15.8 - 40.6	<0.0050 UJ	<0.012 UJ	<10 UJ	120 J-	330 J-	<4.0 UJ	--	--	--
SWFTS-MW12	EM22	11/26/2019	FD	440-255698-2	Alluvium	15.8 - 40.6	<0.0050 UJ	0.019 J	<10 UJ	96 J-	390 J-	<4.0 UJ	--	--	--
SWFTS-MW12	EM26	4/30/2020	N	440-265383-3	Alluvium	15.8 - 40.6	0.024	<0.012	<2.5	120	120	<1.0	--	--	--
SWFTS-MW12	EM29	10/16/2020	N	440-273433-6	Alluvium	15.8 - 40.6	<0.0050	0.016 J	<0.50	19	36	<0.20	--	--	--
SWFTS-MW12	EM33	6/4/2021	N	550-164930-5	Alluvium	15.8 - 40.6	--	--	--	--	--	--	--	--	--
SWFTS-MW12	EM33	6/4/2021	N	550-164930-6	Alluvium	15.8 - 40.6	0.013	0.0080 J	0.12 J	13	23	<0.013	--	--	--
SWFTS-MW12	EM36	12/2/2021	N	550-175153-19	Alluvium	15.8 - 40.6	--	--	--	--	--	--	--	--	--
SWFTS-MW12	EM36	12/2/2021	N	550-175153-20	Alluvium	15.8 - 40.6	0.022	0.0057 J	0.19 J	22	31	<0.013	--	--	--
SWFTS-MW12	EM40	12/15/2022	N	550-195103-10	Alluvium	15.8 - 40.6	0.028	<0.0023	0.16 J	27	45	<0.013	--	--	--
SWFTS-MW12	EM40	12/15/2022	N	550-195103-9	Alluvium	15.8 - 40.6	--	--	--	--	--	--	--	--	--
SWFTS-MW13	BL02	7/12/2017	N	440-188244-6	Alluvium	17.8 - 47.6	0.016	<0.012	<0.50	24	40	<0.50	<500	<0.10	0.033 J
SWFTS-MW13	EM04	10/10/2017	N	440-193989-4	Alluvium	17.8 - 47.6	<0.0050	<0.012	<2.5	49	50	<2.5	--	--	--
SWFTS-MW13	EM06	11/15/2017	N	440-196659-1	Alluvium	17.8 - 47.6	--	--	--	--	--	--	--	--	--
SWFTS-MW13	EM07	12/14/2017	N	440-198571-14	Alluvium	17.8 - 47.6	--	--	--	--	--	--	--	--	--
SWFTS-MW13	EM08	2/22/2018	N	440-204033-7	Alluvium	17.8 - 47.6	--	--	--	--	--	--	--	--	--
SWFTS-MW13	EM09	3/26/2018	N	440-207137-4	Alluvium	17.8 - 47.6	--	--	--	--	--	--	--	--	--
SWFTS-MW13	EM10	5/3/2018	N	440-210534-1	Alluvium	17.8 - 47.6	--	--	--	--	--	--	--	--	--
SWFTS-MW13	EM11	7/12/2018	N	440-215717-15	Alluvium	17.8 - 47.6	<0.0050	<0.012	<5.0	45	41	<5.0	--	--	0.027 J
SWFTS-MW13	EM15	10/11/2018	N	440-222092-14	Alluvium	17.8 - 47.6	<0.0050	<0.012	<2.5	44	48	<2.5	--	--	<0.025
SWFTS-MW13	EM19	5/22/2019	N	440-242198-5	Alluvium	17.8 - 47.6	0.025	<0.012	<5.0	47	37	<2.0	--	--	--
SWFTS-MW13	EM22	11/6/2019	N	440-254051-6	Alluvium	17.8 - 47.6	<0.025	<0.060	<0.50	53	55	<0.20	--	--	--
SWFTS-MW13	EM26	4/30/2020	N	440-265383-2	Alluvium	17.8 - 47.6	0.011	<0.060	<2.5	56	59	<1.0	--	--	--
SWFTS-MW13	EM29	10/15/2020	N	550-151259-6	Alluvium	17.8 - 47.6	0.019	0.018 J	<2.5	56	58	<1.0	--	--	--
SWFTS-MW13	EM33	6/4/2021	N	550-164930-3	Alluvium	17.8 - 47.6	--	--	--	--	--	--	--	--	--
SWFTS-MW13	EM33	6/4/2021	N	550-164930-4	Alluvium	17.8 - 47.6	0.032	0.0024 J	0.13 J	54	59	0.091 J	--	--	--
SWFTS-MW13	EM36	12/2/2021	N	550-175153-17	Alluvium	17.8 - 47.6	--	--	--	--	--	--	--	--	--
SWFTS-MW13	EM36	12/2/2021	N	550-175153-18	Alluvium	17.8 - 47.6	0.032	<0.0023	0.21 J	59	59	0.10 J+	--	--	--
SWFTS-MW13	EM40	12/15/2022	N	550-195106-7	Alluvium	17.8 - 47.6	--	--	--	--	--	--	--	--	--
SWFTS-MW13	EM40	12/15/2022	N	550-195106-8	Alluvium	17.8 - 47.6	0.025	<0.0023	0.11 J	49	47	0.077 J	--	--	--
SWFTS-MW14	BL02	7/12/2017	N	440-188244-8	Alluvium	16.8 - 36.6	0.033	<0.012	<0.50	56	61	<0.50	<500	<0.10	0.062
SWFTS-MW14	BL02	7/12/2017	FD	440-188244-9	Alluvium	16.8 - 36.6	0.034	<0.012	<0.50	54	59	<0.50	<500	<0.10	0.045 J
SWFTS-MW14	EM04	10/11/2017	N	440-194242-8	Alluvium	16.8 - 36.6	<0.0050	<0.012	<0.50	160	2.4	<0.50	--	0.11 J	0.040 J
SWFTS-MW14	EM06	11/15/2017	N	440-196659-3	Alluvium	16.8 - 36.6	<0.0050	<0.012	<2.5	88	<2.5	<2.5	--	0.19 J	0.15 J-
SWFTS-MW14	EM07	12/12/2017	N	440-198371-12	Alluvium	16.8 - 36.6	--	--	--	--	--	--	--	--	--
SWFTS-MW14	EM08	2/20/2018	N	440-203841-11	Alluvium	16.8 - 36.6	<0.010	<0.024	0.65 J	180	7.3 J-	<0.50	200 R	1.1	2.6
SWFTS-MW14	EM09	3/26/2018	N	440-207137-9	Alluvium	16.8 - 36.6	<0.025	<0.060	<2.5 UJ	110	190 J-	<2.5	--	0.87	0.39
SWFTS-MW14	EM10	4/30/2018	N	440-210173-9	Alluvium	16.8 - 36.6	<0.025	<0.060	<5.0	71	220	<5.0	--	0.42	0.43
SWFTS-MW14	EM11	7/10/2018	N	440-215437-8	Alluvium	16.8 - 36.6	<0.0050	<0.012	<5.0	18	110	<5.0	--	0.45	0.52
SWFTS-MW14	EM13	8/14/2018	N	440-218109-11	Alluvium	16.8 - 36.6	<0.0050	<0.012	<5.0	13	180 J+	<5.0	--	0.41	0.35
SWFTS-MW14	EM14	9/11/2018	N	440-219886-17	Alluvium	16.8 - 36.6	<0.0050	<0.012	<5.0	17	510	<5.0	--	0.78	0.43
SWFTS-MW14	EM15	10/9/2018	N	440-221855-10	Alluvium	16.8 - 36.6	<0.025	<0.060	<2.5	13	200	<2.5	--	0.70	0.14
SWFTS-MW14	EM19	5/21/2019	N	440-242084-1	Alluvium	16.8 - 36.6	0.0050 J	<0.012	<0.50	1.5	89	<0.20	--	--	--
SWFTS-MW14	EM22	11/6/2019	N	440-254051-2	Alluvium	16.8 - 36.6	<0.0050	<0.012	<0.50	<0.50	36	<0.20	--	--	--
SWFTS-MW14	EM26	5/1/2020	N	440-265414-2	Alluvium	16.8 - 36.6	<0.0050	<0.012	<2.5 UJ	<2.5	87 J-	<1.0	--	--	--
SWFTS-MW14	EM29	10/14/2020	N	440-273303-5	Alluvium	16.8 - 36.6	<0.0050	<0.012	<0.50	2.5	3.7	<0.20	--	--	--
SWFTS-MW14	EM33	6/4/2021	N	550-164930-1	Alluvium	16.8 - 36.6	--	--	--	--	--	--	--	--	--
SWFTS-MW14	EM33	6/4/2021	N	550-164930-2	Alluvium	16.8 - 36.6	0.015	0.010 J	0.35 J	10	14	0.030 J	--	--	--
SWFTS-MW14	EM36	12/3/2021	N	550-175222-1	Alluvium	16.8 - 36.6	--	--	--	--	--	--	--	--	--
SWFTS-MW14	EM36	12/3/2021	N	550-175222-2	Alluvium	16.8 - 36.6	0.0054	<0.0023	0.23 J	63	0.73	<0.013	--	--	--
SWFTS-MW14	EM40	12/15/2022	N	550-195106-3	Alluvium	16.8 - 36.6	--	--	--	--	--	--	--	--	--
SWFTS-MW14	EM40	12/15/2022	N	550-195106-4	Alluvium	16.8 - 36.6	0.013	<0.0023	0.32 J	7.7	52	<0.013	--	--	--
SWFTS-MW15	BL02	7/13/2017	N	440-188325-3	Alluvium	14.8 - 34.6	0.035	<0.012	<0.50	62	28	<0.50	<500	<0.10	0.15
SWFTS-MW15	EM04	10/10/2017	N	440-194094-1	Alluvium	14.8 - 34.6	0.021	<0.012	<0.50	67	29	<0.50	--	<0.10	0.072
SWFTS-MW15	EM06	11/14/2017	N	440-196558-4	Alluvium	14.8 - 34.6	--	--	--	--	--	--	--	--	--
SWFTS-MW15	EM07	12/13/2017	N	440-198508-13	Alluvium	14.8 - 34.6	0.038	<0.012	<0.50	79	33	<0.50	--	<0.10	<0.025
SWFTS-MW15	EM08	2/19/2018	N	440-203775-4	Alluvium	14.8 - 34.6	--	--	--	--	--	--	--	--	--
SWFTS-MW15	EM09	3/26/2018	N	440-207137-10	Alluvium	14.8 - 34.6	--	--	--	--	--	--	--	--	--
SWFTS-MW15	EM10	5/2/2018	N	440-210430-3	Alluvium	14.8 - 34.6	--	--	--	--	--	--	--	--	--
SWFTS-MW15	EM11	7/11/2018	N	440-215717-1	Alluvium	14.8 - 34.6	0.018	<0.012	<5.0	79	21	<5.0	--	--	0.065
SWFTS-MW15	EM15	10/9/2018	N	440-221855-11	Alluvium	14.8 - 34.6	<0.025	<0.060	<2.5	23	50	<2.5	--	--	0.049 J
SWFTS-MW15	EM19	5/20/2019	N	440-242014-1	Alluvium	14.8 - 34.6	0.020	<0.012	1.8 J	69	26	0.36 J	--	--	--
SWFTS-MW15	EM22	11/6/2019	N	440-254051-3	Alluvium	14.8 - 34.6	0.026	<0.012	<0.50	75	32	<0.20	--	--	--
SWFTS-MW15	EM26	4/29/2020	N	440-265342-3	Alluvium	14.8 - 34.6	0.032	<0.012	<2.5	53	29	<1.0	--	--	--
SWFTS-MW15	EM29	10/15/2020	N	550-151259-4	Alluvium	14.8 - 34.6	0.013	<0.012	<2.5	56	16	<1.0	--	--	--

Table D.2
Groundater Analytical Results Summary - Secondary Parameters
Seep Well Field Area Bioremediation Treatability Study

Well	Event	Sample Date	QC Type	Lab Sample ID	Lithology	Screened Interval (ft bgs)	Dissolved Metals by SW6010	Dissolved Metals by SW6010	Dissolved Metals by SW6020	Dissolved Metals by SW6020	Dissolved Metals by SW6020	Dissolved Metals by SW6020	EPA 300.1B	EPA 351.2	EPA 365.3
							Vanadium	Zinc	Antimony	Arsenic	Selenium	Thallium	Chlorite	Total Kjeldahl Nitrogen (TKN)	Phosphorus
							mg/L	mg/L	µg/L	µg/L	µg/L	µg/L	µg/L	mg/L	mg/L
SWFTS-MW15	EM33	6/3/2021	N	550-164869-13	Alluvium	14.8 - 34.6	--	--	--	--	--	--	--	--	--
SWFTS-MW15	EM33	6/3/2021	N	550-164869-14	Alluvium	14.8 - 34.6	0.029	0.0071 J	0.41 J	47	26	0.017 J	--	--	--
SWFTS-MW15	EM36	11/30/2021	N	550-174968-10	Alluvium	14.8 - 34.6	0.030	<0.0023	0.17 J	60	24	0.15 J+	--	--	--
SWFTS-MW15	EM36	11/30/2021	N	550-174968-9	Alluvium	14.8 - 34.6	--	--	--	--	--	--	--	--	--
SWFTS-MW15	EM40	12/15/2022	N	550-195106-1	Alluvium	14.8 - 34.6	--	--	--	--	--	--	--	--	--
SWFTS-MW15	EM40	12/15/2022	N	550-195106-2	Alluvium	14.8 - 34.6	0.018	<0.0023	0.21 J	22	16	0.046 J	--	--	--
SWFTS-MW16	BL02	7/13/2017	N	440-188325-2	Alluvium	21.8 - 41.6	0.043	<0.012	<0.50	61	43	<0.50	<500	--	--
SWFTS-MW16	EM04	10/12/2017	N	440-194204-7	Alluvium	21.8 - 41.6	<0.0050	<0.012	<0.50	76	17	<0.50	--	0.43	0.081
SWFTS-MW16	EM06	11/16/2017	N	440-196786-4	Alluvium	21.8 - 41.6	0.0091 J	<0.012	<0.50	44	35	<0.50	--	2.8	0.37
SWFTS-MW16	EM07	12/12/2017	N	440-198371-4	Alluvium	21.8 - 41.6	--	--	--	--	--	--	--	--	--
SWFTS-MW16	EM08	2/21/2018	N	440-203937-6	Alluvium	21.8 - 41.6	<0.0050	<0.012	<1.0	15	8.1	<1.0	--	0.23	0.096
SWFTS-MW16	EM09	3/27/2018	N	440-207268-13	Alluvium	21.8 - 41.6	0.024	<0.012	<0.50	63	31	<0.50	--	<0.10	0.12
SWFTS-MW16	EM10	5/2/2018	N	440-210430-13	Alluvium	21.8 - 41.6	<0.010	<0.024	0.80 J	13	22	<0.50 UJ	--	0.34	0.051
SWFTS-MW16	EM11	7/11/2018	N	440-215585-12	Alluvium	21.8 - 41.6	<0.0050	<0.012	<5.0	39	21	<5.0	--	0.75	0.11
SWFTS-MW16	EM13	8/15/2018	N	440-218208-13	Alluvium	21.8 - 41.6	<0.0050	<0.012	<0.50	6.3	<0.50 UJ	<0.50	--	0.61	0.14
SWFTS-MW16	EM14	9/10/2018	N	440-219797-6	Alluvium	21.8 - 41.6	<0.0050	<0.012	<5.0	11	<5.0	<5.0	--	0.58	0.076
SWFTS-MW16	EM15	10/11/2018	N	440-222092-3	Alluvium	21.8 - 41.6	<0.0050	<0.012	<2.5	9.0	<2.5	<2.5	--	0.59	<0.025
SWFTS-MW16	EM19	5/20/2019	N	440-242014-3	Alluvium	21.8 - 41.6	<0.0050	<0.012	<0.50	3.1	5.8	<0.20	--	--	--
SWFTS-MW16	EM22	11/6/2019	N	440-254051-5	Alluvium	21.8 - 41.6	<0.0050	<0.012	<0.50	2.6	5.5	<0.20	--	--	--
SWFTS-MW16	EM26	4/30/2020	N	440-265383-1	Alluvium	21.8 - 41.6	<0.0050	<0.012	<2.5	20	<2.5	<1.0	--	--	--
SWFTS-MW16	EM29	10/15/2020	N	550-151259-1	Alluvium	21.8 - 41.6	<0.0050	<0.012	<2.5	18	5.1 J	<1.0	--	--	--
SWFTS-MW16	EM33	6/3/2021	N	550-164869-11	Alluvium	21.8 - 41.6	--	--	--	--	--	--	--	--	--
SWFTS-MW16	EM33	6/3/2021	N	550-164869-12	Alluvium	21.8 - 41.6	0.0027 J	0.0070 J	0.38 J	10	<0.074	<0.013	--	--	--
SWFTS-MW16	EM36	11/30/2021	N	550-174968-11	Alluvium	21.8 - 41.6	--	--	--	--	--	--	--	--	--
SWFTS-MW16	EM36	11/30/2021	N	550-174968-12	Alluvium	21.8 - 41.6	0.0032 J	<0.0023	0.23 J	6.2	0.69	0.027 J	--	--	--
SWFTS-MW16	EM40	12/14/2022	N	550-195013-15	Alluvium	21.8 - 41.6	--	--	--	--	--	--	--	--	--
SWFTS-MW16	EM40	12/14/2022	N	550-195013-16	Alluvium	21.8 - 41.6	0.0020 J	<0.0023	0.18 J	39	0.75 J+	0.026 J	--	--	--
SWFTS-MW17	BL02	7/12/2017	N	440-188244-1	Alluvium	22.8 - 52.6	0.023	<0.012	<0.50	51	32	<0.50	--	--	--
SWFTS-MW17	EM04	10/10/2017	N	440-193989-3	Alluvium	22.8 - 52.6	<0.0050	<0.012	<2.5	56	30	<2.5	--	<0.10	<0.025
SWFTS-MW17	EM06	11/15/2017	N	440-196659-5	Alluvium	22.8 - 52.6	--	--	--	--	--	--	--	--	--
SWFTS-MW17	EM06	11/15/2017	FD	440-196659-6	Alluvium	22.8 - 52.6	--	--	--	--	--	--	--	--	--
SWFTS-MW17	EM07	12/13/2017	N	440-198508-6	Alluvium	22.8 - 52.6	--	--	--	--	--	--	--	--	--
SWFTS-MW17	EM07	12/13/2017	FD	440-198508-7	Alluvium	22.8 - 52.6	--	--	--	--	--	--	--	--	--
SWFTS-MW17	EM08	2/22/2018	N	440-204033-11	Alluvium	22.8 - 52.6	--	--	--	--	--	--	--	--	--
SWFTS-MW17	EM09	3/28/2018	N	440-207497-11	Alluvium	22.8 - 52.6	--	--	--	--	--	--	--	--	--
SWFTS-MW17	EM10	5/3/2018	N	440-210534-3	Alluvium	22.8 - 52.6	--	--	--	--	--	--	--	--	--
SWFTS-MW17	EM11	7/11/2018	N	440-215585-13	Alluvium	22.8 - 52.6	<0.0050	<0.012	<5.0	53	22	<5.0	--	--	<0.025
SWFTS-MW17	EM15	10/11/2018	N	440-222092-4	Alluvium	22.8 - 52.6	<0.0050	<0.012	<2.5	55	23	<2.5	--	--	<0.025
SWFTS-MW17	EM19	5/22/2019	N	440-242198-6	Alluvium	22.8 - 52.6	0.022	<0.012	<5.0	55	22	<2.0	--	--	--
SWFTS-MW17	EM22	11/7/2019	N	440-254150-1	Alluvium	22.8 - 52.6	<0.0050	0.013 J	<0.50	56	24	<0.20	--	--	--
SWFTS-MW17	EM26	4/30/2020	N	440-265383-6	Alluvium	22.8 - 52.6	<0.0050	<0.012	<2.5	57	24	<1.0	--	--	--
SWFTS-MW17	EM29	10/15/2020	N	550-151259-5	Alluvium	22.8 - 52.6	0.015	<0.012	<2.5	55	25	<1.0	--	--	--
SWFTS-MW17	EM33	6/3/2021	N	550-164869-10	Alluvium	22.8 - 52.6	0.025	0.0046 J	0.59 J	58	26	0.084 J	--	--	--
SWFTS-MW17	EM33	6/3/2021	N	550-164869-9	Alluvium	22.8 - 52.6	--	--	--	--	--	--	--	--	--
SWFTS-MW17	EM36	12/2/2021	N	550-175153-21	Alluvium	22.8 - 52.6	--	--	--	--	--	--	--	--	--
SWFTS-MW17	EM36	12/2/2021	N	550-175153-22	Alluvium	22.8 - 52.6	0.025	0.0064 J	0.17 J	62	33	0.12 J+	--	--	--
SWFTS-MW17	EM40	12/14/2022	N	550-195013-13	Alluvium	22.8 - 52.6	--	--	--	--	--	--	--	--	--
SWFTS-MW17	EM40	12/14/2022	N	550-195013-14	Alluvium	22.8 - 52.6	0.023	<0.0023	0.27 J	58	28	0.088 J	--	--	--
SWFTS-MW18	BL02	7/11/2017	N	440-188133-17	Alluvium	16.8 - 36.6	0.037	<0.012	0.63 J	71	36	<0.50	<500	<0.10	0.25
SWFTS-MW18	EM04	10/10/2017	N	440-194094-3	Alluvium	16.8 - 36.6	0.021	<0.012	<2.5	66	38	<2.5	--	--	--
SWFTS-MW18	EM06	11/15/2017	N	440-196690-11	Alluvium	16.8 - 36.6	--	--	--	--	--	--	--	--	--
SWFTS-MW18	EM07	12/13/2017	N	440-198508-5	Alluvium	16.8 - 36.6	0.042	<0.012	<0.50	73	41	<0.50	--	<0.10	0.058
SWFTS-MW18	EM08	2/22/2018	N	440-204033-4	Alluvium	16.8 - 36.6	--	--	--	--	--	--	--	--	--
SWFTS-MW18	EM09	3/27/2018	N	440-207268-11	Alluvium	16.8 - 36.6	--	--	--	--	--	--	--	--	--
SWFTS-MW18	EM09	3/27/2018	FD	440-207268-12	Alluvium	16.8 - 36.6	--	--	--	--	--	--	--	--	--
SWFTS-MW18	EM10	5/1/2018	N	440-210284-6	Alluvium	16.8 - 36.6	--	--	--	--	--	--	--	--	--
SWFTS-MW18	EM11	7/11/2018	N	440-215717-2	Alluvium	16.8 - 36.6	0.024	<0.012	<5.0	67	37	<5.0	--	--	0.045 J
SWFTS-MW18	EM15	10/11/2018	N	440-222092-5	Alluvium	16.8 - 36.6	0.026	<0.012	<2.5	76	43	<2.5	--	--	<0.025
SWFTS-MW18	EM19	5/21/2019	N	440-242084-15	Alluvium	16.8 - 36.6	0.035	<0.012	<0.50	66	38	0.25 J	--	--	--
SWFTS-MW18	EM22	11/6/2019	N	440-254051-4	Alluvium	16.8 - 36.6	0.015	<0.012	<0.50	63	12	<0.20	--	--	--
SWFTS-MW18	EM26	4/29/2020	N	440-265342-2	Alluvium	16.8 - 36.6	0.023	<0.012	<2.5	54	24	<1.0	--	--	--
SWFTS-MW18	EM29	10/15/2020	N	550-151259-2	Alluvium	16.8 - 36.6	0.026	0.015 J	<2.5	60	29	<1.0	--	--	--
SWFTS-MW18	EM33	6/3/2021	N	550-164869-7	Alluvium	16.8 - 36.6	--	--	--	--	--	--	--	--	--
SWFTS-MW18	EM33	6/3/2021	N	550-164869-8	Alluvium	16.8 - 36.6	0.021	0.0069 J	0.80 J	52	34	0.077 J	--	--	--

Table D.2
Groundater Analytical Results Summary - Secondary Parameters
Seep Well Field Area Bioremediation Treatability Study

Well	Event	Sample Date	QC Type	Lab Sample ID	Lithology	Screened Interval (ft bgs)	Dissolved Metals by SW6010	Dissolved Metals by SW6010	Dissolved Metals by SW6020	Dissolved Metals by SW6020	Dissolved Metals by SW6020	Dissolved Metals by SW6020	EPA 300.1B	EPA 351.2	EPA 365.3
							Vanadium	Zinc	Antimony	Arsenic	Selenium	Thallium	Chlorite	Total Kjeldahl Nitrogen (TKN)	Phosphorus
							mg/L	mg/L	µg/L	µg/L	µg/L	µg/L	µg/L	mg/L	mg/L
SWFTS-MW18	EM36	12/1/2021	N	550-175045-5	Alluvium	16.8 - 36.6	--	--	--	--	--	--	--	--	--
SWFTS-MW18	EM36	12/1/2021	N	550-175045-6	Alluvium	16.8 - 36.6	0.016	<0.0023	0.58 J	210	3.1	0.019 J	--	--	--
SWFTS-MW18	EM40	12/14/2022	N	550-195013-11	Alluvium	16.8 - 36.6	--	--	--	--	--	--	--	--	--
SWFTS-MW18	EM40	12/14/2022	N	550-195013-12	Alluvium	16.8 - 36.6	0.026	<0.0023	0.16 J	60	47	0.055 J	--	--	--
SWFTS-MW19	BL02	7/12/2017	N	440-188244-2	Alluvium	11.3 - 31.1	0.034	<0.012	<0.50	68	2.2	<0.50	<20	0.18 J	<0.025
SWFTS-MW19	EM04	10/12/2017	N	440-194204-1	Alluvium	11.3 - 31.1	0.030	<0.012	<0.50	71	2.8	<0.50	--	--	--
SWFTS-MW19	EM06	11/16/2017	N	440-196786-12	Alluvium	11.3 - 31.1	--	--	--	--	--	--	--	--	--
SWFTS-MW19	EM07	12/12/2017	N	440-198371-8	Alluvium	11.3 - 31.1	--	--	--	--	--	--	--	--	--
SWFTS-MW19	EM08	2/20/2018	N	440-203841-6	Alluvium	11.3 - 31.1	--	--	--	--	--	--	--	--	--
SWFTS-MW19	EM09	3/27/2018	N	440-207268-3	Alluvium	11.3 - 31.1	--	--	--	--	--	--	--	--	--
SWFTS-MW19	EM10	4/30/2018	N	440-210173-4	Alluvium	11.3 - 31.1	--	--	--	--	--	--	--	--	--
SWFTS-MW19	EM10	4/30/2018	FD	440-210173-5	Alluvium	11.3 - 31.1	--	--	--	--	--	--	--	--	--
SWFTS-MW19	EM11	7/10/2018	N	440-215437-10	Alluvium	11.3 - 31.1	0.022	<0.012	<5.0	68	6.0 J	<5.0	--	--	0.035 J
SWFTS-MW19	EM11	7/10/2018	FD	440-215437-11	Alluvium	11.3 - 31.1	0.022	<0.012	<5.0	67	5.9 J	<5.0	--	--	0.028 J
SWFTS-MW19	EM15	10/9/2018	N	440-221855-4	Alluvium	11.3 - 31.1	0.030	<0.012	<2.5	73	4.9 J	<2.5	--	--	<0.025
SWFTS-MW19	EM15	10/9/2018	FD	440-221855-5	Alluvium	11.3 - 31.1	0.031	<0.012	<2.5	71	6.6 J	<2.5	--	--	<0.025
SWFTS-MW19	EM19	5/21/2019	N	440-242084-6	Alluvium	11.3 - 31.1	0.034	<0.012	<0.50	74	4.0	<0.20	--	--	--
SWFTS-MW19	EM19	5/21/2019	FD	440-242084-7	Alluvium	11.3 - 31.1	0.034	<0.012	<0.50	74	3.9	<0.20	--	--	--
SWFTS-MW19	EM22	11/5/2019	N	440-253891-6	Alluvium	11.3 - 31.1	0.032	<0.012 UJ	<0.50	77	5.1	<0.20	--	--	--
SWFTS-MW19	EM22	11/5/2019	FD	440-253891-7	Alluvium	11.3 - 31.1	0.031	0.19 J	<0.50	77	5.3	<0.20	--	--	--
SWFTS-MW19	EM26	4/28/2020	N	440-265288-4	Alluvium	11.3 - 31.1	0.020	<0.012	<0.50	64	11	<0.20	--	--	--
SWFTS-MW19	EM26	4/28/2020	FD	440-265288-7	Alluvium	11.3 - 31.1	0.021	<0.012	<0.50	64	12	<0.20	--	--	--
SWFTS-MW19	EM29	10/14/2020	N	440-273303-2	Alluvium	11.3 - 31.1	0.028	<0.012	<0.50	69	5.0	<0.20	--	--	--
SWFTS-MW19	EM29	10/14/2020	FD	440-273303-3	Alluvium	11.3 - 31.1	0.028	<0.012	<0.50	67	4.6	<0.20	--	--	--
SWFTS-MW19	EM33	6/3/2021	N	550-164869-3	Alluvium	11.3 - 31.1	--	--	--	--	--	--	--	--	--
SWFTS-MW19	EM33	6/3/2021	N	550-164869-4	Alluvium	11.3 - 31.1	0.032	0.0032 J	0.58 J	71	3.2	0.049 J	--	--	--
SWFTS-MW19	EM33	6/3/2021	FD	550-164869-5	Alluvium	11.3 - 31.1	--	--	--	--	--	--	--	--	--
SWFTS-MW19	EM33	6/3/2021	FD	550-164869-6	Alluvium	11.3 - 31.1	0.033	0.0066 J	0.83 J	72	3.1	0.048 J	--	--	--
SWFTS-MW19	EM36	12/1/2021	N	550-175045-13	Alluvium	11.3 - 31.1	--	--	--	--	--	--	--	--	--
SWFTS-MW19	EM36	12/1/2021	N	550-175045-14	Alluvium	11.3 - 31.1	0.035	0.0066 J	0.20 J	75	3.0	0.078 J	--	--	--
SWFTS-MW19	EM36	12/1/2021	FD	550-175045-15	Alluvium	11.3 - 31.1	--	--	--	--	--	--	--	--	--
SWFTS-MW19	EM36	12/1/2021	FD	550-175045-16	Alluvium	11.3 - 31.1	0.036	0.0027 J	0.16 J	75	3.5	0.074 J	--	--	--
SWFTS-MW19	EM40	12/14/2022	N	550-195013-3	Alluvium	11.3 - 31.1	--	--	--	--	--	--	--	--	--
SWFTS-MW19	EM40	12/14/2022	N	550-195013-4	Alluvium	11.3 - 31.1	0.036	<0.0023	0.15 J	74	18	0.094 J	--	--	--
SWFTS-MW19	EM40	12/14/2022	FD	550-195013-5	Alluvium	11.3 - 31.1	--	--	--	--	--	--	--	--	--
SWFTS-MW19	EM40	12/14/2022	FD	550-195013-6	Alluvium	11.3 - 31.1	0.035	<0.0023	0.12 J	73	18	0.087 J	--	--	--
SWFTS-MW20	BL02	7/12/2017	N	440-188244-5	Alluvium	12.8 - 37.6	0.045	<0.012	<0.50	69	98	<0.50	<500	--	--
SWFTS-MW20	EM04	10/12/2017	N	440-194202-1	Alluvium	12.8 - 37.6	0.022	<0.012	<2.5	77	85	<2.5	--	<0.10	0.044 J
SWFTS-MW20	EM04	10/12/2017	FD	440-194202-2	Alluvium	12.8 - 37.6	0.024	<0.012	<2.5	76	89	<2.5	--	<0.10	0.11 J
SWFTS-MW20	EM06	11/16/2017	N	440-196786-7	Alluvium	12.8 - 37.6	--	--	--	--	--	--	--	--	--
SWFTS-MW20	EM07	12/12/2017	N	440-198371-3	Alluvium	12.8 - 37.6	--	--	--	--	--	--	--	--	--
SWFTS-MW20	EM08	2/19/2018	N	440-203775-5	Alluvium	12.8 - 37.6	--	--	--	--	--	--	--	--	--
SWFTS-MW20	EM09	3/27/2018	N	440-207268-9	Alluvium	12.8 - 37.6	--	--	--	--	--	--	--	--	--
SWFTS-MW20	EM10	4/30/2018	N	440-210173-10	Alluvium	12.8 - 37.6	--	--	--	--	--	--	--	--	--
SWFTS-MW20	EM11	7/11/2018	N	440-215717-8	Alluvium	12.8 - 37.6	0.022	<0.012	<5.0	74	39	<5.0	--	--	0.10
SWFTS-MW20	EM15	10/9/2018	N	440-221855-1	Alluvium	12.8 - 37.6	0.028 J	<0.060	<2.5	70	24	<2.5	--	--	0.15
SWFTS-MW20	EM19	5/21/2019	N	440-242084-3	Alluvium	12.8 - 37.6	0.030	<0.012	<0.50	74	15	<0.20	--	--	--
SWFTS-MW20	EM22	11/5/2019	N	440-253918-6	Alluvium	12.8 - 37.6	0.015	<0.012	<0.50	82	10	<0.20	--	--	--
SWFTS-MW20	EM26	4/29/2020	N	440-265342-5	Alluvium	12.8 - 37.6	0.0077 J	<0.012	<2.5	71	7.7 J	<1.0	--	--	--
SWFTS-MW20	EM29	10/14/2020	N	440-273303-6	Alluvium	12.8 - 37.6	0.0094 J	<0.012	<0.50	100	6.0	<0.20	--	--	--
SWFTS-MW20	EM33	6/3/2021	N	550-164869-1	Alluvium	12.8 - 37.6	--	--	--	--	--	--	--	--	--
SWFTS-MW20	EM33	6/3/2021	N	550-164869-2	Alluvium	12.8 - 37.6	0.017	0.0082 J	0.79 J	140	2.8	0.10	--	--	--
SWFTS-MW20	EM36	11/29/2021	N	550-174897-1	Alluvium	12.8 - 37.6	--	--	--	--	--	--	--	--	--
SWFTS-MW20	EM36	11/29/2021	N	550-174897-2	Alluvium	12.8 - 37.6	0.013	0.012 J	0.21 J	160	0.87	0.24	--	--	--
SWFTS-MW20	EM40	12/13/2022	N	550-194919-7	Alluvium	12.8 - 37.6	--	--	--	--	--	--	--	--	--
SWFTS-MW20	EM40	12/13/2022	N	550-194919-8	Alluvium	12.8 - 37.6	0.014	<0.0023	0.052 J	17	0.72	0.042	--	--	--
SWFTS-MW21	BL02	7/13/2017	N	440-188324-5	Alluvium	14.8 - 39.6	0.032	<0.024	<0.50	42	49	<0.50	<500	<0.10	0.58
SWFTS-MW21	EM04	10/11/2017	N	440-194090-8	Alluvium	14.8 - 39.6	<0.0050	<0.012	<0.50	52	6.8	<0.50	--	0.29	0.15
SWFTS-MW21	EM06	11/15/2017	N	440-196665-5	Alluvium	14.8 - 39.6	--	--	--	--	--	--	--	--	--
SWFTS-MW21	EM07	12/13/2017	N	440-198508-10	Alluvium	14.8 - 39.6	0.023	<0.024	0.50 J	38	37 J+	<0.50	--	<0.10 UJ	0.10
SWFTS-MW21	EM08	2/20/2018	N	440-203841-9	Alluvium	14.8 - 39.6	--	--	--	--	--	--	--	--	--
SWFTS-MW21	EM08	2/20/2018	FD	440-203841-10	Alluvium	14.8 - 39.6	--	--	--	--	--	--	--	--	--
SWFTS-MW21	EM09	3/27/2018	N	440-207268-14	Alluvium	14.8 - 39.6	--	--	--	--	--	--	--	--	--
SWFTS-MW21	EM10	4/30/2018	N	440-210173-7	Alluvium	14.8 - 39.6	--	--	--	--	--	--	--	--	--

Table D.2
Groundater Analytical Results Summary - Secondary Parameters
Seep Well Field Area Bioremediation Treatability Study

Well	Event	Sample Date	QC Type	Lab Sample ID	Lithology	Screened Interval (ft bgs)	Dissolved Metals by SW6010	Dissolved Metals by SW6010	Dissolved Metals by SW6020	Dissolved Metals by SW6020	Dissolved Metals by SW6020	Dissolved Metals by SW6020	EPA 300.1B	EPA 351.2	EPA 365.3
							Vanadium	Zinc	Antimony	Arsenic	Selenium	Thallium	Chlorite	Total Kjeldahl Nitrogen (TKN)	Phosphorus
							mg/L	mg/L	µg/L	µg/L	µg/L	µg/L	µg/L	mg/L	mg/L
SWFTS-MW21	EM11	7/12/2018	N	440-215717-3	Alluvium	14.8 - 39.6	<0.0050	<0.012	<5.0	51	11 J	<5.0	--	--	0.054
SWFTS-MW21	EM15	10/9/2018	N	440-221855-3	Alluvium	14.8 - 39.6	<0.025	<0.060	<2.5	31	23	<2.5	--	--	0.38
SWFTS-MW21	EM19	5/22/2019	N	440-242198-3	Alluvium	14.8 - 39.6	0.026	<0.012	<5.0	33	20	<2.0	--	--	--
SWFTS-MW21	EM22	11/4/2019	N	440-253773-3	Alluvium	14.8 - 39.6	<0.0050	<0.012	<0.50	81	14	<0.20	--	--	--
SWFTS-MW21	EM26	4/29/2020	N	440-265342-1	Alluvium	14.8 - 39.6	0.015	<0.012	<2.5	45	31	<1.0	--	--	--
SWFTS-MW21	EM29	10/14/2020	N	440-273303-7	Alluvium	14.8 - 39.6	0.015	<0.012	<1.0	33	12	<0.40	--	--	--
SWFTS-MW21	EM33	6/2/2021	N	550-164872-15	Alluvium	14.8 - 39.6	--	--	--	--	--	--	--	--	--
SWFTS-MW21	EM33	6/2/2021	N	550-164872-16	Alluvium	14.8 - 39.6	0.035	0.0033 J	0.26 J	37	12	0.072 J	--	--	--
SWFTS-MW21	EM36	12/1/2021	N	550-175045-3	Alluvium	14.8 - 39.6	--	--	--	--	--	--	--	--	--
SWFTS-MW21	EM36	12/1/2021	N	550-175045-4	Alluvium	14.8 - 39.6	0.028	<0.0023	0.24 J	47	11	0.12	--	--	--
SWFTS-MW21	EM40	12/15/2022	N	550-195106-5	Alluvium	14.8 - 39.6	--	--	--	--	--	--	--	--	--
SWFTS-MW21	EM40	12/15/2022	N	550-195106-6	Alluvium	14.8 - 39.6	0.023	<0.0023	0.14 J	45	12	0.097 J	--	--	--
SWFTS-MW22	BL02	7/13/2017	N	440-188324-1	Alluvium	11.8 - 31.6	0.066	0.037	<0.50 UJ	52	25	<0.50	<500	0.44	3.3
SWFTS-MW22	EM04	10/12/2017	N	440-194242-9	Alluvium	11.8 - 31.6	0.032	<0.012	<0.50	58	19	<0.50	--	--	--
SWFTS-MW22	EM06	11/16/2017	N	440-196786-18	Alluvium	11.8 - 31.6	--	--	--	--	--	--	--	--	--
SWFTS-MW22	EM07	12/14/2017	N	440-198571-17	Alluvium	11.8 - 31.6	--	--	--	--	--	--	--	--	--
SWFTS-MW22	EM08	2/21/2018	N	440-203937-1	Alluvium	11.8 - 31.6	--	--	--	--	--	--	--	--	--
SWFTS-MW22	EM09	3/28/2018	N	440-207497-1	Alluvium	11.8 - 31.6	--	--	--	--	--	--	--	--	--
SWFTS-MW22	EM10	4/30/2018	N	440-210173-6	Alluvium	11.8 - 31.6	--	--	--	--	--	--	--	--	--
SWFTS-MW22	EM11	7/10/2018	N	440-215437-9	Alluvium	11.8 - 31.6	0.031	<0.012	<5.0	61	11 J	<5.0	--	--	0.089
SWFTS-MW22	EM15	10/9/2018	N	440-221855-2	Alluvium	11.8 - 31.6	0.040 J	<0.060	<2.5	63	12	<2.5	--	--	0.050
SWFTS-MW22	EM19	5/21/2019	N	440-242084-4	Alluvium	11.8 - 31.6	0.048	<0.012	<0.50	68	15	<0.20	--	--	--
SWFTS-MW22	EM22	11/5/2019	N	440-253891-4	Alluvium	11.8 - 31.6	0.044	<0.012	<0.50	71	13	<0.20	--	--	--
SWFTS-MW22	EM26	4/28/2020	N	440-265288-5	Alluvium	11.8 - 31.6	0.039	<0.012	<0.50	65	14	<0.20	--	--	--
SWFTS-MW22	EM29	10/14/2020	N	440-273303-1	Alluvium	11.8 - 31.6	0.040	<0.012	<0.50	62	21	<0.20	--	--	--
SWFTS-MW22	EM33	6/2/2021	N	550-164872-11	Alluvium	11.8 - 31.6	--	--	--	--	--	--	--	--	--
SWFTS-MW22	EM33	6/2/2021	N	550-164872-12	Alluvium	11.8 - 31.6	0.045	0.0080 J	0.24 J	66	19	0.061 J	--	--	--
SWFTS-MW22	EM36	12/2/2021	N	550-175153-1	Alluvium	11.8 - 31.6	--	--	--	--	--	--	--	--	--
SWFTS-MW22	EM36	12/2/2021	N	550-175153-2	Alluvium	11.8 - 31.6	0.049	0.0047 J	0.21 J	70	18	0.096 J	--	--	--
SWFTS-MW22	EM40	12/14/2022	N	550-195013-1	Alluvium	11.8 - 31.6	--	--	--	--	--	--	--	--	--
SWFTS-MW22	EM40	12/14/2022	N	550-195013-2	Alluvium	11.8 - 31.6	0.040	<0.0023	0.23 J	66	45	0.18	--	--	--
SWFTS-MW23	BL02	7/13/2017	N	440-188325-7	Alluvium	13.8 - 33.6	0.046	<0.012	<0.50	91	2.7	<0.50	<20	--	--
SWFTS-MW23	EM04	10/11/2017	N	440-194090-7	Alluvium	13.8 - 33.6	0.041	<0.012	<0.50	88	2.5	<0.50	--	0.30	0.036 J
SWFTS-MW23	EM06	11/15/2017	N	440-196665-3	Alluvium	13.8 - 33.6	--	--	--	--	--	--	--	--	--
SWFTS-MW23	EM07	12/12/2017	N	440-198371-2	Alluvium	13.8 - 33.6	--	--	--	--	--	--	--	--	--
SWFTS-MW23	EM08	2/21/2018	N	440-203937-14	Alluvium	13.8 - 33.6	--	--	--	--	--	--	--	--	--
SWFTS-MW23	EM09	3/28/2018	N	440-207497-9	Alluvium	13.8 - 33.6	--	--	--	--	--	--	--	--	--
SWFTS-MW23	EM10	5/2/2018	N	440-210430-5	Alluvium	13.8 - 33.6	--	--	--	--	--	--	--	--	--
SWFTS-MW23	EM11	7/10/2018	N	440-215437-7	Alluvium	13.8 - 33.6	0.037	<0.012	<5.0	82	<5.0	<5.0	--	--	0.10
SWFTS-MW23	EM15	10/11/2018	N	440-222092-7	Alluvium	13.8 - 33.6	0.043	<0.012	<2.5	88	<2.5	<2.5	--	--	<0.025
SWFTS-MW23	EM19	5/22/2019	N	440-242201-7	Alluvium	13.8 - 33.6	0.045	<0.012	<5.0	81	<5.0	<2.0	--	--	--
SWFTS-MW23	EM22	11/5/2019	N	440-253891-5	Alluvium	13.8 - 33.6	0.037	<0.012	<0.50	89	1.5 J	<0.20	--	--	--
SWFTS-MW23	EM26	4/28/2020	N	440-265288-3	Alluvium	13.8 - 33.6	0.042	<0.012	<0.50	85	2.1	<0.20	--	--	--
SWFTS-MW23	EM29	10/13/2020	N	440-273236-1	Alluvium	13.8 - 33.6	0.044	<0.012	<1.0	86	1.4 J	<0.40	--	--	--
SWFTS-MW23	EM33	6/2/2021	N	550-164872-3	Alluvium	13.8 - 33.6	--	--	--	--	--	--	--	--	--
SWFTS-MW23	EM33	6/2/2021	N	550-164872-4	Alluvium	13.8 - 33.6	0.048	0.0069 J	0.18 J	89	1.1 J+	0.068 J	--	--	--
SWFTS-MW23	EM36	12/2/2021	N	550-175153-15	Alluvium	13.8 - 33.6	--	--	--	--	--	--	--	--	--
SWFTS-MW23	EM36	12/2/2021	N	550-175153-16	Alluvium	13.8 - 33.6	0.052	0.0048 J	0.16 J	97	0.81	0.071 J	--	--	--
SWFTS-MW23	EM40	12/13/2022	N	550-194919-5	Alluvium	13.8 - 33.6	--	--	--	--	--	--	--	--	--
SWFTS-MW23	EM40	12/13/2022	N	550-194919-6	Alluvium	13.8 - 33.6	0.052	<0.0023	0.015 J	9.3	0.13	0.0053 J	--	--	--
SWFTS-MW24	BL02	7/13/2017	N	440-188324-2	Alluvium	12.8 - 37.6	0.034	<0.012	<0.50	60	36	<0.50	<500	<0.10	0.11
SWFTS-MW24	EM04	10/11/2017	N	440-194242-2	Alluvium	12.8 - 37.6	0.019	<0.012	<0.50	67	20	<0.50	--	--	--
SWFTS-MW24	EM06	11/15/2017	N	440-196665-1	Alluvium	12.8 - 37.6	--	--	--	--	--	--	--	--	--
SWFTS-MW24	EM07	12/12/2017	N	440-198371-5	Alluvium	12.8 - 37.6	--	--	--	--	--	--	--	--	--
SWFTS-MW24	EM08	2/21/2018	N	440-203937-8	Alluvium	12.8 - 37.6	--	--	--	--	--	--	--	--	--
SWFTS-MW24	EM09	3/28/2018	N	440-207497-12	Alluvium	12.8 - 37.6	--	--	--	--	--	--	--	--	--
SWFTS-MW24	EM10	5/2/2018	N	440-210430-7	Alluvium	12.8 - 37.6	--	--	--	--	--	--	--	--	--
SWFTS-MW24	EM11	7/12/2018	N	440-215717-5	Alluvium	12.8 - 37.6	0.017	<0.012	<5.0	59	18 J	<5.0	--	--	0.043 J
SWFTS-MW24	EM15	10/10/2018	N	440-221975-7	Alluvium	12.8 - 37.6	0.019	<0.012	<2.5	57	11	<2.5	--	--	<0.025
SWFTS-MW24	EM19	5/22/2019	N	440-242198-1	Alluvium	12.8 - 37.6	0.036	<0.012	<5.0	63	12 J	<2.0	--	--	--
SWFTS-MW24	EM22	11/5/2019	N	440-253891-2	Alluvium	12.8 - 37.6	0.024	<0.012	<0.50	66	18	<0.20	--	--	--
SWFTS-MW24	EM26	4/28/2020	N	440-265288-1	Alluvium	12.8 - 37.6	0.018	<0.012	<0.50	46	12	0.38 J	--	--	--
SWFTS-MW24	EM29	10/12/2020	N	440-273153-1	Alluvium	12.8 - 37.6	0.024	<0.012	2.4	62	13	0.25 J	--	--	--
SWFTS-MW24	EM33	6/2/2021	N	550-164872-7	Alluvium	12.8 - 37.6	--	--	--	--	--	--	--	--	--

Table D.2
Groundater Analytical Results Summary - Secondary Parameters
Seep Well Field Area Bioremediation Treatability Study

Well	Event	Sample Date	QC Type	Lab Sample ID	Lithology	Screened Interval (ft bgs)	Dissolved Metals by SW6010	Dissolved Metals by SW6010	Dissolved Metals by SW6020	Dissolved Metals by SW6020	Dissolved Metals by SW6020	Dissolved Metals by SW6020	EPA 300.1B	EPA 351.2	EPA 365.3
							Vanadium	Zinc	Antimony	Arsenic	Selenium	Thallium	Chlorite	Total Kjeldahl Nitrogen (TKN)	Phosphorus
							mg/L	mg/L	µg/L	µg/L	µg/L	µg/L	µg/L	mg/L	mg/L
SWFTS-MW24	EM33	6/2/2021	N	550-164872-8	Alluvium	12.8 - 37.6	0.035	0.0061 J	0.11 J	60	13	0.064 J	--	--	--
SWFTS-MW24	EM36	12/1/2021	N	550-175045-17	Alluvium	12.8 - 37.6	--	--	--	--	--	--	--	--	--
SWFTS-MW24	EM36	12/1/2021	N	550-175045-18	Alluvium	12.8 - 37.6	0.033	0.0029 J	0.14 J	60	16	0.12	--	--	--
SWFTS-MW24	EM40	12/13/2022	N	550-194919-3	Alluvium	12.8 - 37.6	--	--	--	--	--	--	--	--	--
SWFTS-MW24	EM40	12/13/2022	N	550-194919-4	Alluvium	12.8 - 37.6	0.028	<0.0023	0.011 J	5.0	3.9	0.029	--	--	--
SWFTS-MW25	BL02	7/13/2017	N	440-188324-4	Alluvium	12.8 - 42.6	0.036	<0.012	<0.50	67	53	<0.50	<500 UJ	<0.10	0.48
SWFTS-MW25	EM04	10/11/2017	N	440-194242-1	Alluvium	12.8 - 42.6	<0.0050	<0.012	<0.50	43	4.7	<0.50	--	--	--
SWFTS-MW25	EM06	11/15/2017	N	440-196665-2	Alluvium	12.8 - 42.6	<0.0050	<0.012	<2.5	41	2.5 J	<2.5	--	0.17 J	0.40
SWFTS-MW25	EM07	12/12/2017	N	440-198371-1	Alluvium	12.8 - 42.6	0.021	<0.012	<0.50	37	2.9	0.50 J	--	0.12 J	0.14
SWFTS-MW25	EM08	2/21/2018	N	440-203937-7	Alluvium	12.8 - 42.6	0.042	0.050	<1.0	41	4.7	<1.0	--	0.11 J	1.1
SWFTS-MW25	EM09	3/28/2018	N	440-207497-13	Alluvium	12.8 - 42.6	0.023	<0.012	<0.50	<0.50	2.6 J+	<0.50	--	0.20	0.097
SWFTS-MW25	EM10	5/3/2018	N	440-210534-2	Alluvium	12.8 - 42.6	0.024	<0.012	<5.0	39	12 J	<5.0	--	0.12 J	<0.25
SWFTS-MW25	EM11	7/10/2018	N	440-215437-12	Alluvium	12.8 - 42.6	0.012	<0.012	<5.0	38	6.6 J	<5.0	--	0.24	0.23
SWFTS-MW25	EM13	8/15/2018	N	440-218208-10	Alluvium	12.8 - 42.6	0.011	<0.012	<0.50	37	6.6	0.51 J	--	0.21	0.44
SWFTS-MW25	EM14	9/12/2018	N	440-220031-2	Alluvium	12.8 - 42.6	0.011	<0.012	<5.0	39	7.5 J	<5.0	--	0.24	0.49
SWFTS-MW25	EM15	10/11/2018	N	440-222092-6	Alluvium	12.8 - 42.6	0.013	<0.012	<2.5	41	12	<2.5	--	<0.10	<0.025
SWFTS-MW25	EM19	5/22/2019	N	440-242201-6	Alluvium	12.8 - 42.6	0.029	<0.012	<5.0	41	18 J	<2.0	--	--	--
SWFTS-MW25	EM22	11/5/2019	N	440-253918-4	Alluvium	12.8 - 42.6	0.023	<0.012	<0.50	50	19	0.39 J	--	--	--
SWFTS-MW25	EM26	4/28/2020	N	440-265288-2	Alluvium	12.8 - 42.6	0.020	<0.012	<0.50	48	36	0.55 J	--	--	--
SWFTS-MW25	EM29	10/13/2020	N	440-273236-2	Alluvium	12.8 - 42.6	0.020	<0.012	<2.5	48	32	<1.0	--	--	--
SWFTS-MW25	EM33	6/2/2021	N	550-164872-5	Alluvium	12.8 - 42.6	--	--	--	--	--	--	--	--	--
SWFTS-MW25	EM33	6/2/2021	N	550-164872-6	Alluvium	12.8 - 42.6	0.034	0.0075 J	0.26 J	57	27	0.46	--	--	--
SWFTS-MW25	EM36	12/1/2021	N	550-175045-19	Alluvium	12.8 - 42.6	--	--	--	--	--	--	--	--	--
SWFTS-MW25	EM36	12/1/2021	N	550-175045-20	Alluvium	12.8 - 42.6	0.029	<0.0023	0.27 J	57	23	0.63	--	--	--
SWFTS-MW25	EM40	12/13/2022	N	550-194919-1	Alluvium	12.8 - 42.6	--	--	--	--	--	--	--	--	--
SWFTS-MW25	EM40	12/13/2022	N	550-194919-2	Alluvium	12.8 - 42.6	0.030	<0.0023	0.024 J	5.8	6.4	0.058	--	--	--

Notes:
1. Lithology of monitoring well COH-2B1 was inferred from state records of well construction and generalized stratigraphy.
FD - Field duplicate
J The result is an estimated quantity. The associated numerical value is the approximate concentration of the analyte.
J- The result is an estimated quantity, but the result may be biased low.
J+ The result is an estimated quantity, but the result may be biased high.
mg/L - milligrams per liter
µg/L - micrograms per liter
N - Normal field sample
UMCf- Upper Muddy Creek Formation
R The data are unusable. The sample results are rejected due to serious deficiencies in meeting QC criteria. The
< The analyte was analyzed for, but was not detected above the level of the reported sample quantitation limit.
--- Not tested.

Table D.2
Groundater Analytical Results Summary - Secondary Parameters
Seep Well Field Area Bioremediation Treatability Study

Well	Event	Sample Date	QC Type	Lab Sample ID	Lithology	Screened Interval (ft bgs)	NTOTAL	SM2320B	SM2320B	SM2320B	SM2320B	SM2540C	SW7199	Total Metals by SW6010	Total Metals by SW6010
							Nitrogen, Total	Alkalinity as CaCO3	Bicarbonate Alkalinity as CaCO3	Carbonate Alkalinity as CaCO3	Hydroxide Alkalinity as CaCO3	Total Dissolved Solids	Chromium, Hexavalent	Aluminum	Barium
							mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	µg/L	mg/L	mg/L
COH-2B1	BL02	8/9/2017	N	440-189933-1	Alluvium/UMCf	36.0 - 66.0	--	--	--	--	--	--	--	--	--
COH-2B1	EM04	10/12/2017	N	440-194204-2	Alluvium/UMCf	36.0 - 66.0	--	240	240	<4.0	<4.0	2,800	--	--	--
COH-2B1	EM07	12/14/2017	N	440-198571-5	Alluvium/UMCf	36.0 - 66.0	--	230	230	<4.0	<4.0	--	--	--	--
COH-2B1	EM08	2/22/2018	N	440-204033-6	Alluvium/UMCf	36.0 - 66.0	--	240	240	<4.0	<4.0	--	--	--	--
COH-2B1	EM09	3/29/2018	N	440-207586-2	Alluvium/UMCf	36.0 - 66.0	--	240	240	<4.0	<4.0	--	--	--	--
COH-2B1	EM10	5/2/2018	N	440-210430-11	Alluvium/UMCf	36.0 - 66.0	--	230	230	<4.0	<4.0	--	--	--	--
COH-2B1	EM11	7/10/2018	N	440-215437-6	Alluvium/UMCf	36.0 - 66.0	--	210	210	<4.0	<4.0	--	--	--	--
COH-2B1	EM15	10/11/2018	N	440-222092-1	Alluvium/UMCf	36.0 - 66.0	--	240	240	<4.0	<4.0	--	--	--	--
COH-2B1	EM19	5/22/2019	N	440-242201-5	Alluvium/UMCf	36.0 - 66.0	--	--	--	--	--	--	--	--	--
COH-2B1	EM22	11/4/2019	N	440-253773-1	Alluvium/UMCf	36.0 - 66.0	--	--	--	--	--	--	--	--	--
COH-2B1	EM26	4/27/2020	N	440-265243-1	Alluvium/UMCf	36.0 - 66.0	--	--	--	--	--	--	--	--	--
COH-2B1	EM29	10/13/2020	N	440-273236-9	Alluvium/UMCf	36.0 - 66.0	--	--	--	--	--	--	--	--	--
PC-58	BL01	3/28/2017	N	440-180820-1	Alluvium	7.8 - 32.8	--	--	--	--	--	--	--	<0.050	0.018
PC-58	BL02	7/13/2017	N	440-188324-3	Alluvium	7.8 - 32.8	--	--	--	--	--	--	--	--	--
PC-58	EM04	10/11/2017	N	440-194094-6	Alluvium	7.8 - 32.8	--	310	310	<4.0	<4.0	2,800	--	--	--
PC-58	EM06	11/16/2017	N	440-196786-11	Alluvium	7.8 - 32.8	--	280	280	<4.0	<4.0	2,900	--	--	--
PC-58	EM07	12/14/2017	N	440-198571-9	Alluvium	7.8 - 32.8	--	290	290	<4.0	<4.0	--	--	--	--
PC-58	EM08	2/21/2018	N	440-203937-13	Alluvium	7.8 - 32.8	--	240	240	<4.0	<4.0	--	--	--	--
PC-58	EM09	3/28/2018	N	440-207497-6	Alluvium	7.8 - 32.8	--	240	240	<4.0	<4.0	--	--	--	--
PC-58	EM10	5/2/2018	N	440-210430-10	Alluvium	7.8 - 32.8	--	220	220	<4.0	<4.0	--	--	--	--
PC-58	EM11	7/11/2018	N	440-215717-7	Alluvium	7.8 - 32.8	--	250	250	<4.0	<4.0	--	--	--	--
PC-58	EM15	10/11/2018	N	440-222092-19	Alluvium	7.8 - 32.8	--	270	270	<4.0	<4.0	--	--	--	--
PC-58	EM19	5/22/2019	N	440-242200-7	Alluvium	7.8 - 32.8	--	--	--	--	--	--	--	--	--
PC-58	EM22	11/7/2019	N	440-254148-1	Alluvium	7.8 - 32.8	--	--	--	--	--	--	--	--	--
PC-58	EM26	5/1/2020	N	440-265414-3	Alluvium	7.8 - 32.8	--	--	--	--	--	--	--	--	--
PC-58	EM29	10/16/2020	N	440-273433-5	Alluvium	7.8 - 32.8	--	--	--	--	--	--	--	--	--
PC-58	EM33	6/2/2021	N	550-164872-23	Alluvium	7.8 - 32.8	--	--	--	--	--	--	--	--	--
PC-58	EM33	6/2/2021	N	550-164872-24	Alluvium	7.8 - 32.8	--	--	--	--	--	--	--	--	--
PC-58	EM36	12/3/2021	N	550-175222-11	Alluvium	7.8 - 32.8	--	--	--	--	--	--	--	--	--
PC-58	EM36	12/3/2021	N	550-175222-12	Alluvium	7.8 - 32.8	--	--	--	--	--	--	--	--	--
PC-58	EM40	12/12/2022	N	550-194841-5	Alluvium	7.8 - 32.8	--	--	--	--	--	--	--	--	--
PC-58	EM40	12/12/2022	N	550-194841-6	Alluvium	7.8 - 32.8	--	--	--	--	--	--	--	--	--
PC-88	EM04	10/11/2017	N	440-194090-2	Alluvium	40.0 - 50.0	--	270	270	<4.0	<4.0	3,400	--	--	--
PC-88	EM04	10/11/2017	FD	440-194090-3	Alluvium	40.0 - 50.0	--	240	240	<4.0	<4.0	3,400	--	--	--
PC-88	EM06	11/15/2017	N	440-196690-9	Alluvium	40.0 - 50.0	--	240	240	<4.0	<4.0	3,200	--	--	--
PC-88	EM06	11/15/2017	FD	440-196690-10	Alluvium	40.0 - 50.0	--	250	250	<4.0	<4.0	3,200	--	--	--
PC-88	EM07	12/14/2017	N	440-198571-11	Alluvium	40.0 - 50.0	--	230	230	<4.0	<4.0	--	--	--	--
PC-88	EM08	2/22/2018	N	440-204033-10	Alluvium	40.0 - 50.0	--	220	220	<4.0	<4.0	--	--	--	--
PC-88	EM09	3/29/2018	N	440-207586-3	Alluvium	40.0 - 50.0	--	210	210	<4.0	<4.0	--	--	--	--
PC-88	EM10	5/2/2018	N	440-210430-8	Alluvium	40.0 - 50.0	--	210	210	<4.0	<4.0	--	--	--	--
PC-88	EM10	5/2/2018	FD	440-210430-9	Alluvium	40.0 - 50.0	--	210	210	<4.0	<4.0	--	--	--	--
PC-88	EM11	7/12/2018	N	440-215717-11	Alluvium	40.0 - 50.0	--	220	220	<4.0	<4.0	--	--	--	--
PC-88	EM11	7/12/2018	FD	440-215717-12	Alluvium	40.0 - 50.0	--	220	220	<4.0	<4.0	--	--	--	--
PC-88	EM15	10/11/2018	N	440-222092-15	Alluvium	40.0 - 50.0	--	240	240	<4.0	<4.0	--	--	--	--
PC-88	EM15	10/11/2018	FD	440-222092-16	Alluvium	40.0 - 50.0	--	260	260	<4.0	<4.0	--	--	--	--
PC-88	EM19	5/22/2019	N	440-242201-2	Alluvium	40.0 - 50.0	--	--	--	--	--	--	--	--	--
PC-88	EM19	5/22/2019	FD	440-242201-3	Alluvium	40.0 - 50.0	--	--	--	--	--	--	--	--	--
PC-88	EM22	11/7/2019	N	440-254148-2	Alluvium	40.0 - 50.0	--	--	--	--	--	--	--	--	--
PC-88	EM22	11/7/2019	FD	440-254148-3	Alluvium	40.0 - 50.0	--	--	--	--	--	--	--	--	--
PC-88	EM26	5/1/2020	N	440-265412-2	Alluvium	40.0 - 50.0	--	--	--	--	--	--	--	--	--
PC-88	EM26	5/1/2020	FD	440-265412-3	Alluvium	40.0 - 50.0	--	--	--	--	--	--	--	--	--
PC-88	EM29	10/15/2020	N	550-151259-10	Alluvium	40.0 - 50.0	--	--	--	--	--	--	--	--	--
PC-88	EM29	10/15/2020	FD	550-151259-11	Alluvium	40.0 - 50.0	--	--	--	--	--	--	--	--	--
PC-88	EM33	6/3/2021	N	550-164869-25	Alluvium	40.0 - 50.0	--	--	--	--	--	--	--	--	--
PC-88	EM33	6/3/2021	N	550-164869-26	Alluvium	40.0 - 50.0	--	--	--	--	--	--	--	--	--
PC-88	EM33	6/3/2021	FD	550-164869-27	Alluvium	40.0 - 50.0	--	--	--	--	--	--	--	--	--
PC-88	EM33	6/3/2021	FD	550-164869-28	Alluvium	40.0 - 50.0	--	--	--	--	--	--	--	--	--
PC-88	EM36	12/2/2021	N	550-175153-5	Alluvium	40.0 - 50.0	--	--	--	--	--	--	--	--	--
PC-88	EM36	12/2/2021	N	550-175153-6	Alluvium	40.0 - 50.0	--	--	--	--	--	--	--	--	--
PC-88	EM36	12/2/2021	FD	550-175153-7	Alluvium	40.0 - 50.0	--	--	--	--	--	--	--	--	--
PC-88	EM36	12/2/2021	FD	550-175153-8	Alluvium	40.0 - 50.0	--	--	--	--	--	--	--	--	--
PC-88	EM40	12/12/2022	N	550-194841-1	Alluvium	40.0 - 50.0	--	--	--	--	--	--	--	--	--
PC-88	EM40	12/12/2022	N	550-194841-2	Alluvium	40.0 - 50.0	--	--	--	--	--	--	--	--	--
PC-88	EM40	12/12/2022	FD	550-194841-3	Alluvium	40.0 - 50.0	--	--	--	--	--	--	--	--	--

Table D.2
Groundater Analytical Results Summary - Secondary Parameters
Seep Well Field Area Bioremediation Treatability Study

Well	Event	Sample Date	QC Type	Lab Sample ID	Lithology	Screened Interval (ft bgs)	NTOTAL	SM2320B	SM2320B	SM2320B	SM2320B	SM2540C	SW7199	Total Metals by SW6010	Total Metals by SW6010
							Nitrogen, Total	Alkalinity as CaCO3	Bicarbonate Alkalinity as CaCO3	Carbonate Alkalinity as CaCO3	Hydroxide Alkalinity as CaCO3	Total Dissolved Solids	Chromium, Hexavalent	Aluminum	Barium
							mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	µg/L	mg/L	mg/L
PC-88	EM40	12/12/2022	FD	550-194841-4	Alluvium	40.0 - 50.0	--	--	--	--	--	--	--	--	--
PC-91	BL01	3/29/2017	N	440-180937-1	Alluvium	11.5 - 21.5	--	--	--	--	--	2,600	--	--	--
PC-91	BL02	7/12/2017	N	440-188247-5	Alluvium	11.5 - 21.5	--	--	--	--	--	--	0.45 J	--	--
PC-91	BL02	7/12/2017	FD	440-188244-4	Alluvium	11.5 - 21.5	--	--	--	--	--	--	0.41 J	--	--
PC-91	EM04	10/12/2017	N	440-194204-3	Alluvium	11.5 - 21.5	--	250	250	<4.0	<4.0	2,400	--	--	--
PC-91	EM06	11/16/2017	N	440-196786-8	Alluvium	11.5 - 21.5	--	270	270	<4.0	<4.0	2,300	--	--	--
PC-91	EM07	12/13/2017	N	440-198508-9	Alluvium	11.5 - 21.5	0.48	280	280	<4.0	<4.0	--	--	--	--
PC-91	EM08	2/20/2018	N	440-203841-1	Alluvium	11.5 - 21.5	--	330	330	<4.0	<4.0	--	--	--	--
PC-91	EM09	3/26/2018	N	440-207137-1	Alluvium	11.5 - 21.5	--	430	430	<4.0	<4.0	--	--	--	--
PC-91	EM10	5/1/2018	N	440-210284-3	Alluvium	11.5 - 21.5	--	470	470	<4.0	<4.0	--	--	--	--
PC-91	EM11	7/11/2018	N	440-215585-6	Alluvium	11.5 - 21.5	--	540	540	<4.0	<4.0	--	--	--	--
PC-91	EM15	10/10/2018	N	440-221975-16	Alluvium	11.5 - 21.5	--	530	530	<4.0	<4.0	--	--	--	--
PC-91	EM19	5/21/2019	N	440-242084-9	Alluvium	11.5 - 21.5	--	--	--	--	--	--	--	--	--
PC-91	EM22	11/6/2019	N	440-254027-3	Alluvium	11.5 - 21.5	--	--	--	--	--	--	--	--	--
PC-91	EM26	4/30/2020	N	440-265382-2	Alluvium	11.5 - 21.5	--	--	--	--	--	--	--	--	--
PC-91	EM29	10/14/2020	N	440-273303-11	Alluvium	11.5 - 21.5	--	--	--	--	--	--	--	--	--
PC-91	EM33	6/2/2021	N	550-164872-17	Alluvium	11.5 - 21.5	--	--	--	--	--	--	--	--	--
PC-91	EM33	6/2/2021	N	550-164872-18	Alluvium	11.5 - 21.5	--	--	--	--	--	--	--	--	--
PC-91	EM36	11/30/2021	N	550-174968-1	Alluvium	11.5 - 21.5	--	--	--	--	--	--	--	--	--
PC-91	EM36	11/30/2021	N	550-174968-2	Alluvium	11.5 - 21.5	--	--	--	--	--	--	--	--	--
PC-91	EM40	12/12/2022	N	550-194841-7	Alluvium	11.5 - 21.5	--	--	--	--	--	--	--	--	--
PC-91	EM40	12/12/2022	N	550-194841-8	Alluvium	11.5 - 21.5	--	--	--	--	--	--	--	--	--
PC-92	BL01	3/29/2017	N	440-180937-2	Alluvium	26.5 - 36.5	--	--	--	--	--	3,700	--	--	--
PC-92	BL02	7/12/2017	N	440-188247-6	Alluvium	26.5 - 36.5	--	--	--	--	--	--	--	--	--
PC-92	EM04	10/12/2017	N	440-194204-4	Alluvium	26.5 - 36.5	2.5	190	190	<4.0	<4.0	2,900	--	--	--
PC-92	EM04	10/12/2017	FD	440-194204-5	Alluvium	26.5 - 36.5	2.4	190	190	<4.0	<4.0	2,900	--	--	--
PC-92	EM06	11/16/2017	N	440-196786-9	Alluvium	26.5 - 36.5	--	200	200	<4.0	<4.0	2,400	--	--	--
PC-92	EM06	11/16/2017	FD	440-196786-10	Alluvium	26.5 - 36.5	--	200	200	<4.0	<4.0	2,400	--	--	--
PC-92	EM07	12/14/2017	N	440-198571-7	Alluvium	26.5 - 36.5	2.5	190	190	<4.0	<4.0	--	--	--	--
PC-92	EM07	12/14/2017	FD	440-198571-8	Alluvium	26.5 - 36.5	2.2	190	190	<4.0	<4.0	--	--	--	--
PC-92	EM08	2/20/2018	N	440-203841-2	Alluvium	26.5 - 36.5	--	200	200	<4.0	<4.0	--	--	--	--
PC-92	EM08	2/20/2018	FD	440-203841-3	Alluvium	26.5 - 36.5	--	190	190	<4.0	<4.0	--	--	--	--
PC-92	EM09	3/26/2018	N	440-207137-2	Alluvium	26.5 - 36.5	--	190	190	<4.0	<4.0	--	--	--	--
PC-92	EM09	3/26/2018	FD	440-207137-3	Alluvium	26.5 - 36.5	--	190	190	<4.0	<4.0	--	--	--	--
PC-92	EM10	5/1/2018	N	440-210284-4	Alluvium	26.5 - 36.5	--	200	200	<4.0	<4.0	--	--	--	--
PC-92	EM11	7/11/2018	N	440-215585-5	Alluvium	26.5 - 36.5	--	200	200	<4.0	<4.0	--	--	--	--
PC-92	EM15	10/11/2018	N	440-222092-17	Alluvium	26.5 - 36.5	--	200	200	<4.0	<4.0	--	--	--	--
PC-92	EM19	5/21/2019	N	440-242084-10	Alluvium	26.5 - 36.5	--	--	--	--	--	--	--	--	--
PC-92	EM22	11/6/2019	N	440-254027-2	Alluvium	26.5 - 36.5	--	--	--	--	--	--	--	--	--
PC-92	EM26	4/30/2020	N	440-265382-1	Alluvium	26.5 - 36.5	--	--	--	--	--	--	--	--	--
PC-92	EM29	10/14/2020	N	440-273303-10	Alluvium	26.5 - 36.5	--	--	--	--	--	--	--	--	--
PC-92	EM33	6/2/2021	N	550-164872-19	Alluvium	26.5 - 36.5	--	--	--	--	--	--	--	--	--
PC-92	EM33	6/2/2021	N	550-164872-20	Alluvium	26.5 - 36.5	--	--	--	--	--	--	--	--	--
PC-92	EM36	11/30/2021	N	550-174968-3	Alluvium	26.5 - 36.5	--	--	--	--	--	--	--	--	--
PC-92	EM36	11/30/2021	N	550-174968-4	Alluvium	26.5 - 36.5	--	--	--	--	--	--	--	--	--
PC-92	EM40	12/13/2022	N	550-194920-1	Alluvium	26.5 - 36.5	--	--	--	--	--	--	--	--	--
PC-92	EM40	12/13/2022	N	550-194920-2	Alluvium	26.5 - 36.5	--	--	--	--	--	--	--	--	--
PC-94	BL01	3/28/2017	N	440-180820-2	Alluvium	9.5 - 19.5	--	--	--	--	--	5,100	--	1.0	0.039
PC-94	BL02	7/13/2017	N	440-188325-1	Alluvium	9.5 - 19.5	--	--	--	--	--	--	34	--	--
PC-94	EM04	10/11/2017	N	440-194090-6	Alluvium	9.5 - 19.5	1.2	290	290	<4.0	<4.0	5,100	<0.25	--	--
PC-94	EM06	11/16/2017	N	440-196786-17	Alluvium	9.5 - 19.5	0.81	310	310	<4.0	<4.0	4,700	--	--	--
PC-94	EM07	12/12/2017	N	440-198371-14	Alluvium	9.5 - 19.5	--	330	330	<4.0	<4.0	--	--	--	--
PC-94	EM08	2/21/2018	N	440-203937-12	Alluvium	9.5 - 19.5	4.9	290	290	<4.0	<4.0	--	--	--	--
PC-94	EM09	3/27/2018	N	440-207268-8	Alluvium	9.5 - 19.5	4.9	310	310	<4.0	<4.0	--	--	--	--
PC-94	EM10	5/1/2018	N	440-210284-14	Alluvium	9.5 - 19.5	6.3	280	280	<4.0	<4.0	--	--	--	--
PC-94	EM11	7/10/2018	N	440-215437-1	Alluvium	9.5 - 19.5	5.9	300	300	<4.0	<4.0	--	--	--	--
PC-94	EM13	8/15/2018	N	440-218208-2	Alluvium	9.5 - 19.5	3.2	390	390	<4.0	<4.0	--	--	--	--
PC-94	EM14	9/11/2018	N	440-219886-9	Alluvium	9.5 - 19.5	5.8	340	340	<4.0	<4.0	--	--	--	--
PC-94	EM15	10/11/2018	N	440-222092-18	Alluvium	9.5 - 19.5	8.2	260	260	<4.0	<4.0	--	--	--	--
PC-94	EM19	5/22/2019	N	440-242201-4	Alluvium	9.5 - 19.5	--	--	--	--	--	--	--	--	--
PC-94	EM22	11/6/2019	N	440-254027-1	Alluvium	9.5 - 19.5	--	--	--	--	--	--	--	--	--
PC-94	EM26	4/28/2020	N	440-265289-2	Alluvium	9.5 - 19.5	--	--	--	--	--	--	--	--	--
PC-94	EM29	10/15/2020	N	550-151259-7	Alluvium	9.5 - 19.5	--	--	--	--	--	--	--	--	--
PC-94	EM33	6/2/2021	N	550-164872-21	Alluvium	9.5 - 19.5	--	--	--	--	--	--	--	--	--

Table D.2
Groundater Analytical Results Summary - Secondary Parameters
Seep Well Field Area Bioremediation Treatability Study

Well	Event	Sample Date	QC Type	Lab Sample ID	Lithology	Screened Interval (ft bgs)	NTOTAL	SM2320B	SM2320B	SM2320B	SM2320B	SM2540C	SW7199	Total Metals by SW6010	Total Metals by SW6010
							Nitrogen, Total	Alkalinity as CaCO3	Bicarbonate Alkalinity as CaCO3	Carbonate Alkalinity as CaCO3	Hydroxide Alkalinity as CaCO3	Total Dissolved Solids	Chromium, Hexavalent	Aluminum	Barium
							mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	µg/L	mg/L	mg/L
PC-94	EM33	6/2/2021	N	550-164872-22	Alluvium	9.5 - 19.5	--	--	--	--	--	--	--	--	--
PC-94	EM36	11/30/2021	N	550-174968-5	Alluvium	9.5 - 19.5	--	--	--	--	--	--	--	--	--
PC-94	EM36	11/30/2021	N	550-174968-6	Alluvium	9.5 - 19.5	--	--	--	--	--	--	--	--	--
PC-94	EM40	12/13/2022	N	550-194920-7	Alluvium	9.5 - 19.5	--	--	--	--	--	--	--	--	--
PC-94	EM40	12/13/2022	N	550-194920-8	Alluvium	9.5 - 19.5	--	--	--	--	--	--	--	--	--
PC-97	BL02	7/13/2017	N	440-188325-8	Alluvium	23.0 - 33.0	--	--	--	--	--	--	--	--	--
PC-97	EM04	10/11/2017	N	440-194242-5	Alluvium	23.0 - 33.0	--	180	180	<4.0	<4.0	2,800	--	--	--
PC-97	EM04	10/11/2017	FD	440-194242-6	Alluvium	23.0 - 33.0	--	180	180	<4.0	<4.0	2,800	--	--	--
PC-97	EM06	11/16/2017	N	440-196786-13	Alluvium	23.0 - 33.0	--	180	180	<4.0	<4.0	2,700	--	--	--
PC-97	EM07	12/13/2017	N	440-198508-11	Alluvium	23.0 - 33.0	--	190	190	<4.0	<4.0	--	--	--	--
PC-97	EM07	12/13/2017	FD	440-198508-12	Alluvium	23.0 - 33.0	--	180	180	<4.0	<4.0	--	--	--	--
PC-97	EM08	2/21/2018	N	440-203937-4	Alluvium	23.0 - 33.0	--	200	200	<4.0	<4.0	--	--	--	--
PC-97	EM09	3/27/2018	N	440-207268-4	Alluvium	23.0 - 33.0	--	200	200	<4.0	<4.0	--	--	--	--
PC-97	EM10	5/1/2018	N	440-210284-7	Alluvium	23.0 - 33.0	--	210	210	<4.0	<4.0	--	--	--	--
PC-97	EM11	7/10/2018	N	440-215437-3	Alluvium	23.0 - 33.0	--	190	190	<4.0	<4.0	--	--	--	--
PC-97	EM15	10/11/2018	N	440-222092-13	Alluvium	23.0 - 33.0	--	200	200	<4.0	<4.0	--	--	--	--
PC-97	EM19	5/22/2019	N	440-242201-1	Alluvium	23.0 - 33.0	--	--	--	--	--	--	--	--	--
PC-97	EM22	11/6/2019	N	440-254027-7	Alluvium	23.0 - 33.0	--	--	--	--	--	--	--	--	--
PC-97	EM26	4/30/2020	N	440-265383-7	Alluvium	23.0 - 33.0	--	--	--	--	--	--	--	--	--
PC-97	EM29	10/15/2020	N	550-151259-9	Alluvium	23.0 - 33.0	--	--	--	--	--	--	--	--	--
SWFTS-IW01A	BL02	7/11/2017	N	440-188133-3	Alluvium	15.8 - 25.6	--	--	--	--	--	--	--	--	--
SWFTS-IW01B	BL02	7/11/2017	N	440-188133-13	Alluvium	26.9 - 36.7	--	--	--	--	--	--	--	--	--
SWFTS-IW02A	BL02	7/11/2017	N	440-188133-14	Alluvium	16.8 - 26.6	--	--	--	--	--	6,600	--	--	--
SWFTS-IW02B	BL02	7/11/2017	N	440-188133-2	Alluvium	26.3 - 36.1	--	--	--	--	--	6,500	--	--	--
SWFTS-IW03	BL02	7/11/2017	N	440-188133-4	Alluvium	16.8 - 36.6	--	--	--	--	--	--	--	--	--
SWFTS-IW03	BL02	7/11/2017	FD	440-188133-5	Alluvium	16.8 - 36.6	--	--	--	--	--	--	--	--	--
SWFTS-IW04	BL02	7/11/2017	N	440-188133-11	Alluvium	19.8 - 34.6	--	--	--	--	--	--	--	--	--
SWFTS-IW04	BL02	7/11/2017	FD	440-188133-12	Alluvium	19.8 - 34.6	--	--	--	--	--	--	--	--	--
SWFTS-IW05	BL02	7/11/2017	N	440-188133-16	Alluvium	14.6 - 34.4	--	--	--	--	--	5,500	--	--	--
SWFTS-IW06A	BL02	7/11/2017	N	440-188133-10	Alluvium	16.8 - 26.6	--	--	--	--	--	--	--	--	--
SWFTS-IW06B	BL02	7/11/2017	N	440-188133-6	Alluvium	28.8 - 33.6	--	--	--	--	--	--	--	--	--
SWFTS-IW07	BL02	7/11/2017	N	440-188133-7	Alluvium	17.3 - 37.1	--	--	--	--	--	--	--	--	--
SWFTS-IW08	BL02	7/12/2017	N	440-188247-7	Alluvium	17.5 - 37.3	--	--	--	--	--	--	--	--	--
SWFTS-IW09	BL02	7/12/2017	N	440-188247-8	Alluvium	26.6 - 46.4	--	--	--	--	--	5,000	--	--	--
SWFTS-IW09	BL02	7/12/2017	FD	440-188244-3	Alluvium	26.6 - 46.4	--	--	--	--	--	5,000	--	--	--
SWFTS-IW10	BL02	7/12/2017	N	440-188247-9	Alluvium	26.8 - 46.6	--	--	--	--	--	--	--	--	--
SWFTS-IW11	BL02	7/12/2017	N	440-188247-3	Alluvium	17.3 - 37.1	--	--	--	--	--	3,300	--	--	--
SWFTS-IW12	BL02	7/12/2017	N	440-188247-4	Alluvium	14.3 - 39.1	--	--	--	--	--	--	--	--	--
SWFTS-IW13A	BL02	7/11/2017	N	440-188133-1	Alluvium	15.8 - 25.6	--	--	--	--	--	--	--	--	--
SWFTS-IW13B	BL02	7/11/2017	N	440-188133-15	Alluvium	27.8 - 37.6	--	--	--	--	--	--	--	--	--
SWFTS-IW14	BL02	7/12/2017	N	440-188247-1	Alluvium	16.2 - 36.1	--	--	--	--	--	6,100	--	--	--
SWFTS-IW15	BL02	7/12/2017	N	440-188247-2	Alluvium	16.4 - 36.2	--	--	--	--	--	--	--	--	--
SWFTS-IW16A	BL02	7/11/2017	N	440-188133-9	Alluvium	17.3 - 27.1	--	--	--	--	--	--	--	--	--
SWFTS-IW16B	BL02	7/11/2017	N	440-188133-8	Alluvium	26.5 - 36.3	--	--	--	--	--	--	--	--	--
SWFTS-IW17	BL02	7/13/2017	N	440-188325-6	Alluvium	17.3 - 37.1	--	--	--	--	--	5,300	--	--	--
SWFTS-IW18	BL02	7/13/2017	N	440-188325-4	Alluvium	18.1 - 38.1	--	--	--	--	--	--	--	--	--
SWFTS-IW19	BL02	7/13/2017	N	440-188325-5	Alluvium	24.3 - 44.1	--	--	--	--	--	--	--	--	--
SWFTS-IW20	BL02	7/12/2017	N	440-188247-10	Alluvium	30.8 - 50.6	--	--	--	--	--	5,200	--	--	--
SWFTS-MW01	BL01	3/29/2017	N	440-180937-6	Alluvium	24.2 - 38.9	--	--	--	--	--	5,300	--	--	--
SWFTS-MW01	EM04	10/10/2017	N	440-194094-2	Alluvium	24.2 - 38.9	3.6	250	250	<4.0	<4.0	5,500	--	--	--
SWFTS-MW01	EM06	11/15/2017	N	440-196665-4	Alluvium	24.2 - 38.9	--	310	310	<4.0	<4.0	4,700	--	--	--
SWFTS-MW01	EM07	12/14/2017	N	440-198571-10	Alluvium	24.2 - 38.9	--	330	330	<4.0	<4.0	--	--	--	--
SWFTS-MW01	EM08	2/20/2018	N	440-203841-12	Alluvium	24.2 - 38.9	--	520	520	<4.0	<4.0	--	--	--	--
SWFTS-MW01	EM09	3/27/2018	N	440-207268-10	Alluvium	24.2 - 38.9	--	380	380	<4.0	<4.0	--	--	--	--
SWFTS-MW01	EM10	4/30/2018	N	440-210173-1	Alluvium	24.2 - 38.9	--	270	270	<4.0	<4.0	--	--	--	--
SWFTS-MW01	EM11	7/10/2018	N	440-215437-2	Alluvium	24.2 - 38.9	--	500	500	<4.0	<4.0	--	--	--	--
SWFTS-MW01	EM14	9/10/2018	N	440-219797-1	Alluvium	24.2 - 38.9	8.4	--	--	--	--	--	--	--	--
SWFTS-MW01	EM15	10/9/2018	N	440-221855-12	Alluvium	24.2 - 38.9	--	400	400	<4.0	<4.0	--	--	--	--
SWFTS-MW01	EM19	5/21/2019	N	440-242084-14	Alluvium	24.2 - 38.9	--	--	--	--	--	--	--	--	--
SWFTS-MW01	EM22	11/5/2019	N	440-253918-3	Alluvium	24.2 - 38.9	--	--	--	--	--	--	--	--	--
SWFTS-MW01	EM26	4/28/2020	N	440-265289-5	Alluvium	24.2 - 38.9	--	--	--	--	--	--	--	--	--
SWFTS-MW01	EM29	10/13/2020	N	440-273236-11	Alluvium	24.2 - 38.9	--	--	--	--	--	--	--	--	--
SWFTS-MW01	EM33	6/4/2021	N	550-164930-17	Alluvium	24.2 - 38.9	--	--	--	--	--	--	--	--	--
SWFTS-MW01	EM33	6/4/2021	N	550-164930-18	Alluvium	24.2 - 38.9	--	--	--	--	--	--	--	--	--

Table D.2
Groundater Analytical Results Summary - Secondary Parameters
Seep Well Field Area Bioremediation Treatability Study

Well	Event	Sample Date	QC Type	Lab Sample ID	Lithology	Screened Interval (ft bgs)	NTOTAL	SM2320B	SM2320B	SM2320B	SM2320B	SM2540C	SW7199	Total Metals by SW6010	Total Metals by SW6010
							Nitrogen, Total	Alkalinity as CaCO3	Bicarbonate Alkalinity as CaCO3	Carbonate Alkalinity as CaCO3	Hydroxide Alkalinity as CaCO3	Total Dissolved Solids	Chromium, Hexavalent	Aluminum	Barium
							mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	µg/L	mg/L	mg/L
SWFTS-MW01	EM36	11/30/2021	N	550-174968-19	Alluvium	24.2 - 38.9	--	--	--	--	--	--	--	--	--
SWFTS-MW01	EM36	11/30/2021	N	550-174968-20	Alluvium	24.2 - 38.9	--	--	--	--	--	--	--	--	--
SWFTS-MW01	EM40	12/13/2022	N	550-194920-3	Alluvium	24.2 - 38.9	--	--	--	--	--	--	--	--	--
SWFTS-MW01	EM40	12/13/2022	N	550-194920-4	Alluvium	24.2 - 38.9	--	--	--	--	--	--	--	--	--
SWFTS-MW02	BL01	3/29/2017	N	440-180937-7	Alluvium	18.4 - 33.1	--	--	--	--	--	--	--	--	--
SWFTS-MW02	EM04	10/12/2017	N	440-194204-6	Alluvium	18.4 - 33.1	6.2	200	200	<4.0	<4.0	6,400	<0.25	--	--
SWFTS-MW02	EM06	11/14/2017	N	440-196558-3	Alluvium	18.4 - 33.1	--	200	200	<4.0	<4.0	6,000	--	--	--
SWFTS-MW02	EM07	12/13/2017	N	440-198508-8	Alluvium	18.4 - 33.1	--	200	200	<4.0	<4.0	--	--	--	--
SWFTS-MW02	EM08	2/19/2018	N	440-203775-1	Alluvium	18.4 - 33.1	--	250	250	<4.0	<4.0	--	--	--	--
SWFTS-MW02	EM09	3/27/2018	N	440-207268-1	Alluvium	18.4 - 33.1	--	390	390	<4.0	<4.0	--	--	--	--
SWFTS-MW02	EM10	4/30/2018	N	440-210173-3	Alluvium	18.4 - 33.1	--	360	360	<4.0	<4.0	--	--	--	--
SWFTS-MW02	EM11	7/11/2018	N	440-215717-13	Alluvium	18.4 - 33.1	--	330	330	<4.0	<4.0	--	--	--	--
SWFTS-MW02	EM14	9/10/2018	N	440-219797-2	Alluvium	18.4 - 33.1	<0.11	--	--	--	--	--	--	--	--
SWFTS-MW02	EM15	10/10/2018	N	440-221975-15	Alluvium	18.4 - 33.1	--	380	380	<4.0	<4.0	--	--	--	--
SWFTS-MW02	EM19	5/21/2019	N	440-242084-8	Alluvium	18.4 - 33.1	--	--	--	--	--	--	--	--	--
SWFTS-MW02	EM22	11/7/2019	N	440-254148-7	Alluvium	18.4 - 33.1	--	--	--	--	--	--	--	--	--
SWFTS-MW02	EM26	4/30/2020	N	440-265382-3	Alluvium	18.4 - 33.1	--	--	--	--	--	--	--	--	--
SWFTS-MW02	EM29	10/15/2020	N	550-151259-8	Alluvium	18.4 - 33.1	--	--	--	--	--	--	--	--	--
SWFTS-MW02	EM33	6/3/2021	N	550-164869-21	Alluvium	18.4 - 33.1	--	--	--	--	--	--	--	--	--
SWFTS-MW02	EM33	6/3/2021	N	550-164869-22	Alluvium	18.4 - 33.1	--	--	--	--	--	--	--	--	--
SWFTS-MW02	EM36	11/30/2021	N	550-174968-7	Alluvium	18.4 - 33.1	--	--	--	--	--	--	--	--	--
SWFTS-MW02	EM36	11/30/2021	N	550-174968-8	Alluvium	18.4 - 33.1	--	--	--	--	--	--	--	--	--
SWFTS-MW02	EM40	12/14/2022	N	550-195015-3	Alluvium	18.4 - 33.1	--	--	--	--	--	--	--	--	--
SWFTS-MW02	EM40	12/14/2022	N	550-195015-4	Alluvium	18.4 - 33.1	--	--	--	--	--	--	--	--	--
SWFTS-MW03	BL01	3/30/2017	N	440-181045-5	Alluvium	27.2 - 42.1	--	--	--	--	--	--	--	--	--
SWFTS-MW03	BL01	3/30/2017	FD	440-181045-6	Alluvium	27.2 - 42.1	--	--	--	--	--	--	--	--	--
SWFTS-MW03	EM04	10/12/2017	N	440-194204-8	Alluvium	27.2 - 42.1	0.35	250	250	<4.0	<4.0	5,500	<0.25	--	--
SWFTS-MW03	EM06	11/16/2017	N	440-196786-16	Alluvium	27.2 - 42.1	3.4	280	280	<4.0	<4.0	4,900	--	--	--
SWFTS-MW03	EM07	12/12/2017	N	440-198371-13	Alluvium	27.2 - 42.1	--	270	270	<4.0	<4.0	--	--	--	--
SWFTS-MW03	EM08	2/21/2018	N	440-203937-5	Alluvium	27.2 - 42.1	4.7	280	280	<4.0	<4.0	--	--	--	--
SWFTS-MW03	EM09	3/27/2018	N	440-207268-15	Alluvium	27.2 - 42.1	6.4	250	250	<4.0	<4.0	--	--	--	--
SWFTS-MW03	EM10	5/2/2018	N	440-210430-6	Alluvium	27.2 - 42.1	7.9	220	220	<4.0	<4.0	--	--	--	--
SWFTS-MW03	EM11	7/10/2018	N	440-215437-5	Alluvium	27.2 - 42.1	1.4	310	310	<4.0	<4.0	--	--	--	--
SWFTS-MW03	EM13	8/15/2018	N	440-218208-4	Alluvium	27.2 - 42.1	3.6	320	320	<4.0	<4.0	--	--	--	--
SWFTS-MW03	EM14	9/11/2018	N	440-219886-11	Alluvium	27.2 - 42.1	4.9	290	290	<4.0	<4.0	--	--	--	--
SWFTS-MW03	EM15	10/9/2018	N	440-221855-13	Alluvium	27.2 - 42.1	--	280	280	<4.0	<4.0	--	--	--	--
SWFTS-MW03	EM19	5/21/2019	N	440-242084-12	Alluvium	27.2 - 42.1	--	--	--	--	--	--	--	--	--
SWFTS-MW03	EM22	11/4/2019	N	440-253773-2	Alluvium	27.2 - 42.1	--	--	--	--	--	--	--	--	--
SWFTS-MW03	EM26	4/28/2020	N	440-265289-1	Alluvium	27.2 - 42.1	--	--	--	--	--	--	--	--	--
SWFTS-MW03	EM29	10/13/2020	N	440-273236-10	Alluvium	27.2 - 42.1	--	--	--	--	--	--	--	--	--
SWFTS-MW03	EM33	6/3/2021	N	550-164869-15	Alluvium	27.2 - 42.1	--	--	--	--	--	--	--	--	--
SWFTS-MW03	EM33	6/3/2021	N	550-164869-16	Alluvium	27.2 - 42.1	--	--	--	--	--	--	--	--	--
SWFTS-MW03	EM36	12/1/2021	N	550-175045-1	Alluvium	27.2 - 42.1	--	--	--	--	--	--	--	--	--
SWFTS-MW03	EM36	12/1/2021	N	550-175045-2	Alluvium	27.2 - 42.1	--	--	--	--	--	--	--	--	--
SWFTS-MW03	EM40	12/13/2022	N	550-194920-15	Alluvium	27.2 - 42.1	--	--	--	--	--	--	--	--	--
SWFTS-MW03	EM40	12/13/2022	N	550-194920-16	Alluvium	27.2 - 42.1	--	--	--	--	--	--	--	--	--
SWFTS-MW04	BL01	3/31/2017	N	440-181122-1	Alluvium	25.8 - 40.4	--	--	--	--	--	--	--	--	--
SWFTS-MW04	EM04	10/11/2017	N	440-194242-7	Alluvium	25.8 - 40.4	1.6	210	210	<4.0	<4.0	2,500	--	--	--
SWFTS-MW04	EM06	11/15/2017	N	440-196659-2	Alluvium	25.8 - 40.4	--	200	200	<4.0	<4.0	2,600	--	--	--
SWFTS-MW04	EM07	12/14/2017	N	440-198571-12	Alluvium	25.8 - 40.4	--	210	210	<4.0	<4.0	--	--	--	--
SWFTS-MW04	EM08	2/21/2018	N	440-203937-2	Alluvium	25.8 - 40.4	--	200	200	<4.0	<4.0	--	--	--	--
SWFTS-MW04	EM09	3/27/2018	N	440-207268-5	Alluvium	25.8 - 40.4	--	200	200	<4.0	<4.0	--	--	--	--
SWFTS-MW04	EM10	5/1/2018	N	440-210284-5	Alluvium	25.8 - 40.4	--	210	210	<4.0	<4.0	--	--	--	--
SWFTS-MW04	EM11	7/10/2018	N	440-215437-4	Alluvium	25.8 - 40.4	--	230	230	<4.0	<4.0	--	--	--	--
SWFTS-MW04	EM15	10/11/2018	N	440-222092-9	Alluvium	25.8 - 40.4	--	220	220	<4.0	<4.0	--	--	--	--
SWFTS-MW04	EM19	5/21/2019	N	440-242084-11	Alluvium	25.8 - 40.4	--	--	--	--	--	--	--	--	--
SWFTS-MW04	EM22	11/7/2019	N	440-254150-6	Alluvium	25.8 - 40.4	--	--	--	--	--	--	--	--	--
SWFTS-MW04	EM26	5/1/2020	N	440-265412-1	Alluvium	25.8 - 40.4	--	--	--	--	--	--	--	--	--
SWFTS-MW04	EM29	10/14/2020	N	440-273303-12	Alluvium	25.8 - 40.4	--	--	--	--	--	--	--	--	--
SWFTS-MW04	EM33	6/3/2021	N	550-164869-23	Alluvium	25.8 - 40.4	--	--	--	--	--	--	--	--	--
SWFTS-MW04	EM33	6/3/2021	N	550-164869-24	Alluvium	25.8 - 40.4	--	--	--	--	--	--	--	--	--
SWFTS-MW04	EM36	12/2/2021	N	550-175153-3	Alluvium	25.8 - 40.4	--	--	--	--	--	--	--	--	--
SWFTS-MW04	EM36	12/2/2021	N	550-175153-4	Alluvium	25.8 - 40.4	--	--	--	--	--	--	--	--	--
SWFTS-MW04	EM40	12/14/2022	N	550-195015-1	Alluvium	25.8 - 40.4	--	--	--	--	--	--	--	--	--

Table D.2
Groundater Analytical Results Summary - Secondary Parameters
Seep Well Field Area Bioremediation Treatability Study

Well	Event	Sample Date	QC Type	Lab Sample ID	Lithology	Screened Interval (ft bgs)	NTOTAL	SM2320B	SM2320B	SM2320B	SM2320B	SM2540C	SW7199	Total Metals by SW6010	Total Metals by SW6010
							Nitrogen, Total	Alkalinity as CaCO3	Bicarbonate Alkalinity as CaCO3	Carbonate Alkalinity as CaCO3	Hydroxide Alkalinity as CaCO3	Total Dissolved Solids	Chromium, Hexavalent	Aluminum	Barium
							mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	µg/L	mg/L	mg/L
SWFTS-MW04	EM40	12/14/2022	N	550-195015-2	Alluvium	25.8 - 40.4	--	--	--	--	--	--	--	--	--
SWFTS-MW05A	BL01	3/30/2017	N	440-181045-7	Alluvium	19.3 - 29.3	--	--	--	--	--	--	--	--	--
SWFTS-MW05A	EM04	10/10/2017	N	440-193989-2	Alluvium	19.3 - 29.3	--	97	97	<4.0	<4.0	6,100	--	--	--
SWFTS-MW05A	EM06	11/14/2017	N	440-196558-1	Alluvium	19.3 - 29.3	--	110	110	<4.0	<4.0	5,700	--	--	--
SWFTS-MW05A	EM07	12/13/2017	N	440-198508-3	Alluvium	19.3 - 29.3	--	100	100	<4.0	<4.0	--	--	--	--
SWFTS-MW05A	EM08	2/20/2018	N	440-203841-7	Alluvium	19.3 - 29.3	--	100	100	<4.0	<4.0	--	--	--	--
SWFTS-MW05A	EM09	3/26/2018	N	440-207137-5	Alluvium	19.3 - 29.3	--	100	100	<4.0	<4.0	--	--	--	--
SWFTS-MW05A	EM10	4/30/2018	N	440-210173-8	Alluvium	19.3 - 29.3	--	100	100	<4.0	<4.0	--	--	--	--
SWFTS-MW05A	EM11	7/11/2018	N	440-215585-14	Alluvium	19.3 - 29.3	--	120	120	<4.0	<4.0	--	--	--	--
SWFTS-MW05A	EM15	10/10/2018	N	440-221975-14	Alluvium	19.3 - 29.3	--	220	220	<4.0	<4.0	--	--	--	--
SWFTS-MW05A	EM19	5/21/2019	N	440-242084-17	Alluvium	19.3 - 29.3	--	--	--	--	--	--	--	--	--
SWFTS-MW05A	EM22	11/5/2019	N	440-253918-1	Alluvium	19.3 - 29.3	--	--	--	--	--	--	--	--	--
SWFTS-MW05A	EM26	4/29/2020	N	440-265346-2	Alluvium	19.3 - 29.3	--	--	--	--	--	--	--	--	--
SWFTS-MW05A	EM29	10/14/2020	N	440-273303-9	Alluvium	19.3 - 29.3	--	--	--	--	--	--	--	--	--
SWFTS-MW05A	EM33	6/3/2021	N	550-164869-17	Alluvium	19.3 - 29.3	--	--	--	--	--	--	--	--	--
SWFTS-MW05A	EM33	6/3/2021	N	550-164869-18	Alluvium	19.3 - 29.3	--	--	--	--	--	--	--	--	--
SWFTS-MW05A	EM36	11/29/2021	N	550-174897-3	Alluvium	19.3 - 29.3	--	--	--	--	--	--	--	--	--
SWFTS-MW05A	EM36	11/29/2021	N	550-174897-4	Alluvium	19.3 - 29.3	--	--	--	--	--	--	--	--	--
SWFTS-MW05B	BL01	3/30/2017	N	440-181045-8	Alluvium	32.3 - 42.0	--	--	--	--	--	--	--	--	--
SWFTS-MW05B	EM04	10/10/2017	N	440-193989-1	Alluvium	32.3 - 42.0	--	410	410	<4.0	<4.0	5,300	--	--	--
SWFTS-MW05B	EM06	11/14/2017	N	440-196558-2	Alluvium	32.3 - 42.0	--	410	410	<4.0	<4.0	4,600	--	--	--
SWFTS-MW05B	EM07	12/13/2017	N	440-198508-4	Alluvium	32.3 - 42.0	--	300	300	<4.0	<4.0	--	--	--	--
SWFTS-MW05B	EM08	2/20/2018	N	440-203841-8	Alluvium	32.3 - 42.0	--	310	310	<4.0	<4.0	--	--	--	--
SWFTS-MW05B	EM09	3/26/2018	N	440-207137-6	Alluvium	32.3 - 42.0	--	260	260	<4.0	<4.0	--	--	--	--
SWFTS-MW05B	EM10	4/30/2018	N	440-210173-2	Alluvium	32.3 - 42.0	--	240	240	<4.0	<4.0	--	--	--	--
SWFTS-MW05B	EM11	7/10/2018	N	440-215585-10	Alluvium	32.3 - 42.0	--	470	470	<4.0	<4.0	--	--	--	--
SWFTS-MW05B	EM15	10/9/2018	N	440-221855-14	Alluvium	32.3 - 42.0	--	390	390	<4.0	<4.0	--	--	--	--
SWFTS-MW05B	EM19	5/21/2019	N	440-242084-18	Alluvium	32.3 - 42.0	--	--	--	--	--	--	--	--	--
SWFTS-MW05B	EM22	11/5/2019	N	440-253918-2	Alluvium	32.3 - 42.0	--	--	--	--	--	--	--	--	--
SWFTS-MW05B	EM26	4/29/2020	N	440-265346-1	Alluvium	32.3 - 42.0	--	--	--	--	--	--	--	--	--
SWFTS-MW05B	EM29	10/14/2020	N	440-273303-8	Alluvium	32.3 - 42.0	--	--	--	--	--	--	--	--	--
SWFTS-MW05B	EM33	6/3/2021	N	550-164869-19	Alluvium	32.3 - 42.0	--	--	--	--	--	--	--	--	--
SWFTS-MW05B	EM33	6/3/2021	N	550-164869-20	Alluvium	32.3 - 42.0	--	--	--	--	--	--	--	--	--
SWFTS-MW05B	EM36	11/30/2021	N	550-174968-15	Alluvium	32.3 - 42.0	--	--	--	--	--	--	--	--	--
SWFTS-MW05B	EM36	11/30/2021	N	550-174968-16	Alluvium	32.3 - 42.0	--	--	--	--	--	--	--	--	--
SWFTS-MW06A	BL01	3/30/2017	N	440-181045-1	Alluvium	11.8 - 21.4	--	--	--	--	--	--	--	--	--
SWFTS-MW06A	EM04	10/11/2017	N	440-194090-4	Alluvium	11.8 - 21.4	--	180	180	<4.0	<4.0	2,700	--	--	--
SWFTS-MW06A	EM06	11/16/2017	N	440-196786-19	Alluvium	11.8 - 21.4	--	180	180	<4.0	<4.0	2,800	--	--	--
SWFTS-MW06A	EM07	12/13/2017	N	440-198508-1	Alluvium	11.8 - 21.4	--	180	180	<4.0	<4.0	--	--	--	--
SWFTS-MW06A	EM08	2/22/2018	N	440-204033-1	Alluvium	11.8 - 21.4	--	180	180	<4.0	<4.0	--	--	--	--
SWFTS-MW06A	EM09	3/28/2018	N	440-207497-3	Alluvium	11.8 - 21.4	--	190	190	<4.0	<4.0	--	--	--	--
SWFTS-MW06A	EM10	5/1/2018	N	440-210284-9	Alluvium	11.8 - 21.4	--	200	200	<4.0	<4.0	--	--	--	--
SWFTS-MW06A	EM10	5/1/2018	FD	440-210284-10	Alluvium	11.8 - 21.4	--	200	200	<4.0	<4.0	--	--	--	--
SWFTS-MW06A	EM11	7/11/2018	N	440-215585-2	Alluvium	11.8 - 21.4	--	200	200	<4.0	<4.0	--	--	--	--
SWFTS-MW06A	EM11	7/11/2018	FD	440-215585-3	Alluvium	11.8 - 21.4	--	190	190	<4.0	<4.0	--	--	--	--
SWFTS-MW06A	EM15	10/10/2018	N	440-221975-8	Alluvium	11.8 - 21.4	--	190	190	<4.0	<4.0	--	--	--	--
SWFTS-MW06A	EM15	10/10/2018	FD	440-221975-10	Alluvium	11.8 - 21.4	--	200	200	<4.0	<4.0	--	--	--	--
SWFTS-MW06A	EM19	5/20/2019	N	440-242015-1	Alluvium	11.8 - 21.4	--	--	--	--	--	--	--	--	--
SWFTS-MW06A	EM19	5/20/2019	FD	440-242015-2	Alluvium	11.8 - 21.4	--	--	--	--	--	--	--	--	--
SWFTS-MW06A	EM22	11/6/2019	N	440-254027-4	Alluvium	11.8 - 21.4	--	--	--	--	--	--	--	--	--
SWFTS-MW06A	EM22	11/6/2019	FD	440-254027-5	Alluvium	11.8 - 21.4	--	--	--	--	--	--	--	--	--
SWFTS-MW06A	EM26	4/29/2020	N	440-265346-5	Alluvium	11.8 - 21.4	--	--	--	--	--	--	--	--	--
SWFTS-MW06A	EM26	4/29/2020	FD	440-265346-6	Alluvium	11.8 - 21.4	--	--	--	--	--	--	--	--	--
SWFTS-MW06A	EM29	10/13/2020	N	440-273236-7	Alluvium	11.8 - 21.4	--	--	--	--	--	--	--	--	--
SWFTS-MW06A	EM29	10/13/2020	FD	440-273236-8	Alluvium	11.8 - 21.4	--	--	--	--	--	--	--	--	--
SWFTS-MW06A	EM33	6/4/2021	N	550-164930-19	Alluvium	11.8 - 21.4	--	--	--	--	--	--	--	--	--
SWFTS-MW06A	EM33	6/4/2021	N	550-164930-20	Alluvium	11.8 - 21.4	--	--	--	--	--	--	--	--	--
SWFTS-MW06A	EM33	6/4/2021	FD	550-164930-21	Alluvium	11.8 - 21.4	--	--	--	--	--	--	--	--	--
SWFTS-MW06A	EM33	6/4/2021	FD	550-164930-22	Alluvium	11.8 - 21.4	--	--	--	--	--	--	--	--	--
SWFTS-MW06A	EM36	12/1/2021	N	550-175045-7	Alluvium	11.8 - 21.4	--	--	--	--	--	--	--	--	--
SWFTS-MW06A	EM36	12/1/2021	N	550-175045-8	Alluvium	11.8 - 21.4	--	--	--	--	--	--	--	--	--
SWFTS-MW06A	EM36	12/1/2021	FD	550-175045-10	Alluvium	11.8 - 21.4	--	--	--	--	--	--	--	--	--
SWFTS-MW06A	EM36	12/1/2021	FD	550-175045-9	Alluvium	11.8 - 21.4	--	--	--	--	--	--	--	--	--
SWFTS-MW06A	EM40	12/14/2022	N	550-195015-5	Alluvium	11.8 - 21.4	--	--	--	--	--	--	--	--	--

Table D.2
Groundater Analytical Results Summary - Secondary Parameters
Seep Well Field Area Bioremediation Treatability Study

Well	Event	Sample Date	QC Type	Lab Sample ID	Lithology	Screened Interval (ft bgs)	NTOTAL	SM2320B	SM2320B	SM2320B	SM2320B	SM2540C	SW7199	Total Metals by SW6010	Total Metals by SW6010
							Nitrogen, Total	Alkalinity as CaCO3	Bicarbonate Alkalinity as CaCO3	Carbonate Alkalinity as CaCO3	Hydroxide Alkalinity as CaCO3	Total Dissolved Solids	Chromium, Hexavalent	Aluminum	Barium
							mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	µg/L	mg/L	mg/L
SWFTS-MW06A	EM40	12/14/2022	N	550-195015-6	Alluvium	11.8 - 21.4	--	--	--	--	--	--	--	--	--
SWFTS-MW06A	EM40	12/14/2022	FD	550-195015-7	Alluvium	11.8 - 21.4	--	--	--	--	--	--	--	--	--
SWFTS-MW06A	EM40	12/14/2022	FD	550-195015-8	Alluvium	11.8 - 21.4	--	--	--	--	--	--	--	--	--
SWFTS-MW06B	BL01	3/30/2017	N	440-181045-2	Alluvium	25.9 - 35.5	--	--	--	--	--	--	--	--	--
SWFTS-MW06B	EM04	10/11/2017	N	440-194090-5	Alluvium	25.9 - 35.5	--	190	190	<4.0	<4.0	2,500	--	--	--
SWFTS-MW06B	EM06	11/16/2017	N	440-196786-20	Alluvium	25.9 - 35.5	--	190	190	<4.0	<4.0	2,500	--	--	--
SWFTS-MW06B	EM07	12/13/2017	N	440-198508-2	Alluvium	25.9 - 35.5	--	190	190	<4.0	<4.0	--	--	--	--
SWFTS-MW06B	EM08	2/22/2018	N	440-204033-5	Alluvium	25.9 - 35.5	--	180	180	<4.0	<4.0	--	--	--	--
SWFTS-MW06B	EM09	3/28/2018	N	440-207497-2	Alluvium	25.9 - 35.5	--	190	190	<4.0	<4.0	--	--	--	--
SWFTS-MW06B	EM10	5/1/2018	N	440-210284-8	Alluvium	25.9 - 35.5	--	190	190	<4.0	<4.0	--	--	--	--
SWFTS-MW06B	EM11	7/11/2018	N	440-215585-4	Alluvium	25.9 - 35.5	--	200	200	<4.0	<4.0	--	--	--	--
SWFTS-MW06B	EM15	10/10/2018	N	440-221975-9	Alluvium	25.9 - 35.5	--	200	200	<4.0	<4.0	--	--	--	--
SWFTS-MW06B	EM19	5/21/2019	N	440-242084-5	Alluvium	25.9 - 35.5	--	--	--	--	--	--	--	--	--
SWFTS-MW06B	EM22	11/6/2019	N	440-254027-6	Alluvium	25.9 - 35.5	--	--	--	--	--	--	--	--	--
SWFTS-MW06B	EM26	4/29/2020	N	440-265346-4	Alluvium	25.9 - 35.5	--	--	--	--	--	--	--	--	--
SWFTS-MW06B	EM29	10/13/2020	N	440-273236-6	Alluvium	25.9 - 35.5	--	--	--	--	--	--	--	--	--
SWFTS-MW06B	EM33	6/4/2021	N	550-164930-23	Alluvium	25.9 - 35.5	--	--	--	--	--	--	--	--	--
SWFTS-MW06B	EM33	6/4/2021	N	550-164930-24	Alluvium	25.9 - 35.5	--	--	--	--	--	--	--	--	--
SWFTS-MW06B	EM36	12/1/2021	N	550-175045-11	Alluvium	25.9 - 35.5	--	--	--	--	--	--	--	--	--
SWFTS-MW06B	EM36	12/1/2021	N	550-175045-12	Alluvium	25.9 - 35.5	--	--	--	--	--	--	--	--	--
SWFTS-MW06B	EM40	12/14/2022	N	550-195015-10	Alluvium	25.9 - 35.5	--	--	--	--	--	--	--	--	--
SWFTS-MW06B	EM40	12/14/2022	N	550-195015-9	Alluvium	25.9 - 35.5	--	--	--	--	--	--	--	--	--
SWFTS-MW07A	BL01	3/30/2017	N	440-181045-3	Alluvium	15.0 - 29.5	--	--	--	--	--	--	--	--	--
SWFTS-MW07A	EM04	10/11/2017	N	440-194242-3	Alluvium	15.0 - 29.5	--	240	240	<4.0	<4.0	5,300	--	--	--
SWFTS-MW07A	EM06	11/15/2017	N	440-196659-7	Alluvium	15.0 - 29.5	--	230	230	<4.0	<4.0	5,000	--	--	--
SWFTS-MW07A	EM07	12/14/2017	N	440-198571-3	Alluvium	15.0 - 29.5	--	230	230	<4.0	<4.0	--	--	--	--
SWFTS-MW07A	EM08	2/19/2018	N	440-203775-3	Alluvium	15.0 - 29.5	--	230	230	<4.0	<4.0	--	--	--	--
SWFTS-MW07A	EM09	3/28/2018	N	440-207497-4	Alluvium	15.0 - 29.5	--	220	220	<4.0	<4.0	--	--	--	--
SWFTS-MW07A	EM10	5/2/2018	N	440-210430-2	Alluvium	15.0 - 29.5	--	220	220	<4.0	<4.0	--	--	--	--
SWFTS-MW07A	EM11	7/11/2018	N	440-215585-7	Alluvium	15.0 - 29.5	--	220	220	<4.0	<4.0	--	--	--	--
SWFTS-MW07A	EM15	10/10/2018	N	440-221975-11	Alluvium	15.0 - 29.5	--	260	260	<4.0	<4.0	--	--	--	--
SWFTS-MW07A	EM19	5/22/2019	N	440-242200-5	Alluvium	15.0 - 29.5	--	--	--	--	--	--	--	--	--
SWFTS-MW07A	EM22	11/7/2019	N	440-254148-4	Alluvium	15.0 - 29.5	--	--	--	--	--	--	--	--	--
SWFTS-MW07A	EM26	4/30/2020	N	440-265382-5	Alluvium	15.0 - 29.5	--	--	--	--	--	--	--	--	--
SWFTS-MW07A	EM29	10/16/2020	N	440-273433-1	Alluvium	15.0 - 29.5	--	--	--	--	--	--	--	--	--
SWFTS-MW07A	EM33	6/4/2021	N	550-164930-25	Alluvium	15.0 - 29.5	--	--	--	--	--	--	--	--	--
SWFTS-MW07A	EM33	6/4/2021	N	550-164930-26	Alluvium	15.0 - 29.5	--	--	--	--	--	--	--	--	--
SWFTS-MW07A	EM36	12/3/2021	N	550-175222-3	Alluvium	15.0 - 29.5	--	--	--	--	--	--	--	--	--
SWFTS-MW07A	EM36	12/3/2021	N	550-175222-4	Alluvium	15.0 - 29.5	--	--	--	--	--	--	--	--	--
SWFTS-MW07A	EM40	12/14/2022	N	550-195015-11	Alluvium	15.0 - 29.5	--	--	--	--	--	--	--	--	--
SWFTS-MW07A	EM40	12/14/2022	N	550-195015-12	Alluvium	15.0 - 29.5	--	--	--	--	--	--	--	--	--
SWFTS-MW07B	BL01	3/30/2017	N	440-181045-4	Alluvium	33.8 - 38.3	--	--	--	--	--	--	--	--	--
SWFTS-MW07B	EM04	10/11/2017	N	440-194242-4	Alluvium	33.8 - 38.3	--	230	230	<4.0	<4.0	4,200	--	--	--
SWFTS-MW07B	EM06	11/15/2017	N	440-196659-8	Alluvium	33.8 - 38.3	--	230	230	<4.0	<4.0	4,100	--	--	--
SWFTS-MW07B	EM07	12/14/2017	N	440-198571-4	Alluvium	33.8 - 38.3	--	240	240	<4.0	<4.0	--	--	--	--
SWFTS-MW07B	EM08	2/19/2018	N	440-203775-2	Alluvium	33.8 - 38.3	--	230	230	<4.0	<4.0	--	--	--	--
SWFTS-MW07B	EM09	3/28/2018	N	440-207497-10	Alluvium	33.8 - 38.3	--	220	220	<4.0	<4.0	--	--	--	--
SWFTS-MW07B	EM10	5/2/2018	N	440-210430-1	Alluvium	33.8 - 38.3	--	250	250	<4.0	<4.0	--	--	--	--
SWFTS-MW07B	EM11	7/11/2018	N	440-215585-8	Alluvium	33.8 - 38.3	--	230	230	<4.0	<4.0	--	--	--	--
SWFTS-MW07B	EM15	10/10/2018	N	440-221975-12	Alluvium	33.8 - 38.3	--	250	250	<4.0	<4.0	--	--	--	--
SWFTS-MW07B	EM19	5/22/2019	N	440-242200-6	Alluvium	33.8 - 38.3	--	--	--	--	--	--	--	--	--
SWFTS-MW07B	EM22	11/7/2019	N	440-254148-5	Alluvium	33.8 - 38.3	--	--	--	--	--	--	--	--	--
SWFTS-MW07B	EM26	4/30/2020	N	440-265382-4	Alluvium	33.8 - 38.3	--	--	--	--	--	--	--	--	--
SWFTS-MW07B	EM29	10/16/2020	N	440-273433-2	Alluvium	33.8 - 38.3	--	--	--	--	--	--	--	--	--
SWFTS-MW07B	EM33	6/4/2021	N	550-164930-27	Alluvium	33.8 - 38.3	--	--	--	--	--	--	--	--	--
SWFTS-MW07B	EM33	6/4/2021	N	550-164930-28	Alluvium	33.8 - 38.3	--	--	--	--	--	--	--	--	--
SWFTS-MW07B	EM36	12/3/2021	N	550-175222-5	Alluvium	33.8 - 38.3	--	--	--	--	--	--	--	--	--
SWFTS-MW07B	EM36	12/3/2021	N	550-175222-6	Alluvium	33.8 - 38.3	--	--	--	--	--	--	--	--	--
SWFTS-MW07B	EM40	12/14/2022	N	550-195015-13	Alluvium	33.8 - 38.3	--	--	--	--	--	--	--	--	--
SWFTS-MW07B	EM40	12/14/2022	N	550-195015-14	Alluvium	33.8 - 38.3	--	--	--	--	--	--	--	--	--
SWFTS-MW08A	BL01	3/30/2017	N	440-181045-9	Alluvium	20.2 - 34.8	--	--	--	--	--	5,300	--	--	--
SWFTS-MW08A	EM04	10/10/2017	N	440-194094-4	Alluvium	20.2 - 34.8	--	190	190	<4.0	<4.0	5,000	--	--	--
SWFTS-MW08A	EM06	11/15/2017	N	440-196659-4	Alluvium	20.2 - 34.8	--	190	190	<4.0	<4.0	4,400	--	--	--
SWFTS-MW08A	EM07	12/14/2017	N	440-198571-1	Alluvium	20.2 - 34.8	--	190	190	<4.0	<4.0	--	--	--	--

Table D.2
Groundater Analytical Results Summary - Secondary Parameters
Seep Well Field Area Bioremediation Treatability Study

Well	Event	Sample Date	QC Type	Lab Sample ID	Lithology	Screened Interval (ft bgs)	NTOTAL	SM2320B	SM2320B	SM2320B	SM2320B	SM2540C	SW7199	Total Metals by SW6010	Total Metals by SW6010
							Nitrogen, Total	Alkalinity as CaCO3	Bicarbonate Alkalinity as CaCO3	Carbonate Alkalinity as CaCO3	Hydroxide Alkalinity as CaCO3	Total Dissolved Solids	Chromium, Hexavalent	Aluminum	Barium
							mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	µg/L	mg/L	mg/L
SWFTS-MW08A	EM08	2/22/2018	N	440-204033-8	Alluvium	20.2 - 34.8	--	200	200	<4.0	<4.0	--	--	--	--
SWFTS-MW08A	EM09	3/29/2018	N	440-207586-1	Alluvium	20.2 - 34.8	--	180	180	<4.0	<4.0	--	--	--	--
SWFTS-MW08A	EM10	5/3/2018	N	440-210534-5	Alluvium	20.2 - 34.8	--	150	150	<4.0	<4.0	--	--	--	--
SWFTS-MW08A	EM11	7/11/2018	N	440-215717-14	Alluvium	20.2 - 34.8	--	190	190	<4.0	<4.0	--	--	--	--
SWFTS-MW08A	EM15	10/10/2018	N	440-221975-13	Alluvium	20.2 - 34.8	--	210	210	<4.0	<4.0	--	--	--	--
SWFTS-MW08A	EM19	5/22/2019	N	440-242198-4	Alluvium	20.2 - 34.8	--	--	--	--	--	--	--	--	--
SWFTS-MW08A	EM22	11/7/2019	N	440-254148-6	Alluvium	20.2 - 34.8	--	--	--	--	--	--	--	--	--
SWFTS-MW08A	EM26	4/29/2020	N	440-265346-3	Alluvium	20.2 - 34.8	--	--	--	--	--	--	--	--	--
SWFTS-MW08A	EM29	10/16/2020	N	440-273433-4	Alluvium	20.2 - 34.8	--	--	--	--	--	--	--	--	--
SWFTS-MW08A	EM33	6/4/2021	N	550-164930-29	Alluvium	20.2 - 34.8	--	--	--	--	--	--	--	--	--
SWFTS-MW08A	EM33	6/4/2021	N	550-164930-30	Alluvium	20.2 - 34.8	--	--	--	--	--	--	--	--	--
SWFTS-MW08A	EM36	12/2/2021	N	550-175153-23	Alluvium	20.2 - 34.8	--	--	--	--	--	--	--	--	--
SWFTS-MW08A	EM36	12/2/2021	N	550-175153-24	Alluvium	20.2 - 34.8	--	--	--	--	--	--	--	--	--
SWFTS-MW08C	BL01	3/28/2017	N	440-180820-3	UMCf	49.9 - 69.5	--	--	--	--	--	6,700	--	--	--
SWFTS-MW08C	EM40	12/14/2022	N	550-195015-15	UMCf	49.9 - 69.5	--	--	--	--	--	--	--	--	--
SWFTS-MW08C	EM40	12/14/2022	N	550-195015-16	UMCf	49.9 - 69.5	--	--	--	--	--	--	--	--	--
SWFTS-MW09A	BL01	3/29/2017	N	440-180937-3	Alluvium	19.3 - 28.9	--	--	--	--	--	5,100	--	--	--
SWFTS-MW09A	EM04	10/11/2017	N	440-194094-7	Alluvium	19.3 - 28.9	--	290	290	<4.0	<4.0	5,100	--	--	--
SWFTS-MW09A	EM06	11/16/2017	N	440-196786-14	Alluvium	19.3 - 28.9	--	340	340	<4.0	<4.0	4,500	--	--	--
SWFTS-MW09A	EM07	12/12/2017	N	440-198371-6	Alluvium	19.3 - 28.9	--	320	320	<4.0	<4.0	--	--	--	--
SWFTS-MW09A	EM08	2/20/2018	N	440-203841-14	Alluvium	19.3 - 28.9	--	310	310	<4.0	<4.0	--	--	--	--
SWFTS-MW09A	EM09	3/27/2018	N	440-207268-7	Alluvium	19.3 - 28.9	--	300	300	<4.0	<4.0	--	--	--	--
SWFTS-MW09A	EM10	5/1/2018	N	440-210284-13	Alluvium	19.3 - 28.9	--	280	280	<4.0	<4.0	--	--	--	--
SWFTS-MW09A	EM11	7/12/2018	N	440-215717-10	Alluvium	19.3 - 28.9	--	340	340	<4.0	<4.0	--	--	--	--
SWFTS-MW09A	EM15	10/9/2018	N	440-221855-7	Alluvium	19.3 - 28.9	--	300	300	<4.0	<4.0	--	--	--	--
SWFTS-MW09A	EM19	5/22/2019	N	440-242200-1	Alluvium	19.3 - 28.9	--	--	--	--	--	--	--	--	--
SWFTS-MW09A	EM22	11/5/2019	N	440-253891-1	Alluvium	19.3 - 28.9	--	--	--	--	--	--	--	--	--
SWFTS-MW09A	EM26	4/28/2020	N	440-265289-4	Alluvium	19.3 - 28.9	--	--	--	--	--	--	--	--	--
SWFTS-MW09A	EM29	10/13/2020	N	440-273236-3	Alluvium	19.3 - 28.9	--	--	--	--	--	--	--	--	--
SWFTS-MW09A	EM33	6/1/2021	N	550-164699-1	Alluvium	19.3 - 28.9	--	--	--	--	--	--	--	--	--
SWFTS-MW09A	EM33	6/1/2021	N	550-164699-2	Alluvium	19.3 - 28.9	--	--	--	--	--	--	--	--	--
SWFTS-MW09A	EM36	12/2/2021	N	550-175153-10	Alluvium	19.3 - 28.9	--	--	--	--	--	--	--	--	--
SWFTS-MW09A	EM36	12/2/2021	N	550-175153-9	Alluvium	19.3 - 28.9	--	--	--	--	--	--	--	--	--
SWFTS-MW09A	EM40	12/13/2022	N	550-194920-10	Alluvium	19.3 - 28.9	--	--	--	--	--	--	--	--	--
SWFTS-MW09A	EM40	12/13/2022	N	550-194920-9	Alluvium	19.3 - 28.9	--	--	--	--	--	--	--	--	--
SWFTS-MW09B	BL01	3/29/2017	N	440-180937-4	Alluvium	34.4 - 39.0	--	--	--	--	--	5,100	--	--	--
SWFTS-MW09B	BL01	3/29/2017	FD	440-180937-5	Alluvium	34.4 - 39.0	--	--	--	--	--	5,000	--	--	--
SWFTS-MW09B	EM04	10/11/2017	N	440-194094-5	Alluvium	34.4 - 39.0	--	340	340	<4.0	<4.0	5,100	--	--	--
SWFTS-MW09B	EM06	11/16/2017	N	440-196786-15	Alluvium	34.4 - 39.0	--	380	380	<4.0	<4.0	4,400	--	--	--
SWFTS-MW09B	EM07	12/12/2017	N	440-198371-7	Alluvium	34.4 - 39.0	--	310	310	<4.0	<4.0	--	--	--	--
SWFTS-MW09B	EM08	2/20/2018	N	440-203841-13	Alluvium	34.4 - 39.0	--	430	430	<4.0	<4.0	--	--	--	--
SWFTS-MW09B	EM09	3/27/2018	N	440-207268-6	Alluvium	34.4 - 39.0	--	250	250	<4.0	<4.0	--	--	--	--
SWFTS-MW09B	EM10	4/30/2018	N	440-210173-11	Alluvium	34.4 - 39.0	--	230	230	<4.0	<4.0	--	--	--	--
SWFTS-MW09B	EM11	7/12/2018	N	440-215717-9	Alluvium	34.4 - 39.0	--	290	290	<4.0	<4.0	--	--	--	--
SWFTS-MW09B	EM15	10/9/2018	N	440-221855-8	Alluvium	34.4 - 39.0	--	250	250	<4.0	<4.0	--	--	--	--
SWFTS-MW09B	EM19	5/22/2019	N	440-242200-2	Alluvium	34.4 - 39.0	--	--	--	--	--	--	--	--	--
SWFTS-MW09B	EM22	11/5/2019	N	440-253891-3	Alluvium	34.4 - 39.0	--	--	--	--	--	--	--	--	--
SWFTS-MW09B	EM26	4/28/2020	N	440-265289-3	Alluvium	34.4 - 39.0	--	--	--	--	--	--	--	--	--
SWFTS-MW09B	EM29	10/13/2020	N	440-273236-4	Alluvium	34.4 - 39.0	--	--	--	--	--	--	--	--	--
SWFTS-MW09B	EM33	6/2/2021	N	550-164872-1	Alluvium	34.4 - 39.0	--	--	--	--	--	--	--	--	--
SWFTS-MW09B	EM33	6/2/2021	N	550-164872-2	Alluvium	34.4 - 39.0	--	--	--	--	--	--	--	--	--
SWFTS-MW09B	EM36	12/2/2021	N	550-175153-11	Alluvium	34.4 - 39.0	--	--	--	--	--	--	--	--	--
SWFTS-MW09B	EM36	12/2/2021	N	550-175153-12	Alluvium	34.4 - 39.0	--	--	--	--	--	--	--	--	--
SWFTS-MW09B	EM40	12/13/2022	N	550-194920-13	Alluvium	34.4 - 39.0	--	--	--	--	--	--	--	--	--
SWFTS-MW09B	EM40	12/13/2022	N	550-194920-14	Alluvium	34.4 - 39.0	--	--	--	--	--	--	--	--	--
SWFTS-MW10A	BL01	3/31/2017	N	440-181122-2	Alluvium	20.4 - 35.0	--	--	--	--	--	4,300	--	--	--
SWFTS-MW10A	EM04	10/12/2017	N	440-194242-10	Alluvium	20.4 - 35.0	--	390	390	<4.0	<4.0	3,300	--	--	--
SWFTS-MW10A	EM06	11/16/2017	N	440-196786-5	Alluvium	20.4 - 35.0	0.19	450	450	<4.0	<4.0	3,000	--	--	--
SWFTS-MW10A	EM06	11/16/2017	FD	440-196786-6	Alluvium	20.4 - 35.0	0.28	450	450	<4.0	<4.0	3,000	--	--	--
SWFTS-MW10A	EM07	12/12/2017	N	440-198371-10	Alluvium	20.4 - 35.0	--	410	410	<4.0	<4.0	--	--	--	--
SWFTS-MW10A	EM07	12/12/2017	FD	440-198371-11	Alluvium	20.4 - 35.0	--	410	410	<4.0	<4.0	--	--	--	--
SWFTS-MW10A	EM08	2/20/2018	N	440-203841-4	Alluvium	20.4 - 35.0	0.15 J	470	470	<4.0	<4.0	--	--	--	--
SWFTS-MW10A	EM08	2/20/2018	FD	440-203841-5	Alluvium	20.4 - 35.0	1.5 J	470	470	<4.0	<4.0	--	--	--	--
SWFTS-MW10A	EM09	3/26/2018	N	440-207137-7	Alluvium	20.4 - 35.0	0.37	370	370	<4.0	<4.0	--	--	--	--

Table D.2
Groundater Analytical Results Summary - Secondary Parameters
Seep Well Field Area Bioremediation Treatability Study

Well	Event	Sample Date	QC Type	Lab Sample ID	Lithology	Screened Interval (ft bgs)	NTOTAL	SM2320B	SM2320B	SM2320B	SM2320B	SM2540C	SW7199	Total Metals by SW6010	Total Metals by SW6010
							Nitrogen, Total	Alkalinity as CaCO3	Bicarbonate Alkalinity as CaCO3	Carbonate Alkalinity as CaCO3	Hydroxide Alkalinity as CaCO3	Total Dissolved Solids	Chromium, Hexavalent	Aluminum	Barium
							mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	µg/L	mg/L	mg/L
SWFTS-MW10A	EM09	3/26/2018	FD	440-207137-8	Alluvium	20.4 - 35.0	0.36	370	370	<4.0	<4.0	--	--	--	--
SWFTS-MW10A	EM10	5/1/2018	N	440-210284-1	Alluvium	20.4 - 35.0	0.96	330	330	<4.0	<4.0	--	--	--	--
SWFTS-MW10A	EM11	7/11/2018	N	440-215585-9	Alluvium	20.4 - 35.0	0.99	360	360	<4.0	<4.0	--	--	--	--
SWFTS-MW10A	EM13	8/14/2018	N	440-218109-10	Alluvium	20.4 - 35.0	<0.11	360	360	<4.0	<4.0	--	--	--	--
SWFTS-MW10A	EM14	9/10/2018	N	440-219797-4	Alluvium	20.4 - 35.0	0.19	350	350	<4.0	<4.0	--	--	--	--
SWFTS-MW10A	EM15	10/9/2018	N	440-221855-9	Alluvium	20.4 - 35.0	0.32	380	380	<4.0	<4.0	4,100	--	--	--
SWFTS-MW10A	EM19	5/21/2019	N	440-242084-2	Alluvium	20.4 - 35.0	--	--	--	--	--	--	--	--	--
SWFTS-MW10A	EM22	11/6/2019	N	440-254051-1	Alluvium	20.4 - 35.0	--	--	--	--	--	--	--	--	--
SWFTS-MW10A	EM26	4/29/2020	N	440-265342-6	Alluvium	20.4 - 35.0	--	--	--	--	--	--	--	--	--
SWFTS-MW10A	EM29	10/14/2020	N	440-273303-4	Alluvium	20.4 - 35.0	--	--	--	--	--	--	--	--	--
SWFTS-MW10A	EM33	6/4/2021	N	550-164930-13	Alluvium	20.4 - 35.0	--	--	--	--	--	--	--	--	--
SWFTS-MW10A	EM33	6/4/2021	N	550-164930-14	Alluvium	20.4 - 35.0	--	--	--	--	--	--	--	--	--
SWFTS-MW10A	EM36	11/30/2021	N	550-174968-17	Alluvium	20.4 - 35.0	--	--	--	--	--	--	--	--	--
SWFTS-MW10A	EM36	11/30/2021	N	550-174968-18	Alluvium	20.4 - 35.0	--	--	--	--	--	--	--	--	--
SWFTS-MW10A	EM40	12/15/2022	N	550-195103-1	Alluvium	20.4 - 35.0	--	--	--	--	--	--	--	--	--
SWFTS-MW10A	EM40	12/15/2022	N	550-195103-2	Alluvium	20.4 - 35.0	--	--	--	--	--	--	--	--	--
SWFTS-MW10C	BL01	3/28/2017	N	440-180820-4	UMCf	43.5 - 63.1	--	--	--	--	--	6,500	--	--	--
SWFTS-MW10C	EM40	12/15/2022	N	550-195103-3	UMCf	43.5 - 63.1	--	--	--	--	--	--	--	--	--
SWFTS-MW10C	EM40	12/15/2022	N	550-195103-4	UMCf	43.5 - 63.1	--	--	--	--	--	--	--	--	--
SWFTS-MW11	BL02	7/12/2017	N	440-188244-7	Alluvium	14.8 - 39.6	12	200	200	<4.0	<4.0	5,000	17	--	--
SWFTS-MW11	EM04	10/11/2017	N	440-194094-8	Alluvium	14.8 - 39.6	11	210	210	<4.0	<4.0	5,600	19	--	--
SWFTS-MW11	EM06	11/16/2017	N	440-196786-3	Alluvium	14.8 - 39.6	--	210	210	<4.0	<4.0	5,200	--	--	--
SWFTS-MW11	EM07	12/14/2017	N	440-198571-13	Alluvium	14.8 - 39.6	--	220	220	<4.0	<4.0	--	--	--	--
SWFTS-MW11	EM08	2/21/2018	N	440-203937-10	Alluvium	14.8 - 39.6	--	190	190	<4.0	<4.0	--	--	--	--
SWFTS-MW11	EM08	2/21/2018	FD	440-203937-11	Alluvium	14.8 - 39.6	--	190	190	<4.0	<4.0	--	--	--	--
SWFTS-MW11	EM09	3/28/2018	N	440-207497-7	Alluvium	14.8 - 39.6	--	180	180	<4.0	<4.0	--	--	--	--
SWFTS-MW11	EM09	3/28/2018	FD	440-207497-8	Alluvium	14.8 - 39.6	--	160	160	<4.0	<4.0	--	--	--	--
SWFTS-MW11	EM10	5/1/2018	N	440-210284-11	Alluvium	14.8 - 39.6	--	180	180	<4.0	<4.0	--	--	--	--
SWFTS-MW11	EM10	5/1/2018	FD	440-210367-1	Alluvium	14.8 - 39.6	--	190	190	<4.0	<4.0	--	--	--	--
SWFTS-MW11	EM11	7/12/2018	N	440-215717-17	Alluvium	14.8 - 39.6	16	190	190	<4.0	<4.0	--	--	--	--
SWFTS-MW11	EM11	7/12/2018	FD	440-215717-18	Alluvium	14.8 - 39.6	16	200	200	<4.0	<4.0	--	--	--	--
SWFTS-MW11	EM15	10/11/2018	N	440-222092-10	Alluvium	14.8 - 39.6	17	210	210	<4.0	<4.0	--	--	--	--
SWFTS-MW11	EM15	10/11/2018	FD	440-222092-11	Alluvium	14.8 - 39.6	17	210	210	<4.0	<4.0	--	--	--	--
SWFTS-MW11	EM19	5/22/2019	N	440-242200-3	Alluvium	14.8 - 39.6	--	--	--	--	--	--	--	--	--
SWFTS-MW11	EM19	5/22/2019	FD	440-242200-4	Alluvium	14.8 - 39.6	--	--	--	--	--	--	--	--	--
SWFTS-MW11	EM22	11/7/2019	N	440-254150-3	Alluvium	14.8 - 39.6	--	--	--	--	--	--	--	--	--
SWFTS-MW11	EM22	11/7/2019	FD	440-254150-4	Alluvium	14.8 - 39.6	--	--	--	--	--	--	--	--	--
SWFTS-MW11	EM26	4/30/2020	N	440-265383-4	Alluvium	14.8 - 39.6	--	--	--	--	--	--	--	--	--
SWFTS-MW11	EM26	4/30/2020	FD	440-265383-5	Alluvium	14.8 - 39.6	--	--	--	--	--	--	--	--	--
SWFTS-MW11	EM29	10/16/2020	N	440-273433-7	Alluvium	14.8 - 39.6	--	--	--	--	--	--	--	--	--
SWFTS-MW11	EM29	10/16/2020	FD	440-273433-8	Alluvium	14.8 - 39.6	--	--	--	--	--	--	--	--	--
SWFTS-MW11	EM33	6/4/2021	N	550-164930-7	Alluvium	14.8 - 39.6	--	--	--	--	--	--	--	--	--
SWFTS-MW11	EM33	6/4/2021	N	550-164930-8	Alluvium	14.8 - 39.6	--	--	--	--	--	--	--	--	--
SWFTS-MW11	EM33	6/4/2021	FD	550-164930-10	Alluvium	14.8 - 39.6	--	--	--	--	--	--	--	--	--
SWFTS-MW11	EM33	6/4/2021	FD	550-164930-9	Alluvium	14.8 - 39.6	--	--	--	--	--	--	--	--	--
SWFTS-MW11	EM36	12/3/2021	N	550-175222-7	Alluvium	14.8 - 39.6	--	--	--	--	--	--	--	--	--
SWFTS-MW11	EM36	12/3/2021	N	550-175222-8	Alluvium	14.8 - 39.6	--	--	--	--	--	--	--	--	--
SWFTS-MW11	EM36	12/3/2021	FD	550-175222-10	Alluvium	14.8 - 39.6	--	--	--	--	--	--	--	--	--
SWFTS-MW11	EM36	12/3/2021	FD	550-175222-9	Alluvium	14.8 - 39.6	--	--	--	--	--	--	--	--	--
SWFTS-MW11	EM40	12/15/2022	N	550-195103-5	Alluvium	14.8 - 39.6	--	--	--	--	--	--	--	--	--
SWFTS-MW11	EM40	12/15/2022	N	550-195103-6	Alluvium	14.8 - 39.6	--	--	--	--	--	--	--	--	--
SWFTS-MW11	EM40	12/15/2022	FD	550-195103-7	Alluvium	14.8 - 39.6	--	--	--	--	--	--	--	--	--
SWFTS-MW11	EM40	12/15/2022	FD	550-195103-8	Alluvium	14.8 - 39.6	--	--	--	--	--	--	--	--	--
SWFTS-MW12	BL02	7/13/2017	N	440-188324-6	Alluvium	15.8 - 40.6	--	--	--	--	--	--	--	--	--
SWFTS-MW12	EM04	10/11/2017	N	440-194090-1	Alluvium	15.8 - 40.6	13	110	110	<4.0	<4.0	6,100	33	--	--
SWFTS-MW12	EM06	11/14/2017	N	440-196558-5	Alluvium	15.8 - 40.6	--	110	110	<4.0	<4.0	5,800	--	--	--
SWFTS-MW12	EM07	12/14/2017	N	440-198571-15	Alluvium	15.8 - 40.6	--	110	110	<4.0	<4.0	--	--	--	--
SWFTS-MW12	EM08	2/22/2018	N	440-204033-2	Alluvium	15.8 - 40.6	--	120	120	<4.0	<4.0	--	--	--	--
SWFTS-MW12	EM09	3/28/2018	N	440-207497-5	Alluvium	15.8 - 40.6	--	130	130	<4.0	<4.0	--	--	--	--
SWFTS-MW12	EM10	5/3/2018	N	440-210534-4	Alluvium	15.8 - 40.6	--	110	110	<4.0	<4.0	--	--	--	--
SWFTS-MW12	EM11	7/12/2018	N	440-215717-16	Alluvium	15.8 - 40.6	--	110	110	<4.0	<4.0	--	--	--	--
SWFTS-MW12	EM15	10/11/2018	N	440-222092-12	Alluvium	15.8 - 40.6	--	130	130	<4.0	<4.0	--	--	--	--
SWFTS-MW12	EM19	5/22/2019	N	440-242198-7	Alluvium	15.8 - 40.6	--	--	--	--	--	--	--	--	--
SWFTS-MW12	EM22	11/7/2019	N	440-254150-2	Alluvium	15.8 - 40.6	--	--	--	--	--	--	--	--	--

Table D.2
Groundater Analytical Results Summary - Secondary Parameters
Seep Well Field Area Bioremediation Treatability Study

Well	Event	Sample Date	QC Type	Lab Sample ID	Lithology	Screened Interval (ft bgs)	NTOTAL	SM2320B	SM2320B	SM2320B	SM2320B	SM2540C	SW7199	Total Metals by SW6010	Total Metals by SW6010
							Nitrogen, Total	Alkalinity as CaCO3	Bicarbonate Alkalinity as CaCO3	Carbonate Alkalinity as CaCO3	Hydroxide Alkalinity as CaCO3	Total Dissolved Solids	Chromium, Hexavalent	Aluminum	Barium
							mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	µg/L	mg/L	mg/L
SWFTS-MW12	EM22	11/26/2019	N	440-255698-1	Alluvium	15.8 - 40.6	--	--	--	--	--	--	--	--	--
SWFTS-MW12	EM22	11/26/2019	FD	440-255698-2	Alluvium	15.8 - 40.6	--	--	--	--	--	--	--	--	--
SWFTS-MW12	EM26	4/30/2020	N	440-265383-3	Alluvium	15.8 - 40.6	--	--	--	--	--	--	--	--	--
SWFTS-MW12	EM29	10/16/2020	N	440-273433-6	Alluvium	15.8 - 40.6	--	--	--	--	--	--	--	--	--
SWFTS-MW12	EM33	6/4/2021	N	550-164930-5	Alluvium	15.8 - 40.6	--	--	--	--	--	--	--	--	--
SWFTS-MW12	EM33	6/4/2021	N	550-164930-6	Alluvium	15.8 - 40.6	--	--	--	--	--	--	--	--	--
SWFTS-MW12	EM36	12/2/2021	N	550-175153-19	Alluvium	15.8 - 40.6	--	--	--	--	--	--	--	--	--
SWFTS-MW12	EM36	12/2/2021	N	550-175153-20	Alluvium	15.8 - 40.6	--	--	--	--	--	--	--	--	--
SWFTS-MW12	EM40	12/15/2022	N	550-195103-10	Alluvium	15.8 - 40.6	--	--	--	--	--	--	--	--	--
SWFTS-MW12	EM40	12/15/2022	N	550-195103-9	Alluvium	15.8 - 40.6	--	--	--	--	--	--	--	--	--
SWFTS-MW13	BL02	7/12/2017	N	440-188244-6	Alluvium	17.8 - 47.6	12	110	110	<4.0	<4.0	5,200	--	--	--
SWFTS-MW13	EM04	10/10/2017	N	440-193989-4	Alluvium	17.8 - 47.6	--	120	120	<4.0	<4.0	6,600	--	--	--
SWFTS-MW13	EM06	11/15/2017	N	440-196659-1	Alluvium	17.8 - 47.6	--	100	100	<4.0	<4.0	6,200	--	--	--
SWFTS-MW13	EM07	12/14/2017	N	440-198571-14	Alluvium	17.8 - 47.6	--	110	110	<4.0	<4.0	--	--	--	--
SWFTS-MW13	EM08	2/22/2018	N	440-204033-7	Alluvium	17.8 - 47.6	--	100	100	<4.0	<4.0	--	--	--	--
SWFTS-MW13	EM09	3/26/2018	N	440-207137-4	Alluvium	17.8 - 47.6	--	100	100	<4.0	<4.0	--	--	--	--
SWFTS-MW13	EM10	5/3/2018	N	440-210534-1	Alluvium	17.8 - 47.6	--	96	96	<4.0	<4.0	--	--	--	--
SWFTS-MW13	EM11	7/12/2018	N	440-215717-15	Alluvium	17.8 - 47.6	--	94	94	<4.0	<4.0	--	--	--	--
SWFTS-MW13	EM15	10/11/2018	N	440-222092-14	Alluvium	17.8 - 47.6	--	99	99	<4.0	<4.0	--	--	--	--
SWFTS-MW13	EM19	5/22/2019	N	440-242198-5	Alluvium	17.8 - 47.6	--	--	--	--	--	--	--	--	--
SWFTS-MW13	EM22	11/6/2019	N	440-254051-6	Alluvium	17.8 - 47.6	--	--	--	--	--	--	--	--	--
SWFTS-MW13	EM26	4/30/2020	N	440-265383-2	Alluvium	17.8 - 47.6	--	--	--	--	--	--	--	--	--
SWFTS-MW13	EM29	10/15/2020	N	550-151259-6	Alluvium	17.8 - 47.6	--	--	--	--	--	--	--	--	--
SWFTS-MW13	EM33	6/4/2021	N	550-164930-3	Alluvium	17.8 - 47.6	--	--	--	--	--	--	--	--	--
SWFTS-MW13	EM33	6/4/2021	N	550-164930-4	Alluvium	17.8 - 47.6	--	--	--	--	--	--	--	--	--
SWFTS-MW13	EM36	12/2/2021	N	550-175153-17	Alluvium	17.8 - 47.6	--	--	--	--	--	--	--	--	--
SWFTS-MW13	EM36	12/2/2021	N	550-175153-18	Alluvium	17.8 - 47.6	--	--	--	--	--	--	--	--	--
SWFTS-MW13	EM40	12/15/2022	N	550-195106-7	Alluvium	17.8 - 47.6	--	--	--	--	--	--	--	--	--
SWFTS-MW13	EM40	12/15/2022	N	550-195106-8	Alluvium	17.8 - 47.6	--	--	--	--	--	--	--	--	--
SWFTS-MW14	BL02	7/12/2017	N	440-188244-8	Alluvium	16.8 - 36.6	12	200	200	<4.0	<4.0	5,800	--	--	--
SWFTS-MW14	BL02	7/12/2017	FD	440-188244-9	Alluvium	16.8 - 36.6	12	200	200	<4.0	<4.0	5,700	--	--	--
SWFTS-MW14	EM04	10/11/2017	N	440-194242-8	Alluvium	16.8 - 36.6	0.11	600	600	<4.0	<4.0	5,300	--	--	--
SWFTS-MW14	EM06	11/15/2017	N	440-196659-3	Alluvium	16.8 - 36.6	0.19	560	560	<4.0	<4.0	4,800	--	--	--
SWFTS-MW14	EM07	12/12/2017	N	440-198371-12	Alluvium	16.8 - 36.6	--	430	430	<4.0	<4.0	--	--	--	--
SWFTS-MW14	EM08	2/20/2018	N	440-203841-11	Alluvium	16.8 - 36.6	1.1	1,000	1,000	<4.0	<4.0	--	--	--	--
SWFTS-MW14	EM09	3/26/2018	N	440-207137-9	Alluvium	16.8 - 36.6	0.87	1,100	1,100	<4.0	<4.0	--	--	--	--
SWFTS-MW14	EM10	4/30/2018	N	440-210173-9	Alluvium	16.8 - 36.6	0.42	1,200	1,200	<4.0	<4.0	--	--	--	--
SWFTS-MW14	EM11	7/10/2018	N	440-215437-8	Alluvium	16.8 - 36.6	0.45	1,300	1,300	<4.0	<4.0	--	--	--	--
SWFTS-MW14	EM13	8/14/2018	N	440-218109-11	Alluvium	16.8 - 36.6	0.41	1,300	1,300	<4.0	<4.0	--	--	--	--
SWFTS-MW14	EM14	9/11/2018	N	440-219886-17	Alluvium	16.8 - 36.6	0.78	1,200	1,200	<4.0	<4.0	--	--	--	--
SWFTS-MW14	EM15	10/9/2018	N	440-221855-10	Alluvium	16.8 - 36.6	0.70	1,300	1,300	<4.0	<4.0	4,100	--	--	--
SWFTS-MW14	EM19	5/21/2019	N	440-242084-1	Alluvium	16.8 - 36.6	--	--	--	--	--	--	--	--	--
SWFTS-MW14	EM22	11/6/2019	N	440-254051-2	Alluvium	16.8 - 36.6	--	--	--	--	--	--	--	--	--
SWFTS-MW14	EM26	5/1/2020	N	440-265414-2	Alluvium	16.8 - 36.6	--	--	--	--	--	--	--	--	--
SWFTS-MW14	EM29	10/14/2020	N	440-273303-5	Alluvium	16.8 - 36.6	--	--	--	--	--	--	--	--	--
SWFTS-MW14	EM33	6/4/2021	N	550-164930-1	Alluvium	16.8 - 36.6	--	--	--	--	--	--	--	--	--
SWFTS-MW14	EM33	6/4/2021	N	550-164930-2	Alluvium	16.8 - 36.6	--	--	--	--	--	--	--	--	--
SWFTS-MW14	EM36	12/3/2021	N	550-175222-1	Alluvium	16.8 - 36.6	--	--	--	--	--	--	--	--	--
SWFTS-MW14	EM36	12/3/2021	N	550-175222-2	Alluvium	16.8 - 36.6	--	--	--	--	--	--	--	--	--
SWFTS-MW14	EM40	12/15/2022	N	550-195106-3	Alluvium	16.8 - 36.6	--	--	--	--	--	--	--	--	--
SWFTS-MW14	EM40	12/15/2022	N	550-195106-4	Alluvium	16.8 - 36.6	--	--	--	--	--	--	--	--	--
SWFTS-MW15	BL02	7/13/2017	N	440-188325-3	Alluvium	14.8 - 34.6	10	220	220	<4.0	<4.0	5,300	27	--	--
SWFTS-MW15	EM04	10/10/2017	N	440-194094-1	Alluvium	14.8 - 34.6	11	200	200	<4.0	<4.0	4,900	--	--	--
SWFTS-MW15	EM06	11/14/2017	N	440-196558-4	Alluvium	14.8 - 34.6	--	200	200	<4.0	<4.0	4,600	--	--	--
SWFTS-MW15	EM07	12/13/2017	N	440-198508-13	Alluvium	14.8 - 34.6	12	200	200	<4.0	<4.0	--	--	--	--
SWFTS-MW15	EM08	2/19/2018	N	440-203775-4	Alluvium	14.8 - 34.6	--	190	190	<4.0	<4.0	--	--	--	--
SWFTS-MW15	EM09	3/26/2018	N	440-207137-10	Alluvium	14.8 - 34.6	--	190	190	<4.0	<4.0	--	--	--	--
SWFTS-MW15	EM10	5/2/2018	N	440-210430-3	Alluvium	14.8 - 34.6	--	190	190	<4.0	<4.0	--	--	--	--
SWFTS-MW15	EM11	7/11/2018	N	440-215717-1	Alluvium	14.8 - 34.6	--	290	290	<4.0	<4.0	--	--	--	--
SWFTS-MW15	EM15	10/9/2018	N	440-221855-11	Alluvium	14.8 - 34.6	--	290	290	<4.0	<4.0	--	--	--	--
SWFTS-MW15	EM19	5/20/2019	N	440-242014-1	Alluvium	14.8 - 34.6	--	--	--	--	--	--	--	--	--
SWFTS-MW15	EM22	11/6/2019	N	440-254051-3	Alluvium	14.8 - 34.6	--	--	--	--	--	--	--	--	--
SWFTS-MW15	EM26	4/29/2020	N	440-265342-3	Alluvium	14.8 - 34.6	--	--	--	--	--	--	--	--	--
SWFTS-MW15	EM29	10/15/2020	N	550-151259-4	Alluvium	14.8 - 34.6	--	--	--	--	--	--	--	--	--

Table D.2
Groundater Analytical Results Summary - Secondary Parameters
Seep Well Field Area Bioremediation Treatability Study

Well	Event	Sample Date	QC Type	Lab Sample ID	Lithology	Screened Interval (ft bgs)	NTOTAL	SM2320B	SM2320B	SM2320B	SM2320B	SM2540C	SW7199	Total Metals by SW6010	Total Metals by SW6010
							Nitrogen, Total	Alkalinity as CaCO3	Bicarbonate Alkalinity as CaCO3	Carbonate Alkalinity as CaCO3	Hydroxide Alkalinity as CaCO3	Total Dissolved Solids	Chromium, Hexavalent	Aluminum	Barium
							mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	µg/L	mg/L	mg/L
SWFTS-MW15	EM33	6/3/2021	N	550-164869-13	Alluvium	14.8 - 34.6	--	--	--	--	--	--	--	--	--
SWFTS-MW15	EM33	6/3/2021	N	550-164869-14	Alluvium	14.8 - 34.6	--	--	--	--	--	--	--	--	--
SWFTS-MW15	EM36	11/30/2021	N	550-174968-10	Alluvium	14.8 - 34.6	--	--	--	--	--	--	--	--	--
SWFTS-MW15	EM36	11/30/2021	N	550-174968-9	Alluvium	14.8 - 34.6	--	--	--	--	--	--	--	--	--
SWFTS-MW15	EM40	12/15/2022	N	550-195106-1	Alluvium	14.8 - 34.6	--	--	--	--	--	--	--	--	--
SWFTS-MW15	EM40	12/15/2022	N	550-195106-2	Alluvium	14.8 - 34.6	--	--	--	--	--	--	--	--	--
SWFTS-MW16	BL02	7/13/2017	N	440-188325-2	Alluvium	21.8 - 41.6	--	--	--	--	--	--	--	--	--
SWFTS-MW16	EM04	10/12/2017	N	440-194204-7	Alluvium	21.8 - 41.6	2.5	640	640	<4.0	<4.0	4,800	<0.25	--	--
SWFTS-MW16	EM06	11/16/2017	N	440-196786-4	Alluvium	21.8 - 41.6	4.0	960	960	<4.0	<4.0	3,300	--	--	--
SWFTS-MW16	EM07	12/12/2017	N	440-198371-4	Alluvium	21.8 - 41.6	--	790	790	<4.0	<4.0	--	--	--	--
SWFTS-MW16	EM08	2/21/2018	N	440-203937-6	Alluvium	21.8 - 41.6	0.23	780	780	<4.0	<4.0	--	--	--	--
SWFTS-MW16	EM09	3/27/2018	N	440-207268-13	Alluvium	21.8 - 41.6	12	200	200	<4.0	<4.0	--	--	--	--
SWFTS-MW16	EM10	5/2/2018	N	440-210430-13	Alluvium	21.8 - 41.6	3.8	510	510	<4.0	<4.0	--	--	--	--
SWFTS-MW16	EM11	7/11/2018	N	440-215585-12	Alluvium	21.8 - 41.6	0.75	1,100	1,100	<4.0	<4.0	--	--	--	--
SWFTS-MW16	EM13	8/15/2018	N	440-218208-13	Alluvium	21.8 - 41.6	0.61	810	810	<4.0	<4.0	--	--	--	--
SWFTS-MW16	EM14	9/10/2018	N	440-219797-6	Alluvium	21.8 - 41.6	1.0	680	680	<4.0	<4.0	--	--	--	--
SWFTS-MW16	EM15	10/11/2018	N	440-222092-3	Alluvium	21.8 - 41.6	1.4	570	570	<4.0	<4.0	--	--	--	--
SWFTS-MW16	EM19	5/20/2019	N	440-242014-3	Alluvium	21.8 - 41.6	--	--	--	--	--	--	--	--	--
SWFTS-MW16	EM22	11/6/2019	N	440-254051-5	Alluvium	21.8 - 41.6	--	--	--	--	--	--	--	--	--
SWFTS-MW16	EM26	4/30/2020	N	440-265383-1	Alluvium	21.8 - 41.6	--	--	--	--	--	--	--	--	--
SWFTS-MW16	EM29	10/15/2020	N	550-151259-1	Alluvium	21.8 - 41.6	--	--	--	--	--	--	--	--	--
SWFTS-MW16	EM33	6/3/2021	N	550-164869-11	Alluvium	21.8 - 41.6	--	--	--	--	--	--	--	--	--
SWFTS-MW16	EM33	6/3/2021	N	550-164869-12	Alluvium	21.8 - 41.6	--	--	--	--	--	--	--	--	--
SWFTS-MW16	EM36	11/30/2021	N	550-174968-11	Alluvium	21.8 - 41.6	--	--	--	--	--	--	--	--	--
SWFTS-MW16	EM36	11/30/2021	N	550-174968-12	Alluvium	21.8 - 41.6	--	--	--	--	--	--	--	--	--
SWFTS-MW16	EM40	12/14/2022	N	550-195013-15	Alluvium	21.8 - 41.6	--	--	--	--	--	--	--	--	--
SWFTS-MW16	EM40	12/14/2022	N	550-195013-16	Alluvium	21.8 - 41.6	--	--	--	--	--	--	--	--	--
SWFTS-MW17	BL02	7/12/2017	N	440-188244-1	Alluvium	22.8 - 52.6	--	--	--	--	--	--	19	--	--
SWFTS-MW17	EM04	10/10/2017	N	440-193989-3	Alluvium	22.8 - 52.6	16	94	94	<4.0	<4.0	4,800	--	--	--
SWFTS-MW17	EM06	11/15/2017	N	440-196659-5	Alluvium	22.8 - 52.6	--	93	93	<4.0	<4.0	4,300	--	--	--
SWFTS-MW17	EM06	11/15/2017	FD	440-196659-6	Alluvium	22.8 - 52.6	--	93	93	<4.0	<4.0	4,300	--	--	--
SWFTS-MW17	EM07	12/13/2017	N	440-198508-6	Alluvium	22.8 - 52.6	--	93	93	<4.0	<4.0	--	--	--	--
SWFTS-MW17	EM07	12/13/2017	FD	440-198508-7	Alluvium	22.8 - 52.6	--	92	92	<4.0	<4.0	--	--	--	--
SWFTS-MW17	EM08	2/22/2018	N	440-204033-11	Alluvium	22.8 - 52.6	--	92	92	<4.0	<4.0	--	--	--	--
SWFTS-MW17	EM09	3/28/2018	N	440-207497-11	Alluvium	22.8 - 52.6	--	93	93	<4.0	<4.0	--	--	--	--
SWFTS-MW17	EM10	5/3/2018	N	440-210534-3	Alluvium	22.8 - 52.6	--	93	93	<4.0	<4.0	--	--	--	--
SWFTS-MW17	EM11	7/11/2018	N	440-215585-13	Alluvium	22.8 - 52.6	--	93	93	<4.0	<4.0	--	--	--	--
SWFTS-MW17	EM15	10/11/2018	N	440-222092-4	Alluvium	22.8 - 52.6	--	98	98	<4.0	<4.0	--	--	--	--
SWFTS-MW17	EM19	5/22/2019	N	440-242198-6	Alluvium	22.8 - 52.6	--	--	--	--	--	--	--	--	--
SWFTS-MW17	EM22	11/7/2019	N	440-254150-1	Alluvium	22.8 - 52.6	--	--	--	--	--	--	--	--	--
SWFTS-MW17	EM26	4/30/2020	N	440-265383-6	Alluvium	22.8 - 52.6	--	--	--	--	--	--	--	--	--
SWFTS-MW17	EM29	10/15/2020	N	550-151259-5	Alluvium	22.8 - 52.6	--	--	--	--	--	--	--	--	--
SWFTS-MW17	EM33	6/3/2021	N	550-164869-10	Alluvium	22.8 - 52.6	--	--	--	--	--	--	--	--	--
SWFTS-MW17	EM33	6/3/2021	N	550-164869-9	Alluvium	22.8 - 52.6	--	--	--	--	--	--	--	--	--
SWFTS-MW17	EM36	12/2/2021	N	550-175153-21	Alluvium	22.8 - 52.6	--	--	--	--	--	--	--	--	--
SWFTS-MW17	EM36	12/2/2021	N	550-175153-22	Alluvium	22.8 - 52.6	--	--	--	--	--	--	--	--	--
SWFTS-MW17	EM40	12/14/2022	N	550-195013-13	Alluvium	22.8 - 52.6	--	--	--	--	--	--	--	--	--
SWFTS-MW17	EM40	12/14/2022	N	550-195013-14	Alluvium	22.8 - 52.6	--	--	--	--	--	--	--	--	--
SWFTS-MW18	BL02	7/11/2017	N	440-188133-17	Alluvium	16.8 - 36.6	12	190	190	<4.0	<4.0	5,300	--	--	--
SWFTS-MW18	EM04	10/10/2017	N	440-194094-3	Alluvium	16.8 - 36.6	--	190	190	<4.0	<4.0	5,200	--	--	--
SWFTS-MW18	EM06	11/15/2017	N	440-196690-11	Alluvium	16.8 - 36.6	--	190	190	<4.0	<4.0	4,800	--	--	--
SWFTS-MW18	EM07	12/13/2017	N	440-198508-5	Alluvium	16.8 - 36.6	12	200	200	<4.0	<4.0	--	--	--	--
SWFTS-MW18	EM08	2/22/2018	N	440-204033-4	Alluvium	16.8 - 36.6	--	210	210	<4.0	<4.0	--	--	--	--
SWFTS-MW18	EM09	3/27/2018	N	440-207268-11	Alluvium	16.8 - 36.6	--	580	580	<4.0	<4.0	--	--	--	--
SWFTS-MW18	EM09	3/27/2018	FD	440-207268-12	Alluvium	16.8 - 36.6	--	550	550	<4.0	<4.0	--	--	--	--
SWFTS-MW18	EM10	5/1/2018	N	440-210284-6	Alluvium	16.8 - 36.6	--	190	190	<4.0	<4.0	--	--	--	--
SWFTS-MW18	EM11	7/11/2018	N	440-215717-2	Alluvium	16.8 - 36.6	--	200	200	<4.0	<4.0	--	--	--	--
SWFTS-MW18	EM15	10/11/2018	N	440-222092-5	Alluvium	16.8 - 36.6	--	240	240	<4.0	<4.0	--	--	--	--
SWFTS-MW18	EM19	5/21/2019	N	440-242084-15	Alluvium	16.8 - 36.6	--	--	--	--	--	--	--	--	--
SWFTS-MW18	EM22	11/6/2019	N	440-254051-4	Alluvium	16.8 - 36.6	--	--	--	--	--	--	--	--	--
SWFTS-MW18	EM26	4/29/2020	N	440-265342-2	Alluvium	16.8 - 36.6	--	--	--	--	--	--	--	--	--
SWFTS-MW18	EM29	10/15/2020	N	550-151259-2	Alluvium	16.8 - 36.6	--	--	--	--	--	--	--	--	--
SWFTS-MW18	EM33	6/3/2021	N	550-164869-7	Alluvium	16.8 - 36.6	--	--	--	--	--	--	--	--	--
SWFTS-MW18	EM33	6/3/2021	N	550-164869-8	Alluvium	16.8 - 36.6	--	--	--	--	--	--	--	--	--

Table D.2
Groundater Analytical Results Summary - Secondary Parameters
Seep Well Field Area Bioremediation Treatability Study

Well	Event	Sample Date	QC Type	Lab Sample ID	Lithology	Screened Interval (ft bgs)	NTOTAL	SM2320B	SM2320B	SM2320B	SM2320B	SM2540C	SW7199	Total Metals by SW6010	Total Metals by SW6010
							Nitrogen, Total	Alkalinity as CaCO3	Bicarbonate Alkalinity as CaCO3	Carbonate Alkalinity as CaCO3	Hydroxide Alkalinity as CaCO3	Total Dissolved Solids	Chromium, Hexavalent	Aluminum	Barium
							mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	µg/L	mg/L	mg/L
SWFTS-MW18	EM36	12/1/2021	N	550-175045-5	Alluvium	16.8 - 36.6	--	--	--	--	--	--	--	--	--
SWFTS-MW18	EM36	12/1/2021	N	550-175045-6	Alluvium	16.8 - 36.6	--	--	--	--	--	--	--	--	--
SWFTS-MW18	EM40	12/14/2022	N	550-195013-11	Alluvium	16.8 - 36.6	--	--	--	--	--	--	--	--	--
SWFTS-MW18	EM40	12/14/2022	N	550-195013-12	Alluvium	16.8 - 36.6	--	--	--	--	--	--	--	--	--
SWFTS-MW19	BL02	7/12/2017	N	440-188244-2	Alluvium	11.3 - 31.1	0.51	240	240	<4.0	<4.0	1,900	--	--	--
SWFTS-MW19	EM04	10/12/2017	N	440-194204-1	Alluvium	11.3 - 31.1	--	230	230	<4.0	<4.0	2,200	--	--	--
SWFTS-MW19	EM06	11/16/2017	N	440-196786-12	Alluvium	11.3 - 31.1	--	220	220	<4.0	<4.0	2,200	--	--	--
SWFTS-MW19	EM07	12/12/2017	N	440-198371-8	Alluvium	11.3 - 31.1	--	210	210	<4.0	<4.0	--	--	--	--
SWFTS-MW19	EM08	2/20/2018	N	440-203841-6	Alluvium	11.3 - 31.1	--	210	210	<4.0	<4.0	--	--	--	--
SWFTS-MW19	EM09	3/27/2018	N	440-207268-3	Alluvium	11.3 - 31.1	--	210	210	<4.0	<4.0	--	--	--	--
SWFTS-MW19	EM10	4/30/2018	N	440-210173-4	Alluvium	11.3 - 31.1	--	200	200	<4.0	<4.0	--	--	--	--
SWFTS-MW19	EM10	4/30/2018	FD	440-210173-5	Alluvium	11.3 - 31.1	--	220	220	<4.0	<4.0	--	--	--	--
SWFTS-MW19	EM11	7/10/2018	N	440-215437-10	Alluvium	11.3 - 31.1	--	210	210	<4.0	<4.0	--	--	--	--
SWFTS-MW19	EM11	7/10/2018	FD	440-215437-11	Alluvium	11.3 - 31.1	--	200	200	<4.0	<4.0	--	--	--	--
SWFTS-MW19	EM15	10/9/2018	N	440-221855-4	Alluvium	11.3 - 31.1	--	220	220	<4.0	<4.0	--	--	--	--
SWFTS-MW19	EM15	10/9/2018	FD	440-221855-5	Alluvium	11.3 - 31.1	--	230	230	<4.0	<4.0	--	--	--	--
SWFTS-MW19	EM19	5/21/2019	N	440-242084-6	Alluvium	11.3 - 31.1	--	--	--	--	--	--	--	--	--
SWFTS-MW19	EM19	5/21/2019	FD	440-242084-7	Alluvium	11.3 - 31.1	--	--	--	--	--	--	--	--	--
SWFTS-MW19	EM22	11/5/2019	N	440-253891-6	Alluvium	11.3 - 31.1	--	--	--	--	--	--	--	--	--
SWFTS-MW19	EM22	11/5/2019	FD	440-253891-7	Alluvium	11.3 - 31.1	--	--	--	--	--	--	--	--	--
SWFTS-MW19	EM26	4/28/2020	N	440-265288-4	Alluvium	11.3 - 31.1	--	--	--	--	--	--	--	--	--
SWFTS-MW19	EM26	4/28/2020	FD	440-265288-7	Alluvium	11.3 - 31.1	--	--	--	--	--	--	--	--	--
SWFTS-MW19	EM29	10/14/2020	N	440-273303-2	Alluvium	11.3 - 31.1	--	--	--	--	--	--	--	--	--
SWFTS-MW19	EM29	10/14/2020	FD	440-273303-3	Alluvium	11.3 - 31.1	--	--	--	--	--	--	--	--	--
SWFTS-MW19	EM33	6/3/2021	N	550-164869-3	Alluvium	11.3 - 31.1	--	--	--	--	--	--	--	--	--
SWFTS-MW19	EM33	6/3/2021	N	550-164869-4	Alluvium	11.3 - 31.1	--	--	--	--	--	--	--	--	--
SWFTS-MW19	EM33	6/3/2021	FD	550-164869-5	Alluvium	11.3 - 31.1	--	--	--	--	--	--	--	--	--
SWFTS-MW19	EM33	6/3/2021	FD	550-164869-6	Alluvium	11.3 - 31.1	--	--	--	--	--	--	--	--	--
SWFTS-MW19	EM36	12/1/2021	N	550-175045-13	Alluvium	11.3 - 31.1	--	--	--	--	--	--	--	--	--
SWFTS-MW19	EM36	12/1/2021	N	550-175045-14	Alluvium	11.3 - 31.1	--	--	--	--	--	--	--	--	--
SWFTS-MW19	EM36	12/1/2021	FD	550-175045-15	Alluvium	11.3 - 31.1	--	--	--	--	--	--	--	--	--
SWFTS-MW19	EM36	12/1/2021	FD	550-175045-16	Alluvium	11.3 - 31.1	--	--	--	--	--	--	--	--	--
SWFTS-MW19	EM40	12/14/2022	N	550-195013-3	Alluvium	11.3 - 31.1	--	--	--	--	--	--	--	--	--
SWFTS-MW19	EM40	12/14/2022	N	550-195013-4	Alluvium	11.3 - 31.1	--	--	--	--	--	--	--	--	--
SWFTS-MW19	EM40	12/14/2022	FD	550-195013-5	Alluvium	11.3 - 31.1	--	--	--	--	--	--	--	--	--
SWFTS-MW19	EM40	12/14/2022	FD	550-195013-6	Alluvium	11.3 - 31.1	--	--	--	--	--	--	--	--	--
SWFTS-MW20	BL02	7/12/2017	N	440-188244-5	Alluvium	12.8 - 37.6	--	--	--	--	--	--	--	--	--
SWFTS-MW20	EM04	10/12/2017	N	440-194202-1	Alluvium	12.8 - 37.6	8.5	200	200	<4.0	<4.0	6,500	0.87 J	--	--
SWFTS-MW20	EM04	10/12/2017	FD	440-194202-2	Alluvium	12.8 - 37.6	9.1	200	200	<4.0	<4.0	6,600	1.1 J	--	--
SWFTS-MW20	EM06	11/16/2017	N	440-196786-7	Alluvium	12.8 - 37.6	--	380	380	<4.0	<4.0	5,800	--	--	--
SWFTS-MW20	EM07	12/12/2017	N	440-198371-3	Alluvium	12.8 - 37.6	--	210	210	<4.0	<4.0	--	--	--	--
SWFTS-MW20	EM08	2/19/2018	N	440-203775-5	Alluvium	12.8 - 37.6	--	510	510	<4.0	<4.0	--	--	--	--
SWFTS-MW20	EM09	3/27/2018	N	440-207268-9	Alluvium	12.8 - 37.6	--	400	400	<4.0	<4.0	--	--	--	--
SWFTS-MW20	EM10	4/30/2018	N	440-210173-10	Alluvium	12.8 - 37.6	--	490	490	<4.0	<4.0	--	--	--	--
SWFTS-MW20	EM11	7/11/2018	N	440-215717-8	Alluvium	12.8 - 37.6	--	510	510	<4.0	<4.0	--	--	--	--
SWFTS-MW20	EM15	10/9/2018	N	440-221855-1	Alluvium	12.8 - 37.6	--	580	580	<4.0	<4.0	--	--	--	--
SWFTS-MW20	EM19	5/21/2019	N	440-242084-3	Alluvium	12.8 - 37.6	--	--	--	--	--	--	--	--	--
SWFTS-MW20	EM22	11/5/2019	N	440-253918-6	Alluvium	12.8 - 37.6	--	--	--	--	--	--	--	--	--
SWFTS-MW20	EM26	4/29/2020	N	440-265342-5	Alluvium	12.8 - 37.6	--	--	--	--	--	--	--	--	--
SWFTS-MW20	EM29	10/14/2020	N	440-273303-6	Alluvium	12.8 - 37.6	--	--	--	--	--	--	--	--	--
SWFTS-MW20	EM33	6/3/2021	N	550-164869-1	Alluvium	12.8 - 37.6	--	--	--	--	--	--	--	--	--
SWFTS-MW20	EM33	6/3/2021	N	550-164869-2	Alluvium	12.8 - 37.6	--	--	--	--	--	--	--	--	--
SWFTS-MW20	EM36	11/29/2021	N	550-174897-1	Alluvium	12.8 - 37.6	--	--	--	--	--	--	--	--	--
SWFTS-MW20	EM36	11/29/2021	N	550-174897-2	Alluvium	12.8 - 37.6	--	--	--	--	--	--	--	--	--
SWFTS-MW20	EM40	12/13/2022	N	550-194919-7	Alluvium	12.8 - 37.6	--	--	--	--	--	--	--	--	--
SWFTS-MW20	EM40	12/13/2022	N	550-194919-8	Alluvium	12.8 - 37.6	--	--	--	--	--	--	--	--	--
SWFTS-MW21	BL02	7/13/2017	N	440-188324-5	Alluvium	14.8 - 39.6	15	120	120	<4.0	<4.0	6,000	--	--	--
SWFTS-MW21	EM04	10/11/2017	N	440-194090-8	Alluvium	14.8 - 39.6	2.1	230	230	<4.0	<4.0	6,200	1.9 J	--	--
SWFTS-MW21	EM06	11/15/2017	N	440-196665-5	Alluvium	14.8 - 39.6	--	400	400	<4.0	<4.0	5,800	--	--	--
SWFTS-MW21	EM07	12/13/2017	N	440-198508-10	Alluvium	14.8 - 39.6	6.4	350	350	<4.0	<4.0	--	--	--	--
SWFTS-MW21	EM08	2/20/2018	N	440-203841-9	Alluvium	14.8 - 39.6	--	180	180	<4.0	<4.0	--	--	--	--
SWFTS-MW21	EM08	2/20/2018	FD	440-203841-10	Alluvium	14.8 - 39.6	--	180	180	<4.0	<4.0	--	--	--	--
SWFTS-MW21	EM09	3/27/2018	N	440-207268-14	Alluvium	14.8 - 39.6	--	170	170	<4.0	<4.0	--	--	--	--
SWFTS-MW21	EM10	4/30/2018	N	440-210173-7	Alluvium	14.8 - 39.6	--	170	170	<4.0	<4.0	--	--	--	--

Table D.2
Groundater Analytical Results Summary - Secondary Parameters
Seep Well Field Area Bioremediation Treatability Study

Well	Event	Sample Date	QC Type	Lab Sample ID	Lithology	Screened Interval (ft bgs)	NTOTAL	SM2320B	SM2320B	SM2320B	SM2320B	SM2540C	SW7199	Total Metals by SW6010	Total Metals by SW6010
							Nitrogen, Total	Alkalinity as CaCO3	Bicarbonate Alkalinity as CaCO3	Carbonate Alkalinity as CaCO3	Hydroxide Alkalinity as CaCO3	Total Dissolved Solids	Chromium, Hexavalent	Aluminum	Barium
							mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	µg/L	mg/L	mg/L
SWFTS-MW21	EM11	7/12/2018	N	440-215717-3	Alluvium	14.8 - 39.6	--	330	330	<4.0	<4.0	--	--	--	--
SWFTS-MW21	EM15	10/9/2018	N	440-221855-3	Alluvium	14.8 - 39.6	--	390	390	<4.0	<4.0	--	--	--	--
SWFTS-MW21	EM19	5/22/2019	N	440-242198-3	Alluvium	14.8 - 39.6	--	--	--	--	--	--	--	--	--
SWFTS-MW21	EM22	11/4/2019	N	440-253773-3	Alluvium	14.8 - 39.6	--	--	--	--	--	--	--	--	--
SWFTS-MW21	EM26	4/29/2020	N	440-265342-1	Alluvium	14.8 - 39.6	--	--	--	--	--	--	--	--	--
SWFTS-MW21	EM29	10/14/2020	N	440-273303-7	Alluvium	14.8 - 39.6	--	--	--	--	--	--	--	--	--
SWFTS-MW21	EM33	6/2/2021	N	550-164872-15	Alluvium	14.8 - 39.6	--	--	--	--	--	--	--	--	--
SWFTS-MW21	EM33	6/2/2021	N	550-164872-16	Alluvium	14.8 - 39.6	--	--	--	--	--	--	--	--	--
SWFTS-MW21	EM36	12/1/2021	N	550-175045-3	Alluvium	14.8 - 39.6	--	--	--	--	--	--	--	--	--
SWFTS-MW21	EM36	12/1/2021	N	550-175045-4	Alluvium	14.8 - 39.6	--	--	--	--	--	--	--	--	--
SWFTS-MW21	EM40	12/15/2022	N	550-195106-5	Alluvium	14.8 - 39.6	--	--	--	--	--	--	--	--	--
SWFTS-MW21	EM40	12/15/2022	N	550-195106-6	Alluvium	14.8 - 39.6	--	--	--	--	--	--	--	--	--
SWFTS-MW22	BL02	7/13/2017	N	440-188324-1	Alluvium	11.8 - 31.6	2.6	230	230	<4.0	<4.0	2,900	--	--	--
SWFTS-MW22	EM04	10/12/2017	N	440-194242-9	Alluvium	11.8 - 31.6	--	240	240	<4.0	<4.0	3,100	--	--	--
SWFTS-MW22	EM06	11/16/2017	N	440-196786-18	Alluvium	11.8 - 31.6	--	240	240	<4.0	<4.0	2,800	--	--	--
SWFTS-MW22	EM07	12/14/2017	N	440-198571-17	Alluvium	11.8 - 31.6	--	240	240	<4.0	<4.0	--	--	--	--
SWFTS-MW22	EM08	2/21/2018	N	440-203937-1	Alluvium	11.8 - 31.6	--	230	230	<4.0	<4.0	--	--	--	--
SWFTS-MW22	EM09	3/28/2018	N	440-207497-1	Alluvium	11.8 - 31.6	--	230	230	<4.0	<4.0	--	--	--	--
SWFTS-MW22	EM10	4/30/2018	N	440-210173-6	Alluvium	11.8 - 31.6	--	230	230	<4.0	<4.0	--	--	--	--
SWFTS-MW22	EM11	7/10/2018	N	440-215437-9	Alluvium	11.8 - 31.6	--	250	250	<4.0	<4.0	--	--	--	--
SWFTS-MW22	EM15	10/9/2018	N	440-221855-2	Alluvium	11.8 - 31.6	--	260	260	<4.0	<4.0	--	--	--	--
SWFTS-MW22	EM19	5/21/2019	N	440-242084-4	Alluvium	11.8 - 31.6	--	--	--	--	--	--	--	--	--
SWFTS-MW22	EM22	11/5/2019	N	440-253891-4	Alluvium	11.8 - 31.6	--	--	--	--	--	--	--	--	--
SWFTS-MW22	EM26	4/28/2020	N	440-265288-5	Alluvium	11.8 - 31.6	--	--	--	--	--	--	--	--	--
SWFTS-MW22	EM29	10/14/2020	N	440-273303-1	Alluvium	11.8 - 31.6	--	--	--	--	--	--	--	--	--
SWFTS-MW22	EM33	6/2/2021	N	550-164872-11	Alluvium	11.8 - 31.6	--	--	--	--	--	--	--	--	--
SWFTS-MW22	EM33	6/2/2021	N	550-164872-12	Alluvium	11.8 - 31.6	--	--	--	--	--	--	--	--	--
SWFTS-MW22	EM36	12/2/2021	N	550-175153-1	Alluvium	11.8 - 31.6	--	--	--	--	--	--	--	--	--
SWFTS-MW22	EM36	12/2/2021	N	550-175153-2	Alluvium	11.8 - 31.6	--	--	--	--	--	--	--	--	--
SWFTS-MW22	EM40	12/14/2022	N	550-195013-1	Alluvium	11.8 - 31.6	--	--	--	--	--	--	--	--	--
SWFTS-MW22	EM40	12/14/2022	N	550-195013-2	Alluvium	11.8 - 31.6	--	--	--	--	--	--	--	--	--
SWFTS-MW23	BL02	7/13/2017	N	440-188325-7	Alluvium	13.8 - 33.6	--	--	--	--	--	--	--	--	--
SWFTS-MW23	EM04	10/11/2017	N	440-194090-7	Alluvium	13.8 - 33.6	1.2	200	200	<4.0	<4.0	2,300	<0.25	--	--
SWFTS-MW23	EM06	11/15/2017	N	440-196665-3	Alluvium	13.8 - 33.6	--	200	200	<4.0	<4.0	2,500	--	--	--
SWFTS-MW23	EM07	12/12/2017	N	440-198371-2	Alluvium	13.8 - 33.6	--	190	190	<4.0	<4.0	--	--	--	--
SWFTS-MW23	EM08	2/21/2018	N	440-203937-14	Alluvium	13.8 - 33.6	--	190	190	<4.0	<4.0	--	--	--	--
SWFTS-MW23	EM09	3/28/2018	N	440-207497-9	Alluvium	13.8 - 33.6	--	190	190	<4.0	<4.0	--	--	--	--
SWFTS-MW23	EM10	5/2/2018	N	440-210430-5	Alluvium	13.8 - 33.6	--	210	210	<4.0	<4.0	--	--	--	--
SWFTS-MW23	EM11	7/10/2018	N	440-215437-7	Alluvium	13.8 - 33.6	--	210	210	<4.0	<4.0	--	--	--	--
SWFTS-MW23	EM15	10/11/2018	N	440-222092-7	Alluvium	13.8 - 33.6	--	210	210	<4.0	<4.0	--	--	--	--
SWFTS-MW23	EM19	5/22/2019	N	440-242201-7	Alluvium	13.8 - 33.6	--	--	--	--	--	--	--	--	--
SWFTS-MW23	EM22	11/5/2019	N	440-253891-5	Alluvium	13.8 - 33.6	--	--	--	--	--	--	--	--	--
SWFTS-MW23	EM26	4/28/2020	N	440-265288-3	Alluvium	13.8 - 33.6	--	--	--	--	--	--	--	--	--
SWFTS-MW23	EM29	10/13/2020	N	440-273236-1	Alluvium	13.8 - 33.6	--	--	--	--	--	--	--	--	--
SWFTS-MW23	EM33	6/2/2021	N	550-164872-3	Alluvium	13.8 - 33.6	--	--	--	--	--	--	--	--	--
SWFTS-MW23	EM33	6/2/2021	N	550-164872-4	Alluvium	13.8 - 33.6	--	--	--	--	--	--	--	--	--
SWFTS-MW23	EM36	12/2/2021	N	550-175153-15	Alluvium	13.8 - 33.6	--	--	--	--	--	--	--	--	--
SWFTS-MW23	EM36	12/2/2021	N	550-175153-16	Alluvium	13.8 - 33.6	--	--	--	--	--	--	--	--	--
SWFTS-MW23	EM40	12/13/2022	N	550-194919-5	Alluvium	13.8 - 33.6	--	--	--	--	--	--	--	--	--
SWFTS-MW23	EM40	12/13/2022	N	550-194919-6	Alluvium	13.8 - 33.6	--	--	--	--	--	--	--	--	--
SWFTS-MW24	BL02	7/13/2017	N	440-188324-2	Alluvium	12.8 - 37.6	13	170	170	<4.0	<4.0	4,900	--	--	--
SWFTS-MW24	EM04	10/11/2017	N	440-194242-2	Alluvium	12.8 - 37.6	--	200	200	<4.0	<4.0	5,100	--	--	--
SWFTS-MW24	EM06	11/15/2017	N	440-196665-1	Alluvium	12.8 - 37.6	--	240	240	<4.0	<4.0	4,900	--	--	--
SWFTS-MW24	EM07	12/12/2017	N	440-198371-5	Alluvium	12.8 - 37.6	--	190	190	<4.0	<4.0	--	--	--	--
SWFTS-MW24	EM08	2/21/2018	N	440-203937-8	Alluvium	12.8 - 37.6	--	230	230	<4.0	<4.0	--	--	--	--
SWFTS-MW24	EM09	3/28/2018	N	440-207497-12	Alluvium	12.8 - 37.6	--	270	270	<4.0	<4.0	--	--	--	--
SWFTS-MW24	EM10	5/2/2018	N	440-210430-7	Alluvium	12.8 - 37.6	--	260	260	<4.0	<4.0	--	--	--	--
SWFTS-MW24	EM11	7/12/2018	N	440-215717-5	Alluvium	12.8 - 37.6	--	250	250	<4.0	<4.0	--	--	--	--
SWFTS-MW24	EM15	10/10/2018	N	440-221975-7	Alluvium	12.8 - 37.6	--	300	300	<4.0	<4.0	--	--	--	--
SWFTS-MW24	EM19	5/22/2019	N	440-242198-1	Alluvium	12.8 - 37.6	--	--	--	--	--	--	--	--	--
SWFTS-MW24	EM22	11/5/2019	N	440-253891-2	Alluvium	12.8 - 37.6	--	--	--	--	--	--	--	--	--
SWFTS-MW24	EM26	4/28/2020	N	440-265288-1	Alluvium	12.8 - 37.6	--	--	--	--	--	--	--	--	--
SWFTS-MW24	EM29	10/12/2020	N	440-273153-1	Alluvium	12.8 - 37.6	--	--	--	--	--	--	--	--	--
SWFTS-MW24	EM33	6/2/2021	N	550-164872-7	Alluvium	12.8 - 37.6	--	--	--	--	--	--	--	--	--

Table D.2
Groundater Analytical Results Summary - Secondary Parameters
Seep Well Field Area Bioremediation Treatability Study

Well	Event	Sample Date	QC Type	Lab Sample ID	Lithology	Screened Interval (ft bgs)	NTOTAL	SM2320B	SM2320B	SM2320B	SM2320B	SM2540C	SW7199	Total Metals by SW6010	Total Metals by SW6010
							Nitrogen, Total	Alkalinity as CaCO3	Bicarbonate Alkalinity as CaCO3	Carbonate Alkalinity as CaCO3	Hydroxide Alkalinity as CaCO3	Total Dissolved Solids	Chromium, Hexavalent	Aluminum	Barium
							mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	µg/L	mg/L	mg/L
SWFTS-MW24	EM33	6/2/2021	N	550-164872-8	Alluvium	12.8 - 37.6	--	--	--	--	--	--	--	--	--
SWFTS-MW24	EM36	12/1/2021	N	550-175045-17	Alluvium	12.8 - 37.6	--	--	--	--	--	--	--	--	--
SWFTS-MW24	EM36	12/1/2021	N	550-175045-18	Alluvium	12.8 - 37.6	--	--	--	--	--	--	--	--	--
SWFTS-MW24	EM40	12/13/2022	N	550-194919-3	Alluvium	12.8 - 37.6	--	--	--	--	--	--	--	--	--
SWFTS-MW24	EM40	12/13/2022	N	550-194919-4	Alluvium	12.8 - 37.6	--	--	--	--	--	--	--	--	--
SWFTS-MW25	BL02	7/13/2017	N	440-188324-4	Alluvium	12.8 - 42.6	10	210	210	<4.0	<4.0	5,400	--	--	--
SWFTS-MW25	EM04	10/11/2017	N	440-194242-1	Alluvium	12.8 - 42.6	--	300	300	<4.0	<4.0	5,100	--	--	--
SWFTS-MW25	EM06	11/15/2017	N	440-196665-2	Alluvium	12.8 - 42.6	0.17	400	400	<4.0	<4.0	4,600	--	--	--
SWFTS-MW25	EM07	12/12/2017	N	440-198371-1	Alluvium	12.8 - 42.6	0.12	330	330	<4.0	<4.0	--	--	--	--
SWFTS-MW25	EM08	2/21/2018	N	440-203937-7	Alluvium	12.8 - 42.6	0.11	350	350	<4.0	<4.0	--	--	--	--
SWFTS-MW25	EM09	3/28/2018	N	440-207497-13	Alluvium	12.8 - 42.6	3.0	320	320	<4.0	<4.0	--	--	--	--
SWFTS-MW25	EM10	5/3/2018	N	440-210534-2	Alluvium	12.8 - 42.6	4.3	290	290	<4.0	<4.0	--	--	--	--
SWFTS-MW25	EM11	7/10/2018	N	440-215437-12	Alluvium	12.8 - 42.6	3.8	310	310	<4.0	<4.0	--	--	--	--
SWFTS-MW25	EM13	8/15/2018	N	440-218208-10	Alluvium	12.8 - 42.6	5.4	340	340	<4.0	<4.0	--	--	--	--
SWFTS-MW25	EM14	9/12/2018	N	440-220031-2	Alluvium	12.8 - 42.6	7.1	310	310	<4.0	<4.0	--	--	--	--
SWFTS-MW25	EM15	10/11/2018	N	440-222092-6	Alluvium	12.8 - 42.6	7.9	310	310	<4.0	<4.0	--	--	--	--
SWFTS-MW25	EM19	5/22/2019	N	440-242201-6	Alluvium	12.8 - 42.6	--	--	--	--	--	--	--	--	--
SWFTS-MW25	EM22	11/5/2019	N	440-253918-4	Alluvium	12.8 - 42.6	--	--	--	--	--	--	--	--	--
SWFTS-MW25	EM26	4/28/2020	N	440-265288-2	Alluvium	12.8 - 42.6	--	--	--	--	--	--	--	--	--
SWFTS-MW25	EM29	10/13/2020	N	440-273236-2	Alluvium	12.8 - 42.6	--	--	--	--	--	--	--	--	--
SWFTS-MW25	EM33	6/2/2021	N	550-164872-5	Alluvium	12.8 - 42.6	--	--	--	--	--	--	--	--	--
SWFTS-MW25	EM33	6/2/2021	N	550-164872-6	Alluvium	12.8 - 42.6	--	--	--	--	--	--	--	--	--
SWFTS-MW25	EM36	12/1/2021	N	550-175045-19	Alluvium	12.8 - 42.6	--	--	--	--	--	--	--	--	--
SWFTS-MW25	EM36	12/1/2021	N	550-175045-20	Alluvium	12.8 - 42.6	--	--	--	--	--	--	--	--	--
SWFTS-MW25	EM40	12/13/2022	N	550-194919-1	Alluvium	12.8 - 42.6	--	--	--	--	--	--	--	--	--
SWFTS-MW25	EM40	12/13/2022	N	550-194919-2	Alluvium	12.8 - 42.6	--	--	--	--	--	--	--	--	--

Notes:
1. Lithology of monitoring well COH-2B1 was inferred from state records of well construction and generalized stratigraphy.
FD - Field duplicate
J The result is an estimated quantity. The associated numerical value is the approximate concentration of the analyte.
J- The result is an estimated quantity, but the result may be biased low.
J+ The result is an estimated quantity, but the result may be biased high.
mg/L - milligrams per liter
µg/L - micrograms per liter
N - Normal field sample
UMCf- Upper Muddy Creek Formation
R The data are unusable. The sample results are rejected due to serious deficiencies in meeting QC criteria. The
< The analyte was analyzed for, but was not detected above the level of the reported sample quantitation limit.
--- Not tested.

Table D.2
Groundater Analytical Results Summary - Secondary Parameters
Seep Well Field Area Bioremediation Treatability Study

Well	Event	Sample Date	QC Type	Lab Sample ID	Lithology	Screened Interval (ft bgs)	Total Metals by SW6010	Total Metals by SW6010	Total Metals by SW6010	Total Metals by SW6010	Total Metals by SW6010	Total Metals by SW6010	Total Metals by SW6010	Total Metals by SW6010	Total Metals by SW6010
							Beryllium	Boron	Cadmium	Calcium	Chromium	Cobalt	Copper	Iron	Lead
							mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
COH-2B1	BL02	8/9/2017	N	440-189933-1	Alluvium/UMCf	36.0 - 66.0	--	--	--	--	--	--	--	--	--
COH-2B1	EM04	10/12/2017	N	440-194204-2	Alluvium/UMCf	36.0 - 66.0	--	--	--	--	--	--	--	--	--
COH-2B1	EM07	12/14/2017	N	440-198571-5	Alluvium/UMCf	36.0 - 66.0	--	--	--	--	--	--	--	--	--
COH-2B1	EM08	2/22/2018	N	440-204033-6	Alluvium/UMCf	36.0 - 66.0	--	--	--	--	--	--	--	--	--
COH-2B1	EM09	3/29/2018	N	440-207586-2	Alluvium/UMCf	36.0 - 66.0	--	--	--	--	--	--	--	--	--
COH-2B1	EM10	5/2/2018	N	440-210430-11	Alluvium/UMCf	36.0 - 66.0	--	--	--	--	--	--	--	--	--
COH-2B1	EM11	7/10/2018	N	440-215437-6	Alluvium/UMCf	36.0 - 66.0	--	--	--	--	--	--	--	--	--
COH-2B1	EM15	10/11/2018	N	440-222092-1	Alluvium/UMCf	36.0 - 66.0	--	--	--	--	--	--	--	--	--
COH-2B1	EM19	5/22/2019	N	440-242201-5	Alluvium/UMCf	36.0 - 66.0	--	--	--	--	--	--	--	--	--
COH-2B1	EM22	11/4/2019	N	440-253773-1	Alluvium/UMCf	36.0 - 66.0	--	--	--	--	--	--	--	--	--
COH-2B1	EM26	4/27/2020	N	440-265243-1	Alluvium/UMCf	36.0 - 66.0	--	--	--	--	--	--	--	--	--
COH-2B1	EM29	10/13/2020	N	440-273236-9	Alluvium/UMCf	36.0 - 66.0	--	--	--	--	--	--	--	--	--
PC-58	BL01	3/28/2017	N	440-180820-1	Alluvium	7.8 - 32.8	<0.0010	1.8	<0.0025	200	0.016	<0.0050	<0.0050	<0.050	<0.0035
PC-58	BL02	7/13/2017	N	440-188324-3	Alluvium	7.8 - 32.8	--	--	--	--	--	--	--	--	--
PC-58	EM04	10/11/2017	N	440-194094-6	Alluvium	7.8 - 32.8	--	--	--	--	--	--	--	--	--
PC-58	EM06	11/16/2017	N	440-196786-11	Alluvium	7.8 - 32.8	--	--	--	--	--	--	--	--	--
PC-58	EM07	12/14/2017	N	440-198571-9	Alluvium	7.8 - 32.8	--	--	--	--	--	--	--	--	--
PC-58	EM08	2/21/2018	N	440-203937-13	Alluvium	7.8 - 32.8	--	--	--	--	--	--	--	--	--
PC-58	EM09	3/28/2018	N	440-207497-6	Alluvium	7.8 - 32.8	--	--	--	--	--	--	--	--	--
PC-58	EM10	5/2/2018	N	440-210430-10	Alluvium	7.8 - 32.8	--	--	--	--	--	--	--	--	--
PC-58	EM11	7/11/2018	N	440-215717-7	Alluvium	7.8 - 32.8	--	--	--	--	--	--	--	--	--
PC-58	EM15	10/11/2018	N	440-222092-19	Alluvium	7.8 - 32.8	--	--	--	--	--	--	--	--	--
PC-58	EM19	5/22/2019	N	440-242200-7	Alluvium	7.8 - 32.8	--	--	--	--	--	--	--	--	--
PC-58	EM22	11/7/2019	N	440-254148-1	Alluvium	7.8 - 32.8	--	--	--	--	--	--	--	--	--
PC-58	EM26	5/1/2020	N	440-265414-3	Alluvium	7.8 - 32.8	--	--	--	--	--	--	--	--	--
PC-58	EM29	10/16/2020	N	440-273433-5	Alluvium	7.8 - 32.8	--	--	--	--	--	--	--	--	--
PC-58	EM33	6/2/2021	N	550-164872-23	Alluvium	7.8 - 32.8	--	--	--	--	--	--	--	--	--
PC-58	EM33	6/2/2021	N	550-164872-24	Alluvium	7.8 - 32.8	--	--	--	--	--	--	--	--	--
PC-58	EM36	12/3/2021	N	550-175222-11	Alluvium	7.8 - 32.8	--	--	--	--	--	--	--	--	--
PC-58	EM36	12/3/2021	N	550-175222-12	Alluvium	7.8 - 32.8	--	--	--	--	--	--	--	--	--
PC-58	EM40	12/12/2022	N	550-194841-5	Alluvium	7.8 - 32.8	--	--	--	--	--	--	--	--	--
PC-58	EM40	12/12/2022	N	550-194841-6	Alluvium	7.8 - 32.8	--	--	--	--	--	--	--	--	--
PC-88	EM04	10/11/2017	N	440-194090-2	Alluvium	40.0 - 50.0	--	--	--	--	--	--	--	--	--
PC-88	EM04	10/11/2017	FD	440-194090-3	Alluvium	40.0 - 50.0	--	--	--	--	--	--	--	--	--
PC-88	EM06	11/15/2017	N	440-196690-9	Alluvium	40.0 - 50.0	--	--	--	--	--	--	--	--	--
PC-88	EM06	11/15/2017	FD	440-196690-10	Alluvium	40.0 - 50.0	--	--	--	--	--	--	--	--	--
PC-88	EM07	12/14/2017	N	440-198571-11	Alluvium	40.0 - 50.0	--	--	--	--	--	--	--	--	--
PC-88	EM08	2/22/2018	N	440-204033-10	Alluvium	40.0 - 50.0	--	--	--	--	--	--	--	--	--
PC-88	EM09	3/29/2018	N	440-207586-3	Alluvium	40.0 - 50.0	--	--	--	--	--	--	--	--	--
PC-88	EM10	5/2/2018	N	440-210430-8	Alluvium	40.0 - 50.0	--	--	--	--	--	--	--	--	--
PC-88	EM10	5/2/2018	FD	440-210430-9	Alluvium	40.0 - 50.0	--	--	--	--	--	--	--	--	--
PC-88	EM11	7/12/2018	N	440-215717-11	Alluvium	40.0 - 50.0	--	--	--	--	--	--	--	--	--
PC-88	EM11	7/12/2018	FD	440-215717-12	Alluvium	40.0 - 50.0	--	--	--	--	--	--	--	--	--
PC-88	EM15	10/11/2018	N	440-222092-15	Alluvium	40.0 - 50.0	--	--	--	--	--	--	--	--	--
PC-88	EM15	10/11/2018	FD	440-222092-16	Alluvium	40.0 - 50.0	--	--	--	--	--	--	--	--	--
PC-88	EM19	5/22/2019	N	440-242201-2	Alluvium	40.0 - 50.0	--	--	--	--	--	--	--	--	--
PC-88	EM19	5/22/2019	FD	440-242201-3	Alluvium	40.0 - 50.0	--	--	--	--	--	--	--	--	--
PC-88	EM22	11/7/2019	N	440-254148-2	Alluvium	40.0 - 50.0	--	--	--	--	--	--	--	--	--
PC-88	EM22	11/7/2019	FD	440-254148-3	Alluvium	40.0 - 50.0	--	--	--	--	--	--	--	--	--
PC-88	EM26	5/1/2020	N	440-265412-2	Alluvium	40.0 - 50.0	--	--	--	--	--	--	--	--	--
PC-88	EM26	5/1/2020	FD	440-265412-3	Alluvium	40.0 - 50.0	--	--	--	--	--	--	--	--	--
PC-88	EM29	10/15/2020	N	550-151259-10	Alluvium	40.0 - 50.0	--	--	--	--	--	--	--	--	--
PC-88	EM29	10/15/2020	FD	550-151259-11	Alluvium	40.0 - 50.0	--	--	--	--	--	--	--	--	--
PC-88	EM33	6/3/2021	N	550-164869-25	Alluvium	40.0 - 50.0	--	--	--	--	--	--	--	--	--
PC-88	EM33	6/3/2021	N	550-164869-26	Alluvium	40.0 - 50.0	--	--	--	--	--	--	--	--	--
PC-88	EM33	6/3/2021	FD	550-164869-27	Alluvium	40.0 - 50.0	--	--	--	--	--	--	--	--	--
PC-88	EM33	6/3/2021	FD	550-164869-28	Alluvium	40.0 - 50.0	--	--	--	--	--	--	--	--	--
PC-88	EM36	12/2/2021	N	550-175153-5	Alluvium	40.0 - 50.0	--	--	--	--	--	--	--	--	--
PC-88	EM36	12/2/2021	N	550-175153-6	Alluvium	40.0 - 50.0	--	--	--	--	--	--	--	--	--
PC-88	EM36	12/2/2021	FD	550-175153-7	Alluvium	40.0 - 50.0	--	--	--	--	--	--	--	--	--
PC-88	EM36	12/2/2021	FD	550-175153-8	Alluvium	40.0 - 50.0	--	--	--	--	--	--	--	--	--
PC-88	EM40	12/12/2022	N	550-194841-1	Alluvium	40.0 - 50.0	--	--	--	--	--	--	--	--	--
PC-88	EM40	12/12/2022	N	550-194841-2	Alluvium	40.0 - 50.0	--	--	--	--	--	--	--	--	--
PC-88	EM40	12/12/2022	FD	550-194841-3	Alluvium	40.0 - 50.0	--	--	--	--	--	--	--	--	--

Table D.2
Groundater Analytical Results Summary - Secondary Parameters
Seep Well Field Area Bioremediation Treatability Study

Well	Event	Sample Date	QC Type	Lab Sample ID	Lithology	Screened Interval (ft bgs)	Total Metals by SW6010	Total Metals by SW6010	Total Metals by SW6010	Total Metals by SW6010	Total Metals by SW6010	Total Metals by SW6010	Total Metals by SW6010	Total Metals by SW6010	Total Metals by SW6010
							Beryllium	Boron	Cadmium	Calcium	Chromium	Cobalt	Copper	Iron	Lead
							mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
PC-88	EM40	12/12/2022	FD	550-194841-4	Alluvium	40.0 - 50.0	--	--	--	--	--	--	--	--	--
PC-91	BL01	3/29/2017	N	440-180937-1	Alluvium	11.5 - 21.5	--	--	--	--	--	--	--	--	--
PC-91	BL02	7/12/2017	N	440-188247-5	Alluvium	11.5 - 21.5	--	--	--	--	--	--	--	--	--
PC-91	BL02	7/12/2017	FD	440-188244-4	Alluvium	11.5 - 21.5	--	--	--	--	--	--	--	--	--
PC-91	EM04	10/12/2017	N	440-194204-3	Alluvium	11.5 - 21.5	--	--	--	--	--	--	--	--	--
PC-91	EM06	11/16/2017	N	440-196786-8	Alluvium	11.5 - 21.5	--	--	--	--	--	--	--	--	--
PC-91	EM07	12/13/2017	N	440-198508-9	Alluvium	11.5 - 21.5	--	--	--	--	--	--	--	--	--
PC-91	EM08	2/20/2018	N	440-203841-1	Alluvium	11.5 - 21.5	--	--	--	--	--	--	--	--	--
PC-91	EM09	3/26/2018	N	440-207137-1	Alluvium	11.5 - 21.5	--	--	--	--	--	--	--	--	--
PC-91	EM10	5/1/2018	N	440-210284-3	Alluvium	11.5 - 21.5	--	--	--	--	--	--	--	--	--
PC-91	EM11	7/11/2018	N	440-215585-6	Alluvium	11.5 - 21.5	--	--	--	--	--	--	--	--	--
PC-91	EM15	10/10/2018	N	440-221975-16	Alluvium	11.5 - 21.5	--	--	--	--	--	--	--	--	--
PC-91	EM19	5/21/2019	N	440-242084-9	Alluvium	11.5 - 21.5	--	--	--	--	--	--	--	--	--
PC-91	EM22	11/6/2019	N	440-254027-3	Alluvium	11.5 - 21.5	--	--	--	--	--	--	--	--	--
PC-91	EM26	4/30/2020	N	440-265382-2	Alluvium	11.5 - 21.5	--	--	--	--	--	--	--	--	--
PC-91	EM29	10/14/2020	N	440-273303-11	Alluvium	11.5 - 21.5	--	--	--	--	--	--	--	--	--
PC-91	EM33	6/2/2021	N	550-164872-17	Alluvium	11.5 - 21.5	--	--	--	--	--	--	--	--	--
PC-91	EM33	6/2/2021	N	550-164872-18	Alluvium	11.5 - 21.5	--	--	--	--	--	--	--	--	--
PC-91	EM36	11/30/2021	N	550-174968-1	Alluvium	11.5 - 21.5	--	--	--	--	--	--	--	--	--
PC-91	EM36	11/30/2021	N	550-174968-2	Alluvium	11.5 - 21.5	--	--	--	--	--	--	--	--	--
PC-91	EM40	12/12/2022	N	550-194841-7	Alluvium	11.5 - 21.5	--	--	--	--	--	--	--	--	--
PC-91	EM40	12/12/2022	N	550-194841-8	Alluvium	11.5 - 21.5	--	--	--	--	--	--	--	--	--
PC-92	BL01	3/29/2017	N	440-180937-2	Alluvium	26.5 - 36.5	--	--	--	--	--	--	--	--	--
PC-92	BL02	7/12/2017	N	440-188247-6	Alluvium	26.5 - 36.5	--	--	--	--	--	--	--	--	--
PC-92	EM04	10/12/2017	N	440-194204-4	Alluvium	26.5 - 36.5	--	--	--	--	--	--	--	--	--
PC-92	EM04	10/12/2017	FD	440-194204-5	Alluvium	26.5 - 36.5	--	--	--	--	--	--	--	--	--
PC-92	EM06	11/16/2017	N	440-196786-9	Alluvium	26.5 - 36.5	--	--	--	--	--	--	--	--	--
PC-92	EM06	11/16/2017	FD	440-196786-10	Alluvium	26.5 - 36.5	--	--	--	--	--	--	--	--	--
PC-92	EM07	12/14/2017	N	440-198571-7	Alluvium	26.5 - 36.5	--	--	--	--	--	--	--	--	--
PC-92	EM07	12/14/2017	FD	440-198571-8	Alluvium	26.5 - 36.5	--	--	--	--	--	--	--	--	--
PC-92	EM08	2/20/2018	N	440-203841-2	Alluvium	26.5 - 36.5	--	--	--	--	--	--	--	--	--
PC-92	EM08	2/20/2018	FD	440-203841-3	Alluvium	26.5 - 36.5	--	--	--	--	--	--	--	--	--
PC-92	EM09	3/26/2018	N	440-207137-2	Alluvium	26.5 - 36.5	--	--	--	--	--	--	--	--	--
PC-92	EM09	3/26/2018	FD	440-207137-3	Alluvium	26.5 - 36.5	--	--	--	--	--	--	--	--	--
PC-92	EM10	5/1/2018	N	440-210284-4	Alluvium	26.5 - 36.5	--	--	--	--	--	--	--	--	--
PC-92	EM11	7/11/2018	N	440-215585-5	Alluvium	26.5 - 36.5	--	--	--	--	--	--	--	--	--
PC-92	EM15	10/11/2018	N	440-222092-17	Alluvium	26.5 - 36.5	--	--	--	--	--	--	--	--	--
PC-92	EM19	5/21/2019	N	440-242084-10	Alluvium	26.5 - 36.5	--	--	--	--	--	--	--	--	--
PC-92	EM22	11/6/2019	N	440-254027-2	Alluvium	26.5 - 36.5	--	--	--	--	--	--	--	--	--
PC-92	EM26	4/30/2020	N	440-265382-1	Alluvium	26.5 - 36.5	--	--	--	--	--	--	--	--	--
PC-92	EM29	10/14/2020	N	440-273303-10	Alluvium	26.5 - 36.5	--	--	--	--	--	--	--	--	--
PC-92	EM33	6/2/2021	N	550-164872-19	Alluvium	26.5 - 36.5	--	--	--	--	--	--	--	--	--
PC-92	EM33	6/2/2021	N	550-164872-20	Alluvium	26.5 - 36.5	--	--	--	--	--	--	--	--	--
PC-92	EM36	11/30/2021	N	550-174968-3	Alluvium	26.5 - 36.5	--	--	--	--	--	--	--	--	--
PC-92	EM36	11/30/2021	N	550-174968-4	Alluvium	26.5 - 36.5	--	--	--	--	--	--	--	--	--
PC-92	EM40	12/13/2022	N	550-194920-1	Alluvium	26.5 - 36.5	--	--	--	--	--	--	--	--	--
PC-92	EM40	12/13/2022	N	550-194920-2	Alluvium	26.5 - 36.5	--	--	--	--	--	--	--	--	--
PC-94	BL01	3/28/2017	N	440-180820-2	Alluvium	9.5 - 19.5	<0.0020	3.1	<0.0050	390	0.041	<0.010	<0.010	1.0	<0.0070
PC-94	BL02	7/13/2017	N	440-188325-1	Alluvium	9.5 - 19.5	--	--	--	--	--	--	--	--	--
PC-94	EM04	10/11/2017	N	440-194090-6	Alluvium	9.5 - 19.5	--	--	--	--	--	--	--	--	--
PC-94	EM06	11/16/2017	N	440-196786-17	Alluvium	9.5 - 19.5	--	--	--	--	--	--	--	--	--
PC-94	EM07	12/12/2017	N	440-198371-14	Alluvium	9.5 - 19.5	--	--	--	--	--	--	--	--	--
PC-94	EM08	2/21/2018	N	440-203937-12	Alluvium	9.5 - 19.5	--	--	--	--	--	--	--	--	--
PC-94	EM09	3/27/2018	N	440-207268-8	Alluvium	9.5 - 19.5	--	--	--	--	--	--	--	--	--
PC-94	EM10	5/1/2018	N	440-210284-14	Alluvium	9.5 - 19.5	--	--	--	--	--	--	--	--	--
PC-94	EM11	7/10/2018	N	440-215437-1	Alluvium	9.5 - 19.5	--	--	--	--	--	--	--	--	--
PC-94	EM13	8/15/2018	N	440-218208-2	Alluvium	9.5 - 19.5	--	--	--	--	--	--	--	--	--
PC-94	EM14	9/11/2018	N	440-219886-9	Alluvium	9.5 - 19.5	--	--	--	--	--	--	--	--	--
PC-94	EM15	10/11/2018	N	440-222092-18	Alluvium	9.5 - 19.5	--	--	--	--	--	--	--	--	--
PC-94	EM19	5/22/2019	N	440-242201-4	Alluvium	9.5 - 19.5	--	--	--	--	--	--	--	--	--
PC-94	EM22	11/6/2019	N	440-254027-1	Alluvium	9.5 - 19.5	--	--	--	--	--	--	--	--	--
PC-94	EM26	4/28/2020	N	440-265289-2	Alluvium	9.5 - 19.5	--	--	--	--	--	--	--	--	--
PC-94	EM29	10/15/2020	N	550-151259-7	Alluvium	9.5 - 19.5	--	--	--	--	--	--	--	--	--
PC-94	EM33	6/2/2021	N	550-164872-21	Alluvium	9.5 - 19.5	--	--	--	--	--	--	--	--	--

Table D.2
Groundater Analytical Results Summary - Secondary Parameters
Seep Well Field Area Bioremediation Treatability Study

Well	Event	Sample Date	QC Type	Lab Sample ID	Lithology	Screened Interval (ft bgs)	Total Metals by SW6010	Total Metals by SW6010	Total Metals by SW6010	Total Metals by SW6010	Total Metals by SW6010	Total Metals by SW6010	Total Metals by SW6010	Total Metals by SW6010	Total Metals by SW6010
							Beryllium	Boron	Cadmium	Calcium	Chromium	Cobalt	Copper	Iron	Lead
							mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
PC-94	EM33	6/2/2021	N	550-164872-22	Alluvium	9.5 - 19.5	--	--	--	--	--	--	--	--	--
PC-94	EM36	11/30/2021	N	550-174968-5	Alluvium	9.5 - 19.5	--	--	--	--	--	--	--	--	--
PC-94	EM36	11/30/2021	N	550-174968-6	Alluvium	9.5 - 19.5	--	--	--	--	--	--	--	--	--
PC-94	EM40	12/13/2022	N	550-194920-7	Alluvium	9.5 - 19.5	--	--	--	--	--	--	--	--	--
PC-94	EM40	12/13/2022	N	550-194920-8	Alluvium	9.5 - 19.5	--	--	--	--	--	--	--	--	--
PC-97	BL02	7/13/2017	N	440-188325-8	Alluvium	23.0 - 33.0	--	--	--	--	--	--	--	--	--
PC-97	EM04	10/11/2017	N	440-194242-5	Alluvium	23.0 - 33.0	--	--	--	--	--	--	--	--	--
PC-97	EM04	10/11/2017	FD	440-194242-6	Alluvium	23.0 - 33.0	--	--	--	--	--	--	--	--	--
PC-97	EM06	11/16/2017	N	440-196786-13	Alluvium	23.0 - 33.0	--	--	--	--	--	--	--	--	--
PC-97	EM07	12/13/2017	N	440-198508-11	Alluvium	23.0 - 33.0	--	--	--	--	--	--	--	--	--
PC-97	EM07	12/13/2017	FD	440-198508-12	Alluvium	23.0 - 33.0	--	--	--	--	--	--	--	--	--
PC-97	EM08	2/21/2018	N	440-203937-4	Alluvium	23.0 - 33.0	--	--	--	--	--	--	--	--	--
PC-97	EM09	3/27/2018	N	440-207268-4	Alluvium	23.0 - 33.0	--	--	--	--	--	--	--	--	--
PC-97	EM10	5/1/2018	N	440-210284-7	Alluvium	23.0 - 33.0	--	--	--	--	--	--	--	--	--
PC-97	EM11	7/10/2018	N	440-215437-3	Alluvium	23.0 - 33.0	--	--	--	--	--	--	--	--	--
PC-97	EM15	10/11/2018	N	440-222092-13	Alluvium	23.0 - 33.0	--	--	--	--	--	--	--	--	--
PC-97	EM19	5/22/2019	N	440-242201-1	Alluvium	23.0 - 33.0	--	--	--	--	--	--	--	--	--
PC-97	EM22	11/6/2019	N	440-254027-7	Alluvium	23.0 - 33.0	--	--	--	--	--	--	--	--	--
PC-97	EM26	4/30/2020	N	440-265383-7	Alluvium	23.0 - 33.0	--	--	--	--	--	--	--	--	--
PC-97	EM29	10/15/2020	N	550-151259-9	Alluvium	23.0 - 33.0	--	--	--	--	--	--	--	--	--
SWFTS-IW01A	BL02	7/11/2017	N	440-188133-3	Alluvium	15.8 - 25.6	--	--	--	--	--	--	--	--	--
SWFTS-IW01B	BL02	7/11/2017	N	440-188133-13	Alluvium	26.9 - 36.7	--	--	--	--	--	--	--	--	--
SWFTS-IW02A	BL02	7/11/2017	N	440-188133-14	Alluvium	16.8 - 26.6	--	--	--	--	--	--	--	--	--
SWFTS-IW02B	BL02	7/11/2017	N	440-188133-2	Alluvium	26.3 - 36.1	--	--	--	--	--	--	--	--	--
SWFTS-IW03	BL02	7/11/2017	N	440-188133-4	Alluvium	16.8 - 36.6	--	--	--	--	--	--	--	--	--
SWFTS-IW03	BL02	7/11/2017	FD	440-188133-5	Alluvium	16.8 - 36.6	--	--	--	--	--	--	--	--	--
SWFTS-IW04	BL02	7/11/2017	N	440-188133-11	Alluvium	19.8 - 34.6	--	--	--	--	--	--	--	--	--
SWFTS-IW04	BL02	7/11/2017	FD	440-188133-12	Alluvium	19.8 - 34.6	--	--	--	--	--	--	--	--	--
SWFTS-IW05	BL02	7/11/2017	N	440-188133-16	Alluvium	14.6 - 34.4	--	--	--	--	--	--	--	--	--
SWFTS-IW06A	BL02	7/11/2017	N	440-188133-10	Alluvium	16.8 - 26.6	--	--	--	--	--	--	--	--	--
SWFTS-IW06B	BL02	7/11/2017	N	440-188133-6	Alluvium	28.8 - 33.6	--	--	--	--	--	--	--	--	--
SWFTS-IW07	BL02	7/11/2017	N	440-188133-7	Alluvium	17.3 - 37.1	--	--	--	--	--	--	--	--	--
SWFTS-IW08	BL02	7/12/2017	N	440-188247-7	Alluvium	17.5 - 37.3	--	--	--	--	--	--	--	--	--
SWFTS-IW09	BL02	7/12/2017	N	440-188247-8	Alluvium	26.6 - 46.4	--	--	--	--	--	--	--	--	--
SWFTS-IW09	BL02	7/12/2017	FD	440-188244-3	Alluvium	26.6 - 46.4	--	--	--	--	--	--	--	--	--
SWFTS-IW10	BL02	7/12/2017	N	440-188247-9	Alluvium	26.8 - 46.6	--	--	--	--	--	--	--	--	--
SWFTS-IW11	BL02	7/12/2017	N	440-188247-3	Alluvium	17.3 - 37.1	--	--	--	--	--	--	--	--	--
SWFTS-IW12	BL02	7/12/2017	N	440-188247-4	Alluvium	14.3 - 39.1	--	--	--	--	--	--	--	--	--
SWFTS-IW13A	BL02	7/11/2017	N	440-188133-1	Alluvium	15.8 - 25.6	--	--	--	--	--	--	--	--	--
SWFTS-IW13B	BL02	7/11/2017	N	440-188133-15	Alluvium	27.8 - 37.6	--	--	--	--	--	--	--	--	--
SWFTS-IW14	BL02	7/12/2017	N	440-188247-1	Alluvium	16.2 - 36.1	--	--	--	--	--	--	--	--	--
SWFTS-IW15	BL02	7/12/2017	N	440-188247-2	Alluvium	16.4 - 36.2	--	--	--	--	--	--	--	--	--
SWFTS-IW16A	BL02	7/11/2017	N	440-188133-9	Alluvium	17.3 - 27.1	--	--	--	--	--	--	--	--	--
SWFTS-IW16B	BL02	7/11/2017	N	440-188133-8	Alluvium	26.5 - 36.3	--	--	--	--	--	--	--	--	--
SWFTS-IW17	BL02	7/13/2017	N	440-188325-6	Alluvium	17.3 - 37.1	--	--	--	--	--	--	--	--	--
SWFTS-IW18	BL02	7/13/2017	N	440-188325-4	Alluvium	18.1 - 38.1	--	--	--	--	--	--	--	--	--
SWFTS-IW19	BL02	7/13/2017	N	440-188325-5	Alluvium	24.3 - 44.1	--	--	--	--	--	--	--	--	--
SWFTS-IW20	BL02	7/12/2017	N	440-188247-10	Alluvium	30.8 - 50.6	--	--	--	--	--	--	--	--	--
SWFTS-MW01	BL01	3/29/2017	N	440-180937-6	Alluvium	24.2 - 38.9	--	--	--	--	--	--	--	--	--
SWFTS-MW01	EM04	10/10/2017	N	440-194094-2	Alluvium	24.2 - 38.9	--	--	--	--	--	--	--	--	--
SWFTS-MW01	EM06	11/15/2017	N	440-196665-4	Alluvium	24.2 - 38.9	--	--	--	--	--	--	--	--	--
SWFTS-MW01	EM07	12/14/2017	N	440-198571-10	Alluvium	24.2 - 38.9	--	--	--	--	--	--	--	--	--
SWFTS-MW01	EM08	2/20/2018	N	440-203841-12	Alluvium	24.2 - 38.9	--	--	--	--	--	--	--	--	--
SWFTS-MW01	EM09	3/27/2018	N	440-207268-10	Alluvium	24.2 - 38.9	--	--	--	--	--	--	--	--	--
SWFTS-MW01	EM10	4/30/2018	N	440-210173-1	Alluvium	24.2 - 38.9	--	--	--	--	--	--	--	--	--
SWFTS-MW01	EM11	7/10/2018	N	440-215437-2	Alluvium	24.2 - 38.9	--	--	--	--	--	--	--	--	--
SWFTS-MW01	EM14	9/10/2018	N	440-219797-1	Alluvium	24.2 - 38.9	--	--	--	--	--	--	--	--	--
SWFTS-MW01	EM15	10/9/2018	N	440-221855-12	Alluvium	24.2 - 38.9	--	--	--	--	--	--	--	--	--
SWFTS-MW01	EM19	5/21/2019	N	440-242084-14	Alluvium	24.2 - 38.9	--	--	--	--	--	--	--	--	--
SWFTS-MW01	EM22	11/5/2019	N	440-253918-3	Alluvium	24.2 - 38.9	--	--	--	--	--	--	--	--	--
SWFTS-MW01	EM26	4/28/2020	N	440-265289-5	Alluvium	24.2 - 38.9	--	--	--	--	--	--	--	--	--
SWFTS-MW01	EM29	10/13/2020	N	440-273236-11	Alluvium	24.2 - 38.9	--	--	--	--	--	--	--	--	--
SWFTS-MW01	EM33	6/4/2021	N	550-164930-17	Alluvium	24.2 - 38.9	--	--	--	--	--	--	--	--	--
SWFTS-MW01	EM33	6/4/2021	N	550-164930-18	Alluvium	24.2 - 38.9	--	--	--	--	--	--	--	--	--

Table D.2
Groundater Analytical Results Summary - Secondary Parameters
Seep Well Field Area Bioremediation Treatability Study

Well	Event	Sample Date	QC Type	Lab Sample ID	Lithology	Screened Interval (ft bgs)	Total Metals by SW6010	Total Metals by SW6010	Total Metals by SW6010	Total Metals by SW6010	Total Metals by SW6010	Total Metals by SW6010	Total Metals by SW6010	Total Metals by SW6010	Total Metals by SW6010
							Beryllium	Boron	Cadmium	Calcium	Chromium	Cobalt	Copper	Iron	Lead
							mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
SWFTS-MW01	EM36	11/30/2021	N	550-174968-19	Alluvium	24.2 - 38.9	--	--	--	--	--	--	--	--	--
SWFTS-MW01	EM36	11/30/2021	N	550-174968-20	Alluvium	24.2 - 38.9	--	--	--	--	--	--	--	--	--
SWFTS-MW01	EM40	12/13/2022	N	550-194920-3	Alluvium	24.2 - 38.9	--	--	--	--	--	--	--	--	--
SWFTS-MW01	EM40	12/13/2022	N	550-194920-4	Alluvium	24.2 - 38.9	--	--	--	--	--	--	--	--	--
SWFTS-MW02	BL01	3/29/2017	N	440-180937-7	Alluvium	18.4 - 33.1	--	--	--	--	--	--	--	--	--
SWFTS-MW02	EM04	10/12/2017	N	440-194204-6	Alluvium	18.4 - 33.1	--	--	--	--	--	--	--	--	--
SWFTS-MW02	EM06	11/14/2017	N	440-196558-3	Alluvium	18.4 - 33.1	--	--	--	--	--	--	--	--	--
SWFTS-MW02	EM07	12/13/2017	N	440-198508-8	Alluvium	18.4 - 33.1	--	--	--	--	--	--	--	--	--
SWFTS-MW02	EM08	2/19/2018	N	440-203775-1	Alluvium	18.4 - 33.1	--	--	--	--	--	--	--	--	--
SWFTS-MW02	EM09	3/27/2018	N	440-207268-1	Alluvium	18.4 - 33.1	--	--	--	--	--	--	--	--	--
SWFTS-MW02	EM10	4/30/2018	N	440-210173-3	Alluvium	18.4 - 33.1	--	--	--	--	--	--	--	--	--
SWFTS-MW02	EM11	7/11/2018	N	440-215717-13	Alluvium	18.4 - 33.1	--	--	--	--	--	--	--	--	--
SWFTS-MW02	EM14	9/10/2018	N	440-219797-2	Alluvium	18.4 - 33.1	--	--	--	--	--	--	--	--	--
SWFTS-MW02	EM15	10/10/2018	N	440-221975-15	Alluvium	18.4 - 33.1	--	--	--	--	--	--	--	--	--
SWFTS-MW02	EM19	5/21/2019	N	440-242084-8	Alluvium	18.4 - 33.1	--	--	--	--	--	--	--	--	--
SWFTS-MW02	EM22	11/7/2019	N	440-254148-7	Alluvium	18.4 - 33.1	--	--	--	--	--	--	--	--	--
SWFTS-MW02	EM26	4/30/2020	N	440-265382-3	Alluvium	18.4 - 33.1	--	--	--	--	--	--	--	--	--
SWFTS-MW02	EM29	10/15/2020	N	550-151259-8	Alluvium	18.4 - 33.1	--	--	--	--	--	--	--	--	--
SWFTS-MW02	EM33	6/3/2021	N	550-164869-21	Alluvium	18.4 - 33.1	--	--	--	--	--	--	--	--	--
SWFTS-MW02	EM33	6/3/2021	N	550-164869-22	Alluvium	18.4 - 33.1	--	--	--	--	--	--	--	--	--
SWFTS-MW02	EM36	11/30/2021	N	550-174968-7	Alluvium	18.4 - 33.1	--	--	--	--	--	--	--	--	--
SWFTS-MW02	EM36	11/30/2021	N	550-174968-8	Alluvium	18.4 - 33.1	--	--	--	--	--	--	--	--	--
SWFTS-MW02	EM40	12/14/2022	N	550-195015-3	Alluvium	18.4 - 33.1	--	--	--	--	--	--	--	--	--
SWFTS-MW02	EM40	12/14/2022	N	550-195015-4	Alluvium	18.4 - 33.1	--	--	--	--	--	--	--	--	--
SWFTS-MW03	BL01	3/30/2017	N	440-181045-5	Alluvium	27.2 - 42.1	--	--	--	--	--	--	--	--	--
SWFTS-MW03	BL01	3/30/2017	FD	440-181045-6	Alluvium	27.2 - 42.1	--	--	--	--	--	--	--	--	--
SWFTS-MW03	EM04	10/12/2017	N	440-194204-8	Alluvium	27.2 - 42.1	--	--	--	--	--	--	--	--	--
SWFTS-MW03	EM06	11/16/2017	N	440-196786-16	Alluvium	27.2 - 42.1	--	--	--	--	--	--	--	--	--
SWFTS-MW03	EM07	12/12/2017	N	440-198371-13	Alluvium	27.2 - 42.1	--	--	--	--	--	--	--	--	--
SWFTS-MW03	EM08	2/21/2018	N	440-203937-5	Alluvium	27.2 - 42.1	--	--	--	--	--	--	--	--	--
SWFTS-MW03	EM09	3/27/2018	N	440-207268-15	Alluvium	27.2 - 42.1	--	--	--	--	--	--	--	--	--
SWFTS-MW03	EM10	5/2/2018	N	440-210430-6	Alluvium	27.2 - 42.1	--	--	--	--	--	--	--	--	--
SWFTS-MW03	EM11	7/10/2018	N	440-215437-5	Alluvium	27.2 - 42.1	--	--	--	--	--	--	--	--	--
SWFTS-MW03	EM13	8/15/2018	N	440-218208-4	Alluvium	27.2 - 42.1	--	--	--	--	--	--	--	--	--
SWFTS-MW03	EM14	9/11/2018	N	440-219886-11	Alluvium	27.2 - 42.1	--	--	--	--	--	--	--	--	--
SWFTS-MW03	EM15	10/9/2018	N	440-221855-13	Alluvium	27.2 - 42.1	--	--	--	--	--	--	--	--	--
SWFTS-MW03	EM19	5/21/2019	N	440-242084-12	Alluvium	27.2 - 42.1	--	--	--	--	--	--	--	--	--
SWFTS-MW03	EM22	11/4/2019	N	440-253773-2	Alluvium	27.2 - 42.1	--	--	--	--	--	--	--	--	--
SWFTS-MW03	EM26	4/28/2020	N	440-265289-1	Alluvium	27.2 - 42.1	--	--	--	--	--	--	--	--	--
SWFTS-MW03	EM29	10/13/2020	N	440-273236-10	Alluvium	27.2 - 42.1	--	--	--	--	--	--	--	--	--
SWFTS-MW03	EM33	6/3/2021	N	550-164869-15	Alluvium	27.2 - 42.1	--	--	--	--	--	--	--	--	--
SWFTS-MW03	EM33	6/3/2021	N	550-164869-16	Alluvium	27.2 - 42.1	--	--	--	--	--	--	--	--	--
SWFTS-MW03	EM36	12/1/2021	N	550-175045-1	Alluvium	27.2 - 42.1	--	--	--	--	--	--	--	--	--
SWFTS-MW03	EM36	12/1/2021	N	550-175045-2	Alluvium	27.2 - 42.1	--	--	--	--	--	--	--	--	--
SWFTS-MW03	EM40	12/13/2022	N	550-194920-15	Alluvium	27.2 - 42.1	--	--	--	--	--	--	--	--	--
SWFTS-MW03	EM40	12/13/2022	N	550-194920-16	Alluvium	27.2 - 42.1	--	--	--	--	--	--	--	--	--
SWFTS-MW04	BL01	3/31/2017	N	440-181122-1	Alluvium	25.8 - 40.4	--	--	--	--	--	--	--	--	--
SWFTS-MW04	EM04	10/11/2017	N	440-194242-7	Alluvium	25.8 - 40.4	--	--	--	--	--	--	--	--	--
SWFTS-MW04	EM06	11/15/2017	N	440-196659-2	Alluvium	25.8 - 40.4	--	--	--	--	--	--	--	--	--
SWFTS-MW04	EM07	12/14/2017	N	440-198571-12	Alluvium	25.8 - 40.4	--	--	--	--	--	--	--	--	--
SWFTS-MW04	EM08	2/21/2018	N	440-203937-2	Alluvium	25.8 - 40.4	--	--	--	--	--	--	--	--	--
SWFTS-MW04	EM09	3/27/2018	N	440-207268-5	Alluvium	25.8 - 40.4	--	--	--	--	--	--	--	--	--
SWFTS-MW04	EM10	5/1/2018	N	440-210284-5	Alluvium	25.8 - 40.4	--	--	--	--	--	--	--	--	--
SWFTS-MW04	EM11	7/10/2018	N	440-215437-4	Alluvium	25.8 - 40.4	--	--	--	--	--	--	--	--	--
SWFTS-MW04	EM15	10/11/2018	N	440-222092-9	Alluvium	25.8 - 40.4	--	--	--	--	--	--	--	--	--
SWFTS-MW04	EM19	5/21/2019	N	440-242084-11	Alluvium	25.8 - 40.4	--	--	--	--	--	--	--	--	--
SWFTS-MW04	EM22	11/7/2019	N	440-254150-6	Alluvium	25.8 - 40.4	--	--	--	--	--	--	--	--	--
SWFTS-MW04	EM26	5/1/2020	N	440-265412-1	Alluvium	25.8 - 40.4	--	--	--	--	--	--	--	--	--
SWFTS-MW04	EM29	10/14/2020	N	440-273303-12	Alluvium	25.8 - 40.4	--	--	--	--	--	--	--	--	--
SWFTS-MW04	EM33	6/3/2021	N	550-164869-23	Alluvium	25.8 - 40.4	--	--	--	--	--	--	--	--	--
SWFTS-MW04	EM33	6/3/2021	N	550-164869-24	Alluvium	25.8 - 40.4	--	--	--	--	--	--	--	--	--
SWFTS-MW04	EM36	12/2/2021	N	550-175153-3	Alluvium	25.8 - 40.4	--	--	--	--	--	--	--	--	--
SWFTS-MW04	EM36	12/2/2021	N	550-175153-4	Alluvium	25.8 - 40.4	--	--	--	--	--	--	--	--	--
SWFTS-MW04	EM40	12/14/2022	N	550-195015-1	Alluvium	25.8 - 40.4	--	--	--	--	--	--	--	--	--

Table D.2
Groundater Analytical Results Summary - Secondary Parameters
Seep Well Field Area Bioremediation Treatability Study

Well	Event	Sample Date	QC Type	Lab Sample ID	Lithology	Screened Interval (ft bgs)	Total Metals by SW6010	Total Metals by SW6010	Total Metals by SW6010	Total Metals by SW6010	Total Metals by SW6010	Total Metals by SW6010	Total Metals by SW6010	Total Metals by SW6010	Total Metals by SW6010
							Beryllium	Boron	Cadmium	Calcium	Chromium	Cobalt	Copper	Iron	Lead
							mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
SWFTS-MW04	EM40	12/14/2022	N	550-195015-2	Alluvium	25.8 - 40.4	--	--	--	--	--	--	--	--	--
SWFTS-MW05A	BL01	3/30/2017	N	440-181045-7	Alluvium	19.3 - 29.3	--	--	--	--	--	--	--	--	--
SWFTS-MW05A	EM04	10/10/2017	N	440-193989-2	Alluvium	19.3 - 29.3	--	--	--	--	--	--	--	--	--
SWFTS-MW05A	EM06	11/14/2017	N	440-196558-1	Alluvium	19.3 - 29.3	--	--	--	--	--	--	--	--	--
SWFTS-MW05A	EM07	12/13/2017	N	440-198508-3	Alluvium	19.3 - 29.3	--	--	--	--	--	--	--	--	--
SWFTS-MW05A	EM08	2/20/2018	N	440-203841-7	Alluvium	19.3 - 29.3	--	--	--	--	--	--	--	--	--
SWFTS-MW05A	EM09	3/26/2018	N	440-207137-5	Alluvium	19.3 - 29.3	--	--	--	--	--	--	--	--	--
SWFTS-MW05A	EM10	4/30/2018	N	440-210173-8	Alluvium	19.3 - 29.3	--	--	--	--	--	--	--	--	--
SWFTS-MW05A	EM11	7/11/2018	N	440-215585-14	Alluvium	19.3 - 29.3	--	--	--	--	--	--	--	--	--
SWFTS-MW05A	EM15	10/10/2018	N	440-221975-14	Alluvium	19.3 - 29.3	--	--	--	--	--	--	--	--	--
SWFTS-MW05A	EM19	5/21/2019	N	440-242084-17	Alluvium	19.3 - 29.3	--	--	--	--	--	--	--	--	--
SWFTS-MW05A	EM22	11/5/2019	N	440-253918-1	Alluvium	19.3 - 29.3	--	--	--	--	--	--	--	--	--
SWFTS-MW05A	EM26	4/29/2020	N	440-265346-2	Alluvium	19.3 - 29.3	--	--	--	--	--	--	--	--	--
SWFTS-MW05A	EM29	10/14/2020	N	440-273303-9	Alluvium	19.3 - 29.3	--	--	--	--	--	--	--	--	--
SWFTS-MW05A	EM33	6/3/2021	N	550-164869-17	Alluvium	19.3 - 29.3	--	--	--	--	--	--	--	--	--
SWFTS-MW05A	EM33	6/3/2021	N	550-164869-18	Alluvium	19.3 - 29.3	--	--	--	--	--	--	--	--	--
SWFTS-MW05A	EM36	11/29/2021	N	550-174897-3	Alluvium	19.3 - 29.3	--	--	--	--	--	--	--	--	--
SWFTS-MW05A	EM36	11/29/2021	N	550-174897-4	Alluvium	19.3 - 29.3	--	--	--	--	--	--	--	--	--
SWFTS-MW05B	BL01	3/30/2017	N	440-181045-8	Alluvium	32.3 - 42.0	--	--	--	--	--	--	--	--	--
SWFTS-MW05B	EM04	10/10/2017	N	440-193989-1	Alluvium	32.3 - 42.0	--	--	--	--	--	--	--	--	--
SWFTS-MW05B	EM06	11/14/2017	N	440-196558-2	Alluvium	32.3 - 42.0	--	--	--	--	--	--	--	--	--
SWFTS-MW05B	EM07	12/13/2017	N	440-198508-4	Alluvium	32.3 - 42.0	--	--	--	--	--	--	--	--	--
SWFTS-MW05B	EM08	2/20/2018	N	440-203841-8	Alluvium	32.3 - 42.0	--	--	--	--	--	--	--	--	--
SWFTS-MW05B	EM09	3/26/2018	N	440-207137-6	Alluvium	32.3 - 42.0	--	--	--	--	--	--	--	--	--
SWFTS-MW05B	EM10	4/30/2018	N	440-210173-2	Alluvium	32.3 - 42.0	--	--	--	--	--	--	--	--	--
SWFTS-MW05B	EM11	7/10/2018	N	440-215585-10	Alluvium	32.3 - 42.0	--	--	--	--	--	--	--	--	--
SWFTS-MW05B	EM15	10/9/2018	N	440-221855-14	Alluvium	32.3 - 42.0	--	--	--	--	--	--	--	--	--
SWFTS-MW05B	EM19	5/21/2019	N	440-242084-18	Alluvium	32.3 - 42.0	--	--	--	--	--	--	--	--	--
SWFTS-MW05B	EM22	11/5/2019	N	440-253918-2	Alluvium	32.3 - 42.0	--	--	--	--	--	--	--	--	--
SWFTS-MW05B	EM26	4/29/2020	N	440-265346-1	Alluvium	32.3 - 42.0	--	--	--	--	--	--	--	--	--
SWFTS-MW05B	EM29	10/14/2020	N	440-273303-8	Alluvium	32.3 - 42.0	--	--	--	--	--	--	--	--	--
SWFTS-MW05B	EM33	6/3/2021	N	550-164869-19	Alluvium	32.3 - 42.0	--	--	--	--	--	--	--	--	--
SWFTS-MW05B	EM33	6/3/2021	N	550-164869-20	Alluvium	32.3 - 42.0	--	--	--	--	--	--	--	--	--
SWFTS-MW05B	EM36	11/30/2021	N	550-174968-15	Alluvium	32.3 - 42.0	--	--	--	--	--	--	--	--	--
SWFTS-MW05B	EM36	11/30/2021	N	550-174968-16	Alluvium	32.3 - 42.0	--	--	--	--	--	--	--	--	--
SWFTS-MW06A	BL01	3/30/2017	N	440-181045-1	Alluvium	11.8 - 21.4	--	--	--	--	--	--	--	--	--
SWFTS-MW06A	EM04	10/11/2017	N	440-194090-4	Alluvium	11.8 - 21.4	--	--	--	--	--	--	--	--	--
SWFTS-MW06A	EM06	11/16/2017	N	440-196786-19	Alluvium	11.8 - 21.4	--	--	--	--	--	--	--	--	--
SWFTS-MW06A	EM07	12/13/2017	N	440-198508-1	Alluvium	11.8 - 21.4	--	--	--	--	--	--	--	--	--
SWFTS-MW06A	EM08	2/22/2018	N	440-204033-1	Alluvium	11.8 - 21.4	--	--	--	--	--	--	--	--	--
SWFTS-MW06A	EM09	3/28/2018	N	440-207497-3	Alluvium	11.8 - 21.4	--	--	--	--	--	--	--	--	--
SWFTS-MW06A	EM10	5/1/2018	N	440-210284-9	Alluvium	11.8 - 21.4	--	--	--	--	--	--	--	--	--
SWFTS-MW06A	EM10	5/1/2018	FD	440-210284-10	Alluvium	11.8 - 21.4	--	--	--	--	--	--	--	--	--
SWFTS-MW06A	EM11	7/11/2018	N	440-215585-2	Alluvium	11.8 - 21.4	--	--	--	--	--	--	--	--	--
SWFTS-MW06A	EM11	7/11/2018	FD	440-215585-3	Alluvium	11.8 - 21.4	--	--	--	--	--	--	--	--	--
SWFTS-MW06A	EM15	10/10/2018	N	440-221975-8	Alluvium	11.8 - 21.4	--	--	--	--	--	--	--	--	--
SWFTS-MW06A	EM15	10/10/2018	FD	440-221975-10	Alluvium	11.8 - 21.4	--	--	--	--	--	--	--	--	--
SWFTS-MW06A	EM19	5/20/2019	N	440-242015-1	Alluvium	11.8 - 21.4	--	--	--	--	--	--	--	--	--
SWFTS-MW06A	EM19	5/20/2019	FD	440-242015-2	Alluvium	11.8 - 21.4	--	--	--	--	--	--	--	--	--
SWFTS-MW06A	EM22	11/6/2019	N	440-254027-4	Alluvium	11.8 - 21.4	--	--	--	--	--	--	--	--	--
SWFTS-MW06A	EM22	11/6/2019	FD	440-254027-5	Alluvium	11.8 - 21.4	--	--	--	--	--	--	--	--	--
SWFTS-MW06A	EM26	4/29/2020	N	440-265346-5	Alluvium	11.8 - 21.4	--	--	--	--	--	--	--	--	--
SWFTS-MW06A	EM26	4/29/2020	FD	440-265346-6	Alluvium	11.8 - 21.4	--	--	--	--	--	--	--	--	--
SWFTS-MW06A	EM29	10/13/2020	N	440-273236-7	Alluvium	11.8 - 21.4	--	--	--	--	--	--	--	--	--
SWFTS-MW06A	EM29	10/13/2020	FD	440-273236-8	Alluvium	11.8 - 21.4	--	--	--	--	--	--	--	--	--
SWFTS-MW06A	EM33	6/4/2021	N	550-164930-19	Alluvium	11.8 - 21.4	--	--	--	--	--	--	--	--	--
SWFTS-MW06A	EM33	6/4/2021	N	550-164930-20	Alluvium	11.8 - 21.4	--	--	--	--	--	--	--	--	--
SWFTS-MW06A	EM33	6/4/2021	FD	550-164930-21	Alluvium	11.8 - 21.4	--	--	--	--	--	--	--	--	--
SWFTS-MW06A	EM33	6/4/2021	FD	550-164930-22	Alluvium	11.8 - 21.4	--	--	--	--	--	--	--	--	--
SWFTS-MW06A	EM36	12/1/2021	N	550-175045-7	Alluvium	11.8 - 21.4	--	--	--	--	--	--	--	--	--
SWFTS-MW06A	EM36	12/1/2021	N	550-175045-8	Alluvium	11.8 - 21.4	--	--	--	--	--	--	--	--	--
SWFTS-MW06A	EM36	12/1/2021	FD	550-175045-10	Alluvium	11.8 - 21.4	--	--	--	--	--	--	--	--	--
SWFTS-MW06A	EM36	12/1/2021	FD	550-175045-9	Alluvium	11.8 - 21.4	--	--	--	--	--	--	--	--	--
SWFTS-MW06A	EM40	12/14/2022	N	550-195015-5	Alluvium	11.8 - 21.4	--	--	--	--	--	--	--	--	--

Table D.2
Groundater Analytical Results Summary - Secondary Parameters
Seep Well Field Area Bioremediation Treatability Study

Well	Event	Sample Date	QC Type	Lab Sample ID	Lithology	Screened Interval (ft bgs)	Total Metals by SW6010	Total Metals by SW6010	Total Metals by SW6010	Total Metals by SW6010	Total Metals by SW6010	Total Metals by SW6010	Total Metals by SW6010	Total Metals by SW6010	Total Metals by SW6010
							Beryllium	Boron	Cadmium	Calcium	Chromium	Cobalt	Copper	Iron	Lead
							mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
SWFTS-MW06A	EM40	12/14/2022	N	550-195015-6	Alluvium	11.8 - 21.4	--	--	--	--	--	--	--	--	--
SWFTS-MW06A	EM40	12/14/2022	FD	550-195015-7	Alluvium	11.8 - 21.4	--	--	--	--	--	--	--	--	--
SWFTS-MW06A	EM40	12/14/2022	FD	550-195015-8	Alluvium	11.8 - 21.4	--	--	--	--	--	--	--	--	--
SWFTS-MW06B	BL01	3/30/2017	N	440-181045-2	Alluvium	25.9 - 35.5	--	--	--	--	--	--	--	--	--
SWFTS-MW06B	EM04	10/11/2017	N	440-194090-5	Alluvium	25.9 - 35.5	--	--	--	--	--	--	--	--	--
SWFTS-MW06B	EM06	11/16/2017	N	440-196786-20	Alluvium	25.9 - 35.5	--	--	--	--	--	--	--	--	--
SWFTS-MW06B	EM07	12/13/2017	N	440-198508-2	Alluvium	25.9 - 35.5	--	--	--	--	--	--	--	--	--
SWFTS-MW06B	EM08	2/22/2018	N	440-204033-5	Alluvium	25.9 - 35.5	--	--	--	--	--	--	--	--	--
SWFTS-MW06B	EM09	3/28/2018	N	440-207497-2	Alluvium	25.9 - 35.5	--	--	--	--	--	--	--	--	--
SWFTS-MW06B	EM10	5/1/2018	N	440-210284-8	Alluvium	25.9 - 35.5	--	--	--	--	--	--	--	--	--
SWFTS-MW06B	EM11	7/11/2018	N	440-215585-4	Alluvium	25.9 - 35.5	--	--	--	--	--	--	--	--	--
SWFTS-MW06B	EM15	10/10/2018	N	440-221975-9	Alluvium	25.9 - 35.5	--	--	--	--	--	--	--	--	--
SWFTS-MW06B	EM19	5/21/2019	N	440-242084-5	Alluvium	25.9 - 35.5	--	--	--	--	--	--	--	--	--
SWFTS-MW06B	EM22	11/6/2019	N	440-254027-6	Alluvium	25.9 - 35.5	--	--	--	--	--	--	--	--	--
SWFTS-MW06B	EM26	4/29/2020	N	440-265346-4	Alluvium	25.9 - 35.5	--	--	--	--	--	--	--	--	--
SWFTS-MW06B	EM29	10/13/2020	N	440-273236-6	Alluvium	25.9 - 35.5	--	--	--	--	--	--	--	--	--
SWFTS-MW06B	EM33	6/4/2021	N	550-164930-23	Alluvium	25.9 - 35.5	--	--	--	--	--	--	--	--	--
SWFTS-MW06B	EM33	6/4/2021	N	550-164930-24	Alluvium	25.9 - 35.5	--	--	--	--	--	--	--	--	--
SWFTS-MW06B	EM36	12/1/2021	N	550-175045-11	Alluvium	25.9 - 35.5	--	--	--	--	--	--	--	--	--
SWFTS-MW06B	EM36	12/1/2021	N	550-175045-12	Alluvium	25.9 - 35.5	--	--	--	--	--	--	--	--	--
SWFTS-MW06B	EM40	12/14/2022	N	550-195015-10	Alluvium	25.9 - 35.5	--	--	--	--	--	--	--	--	--
SWFTS-MW06B	EM40	12/14/2022	N	550-195015-9	Alluvium	25.9 - 35.5	--	--	--	--	--	--	--	--	--
SWFTS-MW07A	BL01	3/30/2017	N	440-181045-3	Alluvium	15.0 - 29.5	--	--	--	--	--	--	--	--	--
SWFTS-MW07A	EM04	10/11/2017	N	440-194242-3	Alluvium	15.0 - 29.5	--	--	--	--	--	--	--	--	--
SWFTS-MW07A	EM06	11/15/2017	N	440-196659-7	Alluvium	15.0 - 29.5	--	--	--	--	--	--	--	--	--
SWFTS-MW07A	EM07	12/14/2017	N	440-198571-3	Alluvium	15.0 - 29.5	--	--	--	--	--	--	--	--	--
SWFTS-MW07A	EM08	2/19/2018	N	440-203775-3	Alluvium	15.0 - 29.5	--	--	--	--	--	--	--	--	--
SWFTS-MW07A	EM09	3/28/2018	N	440-207497-4	Alluvium	15.0 - 29.5	--	--	--	--	--	--	--	--	--
SWFTS-MW07A	EM10	5/2/2018	N	440-210430-2	Alluvium	15.0 - 29.5	--	--	--	--	--	--	--	--	--
SWFTS-MW07A	EM11	7/11/2018	N	440-215585-7	Alluvium	15.0 - 29.5	--	--	--	--	--	--	--	--	--
SWFTS-MW07A	EM15	10/10/2018	N	440-221975-11	Alluvium	15.0 - 29.5	--	--	--	--	--	--	--	--	--
SWFTS-MW07A	EM19	5/22/2019	N	440-242200-5	Alluvium	15.0 - 29.5	--	--	--	--	--	--	--	--	--
SWFTS-MW07A	EM22	11/7/2019	N	440-254148-4	Alluvium	15.0 - 29.5	--	--	--	--	--	--	--	--	--
SWFTS-MW07A	EM26	4/30/2020	N	440-265382-5	Alluvium	15.0 - 29.5	--	--	--	--	--	--	--	--	--
SWFTS-MW07A	EM29	10/16/2020	N	440-273433-1	Alluvium	15.0 - 29.5	--	--	--	--	--	--	--	--	--
SWFTS-MW07A	EM33	6/4/2021	N	550-164930-25	Alluvium	15.0 - 29.5	--	--	--	--	--	--	--	--	--
SWFTS-MW07A	EM33	6/4/2021	N	550-164930-26	Alluvium	15.0 - 29.5	--	--	--	--	--	--	--	--	--
SWFTS-MW07A	EM36	12/3/2021	N	550-175222-3	Alluvium	15.0 - 29.5	--	--	--	--	--	--	--	--	--
SWFTS-MW07A	EM36	12/3/2021	N	550-175222-4	Alluvium	15.0 - 29.5	--	--	--	--	--	--	--	--	--
SWFTS-MW07A	EM40	12/14/2022	N	550-195015-11	Alluvium	15.0 - 29.5	--	--	--	--	--	--	--	--	--
SWFTS-MW07A	EM40	12/14/2022	N	550-195015-12	Alluvium	15.0 - 29.5	--	--	--	--	--	--	--	--	--
SWFTS-MW07B	BL01	3/30/2017	N	440-181045-4	Alluvium	33.8 - 38.3	--	--	--	--	--	--	--	--	--
SWFTS-MW07B	EM04	10/11/2017	N	440-194242-4	Alluvium	33.8 - 38.3	--	--	--	--	--	--	--	--	--
SWFTS-MW07B	EM06	11/15/2017	N	440-196659-8	Alluvium	33.8 - 38.3	--	--	--	--	--	--	--	--	--
SWFTS-MW07B	EM07	12/14/2017	N	440-198571-4	Alluvium	33.8 - 38.3	--	--	--	--	--	--	--	--	--
SWFTS-MW07B	EM08	2/19/2018	N	440-203775-2	Alluvium	33.8 - 38.3	--	--	--	--	--	--	--	--	--
SWFTS-MW07B	EM09	3/28/2018	N	440-207497-10	Alluvium	33.8 - 38.3	--	--	--	--	--	--	--	--	--
SWFTS-MW07B	EM10	5/2/2018	N	440-210430-1	Alluvium	33.8 - 38.3	--	--	--	--	--	--	--	--	--
SWFTS-MW07B	EM11	7/11/2018	N	440-215585-8	Alluvium	33.8 - 38.3	--	--	--	--	--	--	--	--	--
SWFTS-MW07B	EM15	10/10/2018	N	440-221975-12	Alluvium	33.8 - 38.3	--	--	--	--	--	--	--	--	--
SWFTS-MW07B	EM19	5/22/2019	N	440-242200-6	Alluvium	33.8 - 38.3	--	--	--	--	--	--	--	--	--
SWFTS-MW07B	EM22	11/7/2019	N	440-254148-5	Alluvium	33.8 - 38.3	--	--	--	--	--	--	--	--	--
SWFTS-MW07B	EM26	4/30/2020	N	440-265382-4	Alluvium	33.8 - 38.3	--	--	--	--	--	--	--	--	--
SWFTS-MW07B	EM29	10/16/2020	N	440-273433-2	Alluvium	33.8 - 38.3	--	--	--	--	--	--	--	--	--
SWFTS-MW07B	EM33	6/4/2021	N	550-164930-27	Alluvium	33.8 - 38.3	--	--	--	--	--	--	--	--	--
SWFTS-MW07B	EM33	6/4/2021	N	550-164930-28	Alluvium	33.8 - 38.3	--	--	--	--	--	--	--	--	--
SWFTS-MW07B	EM36	12/3/2021	N	550-175222-5	Alluvium	33.8 - 38.3	--	--	--	--	--	--	--	--	--
SWFTS-MW07B	EM36	12/3/2021	N	550-175222-6	Alluvium	33.8 - 38.3	--	--	--	--	--	--	--	--	--
SWFTS-MW07B	EM40	12/14/2022	N	550-195015-13	Alluvium	33.8 - 38.3	--	--	--	--	--	--	--	--	--
SWFTS-MW07B	EM40	12/14/2022	N	550-195015-14	Alluvium	33.8 - 38.3	--	--	--	--	--	--	--	--	--
SWFTS-MW08A	BL01	3/30/2017	N	440-181045-9	Alluvium	20.2 - 34.8	--	--	--	--	--	--	--	--	--
SWFTS-MW08A	EM04	10/10/2017	N	440-194094-4	Alluvium	20.2 - 34.8	--	--	--	--	--	--	--	--	--
SWFTS-MW08A	EM06	11/15/2017	N	440-196659-4	Alluvium	20.2 - 34.8	--	--	--	--	--	--	--	--	--
SWFTS-MW08A	EM07	12/14/2017	N	440-198571-1	Alluvium	20.2 - 34.8	--	--	--	--	--	--	--	--	--

Table D.2
Groundater Analytical Results Summary - Secondary Parameters
Seep Well Field Area Bioremediation Treatability Study

Well	Event	Sample Date	QC Type	Lab Sample ID	Lithology	Screened Interval (ft bgs)	Total Metals by SW6010	Total Metals by SW6010	Total Metals by SW6010	Total Metals by SW6010	Total Metals by SW6010	Total Metals by SW6010	Total Metals by SW6010	Total Metals by SW6010	Total Metals by SW6010
							Beryllium	Boron	Cadmium	Calcium	Chromium	Cobalt	Copper	Iron	Lead
							mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
SWFTS-MW08A	EM08	2/22/2018	N	440-204033-8	Alluvium	20.2 - 34.8	--	--	--	--	--	--	--	--	--
SWFTS-MW08A	EM09	3/29/2018	N	440-207586-1	Alluvium	20.2 - 34.8	--	--	--	--	--	--	--	--	--
SWFTS-MW08A	EM10	5/3/2018	N	440-210534-5	Alluvium	20.2 - 34.8	--	--	--	--	--	--	--	--	--
SWFTS-MW08A	EM11	7/11/2018	N	440-215717-14	Alluvium	20.2 - 34.8	--	--	--	--	--	--	--	--	--
SWFTS-MW08A	EM15	10/10/2018	N	440-221975-13	Alluvium	20.2 - 34.8	--	--	--	--	--	--	--	--	--
SWFTS-MW08A	EM19	5/22/2019	N	440-242198-4	Alluvium	20.2 - 34.8	--	--	--	--	--	--	--	--	--
SWFTS-MW08A	EM22	11/7/2019	N	440-254148-6	Alluvium	20.2 - 34.8	--	--	--	--	--	--	--	--	--
SWFTS-MW08A	EM26	4/29/2020	N	440-265346-3	Alluvium	20.2 - 34.8	--	--	--	--	--	--	--	--	--
SWFTS-MW08A	EM29	10/16/2020	N	440-273433-4	Alluvium	20.2 - 34.8	--	--	--	--	--	--	--	--	--
SWFTS-MW08A	EM33	6/4/2021	N	550-164930-29	Alluvium	20.2 - 34.8	--	--	--	--	--	--	--	--	--
SWFTS-MW08A	EM33	6/4/2021	N	550-164930-30	Alluvium	20.2 - 34.8	--	--	--	--	--	--	--	--	--
SWFTS-MW08A	EM36	12/2/2021	N	550-175153-23	Alluvium	20.2 - 34.8	--	--	--	--	--	--	--	--	--
SWFTS-MW08A	EM36	12/2/2021	N	550-175153-24	Alluvium	20.2 - 34.8	--	--	--	--	--	--	--	--	--
SWFTS-MW08C	BL01	3/28/2017	N	440-180820-3	UMCf	49.9 - 69.5	--	--	--	--	--	--	--	--	--
SWFTS-MW08C	EM40	12/14/2022	N	550-195015-15	UMCf	49.9 - 69.5	--	--	--	--	--	--	--	--	--
SWFTS-MW08C	EM40	12/14/2022	N	550-195015-16	UMCf	49.9 - 69.5	--	--	--	--	--	--	--	--	--
SWFTS-MW09A	BL01	3/29/2017	N	440-180937-3	Alluvium	19.3 - 28.9	--	--	--	--	--	--	--	--	--
SWFTS-MW09A	EM04	10/11/2017	N	440-194094-7	Alluvium	19.3 - 28.9	--	--	--	--	--	--	--	--	--
SWFTS-MW09A	EM06	11/16/2017	N	440-196786-14	Alluvium	19.3 - 28.9	--	--	--	--	--	--	--	--	--
SWFTS-MW09A	EM07	12/12/2017	N	440-198371-6	Alluvium	19.3 - 28.9	--	--	--	--	--	--	--	--	--
SWFTS-MW09A	EM08	2/20/2018	N	440-203841-14	Alluvium	19.3 - 28.9	--	--	--	--	--	--	--	--	--
SWFTS-MW09A	EM09	3/27/2018	N	440-207268-7	Alluvium	19.3 - 28.9	--	--	--	--	--	--	--	--	--
SWFTS-MW09A	EM10	5/1/2018	N	440-210284-13	Alluvium	19.3 - 28.9	--	--	--	--	--	--	--	--	--
SWFTS-MW09A	EM11	7/12/2018	N	440-215717-10	Alluvium	19.3 - 28.9	--	--	--	--	--	--	--	--	--
SWFTS-MW09A	EM15	10/9/2018	N	440-221855-7	Alluvium	19.3 - 28.9	--	--	--	--	--	--	--	--	--
SWFTS-MW09A	EM19	5/22/2019	N	440-242200-1	Alluvium	19.3 - 28.9	--	--	--	--	--	--	--	--	--
SWFTS-MW09A	EM22	11/5/2019	N	440-253891-1	Alluvium	19.3 - 28.9	--	--	--	--	--	--	--	--	--
SWFTS-MW09A	EM26	4/28/2020	N	440-265289-4	Alluvium	19.3 - 28.9	--	--	--	--	--	--	--	--	--
SWFTS-MW09A	EM29	10/13/2020	N	440-273236-3	Alluvium	19.3 - 28.9	--	--	--	--	--	--	--	--	--
SWFTS-MW09A	EM33	6/1/2021	N	550-164699-1	Alluvium	19.3 - 28.9	--	--	--	--	--	--	--	--	--
SWFTS-MW09A	EM33	6/1/2021	N	550-164699-2	Alluvium	19.3 - 28.9	--	--	--	--	--	--	--	--	--
SWFTS-MW09A	EM36	12/2/2021	N	550-175153-10	Alluvium	19.3 - 28.9	--	--	--	--	--	--	--	--	--
SWFTS-MW09A	EM36	12/2/2021	N	550-175153-9	Alluvium	19.3 - 28.9	--	--	--	--	--	--	--	--	--
SWFTS-MW09A	EM40	12/13/2022	N	550-194920-10	Alluvium	19.3 - 28.9	--	--	--	--	--	--	--	--	--
SWFTS-MW09A	EM40	12/13/2022	N	550-194920-9	Alluvium	19.3 - 28.9	--	--	--	--	--	--	--	--	--
SWFTS-MW09B	BL01	3/29/2017	N	440-180937-4	Alluvium	34.4 - 39.0	--	--	--	--	--	--	--	--	--
SWFTS-MW09B	BL01	3/29/2017	FD	440-180937-5	Alluvium	34.4 - 39.0	--	--	--	--	--	--	--	--	--
SWFTS-MW09B	EM04	10/11/2017	N	440-194094-5	Alluvium	34.4 - 39.0	--	--	--	--	--	--	--	--	--
SWFTS-MW09B	EM06	11/16/2017	N	440-196786-15	Alluvium	34.4 - 39.0	--	--	--	--	--	--	--	--	--
SWFTS-MW09B	EM07	12/12/2017	N	440-198371-7	Alluvium	34.4 - 39.0	--	--	--	--	--	--	--	--	--
SWFTS-MW09B	EM08	2/20/2018	N	440-203841-13	Alluvium	34.4 - 39.0	--	--	--	--	--	--	--	--	--
SWFTS-MW09B	EM09	3/27/2018	N	440-207268-6	Alluvium	34.4 - 39.0	--	--	--	--	--	--	--	--	--
SWFTS-MW09B	EM10	4/30/2018	N	440-210173-11	Alluvium	34.4 - 39.0	--	--	--	--	--	--	--	--	--
SWFTS-MW09B	EM11	7/12/2018	N	440-215717-9	Alluvium	34.4 - 39.0	--	--	--	--	--	--	--	--	--
SWFTS-MW09B	EM15	10/9/2018	N	440-221855-8	Alluvium	34.4 - 39.0	--	--	--	--	--	--	--	--	--
SWFTS-MW09B	EM19	5/22/2019	N	440-242200-2	Alluvium	34.4 - 39.0	--	--	--	--	--	--	--	--	--
SWFTS-MW09B	EM22	11/5/2019	N	440-253891-3	Alluvium	34.4 - 39.0	--	--	--	--	--	--	--	--	--
SWFTS-MW09B	EM26	4/28/2020	N	440-265289-3	Alluvium	34.4 - 39.0	--	--	--	--	--	--	--	--	--
SWFTS-MW09B	EM29	10/13/2020	N	440-273236-4	Alluvium	34.4 - 39.0	--	--	--	--	--	--	--	--	--
SWFTS-MW09B	EM33	6/2/2021	N	550-164872-1	Alluvium	34.4 - 39.0	--	--	--	--	--	--	--	--	--
SWFTS-MW09B	EM33	6/2/2021	N	550-164872-2	Alluvium	34.4 - 39.0	--	--	--	--	--	--	--	--	--
SWFTS-MW09B	EM36	12/2/2021	N	550-175153-11	Alluvium	34.4 - 39.0	--	--	--	--	--	--	--	--	--
SWFTS-MW09B	EM36	12/2/2021	N	550-175153-12	Alluvium	34.4 - 39.0	--	--	--	--	--	--	--	--	--
SWFTS-MW09B	EM40	12/13/2022	N	550-194920-13	Alluvium	34.4 - 39.0	--	--	--	--	--	--	--	--	--
SWFTS-MW09B	EM40	12/13/2022	N	550-194920-14	Alluvium	34.4 - 39.0	--	--	--	--	--	--	--	--	--
SWFTS-MW10A	BL01	3/31/2017	N	440-181122-2	Alluvium	20.4 - 35.0	--	--	--	--	--	--	--	--	--
SWFTS-MW10A	EM04	10/12/2017	N	440-194242-10	Alluvium	20.4 - 35.0	--	--	--	--	--	--	--	--	--
SWFTS-MW10A	EM06	11/16/2017	N	440-196786-5	Alluvium	20.4 - 35.0	--	--	--	--	--	--	--	--	--
SWFTS-MW10A	EM06	11/16/2017	FD	440-196786-6	Alluvium	20.4 - 35.0	--	--	--	--	--	--	--	--	--
SWFTS-MW10A	EM07	12/12/2017	N	440-198371-10	Alluvium	20.4 - 35.0	--	--	--	--	--	--	--	--	--
SWFTS-MW10A	EM07	12/12/2017	FD	440-198371-11	Alluvium	20.4 - 35.0	--	--	--	--	--	--	--	--	--
SWFTS-MW10A	EM08	2/20/2018	N	440-203841-4	Alluvium	20.4 - 35.0	--	--	--	--	--	--	--	--	--
SWFTS-MW10A	EM08	2/20/2018	FD	440-203841-5	Alluvium	20.4 - 35.0	--	--	--	--	--	--	--	--	--
SWFTS-MW10A	EM09	3/26/2018	N	440-207137-7	Alluvium	20.4 - 35.0	--	--	--	--	--	--	--	--	--

Table D.2
Groundater Analytical Results Summary - Secondary Parameters
Seep Well Field Area Bioremediation Treatability Study

Well	Event	Sample Date	QC Type	Lab Sample ID	Lithology	Screened Interval (ft bgs)	Total Metals by SW6010	Total Metals by SW6010	Total Metals by SW6010	Total Metals by SW6010	Total Metals by SW6010	Total Metals by SW6010	Total Metals by SW6010	Total Metals by SW6010	Total Metals by SW6010
							Beryllium	Boron	Cadmium	Calcium	Chromium	Cobalt	Copper	Iron	Lead
							mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
SWFTS-MW10A	EM09	3/26/2018	FD	440-207137-8	Alluvium	20.4 - 35.0	--	--	--	--	--	--	--	--	--
SWFTS-MW10A	EM10	5/1/2018	N	440-210284-1	Alluvium	20.4 - 35.0	--	--	--	--	--	--	--	--	--
SWFTS-MW10A	EM11	7/11/2018	N	440-215585-9	Alluvium	20.4 - 35.0	--	--	--	--	--	--	--	--	--
SWFTS-MW10A	EM13	8/14/2018	N	440-218109-10	Alluvium	20.4 - 35.0	--	--	--	--	--	--	--	--	--
SWFTS-MW10A	EM14	9/10/2018	N	440-219797-4	Alluvium	20.4 - 35.0	--	--	--	--	--	--	--	--	--
SWFTS-MW10A	EM15	10/9/2018	N	440-221855-9	Alluvium	20.4 - 35.0	--	--	--	--	--	--	--	--	--
SWFTS-MW10A	EM19	5/21/2019	N	440-242084-2	Alluvium	20.4 - 35.0	--	--	--	--	--	--	--	--	--
SWFTS-MW10A	EM22	11/6/2019	N	440-254051-1	Alluvium	20.4 - 35.0	--	--	--	--	--	--	--	--	--
SWFTS-MW10A	EM26	4/29/2020	N	440-265342-6	Alluvium	20.4 - 35.0	--	--	--	--	--	--	--	--	--
SWFTS-MW10A	EM29	10/14/2020	N	440-273303-4	Alluvium	20.4 - 35.0	--	--	--	--	--	--	--	--	--
SWFTS-MW10A	EM33	6/4/2021	N	550-164930-13	Alluvium	20.4 - 35.0	--	--	--	--	--	--	--	--	--
SWFTS-MW10A	EM33	6/4/2021	N	550-164930-14	Alluvium	20.4 - 35.0	--	--	--	--	--	--	--	--	--
SWFTS-MW10A	EM36	11/30/2021	N	550-174968-17	Alluvium	20.4 - 35.0	--	--	--	--	--	--	--	--	--
SWFTS-MW10A	EM36	11/30/2021	N	550-174968-18	Alluvium	20.4 - 35.0	--	--	--	--	--	--	--	--	--
SWFTS-MW10A	EM40	12/15/2022	N	550-195103-1	Alluvium	20.4 - 35.0	--	--	--	--	--	--	--	--	--
SWFTS-MW10A	EM40	12/15/2022	N	550-195103-2	Alluvium	20.4 - 35.0	--	--	--	--	--	--	--	--	--
SWFTS-MW10C	BL01	3/28/2017	N	440-180820-4	UMCf	43.5 - 63.1	--	--	--	--	--	--	--	--	--
SWFTS-MW10C	EM40	12/15/2022	N	550-195103-3	UMCf	43.5 - 63.1	--	--	--	--	--	--	--	--	--
SWFTS-MW10C	EM40	12/15/2022	N	550-195103-4	UMCf	43.5 - 63.1	--	--	--	--	--	--	--	--	--
SWFTS-MW11	BL02	7/12/2017	N	440-188244-7	Alluvium	14.8 - 39.6	--	--	--	--	--	--	--	--	--
SWFTS-MW11	EM04	10/11/2017	N	440-194094-8	Alluvium	14.8 - 39.6	--	--	--	--	--	--	--	--	--
SWFTS-MW11	EM06	11/16/2017	N	440-196786-3	Alluvium	14.8 - 39.6	--	--	--	--	--	--	--	--	--
SWFTS-MW11	EM07	12/14/2017	N	440-198571-13	Alluvium	14.8 - 39.6	--	--	--	--	--	--	--	--	--
SWFTS-MW11	EM08	2/21/2018	N	440-203937-10	Alluvium	14.8 - 39.6	--	--	--	--	--	--	--	--	--
SWFTS-MW11	EM08	2/21/2018	FD	440-203937-11	Alluvium	14.8 - 39.6	--	--	--	--	--	--	--	--	--
SWFTS-MW11	EM09	3/28/2018	N	440-207497-7	Alluvium	14.8 - 39.6	--	--	--	--	--	--	--	--	--
SWFTS-MW11	EM09	3/28/2018	FD	440-207497-8	Alluvium	14.8 - 39.6	--	--	--	--	--	--	--	--	--
SWFTS-MW11	EM10	5/1/2018	N	440-210284-11	Alluvium	14.8 - 39.6	--	--	--	--	--	--	--	--	--
SWFTS-MW11	EM10	5/1/2018	FD	440-210367-1	Alluvium	14.8 - 39.6	--	--	--	--	--	--	--	--	--
SWFTS-MW11	EM11	7/12/2018	N	440-215717-17	Alluvium	14.8 - 39.6	--	--	--	--	--	--	--	--	--
SWFTS-MW11	EM11	7/12/2018	FD	440-215717-18	Alluvium	14.8 - 39.6	--	--	--	--	--	--	--	--	--
SWFTS-MW11	EM15	10/11/2018	N	440-222092-10	Alluvium	14.8 - 39.6	--	--	--	--	--	--	--	--	--
SWFTS-MW11	EM15	10/11/2018	FD	440-222092-11	Alluvium	14.8 - 39.6	--	--	--	--	--	--	--	--	--
SWFTS-MW11	EM19	5/22/2019	N	440-242200-3	Alluvium	14.8 - 39.6	--	--	--	--	--	--	--	--	--
SWFTS-MW11	EM19	5/22/2019	FD	440-242200-4	Alluvium	14.8 - 39.6	--	--	--	--	--	--	--	--	--
SWFTS-MW11	EM22	11/7/2019	N	440-254150-3	Alluvium	14.8 - 39.6	--	--	--	--	--	--	--	--	--
SWFTS-MW11	EM22	11/7/2019	FD	440-254150-4	Alluvium	14.8 - 39.6	--	--	--	--	--	--	--	--	--
SWFTS-MW11	EM26	4/30/2020	N	440-265383-4	Alluvium	14.8 - 39.6	--	--	--	--	--	--	--	--	--
SWFTS-MW11	EM26	4/30/2020	FD	440-265383-5	Alluvium	14.8 - 39.6	--	--	--	--	--	--	--	--	--
SWFTS-MW11	EM29	10/16/2020	N	440-273433-7	Alluvium	14.8 - 39.6	--	--	--	--	--	--	--	--	--
SWFTS-MW11	EM29	10/16/2020	FD	440-273433-8	Alluvium	14.8 - 39.6	--	--	--	--	--	--	--	--	--
SWFTS-MW11	EM33	6/4/2021	N	550-164930-7	Alluvium	14.8 - 39.6	--	--	--	--	--	--	--	--	--
SWFTS-MW11	EM33	6/4/2021	N	550-164930-8	Alluvium	14.8 - 39.6	--	--	--	--	--	--	--	--	--
SWFTS-MW11	EM33	6/4/2021	FD	550-164930-10	Alluvium	14.8 - 39.6	--	--	--	--	--	--	--	--	--
SWFTS-MW11	EM33	6/4/2021	FD	550-164930-9	Alluvium	14.8 - 39.6	--	--	--	--	--	--	--	--	--
SWFTS-MW11	EM36	12/3/2021	N	550-175222-7	Alluvium	14.8 - 39.6	--	--	--	--	--	--	--	--	--
SWFTS-MW11	EM36	12/3/2021	N	550-175222-8	Alluvium	14.8 - 39.6	--	--	--	--	--	--	--	--	--
SWFTS-MW11	EM36	12/3/2021	FD	550-175222-10	Alluvium	14.8 - 39.6	--	--	--	--	--	--	--	--	--
SWFTS-MW11	EM36	12/3/2021	FD	550-175222-9	Alluvium	14.8 - 39.6	--	--	--	--	--	--	--	--	--
SWFTS-MW11	EM40	12/15/2022	N	550-195103-5	Alluvium	14.8 - 39.6	--	--	--	--	--	--	--	--	--
SWFTS-MW11	EM40	12/15/2022	N	550-195103-6	Alluvium	14.8 - 39.6	--	--	--	--	--	--	--	--	--
SWFTS-MW11	EM40	12/15/2022	FD	550-195103-7	Alluvium	14.8 - 39.6	--	--	--	--	--	--	--	--	--
SWFTS-MW11	EM40	12/15/2022	FD	550-195103-8	Alluvium	14.8 - 39.6	--	--	--	--	--	--	--	--	--
SWFTS-MW12	BL02	7/13/2017	N	440-188324-6	Alluvium	15.8 - 40.6	--	--	--	--	--	--	--	--	--
SWFTS-MW12	EM04	10/11/2017	N	440-194090-1	Alluvium	15.8 - 40.6	--	--	--	--	--	--	--	--	--
SWFTS-MW12	EM06	11/14/2017	N	440-196558-5	Alluvium	15.8 - 40.6	--	--	--	--	--	--	--	--	--
SWFTS-MW12	EM07	12/14/2017	N	440-198571-15	Alluvium	15.8 - 40.6	--	--	--	--	--	--	--	--	--
SWFTS-MW12	EM08	2/22/2018	N	440-204033-2	Alluvium	15.8 - 40.6	--	--	--	--	--	--	--	--	--
SWFTS-MW12	EM09	3/28/2018	N	440-207497-5	Alluvium	15.8 - 40.6	--	--	--	--	--	--	--	--	--
SWFTS-MW12	EM10	5/3/2018	N	440-210534-4	Alluvium	15.8 - 40.6	--	--	--	--	--	--	--	--	--
SWFTS-MW12	EM11	7/12/2018	N	440-215717-16	Alluvium	15.8 - 40.6	--	--	--	--	--	--	--	--	--
SWFTS-MW12	EM15	10/11/2018	N	440-222092-12	Alluvium	15.8 - 40.6	--	--	--	--	--	--	--	--	--
SWFTS-MW12	EM19	5/22/2019	N	440-242198-7	Alluvium	15.8 - 40.6	--	--	--	--	--	--	--	--	--
SWFTS-MW12	EM22	11/7/2019	N	440-254150-2	Alluvium	15.8 - 40.6	--	--	--	--	--	--	--	--	--

Table D.2
Groundater Analytical Results Summary - Secondary Parameters
Seep Well Field Area Bioremediation Treatability Study

Well	Event	Sample Date	QC Type	Lab Sample ID	Lithology	Screened Interval (ft bgs)	Total Metals by SW6010	Total Metals by SW6010	Total Metals by SW6010	Total Metals by SW6010	Total Metals by SW6010	Total Metals by SW6010	Total Metals by SW6010	Total Metals by SW6010	Total Metals by SW6010
							Beryllium	Boron	Cadmium	Calcium	Chromium	Cobalt	Copper	Iron	Lead
							mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
SWFTS-MW12	EM22	11/26/2019	N	440-255698-1	Alluvium	15.8 - 40.6	--	--	--	--	--	--	--	--	--
SWFTS-MW12	EM22	11/26/2019	FD	440-255698-2	Alluvium	15.8 - 40.6	--	--	--	--	--	--	--	--	--
SWFTS-MW12	EM26	4/30/2020	N	440-265383-3	Alluvium	15.8 - 40.6	--	--	--	--	--	--	--	--	--
SWFTS-MW12	EM29	10/16/2020	N	440-273433-6	Alluvium	15.8 - 40.6	--	--	--	--	--	--	--	--	--
SWFTS-MW12	EM33	6/4/2021	N	550-164930-5	Alluvium	15.8 - 40.6	--	--	--	--	--	--	--	--	--
SWFTS-MW12	EM33	6/4/2021	N	550-164930-6	Alluvium	15.8 - 40.6	--	--	--	--	--	--	--	--	--
SWFTS-MW12	EM36	12/2/2021	N	550-175153-19	Alluvium	15.8 - 40.6	--	--	--	--	--	--	--	--	--
SWFTS-MW12	EM36	12/2/2021	N	550-175153-20	Alluvium	15.8 - 40.6	--	--	--	--	--	--	--	--	--
SWFTS-MW12	EM40	12/15/2022	N	550-195103-10	Alluvium	15.8 - 40.6	--	--	--	--	--	--	--	--	--
SWFTS-MW12	EM40	12/15/2022	N	550-195103-9	Alluvium	15.8 - 40.6	--	--	--	--	--	--	--	--	--
SWFTS-MW13	BL02	7/12/2017	N	440-188244-6	Alluvium	17.8 - 47.6	--	--	--	--	--	--	--	--	--
SWFTS-MW13	EM04	10/10/2017	N	440-193989-4	Alluvium	17.8 - 47.6	--	--	--	--	--	--	--	--	--
SWFTS-MW13	EM06	11/15/2017	N	440-196659-1	Alluvium	17.8 - 47.6	--	--	--	--	--	--	--	--	--
SWFTS-MW13	EM07	12/14/2017	N	440-198571-14	Alluvium	17.8 - 47.6	--	--	--	--	--	--	--	--	--
SWFTS-MW13	EM08	2/22/2018	N	440-204033-7	Alluvium	17.8 - 47.6	--	--	--	--	--	--	--	--	--
SWFTS-MW13	EM09	3/26/2018	N	440-207137-4	Alluvium	17.8 - 47.6	--	--	--	--	--	--	--	--	--
SWFTS-MW13	EM10	5/3/2018	N	440-210534-1	Alluvium	17.8 - 47.6	--	--	--	--	--	--	--	--	--
SWFTS-MW13	EM11	7/12/2018	N	440-215717-15	Alluvium	17.8 - 47.6	--	--	--	--	--	--	--	--	--
SWFTS-MW13	EM15	10/11/2018	N	440-222092-14	Alluvium	17.8 - 47.6	--	--	--	--	--	--	--	--	--
SWFTS-MW13	EM19	5/22/2019	N	440-242198-5	Alluvium	17.8 - 47.6	--	--	--	--	--	--	--	--	--
SWFTS-MW13	EM22	11/6/2019	N	440-254051-6	Alluvium	17.8 - 47.6	--	--	--	--	--	--	--	--	--
SWFTS-MW13	EM26	4/30/2020	N	440-265383-2	Alluvium	17.8 - 47.6	--	--	--	--	--	--	--	--	--
SWFTS-MW13	EM29	10/15/2020	N	550-151259-6	Alluvium	17.8 - 47.6	--	--	--	--	--	--	--	--	--
SWFTS-MW13	EM33	6/4/2021	N	550-164930-3	Alluvium	17.8 - 47.6	--	--	--	--	--	--	--	--	--
SWFTS-MW13	EM33	6/4/2021	N	550-164930-4	Alluvium	17.8 - 47.6	--	--	--	--	--	--	--	--	--
SWFTS-MW13	EM36	12/2/2021	N	550-175153-17	Alluvium	17.8 - 47.6	--	--	--	--	--	--	--	--	--
SWFTS-MW13	EM36	12/2/2021	N	550-175153-18	Alluvium	17.8 - 47.6	--	--	--	--	--	--	--	--	--
SWFTS-MW13	EM40	12/15/2022	N	550-195106-7	Alluvium	17.8 - 47.6	--	--	--	--	--	--	--	--	--
SWFTS-MW13	EM40	12/15/2022	N	550-195106-8	Alluvium	17.8 - 47.6	--	--	--	--	--	--	--	--	--
SWFTS-MW14	BL02	7/12/2017	N	440-188244-8	Alluvium	16.8 - 36.6	--	--	--	--	--	--	--	--	--
SWFTS-MW14	BL02	7/12/2017	FD	440-188244-9	Alluvium	16.8 - 36.6	--	--	--	--	--	--	--	--	--
SWFTS-MW14	EM04	10/11/2017	N	440-194242-8	Alluvium	16.8 - 36.6	--	--	--	--	--	--	--	--	--
SWFTS-MW14	EM06	11/15/2017	N	440-196659-3	Alluvium	16.8 - 36.6	--	--	--	--	--	--	--	--	--
SWFTS-MW14	EM07	12/12/2017	N	440-198371-12	Alluvium	16.8 - 36.6	--	--	--	--	--	--	--	--	--
SWFTS-MW14	EM08	2/20/2018	N	440-203841-11	Alluvium	16.8 - 36.6	--	--	--	--	--	--	--	--	--
SWFTS-MW14	EM09	3/26/2018	N	440-207137-9	Alluvium	16.8 - 36.6	--	--	--	--	--	--	--	--	--
SWFTS-MW14	EM10	4/30/2018	N	440-210173-9	Alluvium	16.8 - 36.6	--	--	--	--	--	--	--	--	--
SWFTS-MW14	EM11	7/10/2018	N	440-215437-8	Alluvium	16.8 - 36.6	--	--	--	--	--	--	--	--	--
SWFTS-MW14	EM13	8/14/2018	N	440-218109-11	Alluvium	16.8 - 36.6	--	--	--	--	--	--	--	--	--
SWFTS-MW14	EM14	9/11/2018	N	440-219886-17	Alluvium	16.8 - 36.6	--	--	--	--	--	--	--	--	--
SWFTS-MW14	EM15	10/9/2018	N	440-221855-10	Alluvium	16.8 - 36.6	--	--	--	--	--	--	--	--	--
SWFTS-MW14	EM19	5/21/2019	N	440-242084-1	Alluvium	16.8 - 36.6	--	--	--	--	--	--	--	--	--
SWFTS-MW14	EM22	11/6/2019	N	440-254051-2	Alluvium	16.8 - 36.6	--	--	--	--	--	--	--	--	--
SWFTS-MW14	EM26	5/1/2020	N	440-265414-2	Alluvium	16.8 - 36.6	--	--	--	--	--	--	--	--	--
SWFTS-MW14	EM29	10/14/2020	N	440-273303-5	Alluvium	16.8 - 36.6	--	--	--	--	--	--	--	--	--
SWFTS-MW14	EM33	6/4/2021	N	550-164930-1	Alluvium	16.8 - 36.6	--	--	--	--	--	--	--	--	--
SWFTS-MW14	EM33	6/4/2021	N	550-164930-2	Alluvium	16.8 - 36.6	--	--	--	--	--	--	--	--	--
SWFTS-MW14	EM36	12/3/2021	N	550-175222-1	Alluvium	16.8 - 36.6	--	--	--	--	--	--	--	--	--
SWFTS-MW14	EM36	12/3/2021	N	550-175222-2	Alluvium	16.8 - 36.6	--	--	--	--	--	--	--	--	--
SWFTS-MW14	EM40	12/15/2022	N	550-195106-3	Alluvium	16.8 - 36.6	--	--	--	--	--	--	--	--	--
SWFTS-MW14	EM40	12/15/2022	N	550-195106-4	Alluvium	16.8 - 36.6	--	--	--	--	--	--	--	--	--
SWFTS-MW15	BL02	7/13/2017	N	440-188325-3	Alluvium	14.8 - 34.6	--	--	--	--	--	--	--	--	--
SWFTS-MW15	EM04	10/10/2017	N	440-194094-1	Alluvium	14.8 - 34.6	--	--	--	--	--	--	--	--	--
SWFTS-MW15	EM06	11/14/2017	N	440-196558-4	Alluvium	14.8 - 34.6	--	--	--	--	--	--	--	--	--
SWFTS-MW15	EM07	12/13/2017	N	440-198508-13	Alluvium	14.8 - 34.6	--	--	--	--	--	--	--	--	--
SWFTS-MW15	EM08	2/19/2018	N	440-203775-4	Alluvium	14.8 - 34.6	--	--	--	--	--	--	--	--	--
SWFTS-MW15	EM09	3/26/2018	N	440-207137-10	Alluvium	14.8 - 34.6	--	--	--	--	--	--	--	--	--
SWFTS-MW15	EM10	5/2/2018	N	440-210430-3	Alluvium	14.8 - 34.6	--	--	--	--	--	--	--	--	--
SWFTS-MW15	EM11	7/11/2018	N	440-215717-1	Alluvium	14.8 - 34.6	--	--	--	--	--	--	--	--	--
SWFTS-MW15	EM15	10/9/2018	N	440-221855-11	Alluvium	14.8 - 34.6	--	--	--	--	--	--	--	--	--
SWFTS-MW15	EM19	5/20/2019	N	440-242014-1	Alluvium	14.8 - 34.6	--	--	--	--	--	--	--	--	--
SWFTS-MW15	EM22	11/6/2019	N	440-254051-3	Alluvium	14.8 - 34.6	--	--	--	--	--	--	--	--	--
SWFTS-MW15	EM26	4/29/2020	N	440-265342-3	Alluvium	14.8 - 34.6	--	--	--	--	--	--	--	--	--
SWFTS-MW15	EM29	10/15/2020	N	550-151259-4	Alluvium	14.8 - 34.6	--	--	--	--	--	--	--	--	--

Table D.2
Groundater Analytical Results Summary - Secondary Parameters
Seep Well Field Area Bioremediation Treatability Study

Well	Event	Sample Date	QC Type	Lab Sample ID	Lithology	Screened Interval (ft bgs)	Total Metals by SW6010	Total Metals by SW6010	Total Metals by SW6010	Total Metals by SW6010	Total Metals by SW6010	Total Metals by SW6010	Total Metals by SW6010	Total Metals by SW6010	Total Metals by SW6010
							Beryllium	Boron	Cadmium	Calcium	Chromium	Cobalt	Copper	Iron	Lead
							mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
SWFTS-MW15	EM33	6/3/2021	N	550-164869-13	Alluvium	14.8 - 34.6	--	--	--	--	--	--	--	--	--
SWFTS-MW15	EM33	6/3/2021	N	550-164869-14	Alluvium	14.8 - 34.6	--	--	--	--	--	--	--	--	--
SWFTS-MW15	EM36	11/30/2021	N	550-174968-10	Alluvium	14.8 - 34.6	--	--	--	--	--	--	--	--	--
SWFTS-MW15	EM36	11/30/2021	N	550-174968-9	Alluvium	14.8 - 34.6	--	--	--	--	--	--	--	--	--
SWFTS-MW15	EM40	12/15/2022	N	550-195106-1	Alluvium	14.8 - 34.6	--	--	--	--	--	--	--	--	--
SWFTS-MW15	EM40	12/15/2022	N	550-195106-2	Alluvium	14.8 - 34.6	--	--	--	--	--	--	--	--	--
SWFTS-MW16	BL02	7/13/2017	N	440-188325-2	Alluvium	21.8 - 41.6	--	--	--	--	--	--	--	--	--
SWFTS-MW16	EM04	10/12/2017	N	440-194204-7	Alluvium	21.8 - 41.6	--	--	--	--	--	--	--	--	--
SWFTS-MW16	EM06	11/16/2017	N	440-196786-4	Alluvium	21.8 - 41.6	--	--	--	--	--	--	--	--	--
SWFTS-MW16	EM07	12/12/2017	N	440-198371-4	Alluvium	21.8 - 41.6	--	--	--	--	--	--	--	--	--
SWFTS-MW16	EM08	2/21/2018	N	440-203937-6	Alluvium	21.8 - 41.6	--	--	--	--	--	--	--	--	--
SWFTS-MW16	EM09	3/27/2018	N	440-207268-13	Alluvium	21.8 - 41.6	--	--	--	--	--	--	--	--	--
SWFTS-MW16	EM10	5/2/2018	N	440-210430-13	Alluvium	21.8 - 41.6	--	--	--	--	--	--	--	--	--
SWFTS-MW16	EM11	7/11/2018	N	440-215585-12	Alluvium	21.8 - 41.6	--	--	--	--	--	--	--	--	--
SWFTS-MW16	EM13	8/15/2018	N	440-218208-13	Alluvium	21.8 - 41.6	--	--	--	--	--	--	--	--	--
SWFTS-MW16	EM14	9/10/2018	N	440-219797-6	Alluvium	21.8 - 41.6	--	--	--	--	--	--	--	--	--
SWFTS-MW16	EM15	10/11/2018	N	440-222092-3	Alluvium	21.8 - 41.6	--	--	--	--	--	--	--	--	--
SWFTS-MW16	EM19	5/20/2019	N	440-242014-3	Alluvium	21.8 - 41.6	--	--	--	--	--	--	--	--	--
SWFTS-MW16	EM22	11/6/2019	N	440-254051-5	Alluvium	21.8 - 41.6	--	--	--	--	--	--	--	--	--
SWFTS-MW16	EM26	4/30/2020	N	440-265383-1	Alluvium	21.8 - 41.6	--	--	--	--	--	--	--	--	--
SWFTS-MW16	EM29	10/15/2020	N	550-151259-1	Alluvium	21.8 - 41.6	--	--	--	--	--	--	--	--	--
SWFTS-MW16	EM33	6/3/2021	N	550-164869-11	Alluvium	21.8 - 41.6	--	--	--	--	--	--	--	--	--
SWFTS-MW16	EM33	6/3/2021	N	550-164869-12	Alluvium	21.8 - 41.6	--	--	--	--	--	--	--	--	--
SWFTS-MW16	EM36	11/30/2021	N	550-174968-11	Alluvium	21.8 - 41.6	--	--	--	--	--	--	--	--	--
SWFTS-MW16	EM36	11/30/2021	N	550-174968-12	Alluvium	21.8 - 41.6	--	--	--	--	--	--	--	--	--
SWFTS-MW16	EM40	12/14/2022	N	550-195013-15	Alluvium	21.8 - 41.6	--	--	--	--	--	--	--	--	--
SWFTS-MW16	EM40	12/14/2022	N	550-195013-16	Alluvium	21.8 - 41.6	--	--	--	--	--	--	--	--	--
SWFTS-MW17	BL02	7/12/2017	N	440-188244-1	Alluvium	22.8 - 52.6	--	--	--	--	--	--	--	--	--
SWFTS-MW17	EM04	10/10/2017	N	440-193989-3	Alluvium	22.8 - 52.6	--	--	--	--	--	--	--	--	--
SWFTS-MW17	EM06	11/15/2017	N	440-196659-5	Alluvium	22.8 - 52.6	--	--	--	--	--	--	--	--	--
SWFTS-MW17	EM06	11/15/2017	FD	440-196659-6	Alluvium	22.8 - 52.6	--	--	--	--	--	--	--	--	--
SWFTS-MW17	EM07	12/13/2017	N	440-198508-6	Alluvium	22.8 - 52.6	--	--	--	--	--	--	--	--	--
SWFTS-MW17	EM07	12/13/2017	FD	440-198508-7	Alluvium	22.8 - 52.6	--	--	--	--	--	--	--	--	--
SWFTS-MW17	EM08	2/22/2018	N	440-204033-11	Alluvium	22.8 - 52.6	--	--	--	--	--	--	--	--	--
SWFTS-MW17	EM09	3/28/2018	N	440-207497-11	Alluvium	22.8 - 52.6	--	--	--	--	--	--	--	--	--
SWFTS-MW17	EM10	5/3/2018	N	440-210534-3	Alluvium	22.8 - 52.6	--	--	--	--	--	--	--	--	--
SWFTS-MW17	EM11	7/11/2018	N	440-215585-13	Alluvium	22.8 - 52.6	--	--	--	--	--	--	--	--	--
SWFTS-MW17	EM15	10/11/2018	N	440-222092-4	Alluvium	22.8 - 52.6	--	--	--	--	--	--	--	--	--
SWFTS-MW17	EM19	5/22/2019	N	440-242198-6	Alluvium	22.8 - 52.6	--	--	--	--	--	--	--	--	--
SWFTS-MW17	EM22	11/7/2019	N	440-254150-1	Alluvium	22.8 - 52.6	--	--	--	--	--	--	--	--	--
SWFTS-MW17	EM26	4/30/2020	N	440-265383-6	Alluvium	22.8 - 52.6	--	--	--	--	--	--	--	--	--
SWFTS-MW17	EM29	10/15/2020	N	550-151259-5	Alluvium	22.8 - 52.6	--	--	--	--	--	--	--	--	--
SWFTS-MW17	EM33	6/3/2021	N	550-164869-10	Alluvium	22.8 - 52.6	--	--	--	--	--	--	--	--	--
SWFTS-MW17	EM33	6/3/2021	N	550-164869-9	Alluvium	22.8 - 52.6	--	--	--	--	--	--	--	--	--
SWFTS-MW17	EM36	12/2/2021	N	550-175153-21	Alluvium	22.8 - 52.6	--	--	--	--	--	--	--	--	--
SWFTS-MW17	EM36	12/2/2021	N	550-175153-22	Alluvium	22.8 - 52.6	--	--	--	--	--	--	--	--	--
SWFTS-MW17	EM40	12/14/2022	N	550-195013-13	Alluvium	22.8 - 52.6	--	--	--	--	--	--	--	--	--
SWFTS-MW17	EM40	12/14/2022	N	550-195013-14	Alluvium	22.8 - 52.6	--	--	--	--	--	--	--	--	--
SWFTS-MW18	BL02	7/11/2017	N	440-188133-17	Alluvium	16.8 - 36.6	--	--	--	--	--	--	--	--	--
SWFTS-MW18	EM04	10/10/2017	N	440-194094-3	Alluvium	16.8 - 36.6	--	--	--	--	--	--	--	--	--
SWFTS-MW18	EM06	11/15/2017	N	440-196690-11	Alluvium	16.8 - 36.6	--	--	--	--	--	--	--	--	--
SWFTS-MW18	EM07	12/13/2017	N	440-198508-5	Alluvium	16.8 - 36.6	--	--	--	--	--	--	--	--	--
SWFTS-MW18	EM08	2/22/2018	N	440-204033-4	Alluvium	16.8 - 36.6	--	--	--	--	--	--	--	--	--
SWFTS-MW18	EM09	3/27/2018	N	440-207268-11	Alluvium	16.8 - 36.6	--	--	--	--	--	--	--	--	--
SWFTS-MW18	EM09	3/27/2018	FD	440-207268-12	Alluvium	16.8 - 36.6	--	--	--	--	--	--	--	--	--
SWFTS-MW18	EM10	5/1/2018	N	440-210284-6	Alluvium	16.8 - 36.6	--	--	--	--	--	--	--	--	--
SWFTS-MW18	EM11	7/11/2018	N	440-215717-2	Alluvium	16.8 - 36.6	--	--	--	--	--	--	--	--	--
SWFTS-MW18	EM15	10/11/2018	N	440-222092-5	Alluvium	16.8 - 36.6	--	--	--	--	--	--	--	--	--
SWFTS-MW18	EM19	5/21/2019	N	440-242084-15	Alluvium	16.8 - 36.6	--	--	--	--	--	--	--	--	--
SWFTS-MW18	EM22	11/6/2019	N	440-254051-4	Alluvium	16.8 - 36.6	--	--	--	--	--	--	--	--	--
SWFTS-MW18	EM26	4/29/2020	N	440-265342-2	Alluvium	16.8 - 36.6	--	--	--	--	--	--	--	--	--
SWFTS-MW18	EM29	10/15/2020	N	550-151259-2	Alluvium	16.8 - 36.6	--	--	--	--	--	--	--	--	--
SWFTS-MW18	EM33	6/3/2021	N	550-164869-7	Alluvium	16.8 - 36.6	--	--	--	--	--	--	--	--	--
SWFTS-MW18	EM33	6/3/2021	N	550-164869-8	Alluvium	16.8 - 36.6	--	--	--	--	--	--	--	--	--

Table D.2
Groundater Analytical Results Summary - Secondary Parameters
Seep Well Field Area Bioremediation Treatability Study

Well	Event	Sample Date	QC Type	Lab Sample ID	Lithology	Screened Interval (ft bgs)	Total Metals by SW6010	Total Metals by SW6010	Total Metals by SW6010	Total Metals by SW6010	Total Metals by SW6010	Total Metals by SW6010	Total Metals by SW6010	Total Metals by SW6010	Total Metals by SW6010
							Beryllium	Boron	Cadmium	Calcium	Chromium	Cobalt	Copper	Iron	Lead
							mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
SWFTS-MW18	EM36	12/1/2021	N	550-175045-5	Alluvium	16.8 - 36.6	--	--	--	--	--	--	--	--	--
SWFTS-MW18	EM36	12/1/2021	N	550-175045-6	Alluvium	16.8 - 36.6	--	--	--	--	--	--	--	--	--
SWFTS-MW18	EM40	12/14/2022	N	550-195013-11	Alluvium	16.8 - 36.6	--	--	--	--	--	--	--	--	--
SWFTS-MW18	EM40	12/14/2022	N	550-195013-12	Alluvium	16.8 - 36.6	--	--	--	--	--	--	--	--	--
SWFTS-MW19	BL02	7/12/2017	N	440-188244-2	Alluvium	11.3 - 31.1	--	--	--	--	--	--	--	--	--
SWFTS-MW19	EM04	10/12/2017	N	440-194204-1	Alluvium	11.3 - 31.1	--	--	--	--	--	--	--	--	--
SWFTS-MW19	EM06	11/16/2017	N	440-196786-12	Alluvium	11.3 - 31.1	--	--	--	--	--	--	--	--	--
SWFTS-MW19	EM07	12/12/2017	N	440-198371-8	Alluvium	11.3 - 31.1	--	--	--	--	--	--	--	--	--
SWFTS-MW19	EM08	2/20/2018	N	440-203841-6	Alluvium	11.3 - 31.1	--	--	--	--	--	--	--	--	--
SWFTS-MW19	EM09	3/27/2018	N	440-207268-3	Alluvium	11.3 - 31.1	--	--	--	--	--	--	--	--	--
SWFTS-MW19	EM10	4/30/2018	N	440-210173-4	Alluvium	11.3 - 31.1	--	--	--	--	--	--	--	--	--
SWFTS-MW19	EM10	4/30/2018	FD	440-210173-5	Alluvium	11.3 - 31.1	--	--	--	--	--	--	--	--	--
SWFTS-MW19	EM11	7/10/2018	N	440-215437-10	Alluvium	11.3 - 31.1	--	--	--	--	--	--	--	--	--
SWFTS-MW19	EM11	7/10/2018	FD	440-215437-11	Alluvium	11.3 - 31.1	--	--	--	--	--	--	--	--	--
SWFTS-MW19	EM15	10/9/2018	N	440-221855-4	Alluvium	11.3 - 31.1	--	--	--	--	--	--	--	--	--
SWFTS-MW19	EM15	10/9/2018	FD	440-221855-5	Alluvium	11.3 - 31.1	--	--	--	--	--	--	--	--	--
SWFTS-MW19	EM19	5/21/2019	N	440-242084-6	Alluvium	11.3 - 31.1	--	--	--	--	--	--	--	--	--
SWFTS-MW19	EM19	5/21/2019	FD	440-242084-7	Alluvium	11.3 - 31.1	--	--	--	--	--	--	--	--	--
SWFTS-MW19	EM22	11/5/2019	N	440-253891-6	Alluvium	11.3 - 31.1	--	--	--	--	--	--	--	--	--
SWFTS-MW19	EM22	11/5/2019	FD	440-253891-7	Alluvium	11.3 - 31.1	--	--	--	--	--	--	--	--	--
SWFTS-MW19	EM26	4/28/2020	N	440-265288-4	Alluvium	11.3 - 31.1	--	--	--	--	--	--	--	--	--
SWFTS-MW19	EM26	4/28/2020	FD	440-265288-7	Alluvium	11.3 - 31.1	--	--	--	--	--	--	--	--	--
SWFTS-MW19	EM29	10/14/2020	N	440-273303-2	Alluvium	11.3 - 31.1	--	--	--	--	--	--	--	--	--
SWFTS-MW19	EM29	10/14/2020	FD	440-273303-3	Alluvium	11.3 - 31.1	--	--	--	--	--	--	--	--	--
SWFTS-MW19	EM33	6/3/2021	N	550-164869-3	Alluvium	11.3 - 31.1	--	--	--	--	--	--	--	--	--
SWFTS-MW19	EM33	6/3/2021	N	550-164869-4	Alluvium	11.3 - 31.1	--	--	--	--	--	--	--	--	--
SWFTS-MW19	EM33	6/3/2021	FD	550-164869-5	Alluvium	11.3 - 31.1	--	--	--	--	--	--	--	--	--
SWFTS-MW19	EM33	6/3/2021	FD	550-164869-6	Alluvium	11.3 - 31.1	--	--	--	--	--	--	--	--	--
SWFTS-MW19	EM36	12/1/2021	N	550-175045-13	Alluvium	11.3 - 31.1	--	--	--	--	--	--	--	--	--
SWFTS-MW19	EM36	12/1/2021	N	550-175045-14	Alluvium	11.3 - 31.1	--	--	--	--	--	--	--	--	--
SWFTS-MW19	EM36	12/1/2021	FD	550-175045-15	Alluvium	11.3 - 31.1	--	--	--	--	--	--	--	--	--
SWFTS-MW19	EM36	12/1/2021	FD	550-175045-16	Alluvium	11.3 - 31.1	--	--	--	--	--	--	--	--	--
SWFTS-MW19	EM40	12/14/2022	N	550-195013-3	Alluvium	11.3 - 31.1	--	--	--	--	--	--	--	--	--
SWFTS-MW19	EM40	12/14/2022	N	550-195013-4	Alluvium	11.3 - 31.1	--	--	--	--	--	--	--	--	--
SWFTS-MW19	EM40	12/14/2022	FD	550-195013-5	Alluvium	11.3 - 31.1	--	--	--	--	--	--	--	--	--
SWFTS-MW19	EM40	12/14/2022	FD	550-195013-6	Alluvium	11.3 - 31.1	--	--	--	--	--	--	--	--	--
SWFTS-MW20	BL02	7/12/2017	N	440-188244-5	Alluvium	12.8 - 37.6	--	--	--	--	--	--	--	--	--
SWFTS-MW20	EM04	10/12/2017	N	440-194202-1	Alluvium	12.8 - 37.6	--	--	--	--	--	--	--	--	--
SWFTS-MW20	EM04	10/12/2017	FD	440-194202-2	Alluvium	12.8 - 37.6	--	--	--	--	--	--	--	--	--
SWFTS-MW20	EM06	11/16/2017	N	440-196786-7	Alluvium	12.8 - 37.6	--	--	--	--	--	--	--	--	--
SWFTS-MW20	EM07	12/12/2017	N	440-198371-3	Alluvium	12.8 - 37.6	--	--	--	--	--	--	--	--	--
SWFTS-MW20	EM08	2/19/2018	N	440-203775-5	Alluvium	12.8 - 37.6	--	--	--	--	--	--	--	--	--
SWFTS-MW20	EM09	3/27/2018	N	440-207268-9	Alluvium	12.8 - 37.6	--	--	--	--	--	--	--	--	--
SWFTS-MW20	EM10	4/30/2018	N	440-210173-10	Alluvium	12.8 - 37.6	--	--	--	--	--	--	--	--	--
SWFTS-MW20	EM11	7/11/2018	N	440-215717-8	Alluvium	12.8 - 37.6	--	--	--	--	--	--	--	--	--
SWFTS-MW20	EM15	10/9/2018	N	440-221855-1	Alluvium	12.8 - 37.6	--	--	--	--	--	--	--	--	--
SWFTS-MW20	EM19	5/21/2019	N	440-242084-3	Alluvium	12.8 - 37.6	--	--	--	--	--	--	--	--	--
SWFTS-MW20	EM22	11/5/2019	N	440-253918-6	Alluvium	12.8 - 37.6	--	--	--	--	--	--	--	--	--
SWFTS-MW20	EM26	4/29/2020	N	440-265342-5	Alluvium	12.8 - 37.6	--	--	--	--	--	--	--	--	--
SWFTS-MW20	EM29	10/14/2020	N	440-273303-6	Alluvium	12.8 - 37.6	--	--	--	--	--	--	--	--	--
SWFTS-MW20	EM33	6/3/2021	N	550-164869-1	Alluvium	12.8 - 37.6	--	--	--	--	--	--	--	--	--
SWFTS-MW20	EM33	6/3/2021	N	550-164869-2	Alluvium	12.8 - 37.6	--	--	--	--	--	--	--	--	--
SWFTS-MW20	EM36	11/29/2021	N	550-174897-1	Alluvium	12.8 - 37.6	--	--	--	--	--	--	--	--	--
SWFTS-MW20	EM36	11/29/2021	N	550-174897-2	Alluvium	12.8 - 37.6	--	--	--	--	--	--	--	--	--
SWFTS-MW20	EM40	12/13/2022	N	550-194919-7	Alluvium	12.8 - 37.6	--	--	--	--	--	--	--	--	--
SWFTS-MW20	EM40	12/13/2022	N	550-194919-8	Alluvium	12.8 - 37.6	--	--	--	--	--	--	--	--	--
SWFTS-MW21	BL02	7/13/2017	N	440-188324-5	Alluvium	14.8 - 39.6	--	--	--	--	--	--	--	--	--
SWFTS-MW21	EM04	10/11/2017	N	440-194090-8	Alluvium	14.8 - 39.6	--	--	--	--	--	--	--	--	--
SWFTS-MW21	EM06	11/15/2017	N	440-196665-5	Alluvium	14.8 - 39.6	--	--	--	--	--	--	--	--	--
SWFTS-MW21	EM07	12/13/2017	N	440-198508-10	Alluvium	14.8 - 39.6	--	--	--	--	--	--	--	--	--
SWFTS-MW21	EM08	2/20/2018	N	440-203841-9	Alluvium	14.8 - 39.6	--	--	--	--	--	--	--	--	--
SWFTS-MW21	EM08	2/20/2018	FD	440-203841-10	Alluvium	14.8 - 39.6	--	--	--	--	--	--	--	--	--
SWFTS-MW21	EM09	3/27/2018	N	440-207268-14	Alluvium	14.8 - 39.6	--	--	--	--	--	--	--	--	--
SWFTS-MW21	EM10	4/30/2018	N	440-210173-7	Alluvium	14.8 - 39.6	--	--	--	--	--	--	--	--	--

Table D.2
Groundater Analytical Results Summary - Secondary Parameters
Seep Well Field Area Bioremediation Treatability Study

Well	Event	Sample Date	QC Type	Lab Sample ID	Lithology	Screened Interval (ft bgs)	Total Metals by SW6010	Total Metals by SW6010	Total Metals by SW6010	Total Metals by SW6010	Total Metals by SW6010	Total Metals by SW6010	Total Metals by SW6010	Total Metals by SW6010	Total Metals by SW6010
							Beryllium	Boron	Cadmium	Calcium	Chromium	Cobalt	Copper	Iron	Lead
							mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
SWFTS-MW21	EM11	7/12/2018	N	440-215717-3	Alluvium	14.8 - 39.6	--	--	--	--	--	--	--	--	--
SWFTS-MW21	EM15	10/9/2018	N	440-221855-3	Alluvium	14.8 - 39.6	--	--	--	--	--	--	--	--	--
SWFTS-MW21	EM19	5/22/2019	N	440-242198-3	Alluvium	14.8 - 39.6	--	--	--	--	--	--	--	--	--
SWFTS-MW21	EM22	11/4/2019	N	440-253773-3	Alluvium	14.8 - 39.6	--	--	--	--	--	--	--	--	--
SWFTS-MW21	EM26	4/29/2020	N	440-265342-1	Alluvium	14.8 - 39.6	--	--	--	--	--	--	--	--	--
SWFTS-MW21	EM29	10/14/2020	N	440-273303-7	Alluvium	14.8 - 39.6	--	--	--	--	--	--	--	--	--
SWFTS-MW21	EM33	6/2/2021	N	550-164872-15	Alluvium	14.8 - 39.6	--	--	--	--	--	--	--	--	--
SWFTS-MW21	EM33	6/2/2021	N	550-164872-16	Alluvium	14.8 - 39.6	--	--	--	--	--	--	--	--	--
SWFTS-MW21	EM36	12/1/2021	N	550-175045-3	Alluvium	14.8 - 39.6	--	--	--	--	--	--	--	--	--
SWFTS-MW21	EM36	12/1/2021	N	550-175045-4	Alluvium	14.8 - 39.6	--	--	--	--	--	--	--	--	--
SWFTS-MW21	EM40	12/15/2022	N	550-195106-5	Alluvium	14.8 - 39.6	--	--	--	--	--	--	--	--	--
SWFTS-MW21	EM40	12/15/2022	N	550-195106-6	Alluvium	14.8 - 39.6	--	--	--	--	--	--	--	--	--
SWFTS-MW22	BL02	7/13/2017	N	440-188324-1	Alluvium	11.8 - 31.6	--	--	--	--	--	--	--	--	--
SWFTS-MW22	EM04	10/12/2017	N	440-194242-9	Alluvium	11.8 - 31.6	--	--	--	--	--	--	--	--	--
SWFTS-MW22	EM06	11/16/2017	N	440-196786-18	Alluvium	11.8 - 31.6	--	--	--	--	--	--	--	--	--
SWFTS-MW22	EM07	12/14/2017	N	440-198571-17	Alluvium	11.8 - 31.6	--	--	--	--	--	--	--	--	--
SWFTS-MW22	EM08	2/21/2018	N	440-203937-1	Alluvium	11.8 - 31.6	--	--	--	--	--	--	--	--	--
SWFTS-MW22	EM09	3/28/2018	N	440-207497-1	Alluvium	11.8 - 31.6	--	--	--	--	--	--	--	--	--
SWFTS-MW22	EM10	4/30/2018	N	440-210173-6	Alluvium	11.8 - 31.6	--	--	--	--	--	--	--	--	--
SWFTS-MW22	EM11	7/10/2018	N	440-215437-9	Alluvium	11.8 - 31.6	--	--	--	--	--	--	--	--	--
SWFTS-MW22	EM15	10/9/2018	N	440-221855-2	Alluvium	11.8 - 31.6	--	--	--	--	--	--	--	--	--
SWFTS-MW22	EM19	5/21/2019	N	440-242084-4	Alluvium	11.8 - 31.6	--	--	--	--	--	--	--	--	--
SWFTS-MW22	EM22	11/5/2019	N	440-253891-4	Alluvium	11.8 - 31.6	--	--	--	--	--	--	--	--	--
SWFTS-MW22	EM26	4/28/2020	N	440-265288-5	Alluvium	11.8 - 31.6	--	--	--	--	--	--	--	--	--
SWFTS-MW22	EM29	10/14/2020	N	440-273303-1	Alluvium	11.8 - 31.6	--	--	--	--	--	--	--	--	--
SWFTS-MW22	EM33	6/2/2021	N	550-164872-11	Alluvium	11.8 - 31.6	--	--	--	--	--	--	--	--	--
SWFTS-MW22	EM33	6/2/2021	N	550-164872-12	Alluvium	11.8 - 31.6	--	--	--	--	--	--	--	--	--
SWFTS-MW22	EM36	12/2/2021	N	550-175153-1	Alluvium	11.8 - 31.6	--	--	--	--	--	--	--	--	--
SWFTS-MW22	EM36	12/2/2021	N	550-175153-2	Alluvium	11.8 - 31.6	--	--	--	--	--	--	--	--	--
SWFTS-MW22	EM40	12/14/2022	N	550-195013-1	Alluvium	11.8 - 31.6	--	--	--	--	--	--	--	--	--
SWFTS-MW22	EM40	12/14/2022	N	550-195013-2	Alluvium	11.8 - 31.6	--	--	--	--	--	--	--	--	--
SWFTS-MW23	BL02	7/13/2017	N	440-188325-7	Alluvium	13.8 - 33.6	--	--	--	--	--	--	--	--	--
SWFTS-MW23	EM04	10/11/2017	N	440-194090-7	Alluvium	13.8 - 33.6	--	--	--	--	--	--	--	--	--
SWFTS-MW23	EM06	11/15/2017	N	440-196665-3	Alluvium	13.8 - 33.6	--	--	--	--	--	--	--	--	--
SWFTS-MW23	EM07	12/12/2017	N	440-198371-2	Alluvium	13.8 - 33.6	--	--	--	--	--	--	--	--	--
SWFTS-MW23	EM08	2/21/2018	N	440-203937-14	Alluvium	13.8 - 33.6	--	--	--	--	--	--	--	--	--
SWFTS-MW23	EM09	3/28/2018	N	440-207497-9	Alluvium	13.8 - 33.6	--	--	--	--	--	--	--	--	--
SWFTS-MW23	EM10	5/2/2018	N	440-210430-5	Alluvium	13.8 - 33.6	--	--	--	--	--	--	--	--	--
SWFTS-MW23	EM11	7/10/2018	N	440-215437-7	Alluvium	13.8 - 33.6	--	--	--	--	--	--	--	--	--
SWFTS-MW23	EM15	10/11/2018	N	440-222092-7	Alluvium	13.8 - 33.6	--	--	--	--	--	--	--	--	--
SWFTS-MW23	EM19	5/22/2019	N	440-242201-7	Alluvium	13.8 - 33.6	--	--	--	--	--	--	--	--	--
SWFTS-MW23	EM22	11/5/2019	N	440-253891-5	Alluvium	13.8 - 33.6	--	--	--	--	--	--	--	--	--
SWFTS-MW23	EM26	4/28/2020	N	440-265288-3	Alluvium	13.8 - 33.6	--	--	--	--	--	--	--	--	--
SWFTS-MW23	EM29	10/13/2020	N	440-273236-1	Alluvium	13.8 - 33.6	--	--	--	--	--	--	--	--	--
SWFTS-MW23	EM33	6/2/2021	N	550-164872-3	Alluvium	13.8 - 33.6	--	--	--	--	--	--	--	--	--
SWFTS-MW23	EM33	6/2/2021	N	550-164872-4	Alluvium	13.8 - 33.6	--	--	--	--	--	--	--	--	--
SWFTS-MW23	EM36	12/2/2021	N	550-175153-15	Alluvium	13.8 - 33.6	--	--	--	--	--	--	--	--	--
SWFTS-MW23	EM36	12/2/2021	N	550-175153-16	Alluvium	13.8 - 33.6	--	--	--	--	--	--	--	--	--
SWFTS-MW23	EM40	12/13/2022	N	550-194919-5	Alluvium	13.8 - 33.6	--	--	--	--	--	--	--	--	--
SWFTS-MW23	EM40	12/13/2022	N	550-194919-6	Alluvium	13.8 - 33.6	--	--	--	--	--	--	--	--	--
SWFTS-MW24	BL02	7/13/2017	N	440-188324-2	Alluvium	12.8 - 37.6	--	--	--	--	--	--	--	--	--
SWFTS-MW24	EM04	10/11/2017	N	440-194242-2	Alluvium	12.8 - 37.6	--	--	--	--	--	--	--	--	--
SWFTS-MW24	EM06	11/15/2017	N	440-196665-1	Alluvium	12.8 - 37.6	--	--	--	--	--	--	--	--	--
SWFTS-MW24	EM07	12/12/2017	N	440-198371-5	Alluvium	12.8 - 37.6	--	--	--	--	--	--	--	--	--
SWFTS-MW24	EM08	2/21/2018	N	440-203937-8	Alluvium	12.8 - 37.6	--	--	--	--	--	--	--	--	--
SWFTS-MW24	EM09	3/28/2018	N	440-207497-12	Alluvium	12.8 - 37.6	--	--	--	--	--	--	--	--	--
SWFTS-MW24	EM10	5/2/2018	N	440-210430-7	Alluvium	12.8 - 37.6	--	--	--	--	--	--	--	--	--
SWFTS-MW24	EM11	7/12/2018	N	440-215717-5	Alluvium	12.8 - 37.6	--	--	--	--	--	--	--	--	--
SWFTS-MW24	EM15	10/10/2018	N	440-221975-7	Alluvium	12.8 - 37.6	--	--	--	--	--	--	--	--	--
SWFTS-MW24	EM19	5/22/2019	N	440-242198-1	Alluvium	12.8 - 37.6	--	--	--	--	--	--	--	--	--
SWFTS-MW24	EM22	11/5/2019	N	440-253891-2	Alluvium	12.8 - 37.6	--	--	--	--	--	--	--	--	--
SWFTS-MW24	EM26	4/28/2020	N	440-265288-1	Alluvium	12.8 - 37.6	--	--	--	--	--	--	--	--	--
SWFTS-MW24	EM29	10/12/2020	N	440-273153-1	Alluvium	12.8 - 37.6	--	--	--	--	--	--	--	--	--
SWFTS-MW24	EM33	6/2/2021	N	550-164872-7	Alluvium	12.8 - 37.6	--	--	--	--	--	--	--	--	--

Table D.2
Groundater Analytical Results Summary - Secondary Parameters
Seep Well Field Area Bioremediation Treatability Study

Well	Event	Sample Date	QC Type	Lab Sample ID	Lithology	Screened Interval (ft bgs)	Total Metals by SW6010	Total Metals by SW6010	Total Metals by SW6010	Total Metals by SW6010	Total Metals by SW6010	Total Metals by SW6010	Total Metals by SW6010	Total Metals by SW6010	Total Metals by SW6010
							Beryllium	Boron	Cadmium	Calcium	Chromium	Cobalt	Copper	Iron	Lead
							mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
SWFTS-MW24	EM33	6/2/2021	N	550-164872-8	Alluvium	12.8 - 37.6	--	--	--	--	--	--	--	--	--
SWFTS-MW24	EM36	12/1/2021	N	550-175045-17	Alluvium	12.8 - 37.6	--	--	--	--	--	--	--	--	--
SWFTS-MW24	EM36	12/1/2021	N	550-175045-18	Alluvium	12.8 - 37.6	--	--	--	--	--	--	--	--	--
SWFTS-MW24	EM40	12/13/2022	N	550-194919-3	Alluvium	12.8 - 37.6	--	--	--	--	--	--	--	--	--
SWFTS-MW24	EM40	12/13/2022	N	550-194919-4	Alluvium	12.8 - 37.6	--	--	--	--	--	--	--	--	--
SWFTS-MW25	BL02	7/13/2017	N	440-188324-4	Alluvium	12.8 - 42.6	--	--	--	--	--	--	--	--	--
SWFTS-MW25	EM04	10/11/2017	N	440-194242-1	Alluvium	12.8 - 42.6	--	--	--	--	--	--	--	--	--
SWFTS-MW25	EM06	11/15/2017	N	440-196665-2	Alluvium	12.8 - 42.6	--	--	--	--	--	--	--	--	--
SWFTS-MW25	EM07	12/12/2017	N	440-198371-1	Alluvium	12.8 - 42.6	--	--	--	--	--	--	--	--	--
SWFTS-MW25	EM08	2/21/2018	N	440-203937-7	Alluvium	12.8 - 42.6	--	--	--	--	--	--	--	--	--
SWFTS-MW25	EM09	3/28/2018	N	440-207497-13	Alluvium	12.8 - 42.6	--	--	--	--	--	--	--	--	--
SWFTS-MW25	EM10	5/3/2018	N	440-210534-2	Alluvium	12.8 - 42.6	--	--	--	--	--	--	--	--	--
SWFTS-MW25	EM11	7/10/2018	N	440-215437-12	Alluvium	12.8 - 42.6	--	--	--	--	--	--	--	--	--
SWFTS-MW25	EM13	8/15/2018	N	440-218208-10	Alluvium	12.8 - 42.6	--	--	--	--	--	--	--	--	--
SWFTS-MW25	EM14	9/12/2018	N	440-220031-2	Alluvium	12.8 - 42.6	--	--	--	--	--	--	--	--	--
SWFTS-MW25	EM15	10/11/2018	N	440-222092-6	Alluvium	12.8 - 42.6	--	--	--	--	--	--	--	--	--
SWFTS-MW25	EM19	5/22/2019	N	440-242201-6	Alluvium	12.8 - 42.6	--	--	--	--	--	--	--	--	--
SWFTS-MW25	EM22	11/5/2019	N	440-253918-4	Alluvium	12.8 - 42.6	--	--	--	--	--	--	--	--	--
SWFTS-MW25	EM26	4/28/2020	N	440-265288-2	Alluvium	12.8 - 42.6	--	--	--	--	--	--	--	--	--
SWFTS-MW25	EM29	10/13/2020	N	440-273236-2	Alluvium	12.8 - 42.6	--	--	--	--	--	--	--	--	--
SWFTS-MW25	EM33	6/2/2021	N	550-164872-5	Alluvium	12.8 - 42.6	--	--	--	--	--	--	--	--	--
SWFTS-MW25	EM33	6/2/2021	N	550-164872-6	Alluvium	12.8 - 42.6	--	--	--	--	--	--	--	--	--
SWFTS-MW25	EM36	12/1/2021	N	550-175045-19	Alluvium	12.8 - 42.6	--	--	--	--	--	--	--	--	--
SWFTS-MW25	EM36	12/1/2021	N	550-175045-20	Alluvium	12.8 - 42.6	--	--	--	--	--	--	--	--	--
SWFTS-MW25	EM40	12/13/2022	N	550-194919-1	Alluvium	12.8 - 42.6	--	--	--	--	--	--	--	--	--
SWFTS-MW25	EM40	12/13/2022	N	550-194919-2	Alluvium	12.8 - 42.6	--	--	--	--	--	--	--	--	--

Notes:
1. Lithology of monitoring well COH-2B1 was inferred from state records of well construction and generalized stratigraphy.
FD - Field duplicate
J The result is an estimated quantity. The associated numerical value is the approximate concentration of the analyte.
J- The result is an estimated quantity, but the result may be biased low.
J+ The result is an estimated quantity, but the result may be biased high.
mg/L - milligrams per liter
µg/L - micrograms per liter
N - Normal field sample
UMCf- Upper Muddy Creek Formation
R The data are unusable. The sample results are rejected due to serious deficiencies in meeting QC criteria. The
< The analyte was analyzed for, but was not detected above the level of the reported sample quantitation limit.
--- Not tested.

Table D.2
Groundater Analytical Results Summary - Secondary Parameters
Seep Well Field Area Bioremediation Treatability Study

Well	Event	Sample Date	QC Type	Lab Sample ID	Lithology	Screened Interval (ft bgs)	Total Metals by SW6010	Total Metals by SW6010	Total Metals by SW6010	Total Metals by SW6010	Total Metals by SW6010	Total Metals by SW6010	Total Metals by SW6010	Total Metals by SW6010	Total Metals by SW6010
							Magnesium	Manganese	Molybdenum	Nickel	Phosphorus	Potassium	Silicon	Silver	Sodium
							mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
COH-2B1	BL02	8/9/2017	N	440-189933-1	Alluvium/UMCf	36.0 - 66.0	--	0.11	--	--	--	--	--	--	--
COH-2B1	EM04	10/12/2017	N	440-194204-2	Alluvium/UMCf	36.0 - 66.0	--	0.19	--	--	--	--	--	--	--
COH-2B1	EM07	12/14/2017	N	440-198571-5	Alluvium/UMCf	36.0 - 66.0	--	--	--	--	--	--	--	--	--
COH-2B1	EM08	2/22/2018	N	440-204033-6	Alluvium/UMCf	36.0 - 66.0	--	--	--	--	--	--	--	--	--
COH-2B1	EM09	3/29/2018	N	440-207586-2	Alluvium/UMCf	36.0 - 66.0	--	--	--	--	--	--	--	--	--
COH-2B1	EM10	5/2/2018	N	440-210430-11	Alluvium/UMCf	36.0 - 66.0	--	--	--	--	--	--	--	--	--
COH-2B1	EM11	7/10/2018	N	440-215437-6	Alluvium/UMCf	36.0 - 66.0	--	0.24	--	--	--	--	--	--	--
COH-2B1	EM15	10/11/2018	N	440-222092-1	Alluvium/UMCf	36.0 - 66.0	--	0.17	--	--	--	--	--	--	--
COH-2B1	EM19	5/22/2019	N	440-242201-5	Alluvium/UMCf	36.0 - 66.0	--	0.16	--	--	--	--	--	--	--
COH-2B1	EM22	11/4/2019	N	440-253773-1	Alluvium/UMCf	36.0 - 66.0	--	1.2	--	--	--	--	--	--	--
COH-2B1	EM26	4/27/2020	N	440-265243-1	Alluvium/UMCf	36.0 - 66.0	--	0.41	--	--	--	--	--	--	--
COH-2B1	EM29	10/13/2020	N	440-273236-9	Alluvium/UMCf	36.0 - 66.0	--	0.64	--	--	--	--	--	--	--
PC-58	BL01	3/28/2017	N	440-180820-1	Alluvium	7.8 - 32.8	140	0.013 J	0.17	<0.0050	<0.10	44	34	<0.0050	540
PC-58	BL02	7/13/2017	N	440-188324-3	Alluvium	7.8 - 32.8	--	<0.015	--	--	--	--	--	--	--
PC-58	EM04	10/11/2017	N	440-194094-6	Alluvium	7.8 - 32.8	--	<0.015	--	--	--	--	--	--	--
PC-58	EM06	11/16/2017	N	440-196786-11	Alluvium	7.8 - 32.8	--	--	--	--	--	--	--	--	--
PC-58	EM07	12/14/2017	N	440-198571-9	Alluvium	7.8 - 32.8	--	--	--	--	--	--	--	--	--
PC-58	EM08	2/21/2018	N	440-203937-13	Alluvium	7.8 - 32.8	--	--	--	--	--	--	--	--	--
PC-58	EM09	3/28/2018	N	440-207497-6	Alluvium	7.8 - 32.8	--	--	--	--	--	--	--	--	--
PC-58	EM10	5/2/2018	N	440-210430-10	Alluvium	7.8 - 32.8	--	--	--	--	--	--	--	--	--
PC-58	EM11	7/11/2018	N	440-215717-7	Alluvium	7.8 - 32.8	--	<0.015	--	--	--	--	--	--	--
PC-58	EM15	10/11/2018	N	440-222092-19	Alluvium	7.8 - 32.8	--	<0.015	--	--	--	--	--	--	--
PC-58	EM19	5/22/2019	N	440-242200-7	Alluvium	7.8 - 32.8	--	0.041	--	--	--	--	--	--	--
PC-58	EM22	11/7/2019	N	440-254148-1	Alluvium	7.8 - 32.8	--	<0.015	--	--	--	--	--	--	--
PC-58	EM26	5/1/2020	N	440-265414-3	Alluvium	7.8 - 32.8	--	<0.015	--	--	--	--	--	--	--
PC-58	EM29	10/16/2020	N	440-273433-5	Alluvium	7.8 - 32.8	--	<0.015	--	--	--	--	--	--	--
PC-58	EM33	6/2/2021	N	550-164872-23	Alluvium	7.8 - 32.8	--	0.0092 J	--	--	--	--	--	--	--
PC-58	EM33	6/2/2021	N	550-164872-24	Alluvium	7.8 - 32.8	--	--	--	--	--	--	--	--	--
PC-58	EM36	12/3/2021	N	550-175222-11	Alluvium	7.8 - 32.8	--	0.023	--	--	--	--	--	--	--
PC-58	EM36	12/3/2021	N	550-175222-12	Alluvium	7.8 - 32.8	--	--	--	--	--	--	--	--	--
PC-58	EM40	12/12/2022	N	550-194841-5	Alluvium	7.8 - 32.8	--	<0.0083	--	--	--	--	--	--	--
PC-58	EM40	12/12/2022	N	550-194841-6	Alluvium	7.8 - 32.8	--	--	--	--	--	--	--	--	--
PC-88	EM04	10/11/2017	N	440-194090-2	Alluvium	40.0 - 50.0	--	0.88	--	--	--	--	--	--	--
PC-88	EM04	10/11/2017	FD	440-194090-3	Alluvium	40.0 - 50.0	--	0.95	--	--	--	--	--	--	--
PC-88	EM06	11/15/2017	N	440-196690-9	Alluvium	40.0 - 50.0	--	--	--	--	--	--	--	--	--
PC-88	EM06	11/15/2017	FD	440-196690-10	Alluvium	40.0 - 50.0	--	--	--	--	--	--	--	--	--
PC-88	EM07	12/14/2017	N	440-198571-11	Alluvium	40.0 - 50.0	--	--	--	--	--	--	--	--	--
PC-88	EM08	2/22/2018	N	440-204033-10	Alluvium	40.0 - 50.0	--	--	--	--	--	--	--	--	--
PC-88	EM09	3/29/2018	N	440-207586-3	Alluvium	40.0 - 50.0	--	--	--	--	--	--	--	--	--
PC-88	EM10	5/2/2018	N	440-210430-8	Alluvium	40.0 - 50.0	--	--	--	--	--	--	--	--	--
PC-88	EM10	5/2/2018	FD	440-210430-9	Alluvium	40.0 - 50.0	--	--	--	--	--	--	--	--	--
PC-88	EM11	7/12/2018	N	440-215717-11	Alluvium	40.0 - 50.0	--	0.80	--	--	--	--	--	--	--
PC-88	EM11	7/12/2018	FD	440-215717-12	Alluvium	40.0 - 50.0	--	0.74	--	--	--	--	--	--	--
PC-88	EM15	10/11/2018	N	440-222092-15	Alluvium	40.0 - 50.0	--	1.2	--	--	--	--	--	--	--
PC-88	EM15	10/11/2018	FD	440-222092-16	Alluvium	40.0 - 50.0	--	1.1	--	--	--	--	--	--	--
PC-88	EM19	5/22/2019	N	440-242201-2	Alluvium	40.0 - 50.0	--	0.91 J	--	--	--	--	--	--	--
PC-88	EM19	5/22/2019	FD	440-242201-3	Alluvium	40.0 - 50.0	--	0.89 J	--	--	--	--	--	--	--
PC-88	EM22	11/7/2019	N	440-254148-2	Alluvium	40.0 - 50.0	--	0.60	--	--	--	--	--	--	--
PC-88	EM22	11/7/2019	FD	440-254148-3	Alluvium	40.0 - 50.0	--	0.63	--	--	--	--	--	--	--
PC-88	EM26	5/1/2020	N	440-265412-2	Alluvium	40.0 - 50.0	--	0.75 J	--	--	--	--	--	--	--
PC-88	EM26	5/1/2020	FD	440-265412-3	Alluvium	40.0 - 50.0	--	0.54 J	--	--	--	--	--	--	--
PC-88	EM29	10/15/2020	N	550-151259-10	Alluvium	40.0 - 50.0	--	0.64	--	--	--	--	--	--	--
PC-88	EM29	10/15/2020	FD	550-151259-11	Alluvium	40.0 - 50.0	--	0.65	--	--	--	--	--	--	--
PC-88	EM33	6/3/2021	N	550-164869-25	Alluvium	40.0 - 50.0	--	0.30	--	--	--	--	--	--	--
PC-88	EM33	6/3/2021	N	550-164869-26	Alluvium	40.0 - 50.0	--	--	--	--	--	--	--	--	--
PC-88	EM33	6/3/2021	FD	550-164869-27	Alluvium	40.0 - 50.0	--	0.31	--	--	--	--	--	--	--
PC-88	EM33	6/3/2021	FD	550-164869-28	Alluvium	40.0 - 50.0	--	--	--	--	--	--	--	--	--
PC-88	EM36	12/2/2021	N	550-175153-5	Alluvium	40.0 - 50.0	--	0.44	--	--	--	--	--	--	--
PC-88	EM36	12/2/2021	N	550-175153-6	Alluvium	40.0 - 50.0	--	--	--	--	--	--	--	--	--
PC-88	EM36	12/2/2021	FD	550-175153-7	Alluvium	40.0 - 50.0	--	0.44	--	--	--	--	--	--	--
PC-88	EM36	12/2/2021	FD	550-175153-8	Alluvium	40.0 - 50.0	--	--	--	--	--	--	--	--	--
PC-88	EM40	12/12/2022	N	550-194841-1	Alluvium	40.0 - 50.0	--	0.61	--	--	--	--	--	--	--
PC-88	EM40	12/12/2022	N	550-194841-2	Alluvium	40.0 - 50.0	--	--	--	--	--	--	--	--	--
PC-88	EM40	12/12/2022	FD	550-194841-3	Alluvium	40.0 - 50.0	--	0.61	--	--	--	--	--	--	--

Table D.2
Groundater Analytical Results Summary - Secondary Parameters
Seep Well Field Area Bioremediation Treatability Study

Well	Event	Sample Date	QC Type	Lab Sample ID	Lithology	Screened Interval (ft bgs)	Total Metals by SW6010	Total Metals by SW6010	Total Metals by SW6010	Total Metals by SW6010	Total Metals by SW6010	Total Metals by SW6010	Total Metals by SW6010	Total Metals by SW6010	Total Metals by SW6010
							Magnesium	Manganese	Molybdenum	Nickel	Phosphorus	Potassium	Silicon	Silver	Sodium
							mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
PC-88	EM40	12/12/2022	FD	550-194841-4	Alluvium	40.0 - 50.0	--	--	--	--	--	--	--	--	--
PC-91	BL01	3/29/2017	N	440-180937-1	Alluvium	11.5 - 21.5	--	0.11	--	--	--	--	--	--	--
PC-91	BL02	7/12/2017	N	440-188247-5	Alluvium	11.5 - 21.5	--	0.19	--	--	--	--	--	--	--
PC-91	BL02	7/12/2017	FD	440-188244-4	Alluvium	11.5 - 21.5	--	0.14	--	--	--	--	--	--	--
PC-91	EM04	10/12/2017	N	440-194204-3	Alluvium	11.5 - 21.5	--	0.15	--	--	--	--	--	--	--
PC-91	EM06	11/16/2017	N	440-196786-8	Alluvium	11.5 - 21.5	--	--	--	--	--	--	--	--	--
PC-91	EM07	12/13/2017	N	440-198508-9	Alluvium	11.5 - 21.5	--	0.062	--	--	--	--	--	--	--
PC-91	EM08	2/20/2018	N	440-203841-1	Alluvium	11.5 - 21.5	--	--	--	--	--	--	--	--	--
PC-91	EM09	3/26/2018	N	440-207137-1	Alluvium	11.5 - 21.5	--	--	--	--	--	--	--	--	--
PC-91	EM10	5/1/2018	N	440-210284-3	Alluvium	11.5 - 21.5	--	--	--	--	--	--	--	--	--
PC-91	EM11	7/11/2018	N	440-215585-6	Alluvium	11.5 - 21.5	--	0.57	--	--	--	--	--	--	--
PC-91	EM15	10/10/2018	N	440-221975-16	Alluvium	11.5 - 21.5	--	0.44	--	--	--	--	--	--	--
PC-91	EM19	5/21/2019	N	440-242084-9	Alluvium	11.5 - 21.5	--	1.4	--	--	--	--	--	--	--
PC-91	EM22	11/6/2019	N	440-254027-3	Alluvium	11.5 - 21.5	--	1.3	--	--	--	--	--	--	--
PC-91	EM26	4/30/2020	N	440-265382-2	Alluvium	11.5 - 21.5	--	1.1	--	--	--	--	--	--	--
PC-91	EM29	10/14/2020	N	440-273303-11	Alluvium	11.5 - 21.5	--	3.0	--	--	--	--	--	--	--
PC-91	EM33	6/2/2021	N	550-164872-17	Alluvium	11.5 - 21.5	--	3.7	--	--	--	--	--	--	--
PC-91	EM33	6/2/2021	N	550-164872-18	Alluvium	11.5 - 21.5	--	--	--	--	--	--	--	--	--
PC-91	EM36	11/30/2021	N	550-174968-1	Alluvium	11.5 - 21.5	--	3.1	--	--	--	--	--	--	--
PC-91	EM36	11/30/2021	N	550-174968-2	Alluvium	11.5 - 21.5	--	--	--	--	--	--	--	--	--
PC-91	EM40	12/12/2022	N	550-194841-7	Alluvium	11.5 - 21.5	--	1.0	--	--	--	--	--	--	--
PC-91	EM40	12/12/2022	N	550-194841-8	Alluvium	11.5 - 21.5	--	--	--	--	--	--	--	--	--
PC-92	BL01	3/29/2017	N	440-180937-2	Alluvium	26.5 - 36.5	--	0.86	--	--	--	--	--	--	--
PC-92	BL02	7/12/2017	N	440-188247-6	Alluvium	26.5 - 36.5	--	0.80	--	--	--	--	--	--	--
PC-92	EM04	10/12/2017	N	440-194204-4	Alluvium	26.5 - 36.5	--	0.55	--	--	--	--	--	--	--
PC-92	EM04	10/12/2017	FD	440-194204-5	Alluvium	26.5 - 36.5	--	0.56	--	--	--	--	--	--	--
PC-92	EM06	11/16/2017	N	440-196786-9	Alluvium	26.5 - 36.5	--	--	--	--	--	--	--	--	--
PC-92	EM06	11/16/2017	FD	440-196786-10	Alluvium	26.5 - 36.5	--	--	--	--	--	--	--	--	--
PC-92	EM07	12/14/2017	N	440-198571-7	Alluvium	26.5 - 36.5	--	1.2	--	--	--	--	--	--	--
PC-92	EM07	12/14/2017	FD	440-198571-8	Alluvium	26.5 - 36.5	--	1.3	--	--	--	--	--	--	--
PC-92	EM08	2/20/2018	N	440-203841-2	Alluvium	26.5 - 36.5	--	--	--	--	--	--	--	--	--
PC-92	EM08	2/20/2018	FD	440-203841-3	Alluvium	26.5 - 36.5	--	--	--	--	--	--	--	--	--
PC-92	EM09	3/26/2018	N	440-207137-2	Alluvium	26.5 - 36.5	--	--	--	--	--	--	--	--	--
PC-92	EM09	3/26/2018	FD	440-207137-3	Alluvium	26.5 - 36.5	--	--	--	--	--	--	--	--	--
PC-92	EM10	5/1/2018	N	440-210284-4	Alluvium	26.5 - 36.5	--	--	--	--	--	--	--	--	--
PC-92	EM11	7/11/2018	N	440-215585-5	Alluvium	26.5 - 36.5	--	0.78	--	--	--	--	--	--	--
PC-92	EM15	10/11/2018	N	440-222092-17	Alluvium	26.5 - 36.5	--	0.54	--	--	--	--	--	--	--
PC-92	EM19	5/21/2019	N	440-242084-10	Alluvium	26.5 - 36.5	--	0.86	--	--	--	--	--	--	--
PC-92	EM22	11/6/2019	N	440-254027-2	Alluvium	26.5 - 36.5	--	0.78	--	--	--	--	--	--	--
PC-92	EM26	4/30/2020	N	440-265382-1	Alluvium	26.5 - 36.5	--	0.13	--	--	--	--	--	--	--
PC-92	EM29	10/14/2020	N	440-273303-10	Alluvium	26.5 - 36.5	--	0.71	--	--	--	--	--	--	--
PC-92	EM33	6/2/2021	N	550-164872-19	Alluvium	26.5 - 36.5	--	0.76	--	--	--	--	--	--	--
PC-92	EM33	6/2/2021	N	550-164872-20	Alluvium	26.5 - 36.5	--	--	--	--	--	--	--	--	--
PC-92	EM36	11/30/2021	N	550-174968-3	Alluvium	26.5 - 36.5	--	1.4	--	--	--	--	--	--	--
PC-92	EM36	11/30/2021	N	550-174968-4	Alluvium	26.5 - 36.5	--	--	--	--	--	--	--	--	--
PC-92	EM40	12/13/2022	N	550-194920-1	Alluvium	26.5 - 36.5	--	0.86	--	--	--	--	--	--	--
PC-92	EM40	12/13/2022	N	550-194920-2	Alluvium	26.5 - 36.5	--	--	--	--	--	--	--	--	--
PC-94	BL01	3/28/2017	N	440-180820-2	Alluvium	9.5 - 19.5	200	0.022 J	0.17	<0.010	<0.20	62	40	<0.010	1,100
PC-94	BL02	7/13/2017	N	440-188325-1	Alluvium	9.5 - 19.5	--	0.14	--	--	--	--	--	--	--
PC-94	EM04	10/11/2017	N	440-194090-6	Alluvium	9.5 - 19.5	--	2.8	--	--	--	--	--	--	--
PC-94	EM06	11/16/2017	N	440-196786-17	Alluvium	9.5 - 19.5	--	3.0	--	--	--	--	--	--	--
PC-94	EM07	12/12/2017	N	440-198371-14	Alluvium	9.5 - 19.5	--	--	--	--	--	--	--	--	--
PC-94	EM08	2/21/2018	N	440-203937-12	Alluvium	9.5 - 19.5	--	2.6	--	--	--	--	--	--	--
PC-94	EM09	3/27/2018	N	440-207268-8	Alluvium	9.5 - 19.5	--	3.4	--	--	--	--	--	--	--
PC-94	EM10	5/1/2018	N	440-210284-14	Alluvium	9.5 - 19.5	--	2.3	--	--	--	--	--	--	--
PC-94	EM11	7/10/2018	N	440-215437-1	Alluvium	9.5 - 19.5	--	6.3	--	--	--	--	--	--	--
PC-94	EM13	8/15/2018	N	440-218208-2	Alluvium	9.5 - 19.5	--	3.9	--	--	--	--	--	--	--
PC-94	EM14	9/11/2018	N	440-219886-9	Alluvium	9.5 - 19.5	--	3.5 J	--	--	--	--	--	--	--
PC-94	EM15	10/11/2018	N	440-222092-18	Alluvium	9.5 - 19.5	--	5.0	--	--	--	--	--	--	--
PC-94	EM19	5/22/2019	N	440-242201-4	Alluvium	9.5 - 19.5	--	3.5	--	--	--	--	--	--	--
PC-94	EM22	11/6/2019	N	440-254027-1	Alluvium	9.5 - 19.5	--	2.6	--	--	--	--	--	--	--
PC-94	EM26	4/28/2020	N	440-265289-2	Alluvium	9.5 - 19.5	--	3.4	--	--	--	--	--	--	--
PC-94	EM29	10/15/2020	N	550-151259-7	Alluvium	9.5 - 19.5	--	2.8	--	--	--	--	--	--	--
PC-94	EM33	6/2/2021	N	550-164872-21	Alluvium	9.5 - 19.5	--	2.8	--	--	--	--	--	--	--

Table D.2
Groundater Analytical Results Summary - Secondary Parameters
Seep Well Field Area Bioremediation Treatability Study

Well	Event	Sample Date	QC Type	Lab Sample ID	Lithology	Screened Interval (ft bgs)	Total Metals by SW6010	Total Metals by SW6010	Total Metals by SW6010	Total Metals by SW6010	Total Metals by SW6010	Total Metals by SW6010	Total Metals by SW6010	Total Metals by SW6010	Total Metals by SW6010
							Magnesium	Manganese	Molybdenum	Nickel	Phosphorus	Potassium	Silicon	Silver	Sodium
							mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
PC-94	EM33	6/2/2021	N	550-164872-22	Alluvium	9.5 - 19.5	--	--	--	--	--	--	--	--	--
PC-94	EM36	11/30/2021	N	550-174968-5	Alluvium	9.5 - 19.5	--	5.0	--	--	--	--	--	--	--
PC-94	EM36	11/30/2021	N	550-174968-6	Alluvium	9.5 - 19.5	--	--	--	--	--	--	--	--	--
PC-94	EM40	12/13/2022	N	550-194920-7	Alluvium	9.5 - 19.5	--	3.2	--	--	--	--	--	--	--
PC-94	EM40	12/13/2022	N	550-194920-8	Alluvium	9.5 - 19.5	--	--	--	--	--	--	--	--	--
PC-97	BL02	7/13/2017	N	440-188325-8	Alluvium	23.0 - 33.0	--	1.2	--	--	--	--	--	--	--
PC-97	EM04	10/11/2017	N	440-194242-5	Alluvium	23.0 - 33.0	--	1.3	--	--	--	--	--	--	--
PC-97	EM04	10/11/2017	FD	440-194242-6	Alluvium	23.0 - 33.0	--	1.3	--	--	--	--	--	--	--
PC-97	EM06	11/16/2017	N	440-196786-13	Alluvium	23.0 - 33.0	--	--	--	--	--	--	--	--	--
PC-97	EM07	12/13/2017	N	440-198508-11	Alluvium	23.0 - 33.0	--	--	--	--	--	--	--	--	--
PC-97	EM07	12/13/2017	FD	440-198508-12	Alluvium	23.0 - 33.0	--	--	--	--	--	--	--	--	--
PC-97	EM08	2/21/2018	N	440-203937-4	Alluvium	23.0 - 33.0	--	--	--	--	--	--	--	--	--
PC-97	EM09	3/27/2018	N	440-207268-4	Alluvium	23.0 - 33.0	--	--	--	--	--	--	--	--	--
PC-97	EM10	5/1/2018	N	440-210284-7	Alluvium	23.0 - 33.0	--	--	--	--	--	--	--	--	--
PC-97	EM11	7/10/2018	N	440-215437-3	Alluvium	23.0 - 33.0	--	0.97	--	--	--	--	--	--	--
PC-97	EM15	10/11/2018	N	440-222092-13	Alluvium	23.0 - 33.0	--	0.95	--	--	--	--	--	--	--
PC-97	EM19	5/22/2019	N	440-242201-1	Alluvium	23.0 - 33.0	--	1.0	--	--	--	--	--	--	--
PC-97	EM22	11/6/2019	N	440-254027-7	Alluvium	23.0 - 33.0	--	0.92	--	--	--	--	--	--	--
PC-97	EM26	4/30/2020	N	440-265383-7	Alluvium	23.0 - 33.0	--	0.69	--	--	--	--	--	--	--
PC-97	EM29	10/15/2020	N	550-151259-9	Alluvium	23.0 - 33.0	--	1.3	--	--	--	--	--	--	--
SWFTS-IW01A	BL02	7/11/2017	N	440-188133-3	Alluvium	15.8 - 25.6	--	--	--	--	--	--	--	--	--
SWFTS-IW01B	BL02	7/11/2017	N	440-188133-13	Alluvium	26.9 - 36.7	--	--	--	--	--	--	--	--	--
SWFTS-IW02A	BL02	7/11/2017	N	440-188133-14	Alluvium	16.8 - 26.6	--	--	--	--	--	--	--	--	--
SWFTS-IW02B	BL02	7/11/2017	N	440-188133-2	Alluvium	26.3 - 36.1	--	--	--	--	--	--	--	--	--
SWFTS-IW03	BL02	7/11/2017	N	440-188133-4	Alluvium	16.8 - 36.6	--	--	--	--	--	--	--	--	--
SWFTS-IW03	BL02	7/11/2017	FD	440-188133-5	Alluvium	16.8 - 36.6	--	--	--	--	--	--	--	--	--
SWFTS-IW04	BL02	7/11/2017	N	440-188133-11	Alluvium	19.8 - 34.6	--	--	--	--	--	--	--	--	--
SWFTS-IW04	BL02	7/11/2017	FD	440-188133-12	Alluvium	19.8 - 34.6	--	--	--	--	--	--	--	--	--
SWFTS-IW05	BL02	7/11/2017	N	440-188133-16	Alluvium	14.6 - 34.4	--	--	--	--	--	--	--	--	--
SWFTS-IW06A	BL02	7/11/2017	N	440-188133-10	Alluvium	16.8 - 26.6	--	--	--	--	--	--	--	--	--
SWFTS-IW06B	BL02	7/11/2017	N	440-188133-6	Alluvium	28.8 - 33.6	--	--	--	--	--	--	--	--	--
SWFTS-IW07	BL02	7/11/2017	N	440-188133-7	Alluvium	17.3 - 37.1	--	--	--	--	--	--	--	--	--
SWFTS-IW08	BL02	7/12/2017	N	440-188247-7	Alluvium	17.5 - 37.3	--	--	--	--	--	--	--	--	--
SWFTS-IW09	BL02	7/12/2017	N	440-188247-8	Alluvium	26.6 - 46.4	--	--	--	--	--	--	--	--	--
SWFTS-IW09	BL02	7/12/2017	FD	440-188244-3	Alluvium	26.6 - 46.4	--	--	--	--	--	--	--	--	--
SWFTS-IW10	BL02	7/12/2017	N	440-188247-9	Alluvium	26.8 - 46.6	--	--	--	--	--	--	--	--	--
SWFTS-IW11	BL02	7/12/2017	N	440-188247-3	Alluvium	17.3 - 37.1	--	--	--	--	--	--	--	--	--
SWFTS-IW12	BL02	7/12/2017	N	440-188247-4	Alluvium	14.3 - 39.1	--	--	--	--	--	--	--	--	--
SWFTS-IW13A	BL02	7/11/2017	N	440-188133-1	Alluvium	15.8 - 25.6	--	--	--	--	--	--	--	--	--
SWFTS-IW13B	BL02	7/11/2017	N	440-188133-15	Alluvium	27.8 - 37.6	--	--	--	--	--	--	--	--	--
SWFTS-IW14	BL02	7/12/2017	N	440-188247-1	Alluvium	16.2 - 36.1	--	--	--	--	--	--	--	--	--
SWFTS-IW15	BL02	7/12/2017	N	440-188247-2	Alluvium	16.4 - 36.2	--	--	--	--	--	--	--	--	--
SWFTS-IW16A	BL02	7/11/2017	N	440-188133-9	Alluvium	17.3 - 27.1	--	--	--	--	--	--	--	--	--
SWFTS-IW16B	BL02	7/11/2017	N	440-188133-8	Alluvium	26.5 - 36.3	--	--	--	--	--	--	--	--	--
SWFTS-IW17	BL02	7/13/2017	N	440-188325-6	Alluvium	17.3 - 37.1	--	--	--	--	--	--	--	--	--
SWFTS-IW18	BL02	7/13/2017	N	440-188325-4	Alluvium	18.1 - 38.1	--	--	--	--	--	--	--	--	--
SWFTS-IW19	BL02	7/13/2017	N	440-188325-5	Alluvium	24.3 - 44.1	--	--	--	--	--	--	--	--	--
SWFTS-IW20	BL02	7/12/2017	N	440-188247-10	Alluvium	30.8 - 50.6	--	--	--	--	--	--	--	--	--
SWFTS-MW01	BL01	3/29/2017	N	440-180937-6	Alluvium	24.2 - 38.9	--	<0.010	--	--	--	--	--	--	--
SWFTS-MW01	EM04	10/10/2017	N	440-194094-2	Alluvium	24.2 - 38.9	--	3.7	--	--	--	--	--	--	--
SWFTS-MW01	EM06	11/15/2017	N	440-196665-4	Alluvium	24.2 - 38.9	--	--	--	--	--	--	--	--	--
SWFTS-MW01	EM07	12/14/2017	N	440-198571-10	Alluvium	24.2 - 38.9	--	--	--	--	--	--	--	--	--
SWFTS-MW01	EM08	2/20/2018	N	440-203841-12	Alluvium	24.2 - 38.9	--	--	--	--	--	--	--	--	--
SWFTS-MW01	EM09	3/27/2018	N	440-207268-10	Alluvium	24.2 - 38.9	--	--	--	--	--	--	--	--	--
SWFTS-MW01	EM10	4/30/2018	N	440-210173-1	Alluvium	24.2 - 38.9	--	--	--	--	--	--	--	--	--
SWFTS-MW01	EM11	7/10/2018	N	440-215437-2	Alluvium	24.2 - 38.9	--	4.7	--	--	--	--	--	--	--
SWFTS-MW01	EM14	9/10/2018	N	440-219797-1	Alluvium	24.2 - 38.9	--	--	--	--	--	--	--	--	--
SWFTS-MW01	EM15	10/9/2018	N	440-221855-12	Alluvium	24.2 - 38.9	--	3.3	--	--	--	--	--	--	--
SWFTS-MW01	EM19	5/21/2019	N	440-242084-14	Alluvium	24.2 - 38.9	--	4.9	--	--	--	--	--	--	--
SWFTS-MW01	EM22	11/5/2019	N	440-253918-3	Alluvium	24.2 - 38.9	--	4.3	--	--	--	--	--	--	--
SWFTS-MW01	EM26	4/28/2020	N	440-265289-5	Alluvium	24.2 - 38.9	--	5.6	--	--	--	--	--	--	--
SWFTS-MW01	EM29	10/13/2020	N	440-273236-11	Alluvium	24.2 - 38.9	--	4.4	--	--	--	--	--	--	--
SWFTS-MW01	EM33	6/4/2021	N	550-164930-17	Alluvium	24.2 - 38.9	--	3.7	--	--	--	--	--	--	--
SWFTS-MW01	EM33	6/4/2021	N	550-164930-18	Alluvium	24.2 - 38.9	--	--	--	--	--	--	--	--	--

Table D.2
Groundater Analytical Results Summary - Secondary Parameters
Seep Well Field Area Bioremediation Treatability Study

Well	Event	Sample Date	QC Type	Lab Sample ID	Lithology	Screened Interval (ft bgs)	Total Metals by SW6010	Total Metals by SW6010	Total Metals by SW6010	Total Metals by SW6010	Total Metals by SW6010	Total Metals by SW6010	Total Metals by SW6010	Total Metals by SW6010	Total Metals by SW6010
							Magnesium	Manganese	Molybdenum	Nickel	Phosphorus	Potassium	Silicon	Silver	Sodium
							mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
SWFTS-MW01	EM36	11/30/2021	N	550-174968-19	Alluvium	24.2 - 38.9	--	2.6	--	--	--	--	--	--	--
SWFTS-MW01	EM36	11/30/2021	N	550-174968-20	Alluvium	24.2 - 38.9	--	--	--	--	--	--	--	--	--
SWFTS-MW01	EM40	12/13/2022	N	550-194920-3	Alluvium	24.2 - 38.9	--	2.0	--	--	--	--	--	--	--
SWFTS-MW01	EM40	12/13/2022	N	550-194920-4	Alluvium	24.2 - 38.9	--	--	--	--	--	--	--	--	--
SWFTS-MW02	BL01	3/29/2017	N	440-180937-7	Alluvium	18.4 - 33.1	--	--	--	--	--	--	--	--	--
SWFTS-MW02	EM04	10/12/2017	N	440-194204-6	Alluvium	18.4 - 33.1	--	1.6	--	--	--	--	--	--	--
SWFTS-MW02	EM06	11/14/2017	N	440-196558-3	Alluvium	18.4 - 33.1	--	--	--	--	--	--	--	--	--
SWFTS-MW02	EM07	12/13/2017	N	440-198508-8	Alluvium	18.4 - 33.1	--	--	--	--	--	--	--	--	--
SWFTS-MW02	EM08	2/19/2018	N	440-203775-1	Alluvium	18.4 - 33.1	--	--	--	--	--	--	--	--	--
SWFTS-MW02	EM09	3/27/2018	N	440-207268-1	Alluvium	18.4 - 33.1	--	--	--	--	--	--	--	--	--
SWFTS-MW02	EM10	4/30/2018	N	440-210173-3	Alluvium	18.4 - 33.1	--	--	--	--	--	--	--	--	--
SWFTS-MW02	EM11	7/11/2018	N	440-215717-13	Alluvium	18.4 - 33.1	--	1.6	--	--	--	--	--	--	--
SWFTS-MW02	EM14	9/10/2018	N	440-219797-2	Alluvium	18.4 - 33.1	--	--	--	--	--	--	--	--	--
SWFTS-MW02	EM15	10/10/2018	N	440-221975-15	Alluvium	18.4 - 33.1	--	1.8	--	--	--	--	--	--	--
SWFTS-MW02	EM19	5/21/2019	N	440-242084-8	Alluvium	18.4 - 33.1	--	2.2	--	--	--	--	--	--	--
SWFTS-MW02	EM22	11/7/2019	N	440-254148-7	Alluvium	18.4 - 33.1	--	2.7	--	--	--	--	--	--	--
SWFTS-MW02	EM26	4/30/2020	N	440-265382-3	Alluvium	18.4 - 33.1	--	1.9	--	--	--	--	--	--	--
SWFTS-MW02	EM29	10/15/2020	N	550-151259-8	Alluvium	18.4 - 33.1	--	2.4	--	--	--	--	--	--	--
SWFTS-MW02	EM33	6/3/2021	N	550-164869-21	Alluvium	18.4 - 33.1	--	2.2	--	--	--	--	--	--	--
SWFTS-MW02	EM33	6/3/2021	N	550-164869-22	Alluvium	18.4 - 33.1	--	--	--	--	--	--	--	--	--
SWFTS-MW02	EM36	11/30/2021	N	550-174968-7	Alluvium	18.4 - 33.1	--	2.2	--	--	--	--	--	--	--
SWFTS-MW02	EM36	11/30/2021	N	550-174968-8	Alluvium	18.4 - 33.1	--	--	--	--	--	--	--	--	--
SWFTS-MW02	EM40	12/14/2022	N	550-195015-3	Alluvium	18.4 - 33.1	--	3.7	--	--	--	--	--	--	--
SWFTS-MW02	EM40	12/14/2022	N	550-195015-4	Alluvium	18.4 - 33.1	--	--	--	--	--	--	--	--	--
SWFTS-MW03	BL01	3/30/2017	N	440-181045-5	Alluvium	27.2 - 42.1	--	--	--	--	--	--	--	--	--
SWFTS-MW03	BL01	3/30/2017	FD	440-181045-6	Alluvium	27.2 - 42.1	--	--	--	--	--	--	--	--	--
SWFTS-MW03	EM04	10/12/2017	N	440-194204-8	Alluvium	27.2 - 42.1	--	6.9	--	--	--	--	--	--	--
SWFTS-MW03	EM06	11/16/2017	N	440-196786-16	Alluvium	27.2 - 42.1	--	4.4	--	--	--	--	--	--	--
SWFTS-MW03	EM07	12/12/2017	N	440-198371-13	Alluvium	27.2 - 42.1	--	--	--	--	--	--	--	--	--
SWFTS-MW03	EM08	2/21/2018	N	440-203937-5	Alluvium	27.2 - 42.1	--	2.9	--	--	--	--	--	--	--
SWFTS-MW03	EM09	3/27/2018	N	440-207268-15	Alluvium	27.2 - 42.1	--	2.6	--	--	--	--	--	--	--
SWFTS-MW03	EM10	5/2/2018	N	440-210430-6	Alluvium	27.2 - 42.1	--	2.6	--	--	--	--	--	--	--
SWFTS-MW03	EM11	7/10/2018	N	440-215437-5	Alluvium	27.2 - 42.1	--	2.6	--	--	--	--	--	--	--
SWFTS-MW03	EM13	8/15/2018	N	440-218208-4	Alluvium	27.2 - 42.1	--	2.3	--	--	--	--	--	--	--
SWFTS-MW03	EM14	9/11/2018	N	440-219886-11	Alluvium	27.2 - 42.1	--	2.4	--	--	--	--	--	--	--
SWFTS-MW03	EM15	10/9/2018	N	440-221855-13	Alluvium	27.2 - 42.1	--	2.4	--	--	--	--	--	--	--
SWFTS-MW03	EM19	5/21/2019	N	440-242084-12	Alluvium	27.2 - 42.1	--	2.4	--	--	--	--	--	--	--
SWFTS-MW03	EM22	11/4/2019	N	440-253773-2	Alluvium	27.2 - 42.1	--	2.0	--	--	--	--	--	--	--
SWFTS-MW03	EM26	4/28/2020	N	440-265289-1	Alluvium	27.2 - 42.1	--	2.6	--	--	--	--	--	--	--
SWFTS-MW03	EM29	10/13/2020	N	440-273236-10	Alluvium	27.2 - 42.1	--	2.3	--	--	--	--	--	--	--
SWFTS-MW03	EM33	6/3/2021	N	550-164869-15	Alluvium	27.2 - 42.1	--	2.0	--	--	--	--	--	--	--
SWFTS-MW03	EM33	6/3/2021	N	550-164869-16	Alluvium	27.2 - 42.1	--	--	--	--	--	--	--	--	--
SWFTS-MW03	EM36	12/1/2021	N	550-175045-1	Alluvium	27.2 - 42.1	--	1.9	--	--	--	--	--	--	--
SWFTS-MW03	EM36	12/1/2021	N	550-175045-2	Alluvium	27.2 - 42.1	--	--	--	--	--	--	--	--	--
SWFTS-MW03	EM40	12/13/2022	N	550-194920-15	Alluvium	27.2 - 42.1	--	2.1	--	--	--	--	--	--	--
SWFTS-MW03	EM40	12/13/2022	N	550-194920-16	Alluvium	27.2 - 42.1	--	--	--	--	--	--	--	--	--
SWFTS-MW04	BL01	3/31/2017	N	440-181122-1	Alluvium	25.8 - 40.4	--	--	--	--	--	--	--	--	--
SWFTS-MW04	EM04	10/11/2017	N	440-194242-7	Alluvium	25.8 - 40.4	--	0.65	--	--	--	--	--	--	--
SWFTS-MW04	EM06	11/15/2017	N	440-196659-2	Alluvium	25.8 - 40.4	--	--	--	--	--	--	--	--	--
SWFTS-MW04	EM07	12/14/2017	N	440-198571-12	Alluvium	25.8 - 40.4	--	--	--	--	--	--	--	--	--
SWFTS-MW04	EM08	2/21/2018	N	440-203937-2	Alluvium	25.8 - 40.4	--	--	--	--	--	--	--	--	--
SWFTS-MW04	EM09	3/27/2018	N	440-207268-5	Alluvium	25.8 - 40.4	--	--	--	--	--	--	--	--	--
SWFTS-MW04	EM10	5/1/2018	N	440-210284-5	Alluvium	25.8 - 40.4	--	--	--	--	--	--	--	--	--
SWFTS-MW04	EM11	7/10/2018	N	440-215437-4	Alluvium	25.8 - 40.4	--	0.86	--	--	--	--	--	--	--
SWFTS-MW04	EM15	10/11/2018	N	440-222092-9	Alluvium	25.8 - 40.4	--	0.77	--	--	--	--	--	--	--
SWFTS-MW04	EM19	5/21/2019	N	440-242084-11	Alluvium	25.8 - 40.4	--	0.86	--	--	--	--	--	--	--
SWFTS-MW04	EM22	11/7/2019	N	440-254150-6	Alluvium	25.8 - 40.4	--	0.82	--	--	--	--	--	--	--
SWFTS-MW04	EM26	5/1/2020	N	440-265412-1	Alluvium	25.8 - 40.4	--	1.3	--	--	--	--	--	--	--
SWFTS-MW04	EM29	10/14/2020	N	440-273303-12	Alluvium	25.8 - 40.4	--	1.0	--	--	--	--	--	--	--
SWFTS-MW04	EM33	6/3/2021	N	550-164869-23	Alluvium	25.8 - 40.4	--	0.95	--	--	--	--	--	--	--
SWFTS-MW04	EM33	6/3/2021	N	550-164869-24	Alluvium	25.8 - 40.4	--	--	--	--	--	--	--	--	--
SWFTS-MW04	EM36	12/2/2021	N	550-175153-3	Alluvium	25.8 - 40.4	--	1.2	--	--	--	--	--	--	--
SWFTS-MW04	EM36	12/2/2021	N	550-175153-4	Alluvium	25.8 - 40.4	--	--	--	--	--	--	--	--	--
SWFTS-MW04	EM40	12/14/2022	N	550-195015-1	Alluvium	25.8 - 40.4	--	0.82	--	--	--	--	--	--	--

Table D.2
Groundater Analytical Results Summary - Secondary Parameters
Seep Well Field Area Bioremediation Treatability Study

Well	Event	Sample Date	QC Type	Lab Sample ID	Lithology	Screened Interval (ft bgs)	Total Metals by SW6010	Total Metals by SW6010	Total Metals by SW6010	Total Metals by SW6010	Total Metals by SW6010	Total Metals by SW6010	Total Metals by SW6010	Total Metals by SW6010	Total Metals by SW6010
							Magnesium	Manganese	Molybdenum	Nickel	Phosphorus	Potassium	Silicon	Silver	Sodium
							mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
SWFTS-MW04	EM40	12/14/2022	N	550-195015-2	Alluvium	25.8 - 40.4	--	--	--	--	--	--	--	--	--
SWFTS-MW05A	BL01	3/30/2017	N	440-181045-7	Alluvium	19.3 - 29.3	--	--	--	--	--	--	--	--	--
SWFTS-MW05A	EM04	10/10/2017	N	440-193989-2	Alluvium	19.3 - 29.3	--	<0.015	--	--	--	--	--	--	--
SWFTS-MW05A	EM06	11/14/2017	N	440-196558-1	Alluvium	19.3 - 29.3	--	--	--	--	--	--	--	--	--
SWFTS-MW05A	EM07	12/13/2017	N	440-198508-3	Alluvium	19.3 - 29.3	--	--	--	--	--	--	--	--	--
SWFTS-MW05A	EM08	2/20/2018	N	440-203841-7	Alluvium	19.3 - 29.3	--	--	--	--	--	--	--	--	--
SWFTS-MW05A	EM09	3/26/2018	N	440-207137-5	Alluvium	19.3 - 29.3	--	--	--	--	--	--	--	--	--
SWFTS-MW05A	EM10	4/30/2018	N	440-210173-8	Alluvium	19.3 - 29.3	--	--	--	--	--	--	--	--	--
SWFTS-MW05A	EM11	7/11/2018	N	440-215585-14	Alluvium	19.3 - 29.3	--	<0.015	--	--	--	--	--	--	--
SWFTS-MW05A	EM15	10/10/2018	N	440-221975-14	Alluvium	19.3 - 29.3	--	<0.015	--	--	--	--	--	--	--
SWFTS-MW05A	EM19	5/21/2019	N	440-242084-17	Alluvium	19.3 - 29.3	--	<0.015	--	--	--	--	--	--	--
SWFTS-MW05A	EM22	11/5/2019	N	440-253918-1	Alluvium	19.3 - 29.3	--	<0.015	--	--	--	--	--	--	--
SWFTS-MW05A	EM26	4/29/2020	N	440-265346-2	Alluvium	19.3 - 29.3	--	<0.015	--	--	--	--	--	--	--
SWFTS-MW05A	EM29	10/14/2020	N	440-273303-9	Alluvium	19.3 - 29.3	--	<0.015	--	--	--	--	--	--	--
SWFTS-MW05A	EM33	6/3/2021	N	550-164869-17	Alluvium	19.3 - 29.3	--	0.020	--	--	--	--	--	--	--
SWFTS-MW05A	EM33	6/3/2021	N	550-164869-18	Alluvium	19.3 - 29.3	--	--	--	--	--	--	--	--	--
SWFTS-MW05A	EM36	11/29/2021	N	550-174897-3	Alluvium	19.3 - 29.3	--	0.018 J	--	--	--	--	--	--	--
SWFTS-MW05A	EM36	11/29/2021	N	550-174897-4	Alluvium	19.3 - 29.3	--	--	--	--	--	--	--	--	--
SWFTS-MW05B	BL01	3/30/2017	N	440-181045-8	Alluvium	32.3 - 42.0	--	--	--	--	--	--	--	--	--
SWFTS-MW05B	EM04	10/10/2017	N	440-193989-1	Alluvium	32.3 - 42.0	--	11	--	--	--	--	--	--	--
SWFTS-MW05B	EM06	11/14/2017	N	440-196558-2	Alluvium	32.3 - 42.0	--	--	--	--	--	--	--	--	--
SWFTS-MW05B	EM07	12/13/2017	N	440-198508-4	Alluvium	32.3 - 42.0	--	--	--	--	--	--	--	--	--
SWFTS-MW05B	EM08	2/20/2018	N	440-203841-8	Alluvium	32.3 - 42.0	--	--	--	--	--	--	--	--	--
SWFTS-MW05B	EM09	3/26/2018	N	440-207137-6	Alluvium	32.3 - 42.0	--	--	--	--	--	--	--	--	--
SWFTS-MW05B	EM10	4/30/2018	N	440-210173-2	Alluvium	32.3 - 42.0	--	--	--	--	--	--	--	--	--
SWFTS-MW05B	EM11	7/10/2018	N	440-215585-10	Alluvium	32.3 - 42.0	--	2.0	--	--	--	--	--	--	--
SWFTS-MW05B	EM15	10/9/2018	N	440-221855-14	Alluvium	32.3 - 42.0	--	2.1	--	--	--	--	--	--	--
SWFTS-MW05B	EM19	5/21/2019	N	440-242084-18	Alluvium	32.3 - 42.0	--	2.2	--	--	--	--	--	--	--
SWFTS-MW05B	EM22	11/5/2019	N	440-253918-2	Alluvium	32.3 - 42.0	--	1.9	--	--	--	--	--	--	--
SWFTS-MW05B	EM26	4/29/2020	N	440-265346-1	Alluvium	32.3 - 42.0	--	1.9	--	--	--	--	--	--	--
SWFTS-MW05B	EM29	10/14/2020	N	440-273303-8	Alluvium	32.3 - 42.0	--	2.2	--	--	--	--	--	--	--
SWFTS-MW05B	EM33	6/3/2021	N	550-164869-19	Alluvium	32.3 - 42.0	--	2.4	--	--	--	--	--	--	--
SWFTS-MW05B	EM33	6/3/2021	N	550-164869-20	Alluvium	32.3 - 42.0	--	--	--	--	--	--	--	--	--
SWFTS-MW05B	EM36	11/30/2021	N	550-174968-15	Alluvium	32.3 - 42.0	--	1.6	--	--	--	--	--	--	--
SWFTS-MW05B	EM36	11/30/2021	N	550-174968-16	Alluvium	32.3 - 42.0	--	--	--	--	--	--	--	--	--
SWFTS-MW06A	BL01	3/30/2017	N	440-181045-1	Alluvium	11.8 - 21.4	--	--	--	--	--	--	--	--	--
SWFTS-MW06A	EM04	10/11/2017	N	440-194090-4	Alluvium	11.8 - 21.4	--	0.96	--	--	--	--	--	--	--
SWFTS-MW06A	EM06	11/16/2017	N	440-196786-19	Alluvium	11.8 - 21.4	--	--	--	--	--	--	--	--	--
SWFTS-MW06A	EM07	12/13/2017	N	440-198508-1	Alluvium	11.8 - 21.4	--	--	--	--	--	--	--	--	--
SWFTS-MW06A	EM08	2/22/2018	N	440-204033-1	Alluvium	11.8 - 21.4	--	--	--	--	--	--	--	--	--
SWFTS-MW06A	EM09	3/28/2018	N	440-207497-3	Alluvium	11.8 - 21.4	--	--	--	--	--	--	--	--	--
SWFTS-MW06A	EM10	5/1/2018	N	440-210284-9	Alluvium	11.8 - 21.4	--	--	--	--	--	--	--	--	--
SWFTS-MW06A	EM10	5/1/2018	FD	440-210284-10	Alluvium	11.8 - 21.4	--	--	--	--	--	--	--	--	--
SWFTS-MW06A	EM11	7/11/2018	N	440-215585-2	Alluvium	11.8 - 21.4	--	0.68	--	--	--	--	--	--	--
SWFTS-MW06A	EM11	7/11/2018	FD	440-215585-3	Alluvium	11.8 - 21.4	--	0.70	--	--	--	--	--	--	--
SWFTS-MW06A	EM15	10/10/2018	N	440-221975-8	Alluvium	11.8 - 21.4	--	0.81	--	--	--	--	--	--	--
SWFTS-MW06A	EM15	10/10/2018	FD	440-221975-10	Alluvium	11.8 - 21.4	--	0.83	--	--	--	--	--	--	--
SWFTS-MW06A	EM19	5/20/2019	N	440-242015-1	Alluvium	11.8 - 21.4	--	0.80	--	--	--	--	--	--	--
SWFTS-MW06A	EM19	5/20/2019	FD	440-242015-2	Alluvium	11.8 - 21.4	--	0.79	--	--	--	--	--	--	--
SWFTS-MW06A	EM22	11/6/2019	N	440-254027-4	Alluvium	11.8 - 21.4	--	0.94	--	--	--	--	--	--	--
SWFTS-MW06A	EM22	11/6/2019	FD	440-254027-5	Alluvium	11.8 - 21.4	--	0.93	--	--	--	--	--	--	--
SWFTS-MW06A	EM26	4/29/2020	N	440-265346-5	Alluvium	11.8 - 21.4	--	0.58	--	--	--	--	--	--	--
SWFTS-MW06A	EM26	4/29/2020	FD	440-265346-6	Alluvium	11.8 - 21.4	--	0.58	--	--	--	--	--	--	--
SWFTS-MW06A	EM29	10/13/2020	N	440-273236-7	Alluvium	11.8 - 21.4	--	0.80	--	--	--	--	--	--	--
SWFTS-MW06A	EM29	10/13/2020	FD	440-273236-8	Alluvium	11.8 - 21.4	--	0.82	--	--	--	--	--	--	--
SWFTS-MW06A	EM33	6/4/2021	N	550-164930-19	Alluvium	11.8 - 21.4	--	0.87	--	--	--	--	--	--	--
SWFTS-MW06A	EM33	6/4/2021	N	550-164930-20	Alluvium	11.8 - 21.4	--	--	--	--	--	--	--	--	--
SWFTS-MW06A	EM33	6/4/2021	FD	550-164930-21	Alluvium	11.8 - 21.4	--	0.86	--	--	--	--	--	--	--
SWFTS-MW06A	EM33	6/4/2021	FD	550-164930-22	Alluvium	11.8 - 21.4	--	--	--	--	--	--	--	--	--
SWFTS-MW06A	EM36	12/1/2021	N	550-175045-7	Alluvium	11.8 - 21.4	--	0.83	--	--	--	--	--	--	--
SWFTS-MW06A	EM36	12/1/2021	N	550-175045-8	Alluvium	11.8 - 21.4	--	--	--	--	--	--	--	--	--
SWFTS-MW06A	EM36	12/1/2021	FD	550-175045-10	Alluvium	11.8 - 21.4	--	--	--	--	--	--	--	--	--
SWFTS-MW06A	EM36	12/1/2021	FD	550-175045-9	Alluvium	11.8 - 21.4	--	0.81	--	--	--	--	--	--	--
SWFTS-MW06A	EM40	12/14/2022	N	550-195015-5	Alluvium	11.8 - 21.4	--	0.80	--	--	--	--	--	--	--

Table D.2
Groundater Analytical Results Summary - Secondary Parameters
Seep Well Field Area Bioremediation Treatability Study

Well	Event	Sample Date	QC Type	Lab Sample ID	Lithology	Screened Interval (ft bgs)	Total Metals by SW6010	Total Metals by SW6010	Total Metals by SW6010	Total Metals by SW6010	Total Metals by SW6010	Total Metals by SW6010	Total Metals by SW6010	Total Metals by SW6010	Total Metals by SW6010
							Magnesium	Manganese	Molybdenum	Nickel	Phosphorus	Potassium	Silicon	Silver	Sodium
							mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
SWFTS-MW06A	EM40	12/14/2022	N	550-195015-6	Alluvium	11.8 - 21.4	--	--	--	--	--	--	--	--	--
SWFTS-MW06A	EM40	12/14/2022	FD	550-195015-7	Alluvium	11.8 - 21.4	--	0.80	--	--	--	--	--	--	--
SWFTS-MW06A	EM40	12/14/2022	FD	550-195015-8	Alluvium	11.8 - 21.4	--	--	--	--	--	--	--	--	--
SWFTS-MW06B	BL01	3/30/2017	N	440-181045-2	Alluvium	25.9 - 35.5	--	--	--	--	--	--	--	--	--
SWFTS-MW06B	EM04	10/11/2017	N	440-194090-5	Alluvium	25.9 - 35.5	--	0.97	--	--	--	--	--	--	--
SWFTS-MW06B	EM06	11/16/2017	N	440-196786-20	Alluvium	25.9 - 35.5	--	--	--	--	--	--	--	--	--
SWFTS-MW06B	EM07	12/13/2017	N	440-198508-2	Alluvium	25.9 - 35.5	--	--	--	--	--	--	--	--	--
SWFTS-MW06B	EM08	2/22/2018	N	440-204033-5	Alluvium	25.9 - 35.5	--	--	--	--	--	--	--	--	--
SWFTS-MW06B	EM09	3/28/2018	N	440-207497-2	Alluvium	25.9 - 35.5	--	--	--	--	--	--	--	--	--
SWFTS-MW06B	EM10	5/1/2018	N	440-210284-8	Alluvium	25.9 - 35.5	--	--	--	--	--	--	--	--	--
SWFTS-MW06B	EM11	7/11/2018	N	440-215585-4	Alluvium	25.9 - 35.5	--	0.77	--	--	--	--	--	--	--
SWFTS-MW06B	EM15	10/10/2018	N	440-221975-9	Alluvium	25.9 - 35.5	--	0.98	--	--	--	--	--	--	--
SWFTS-MW06B	EM19	5/21/2019	N	440-242084-5	Alluvium	25.9 - 35.5	--	0.89	--	--	--	--	--	--	--
SWFTS-MW06B	EM22	11/6/2019	N	440-254027-6	Alluvium	25.9 - 35.5	--	1.1	--	--	--	--	--	--	--
SWFTS-MW06B	EM26	4/29/2020	N	440-265346-4	Alluvium	25.9 - 35.5	--	0.79	--	--	--	--	--	--	--
SWFTS-MW06B	EM29	10/13/2020	N	440-273236-6	Alluvium	25.9 - 35.5	--	0.89	--	--	--	--	--	--	--
SWFTS-MW06B	EM33	6/4/2021	N	550-164930-23	Alluvium	25.9 - 35.5	--	1.1	--	--	--	--	--	--	--
SWFTS-MW06B	EM33	6/4/2021	N	550-164930-24	Alluvium	25.9 - 35.5	--	--	--	--	--	--	--	--	--
SWFTS-MW06B	EM36	12/1/2021	N	550-175045-11	Alluvium	25.9 - 35.5	--	0.94	--	--	--	--	--	--	--
SWFTS-MW06B	EM36	12/1/2021	N	550-175045-12	Alluvium	25.9 - 35.5	--	--	--	--	--	--	--	--	--
SWFTS-MW06B	EM40	12/14/2022	N	550-195015-10	Alluvium	25.9 - 35.5	--	--	--	--	--	--	--	--	--
SWFTS-MW06B	EM40	12/14/2022	N	550-195015-9	Alluvium	25.9 - 35.5	--	0.97	--	--	--	--	--	--	--
SWFTS-MW07A	BL01	3/30/2017	N	440-181045-3	Alluvium	15.0 - 29.5	--	--	--	--	--	--	--	--	--
SWFTS-MW07A	EM04	10/11/2017	N	440-194242-3	Alluvium	15.0 - 29.5	--	1.1	--	--	--	--	--	--	--
SWFTS-MW07A	EM06	11/15/2017	N	440-196659-7	Alluvium	15.0 - 29.5	--	--	--	--	--	--	--	--	--
SWFTS-MW07A	EM07	12/14/2017	N	440-198571-3	Alluvium	15.0 - 29.5	--	--	--	--	--	--	--	--	--
SWFTS-MW07A	EM08	2/19/2018	N	440-203775-3	Alluvium	15.0 - 29.5	--	--	--	--	--	--	--	--	--
SWFTS-MW07A	EM09	3/28/2018	N	440-207497-4	Alluvium	15.0 - 29.5	--	--	--	--	--	--	--	--	--
SWFTS-MW07A	EM10	5/2/2018	N	440-210430-2	Alluvium	15.0 - 29.5	--	--	--	--	--	--	--	--	--
SWFTS-MW07A	EM11	7/11/2018	N	440-215585-7	Alluvium	15.0 - 29.5	--	1.2	--	--	--	--	--	--	--
SWFTS-MW07A	EM15	10/10/2018	N	440-221975-11	Alluvium	15.0 - 29.5	--	1.1	--	--	--	--	--	--	--
SWFTS-MW07A	EM19	5/22/2019	N	440-242200-5	Alluvium	15.0 - 29.5	--	0.65	--	--	--	--	--	--	--
SWFTS-MW07A	EM22	11/7/2019	N	440-254148-4	Alluvium	15.0 - 29.5	--	0.71	--	--	--	--	--	--	--
SWFTS-MW07A	EM26	4/30/2020	N	440-265382-5	Alluvium	15.0 - 29.5	--	0.68	--	--	--	--	--	--	--
SWFTS-MW07A	EM29	10/16/2020	N	440-273433-1	Alluvium	15.0 - 29.5	--	0.90	--	--	--	--	--	--	--
SWFTS-MW07A	EM33	6/4/2021	N	550-164930-25	Alluvium	15.0 - 29.5	--	0.75	--	--	--	--	--	--	--
SWFTS-MW07A	EM33	6/4/2021	N	550-164930-26	Alluvium	15.0 - 29.5	--	--	--	--	--	--	--	--	--
SWFTS-MW07A	EM36	12/3/2021	N	550-175222-3	Alluvium	15.0 - 29.5	--	0.96	--	--	--	--	--	--	--
SWFTS-MW07A	EM36	12/3/2021	N	550-175222-4	Alluvium	15.0 - 29.5	--	--	--	--	--	--	--	--	--
SWFTS-MW07A	EM40	12/14/2022	N	550-195015-11	Alluvium	15.0 - 29.5	--	1.2	--	--	--	--	--	--	--
SWFTS-MW07A	EM40	12/14/2022	N	550-195015-12	Alluvium	15.0 - 29.5	--	--	--	--	--	--	--	--	--
SWFTS-MW07B	BL01	3/30/2017	N	440-181045-4	Alluvium	33.8 - 38.3	--	--	--	--	--	--	--	--	--
SWFTS-MW07B	EM04	10/11/2017	N	440-194242-4	Alluvium	33.8 - 38.3	--	0.98	--	--	--	--	--	--	--
SWFTS-MW07B	EM06	11/15/2017	N	440-196659-8	Alluvium	33.8 - 38.3	--	--	--	--	--	--	--	--	--
SWFTS-MW07B	EM07	12/14/2017	N	440-198571-4	Alluvium	33.8 - 38.3	--	--	--	--	--	--	--	--	--
SWFTS-MW07B	EM08	2/19/2018	N	440-203775-2	Alluvium	33.8 - 38.3	--	--	--	--	--	--	--	--	--
SWFTS-MW07B	EM09	3/28/2018	N	440-207497-10	Alluvium	33.8 - 38.3	--	--	--	--	--	--	--	--	--
SWFTS-MW07B	EM10	5/2/2018	N	440-210430-1	Alluvium	33.8 - 38.3	--	--	--	--	--	--	--	--	--
SWFTS-MW07B	EM11	7/11/2018	N	440-215585-8	Alluvium	33.8 - 38.3	--	0.89	--	--	--	--	--	--	--
SWFTS-MW07B	EM15	10/10/2018	N	440-221975-12	Alluvium	33.8 - 38.3	--	0.65	--	--	--	--	--	--	--
SWFTS-MW07B	EM19	5/22/2019	N	440-242200-6	Alluvium	33.8 - 38.3	--	0.64	--	--	--	--	--	--	--
SWFTS-MW07B	EM22	11/7/2019	N	440-254148-5	Alluvium	33.8 - 38.3	--	0.59	--	--	--	--	--	--	--
SWFTS-MW07B	EM26	4/30/2020	N	440-265382-4	Alluvium	33.8 - 38.3	--	0.90	--	--	--	--	--	--	--
SWFTS-MW07B	EM29	10/16/2020	N	440-273433-2	Alluvium	33.8 - 38.3	--	0.62	--	--	--	--	--	--	--
SWFTS-MW07B	EM33	6/4/2021	N	550-164930-27	Alluvium	33.8 - 38.3	--	0.90	--	--	--	--	--	--	--
SWFTS-MW07B	EM33	6/4/2021	N	550-164930-28	Alluvium	33.8 - 38.3	--	--	--	--	--	--	--	--	--
SWFTS-MW07B	EM36	12/3/2021	N	550-175222-5	Alluvium	33.8 - 38.3	--	1.3	--	--	--	--	--	--	--
SWFTS-MW07B	EM36	12/3/2021	N	550-175222-6	Alluvium	33.8 - 38.3	--	--	--	--	--	--	--	--	--
SWFTS-MW07B	EM40	12/14/2022	N	550-195015-13	Alluvium	33.8 - 38.3	--	0.77	--	--	--	--	--	--	--
SWFTS-MW07B	EM40	12/14/2022	N	550-195015-14	Alluvium	33.8 - 38.3	--	--	--	--	--	--	--	--	--
SWFTS-MW08A	BL01	3/30/2017	N	440-181045-9	Alluvium	20.2 - 34.8	--	0.014 J	--	--	--	--	--	--	--
SWFTS-MW08A	EM04	10/10/2017	N	440-194094-4	Alluvium	20.2 - 34.8	--	<0.015	--	--	--	--	--	--	--
SWFTS-MW08A	EM06	11/15/2017	N	440-196659-4	Alluvium	20.2 - 34.8	--	--	--	--	--	--	--	--	--
SWFTS-MW08A	EM07	12/14/2017	N	440-198571-1	Alluvium	20.2 - 34.8	--	--	--	--	--	--	--	--	--

Table D.2
Groundater Analytical Results Summary - Secondary Parameters
Seep Well Field Area Bioremediation Treatability Study

Well	Event	Sample Date	QC Type	Lab Sample ID	Lithology	Screened Interval (ft bgs)	Total Metals by SW6010	Total Metals by SW6010	Total Metals by SW6010	Total Metals by SW6010	Total Metals by SW6010	Total Metals by SW6010	Total Metals by SW6010	Total Metals by SW6010	Total Metals by SW6010
							Magnesium	Manganese	Molybdenum	Nickel	Phosphorus	Potassium	Silicon	Silver	Sodium
							mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
SWFTS-MW08A	EM08	2/22/2018	N	440-204033-8	Alluvium	20.2 - 34.8	--	--	--	--	--	--	--	--	--
SWFTS-MW08A	EM09	3/29/2018	N	440-207586-1	Alluvium	20.2 - 34.8	--	--	--	--	--	--	--	--	--
SWFTS-MW08A	EM10	5/3/2018	N	440-210534-5	Alluvium	20.2 - 34.8	--	--	--	--	--	--	--	--	--
SWFTS-MW08A	EM11	7/11/2018	N	440-215717-14	Alluvium	20.2 - 34.8	--	<0.015	--	--	--	--	--	--	--
SWFTS-MW08A	EM15	10/10/2018	N	440-221975-13	Alluvium	20.2 - 34.8	--	<0.015	--	--	--	--	--	--	--
SWFTS-MW08A	EM19	5/22/2019	N	440-242198-4	Alluvium	20.2 - 34.8	--	<0.015	--	--	--	--	--	--	--
SWFTS-MW08A	EM22	11/7/2019	N	440-254148-6	Alluvium	20.2 - 34.8	--	<0.015	--	--	--	--	--	--	--
SWFTS-MW08A	EM26	4/29/2020	N	440-265346-3	Alluvium	20.2 - 34.8	--	<0.015	--	--	--	--	--	--	--
SWFTS-MW08A	EM29	10/16/2020	N	440-273433-4	Alluvium	20.2 - 34.8	--	<0.015	--	--	--	--	--	--	--
SWFTS-MW08A	EM33	6/4/2021	N	550-164930-29	Alluvium	20.2 - 34.8	--	<0.0083	--	--	--	--	--	--	--
SWFTS-MW08A	EM33	6/4/2021	N	550-164930-30	Alluvium	20.2 - 34.8	--	--	--	--	--	--	--	--	--
SWFTS-MW08A	EM36	12/2/2021	N	550-175153-23	Alluvium	20.2 - 34.8	--	<0.0083	--	--	--	--	--	--	--
SWFTS-MW08A	EM36	12/2/2021	N	550-175153-24	Alluvium	20.2 - 34.8	--	--	--	--	--	--	--	--	--
SWFTS-MW08C	BL01	3/28/2017	N	440-180820-3	UMCf	49.9 - 69.5	--	<0.010	--	--	--	--	--	--	--
SWFTS-MW08C	EM40	12/14/2022	N	550-195015-15	UMCf	49.9 - 69.5	--	<0.0083	--	--	--	--	--	--	--
SWFTS-MW08C	EM40	12/14/2022	N	550-195015-16	UMCf	49.9 - 69.5	--	--	--	--	--	--	--	--	--
SWFTS-MW09A	BL01	3/29/2017	N	440-180937-3	Alluvium	19.3 - 28.9	--	0.024	--	--	--	--	--	--	--
SWFTS-MW09A	EM04	10/11/2017	N	440-194094-7	Alluvium	19.3 - 28.9	--	8.9	--	--	--	--	--	--	--
SWFTS-MW09A	EM06	11/16/2017	N	440-196786-14	Alluvium	19.3 - 28.9	--	--	--	--	--	--	--	--	--
SWFTS-MW09A	EM07	12/12/2017	N	440-198371-6	Alluvium	19.3 - 28.9	--	--	--	--	--	--	--	--	--
SWFTS-MW09A	EM08	2/20/2018	N	440-203841-14	Alluvium	19.3 - 28.9	--	--	--	--	--	--	--	--	--
SWFTS-MW09A	EM09	3/27/2018	N	440-207268-7	Alluvium	19.3 - 28.9	--	--	--	--	--	--	--	--	--
SWFTS-MW09A	EM10	5/1/2018	N	440-210284-13	Alluvium	19.3 - 28.9	--	--	--	--	--	--	--	--	--
SWFTS-MW09A	EM11	7/12/2018	N	440-215717-10	Alluvium	19.3 - 28.9	--	3.8	--	--	--	--	--	--	--
SWFTS-MW09A	EM15	10/9/2018	N	440-221855-7	Alluvium	19.3 - 28.9	--	3.4	--	--	--	--	--	--	--
SWFTS-MW09A	EM19	5/22/2019	N	440-242200-1	Alluvium	19.3 - 28.9	--	3.6	--	--	--	--	--	--	--
SWFTS-MW09A	EM22	11/5/2019	N	440-253891-1	Alluvium	19.3 - 28.9	--	2.9	--	--	--	--	--	--	--
SWFTS-MW09A	EM26	4/28/2020	N	440-265289-4	Alluvium	19.3 - 28.9	--	3.7	--	--	--	--	--	--	--
SWFTS-MW09A	EM29	10/13/2020	N	440-273236-3	Alluvium	19.3 - 28.9	--	3.2	--	--	--	--	--	--	--
SWFTS-MW09A	EM33	6/1/2021	N	550-164699-1	Alluvium	19.3 - 28.9	--	3.3	--	--	--	--	--	--	--
SWFTS-MW09A	EM33	6/1/2021	N	550-164699-2	Alluvium	19.3 - 28.9	--	--	--	--	--	--	--	--	--
SWFTS-MW09A	EM36	12/2/2021	N	550-175153-10	Alluvium	19.3 - 28.9	--	--	--	--	--	--	--	--	--
SWFTS-MW09A	EM36	12/2/2021	N	550-175153-9	Alluvium	19.3 - 28.9	--	4.2	--	--	--	--	--	--	--
SWFTS-MW09A	EM40	12/13/2022	N	550-194920-10	Alluvium	19.3 - 28.9	--	--	--	--	--	--	--	--	--
SWFTS-MW09A	EM40	12/13/2022	N	550-194920-9	Alluvium	19.3 - 28.9	--	3.1	--	--	--	--	--	--	--
SWFTS-MW09B	BL01	3/29/2017	N	440-180937-4	Alluvium	34.4 - 39.0	--	0.84	--	--	--	--	--	--	--
SWFTS-MW09B	BL01	3/29/2017	FD	440-180937-5	Alluvium	34.4 - 39.0	--	0.82	--	--	--	--	--	--	--
SWFTS-MW09B	EM04	10/11/2017	N	440-194094-5	Alluvium	34.4 - 39.0	--	6.8	--	--	--	--	--	--	--
SWFTS-MW09B	EM06	11/16/2017	N	440-196786-15	Alluvium	34.4 - 39.0	--	--	--	--	--	--	--	--	--
SWFTS-MW09B	EM07	12/12/2017	N	440-198371-7	Alluvium	34.4 - 39.0	--	--	--	--	--	--	--	--	--
SWFTS-MW09B	EM08	2/20/2018	N	440-203841-13	Alluvium	34.4 - 39.0	--	--	--	--	--	--	--	--	--
SWFTS-MW09B	EM09	3/27/2018	N	440-207268-6	Alluvium	34.4 - 39.0	--	--	--	--	--	--	--	--	--
SWFTS-MW09B	EM10	4/30/2018	N	440-210173-11	Alluvium	34.4 - 39.0	--	--	--	--	--	--	--	--	--
SWFTS-MW09B	EM11	7/12/2018	N	440-215717-9	Alluvium	34.4 - 39.0	--	2.5	--	--	--	--	--	--	--
SWFTS-MW09B	EM15	10/9/2018	N	440-221855-8	Alluvium	34.4 - 39.0	--	2.2	--	--	--	--	--	--	--
SWFTS-MW09B	EM19	5/22/2019	N	440-242200-2	Alluvium	34.4 - 39.0	--	<0.015	--	--	--	--	--	--	--
SWFTS-MW09B	EM22	11/5/2019	N	440-253891-3	Alluvium	34.4 - 39.0	--	1.8	--	--	--	--	--	--	--
SWFTS-MW09B	EM26	4/28/2020	N	440-265289-3	Alluvium	34.4 - 39.0	--	2.0	--	--	--	--	--	--	--
SWFTS-MW09B	EM29	10/13/2020	N	440-273236-4	Alluvium	34.4 - 39.0	--	1.5	--	--	--	--	--	--	--
SWFTS-MW09B	EM33	6/2/2021	N	550-164872-1	Alluvium	34.4 - 39.0	--	1.4	--	--	--	--	--	--	--
SWFTS-MW09B	EM33	6/2/2021	N	550-164872-2	Alluvium	34.4 - 39.0	--	--	--	--	--	--	--	--	--
SWFTS-MW09B	EM36	12/2/2021	N	550-175153-11	Alluvium	34.4 - 39.0	--	1.7	--	--	--	--	--	--	--
SWFTS-MW09B	EM36	12/2/2021	N	550-175153-12	Alluvium	34.4 - 39.0	--	--	--	--	--	--	--	--	--
SWFTS-MW09B	EM40	12/13/2022	N	550-194920-13	Alluvium	34.4 - 39.0	--	1.1	--	--	--	--	--	--	--
SWFTS-MW09B	EM40	12/13/2022	N	550-194920-14	Alluvium	34.4 - 39.0	--	--	--	--	--	--	--	--	--
SWFTS-MW10A	BL01	3/31/2017	N	440-181122-2	Alluvium	20.4 - 35.0	--	1.1	--	--	--	--	--	--	--
SWFTS-MW10A	EM04	10/12/2017	N	440-194242-10	Alluvium	20.4 - 35.0	--	4.3	--	--	--	--	--	--	--
SWFTS-MW10A	EM06	11/16/2017	N	440-196786-5	Alluvium	20.4 - 35.0	--	2.4	--	--	--	--	--	--	--
SWFTS-MW10A	EM06	11/16/2017	FD	440-196786-6	Alluvium	20.4 - 35.0	--	2.5	--	--	--	--	--	--	--
SWFTS-MW10A	EM07	12/12/2017	N	440-198371-10	Alluvium	20.4 - 35.0	--	--	--	--	--	--	--	--	--
SWFTS-MW10A	EM07	12/12/2017	FD	440-198371-11	Alluvium	20.4 - 35.0	--	--	--	--	--	--	--	--	--
SWFTS-MW10A	EM08	2/20/2018	N	440-203841-4	Alluvium	20.4 - 35.0	--	2.4	--	--	--	--	--	--	--
SWFTS-MW10A	EM08	2/20/2018	FD	440-203841-5	Alluvium	20.4 - 35.0	--	2.4	--	--	--	--	--	--	--
SWFTS-MW10A	EM09	3/26/2018	N	440-207137-7	Alluvium	20.4 - 35.0	--	2.6	--	--	--	--	--	--	--

Table D.2
Groundater Analytical Results Summary - Secondary Parameters
Seep Well Field Area Bioremediation Treatability Study

Well	Event	Sample Date	QC Type	Lab Sample ID	Lithology	Screened Interval (ft bgs)	Total Metals by SW6010	Total Metals by SW6010	Total Metals by SW6010	Total Metals by SW6010	Total Metals by SW6010	Total Metals by SW6010	Total Metals by SW6010	Total Metals by SW6010	Total Metals by SW6010
							Magnesium	Manganese	Molybdenum	Nickel	Phosphorus	Potassium	Silicon	Silver	Sodium
							mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
SWFTS-MW10A	EM09	3/26/2018	FD	440-207137-8	Alluvium	20.4 - 35.0	--	2.4	--	--	--	--	--	--	--
SWFTS-MW10A	EM10	5/1/2018	N	440-210284-1	Alluvium	20.4 - 35.0	--	2.5	--	--	--	--	--	--	--
SWFTS-MW10A	EM11	7/11/2018	N	440-215585-9	Alluvium	20.4 - 35.0	--	2.1	--	--	--	--	--	--	--
SWFTS-MW10A	EM13	8/14/2018	N	440-218109-10	Alluvium	20.4 - 35.0	--	1.8	--	--	--	--	--	--	--
SWFTS-MW10A	EM14	9/10/2018	N	440-219797-4	Alluvium	20.4 - 35.0	--	1.8	--	--	--	--	--	--	--
SWFTS-MW10A	EM15	10/9/2018	N	440-221855-9	Alluvium	20.4 - 35.0	--	1.7	--	--	--	--	--	--	--
SWFTS-MW10A	EM19	5/21/2019	N	440-242084-2	Alluvium	20.4 - 35.0	--	1.5	--	--	--	--	--	--	--
SWFTS-MW10A	EM22	11/6/2019	N	440-254051-1	Alluvium	20.4 - 35.0	--	1.6	--	--	--	--	--	--	--
SWFTS-MW10A	EM26	4/29/2020	N	440-265342-6	Alluvium	20.4 - 35.0	--	1.8	--	--	--	--	--	--	--
SWFTS-MW10A	EM29	10/14/2020	N	440-273303-4	Alluvium	20.4 - 35.0	--	1.7	--	--	--	--	--	--	--
SWFTS-MW10A	EM33	6/4/2021	N	550-164930-13	Alluvium	20.4 - 35.0	--	1.8	--	--	--	--	--	--	--
SWFTS-MW10A	EM33	6/4/2021	N	550-164930-14	Alluvium	20.4 - 35.0	--	--	--	--	--	--	--	--	--
SWFTS-MW10A	EM36	11/30/2021	N	550-174968-17	Alluvium	20.4 - 35.0	--	1.5	--	--	--	--	--	--	--
SWFTS-MW10A	EM36	11/30/2021	N	550-174968-18	Alluvium	20.4 - 35.0	--	--	--	--	--	--	--	--	--
SWFTS-MW10A	EM40	12/15/2022	N	550-195103-1	Alluvium	20.4 - 35.0	--	1.7	--	--	--	--	--	--	--
SWFTS-MW10A	EM40	12/15/2022	N	550-195103-2	Alluvium	20.4 - 35.0	--	--	--	--	--	--	--	--	--
SWFTS-MW10C	BL01	3/28/2017	N	440-180820-4	UMCf	43.5 - 63.1	--	0.066	--	--	--	--	--	--	--
SWFTS-MW10C	EM40	12/15/2022	N	550-195103-3	UMCf	43.5 - 63.1	--	0.34	--	--	--	--	--	--	--
SWFTS-MW10C	EM40	12/15/2022	N	550-195103-4	UMCf	43.5 - 63.1	--	--	--	--	--	--	--	--	--
SWFTS-MW11	BL02	7/12/2017	N	440-188244-7	Alluvium	14.8 - 39.6	--	0.16	--	--	--	--	--	--	--
SWFTS-MW11	EM04	10/11/2017	N	440-194094-8	Alluvium	14.8 - 39.6	--	0.21	--	--	--	--	--	--	--
SWFTS-MW11	EM06	11/16/2017	N	440-196786-3	Alluvium	14.8 - 39.6	--	--	--	--	--	--	--	--	--
SWFTS-MW11	EM07	12/14/2017	N	440-198571-13	Alluvium	14.8 - 39.6	--	--	--	--	--	--	--	--	--
SWFTS-MW11	EM08	2/21/2018	N	440-203937-10	Alluvium	14.8 - 39.6	--	--	--	--	--	--	--	--	--
SWFTS-MW11	EM08	2/21/2018	FD	440-203937-11	Alluvium	14.8 - 39.6	--	--	--	--	--	--	--	--	--
SWFTS-MW11	EM09	3/28/2018	N	440-207497-7	Alluvium	14.8 - 39.6	--	--	--	--	--	--	--	--	--
SWFTS-MW11	EM09	3/28/2018	FD	440-207497-8	Alluvium	14.8 - 39.6	--	--	--	--	--	--	--	--	--
SWFTS-MW11	EM10	5/1/2018	N	440-210284-11	Alluvium	14.8 - 39.6	--	--	--	--	--	--	--	--	--
SWFTS-MW11	EM10	5/1/2018	FD	440-210367-1	Alluvium	14.8 - 39.6	--	--	--	--	--	--	--	--	--
SWFTS-MW11	EM11	7/12/2018	N	440-215717-17	Alluvium	14.8 - 39.6	--	<0.015	--	--	--	--	--	--	--
SWFTS-MW11	EM11	7/12/2018	FD	440-215717-18	Alluvium	14.8 - 39.6	--	<0.015	--	--	--	--	--	--	--
SWFTS-MW11	EM15	10/11/2018	N	440-222092-10	Alluvium	14.8 - 39.6	--	<0.015	--	--	--	--	--	--	--
SWFTS-MW11	EM15	10/11/2018	FD	440-222092-11	Alluvium	14.8 - 39.6	--	<0.015	--	--	--	--	--	--	--
SWFTS-MW11	EM19	5/22/2019	N	440-242200-3	Alluvium	14.8 - 39.6	--	1.8 J	--	--	--	--	--	--	--
SWFTS-MW11	EM19	5/22/2019	FD	440-242200-4	Alluvium	14.8 - 39.6	--	<0.015 UJ	--	--	--	--	--	--	--
SWFTS-MW11	EM22	11/7/2019	N	440-254150-3	Alluvium	14.8 - 39.6	--	<0.015	--	--	--	--	--	--	--
SWFTS-MW11	EM22	11/7/2019	FD	440-254150-4	Alluvium	14.8 - 39.6	--	<0.015	--	--	--	--	--	--	--
SWFTS-MW11	EM26	4/30/2020	N	440-265383-4	Alluvium	14.8 - 39.6	--	<0.015	--	--	--	--	--	--	--
SWFTS-MW11	EM26	4/30/2020	FD	440-265383-5	Alluvium	14.8 - 39.6	--	<0.015	--	--	--	--	--	--	--
SWFTS-MW11	EM29	10/16/2020	N	440-273433-7	Alluvium	14.8 - 39.6	--	<0.015	--	--	--	--	--	--	--
SWFTS-MW11	EM29	10/16/2020	FD	440-273433-8	Alluvium	14.8 - 39.6	--	<0.015	--	--	--	--	--	--	--
SWFTS-MW11	EM33	6/4/2021	N	550-164930-7	Alluvium	14.8 - 39.6	--	<0.0083	--	--	--	--	--	--	--
SWFTS-MW11	EM33	6/4/2021	N	550-164930-8	Alluvium	14.8 - 39.6	--	--	--	--	--	--	--	--	--
SWFTS-MW11	EM33	6/4/2021	FD	550-164930-10	Alluvium	14.8 - 39.6	--	--	--	--	--	--	--	--	--
SWFTS-MW11	EM33	6/4/2021	FD	550-164930-9	Alluvium	14.8 - 39.6	--	<0.0083	--	--	--	--	--	--	--
SWFTS-MW11	EM36	12/3/2021	N	550-175222-7	Alluvium	14.8 - 39.6	--	<0.0083	--	--	--	--	--	--	--
SWFTS-MW11	EM36	12/3/2021	N	550-175222-8	Alluvium	14.8 - 39.6	--	--	--	--	--	--	--	--	--
SWFTS-MW11	EM36	12/3/2021	FD	550-175222-10	Alluvium	14.8 - 39.6	--	--	--	--	--	--	--	--	--
SWFTS-MW11	EM36	12/3/2021	FD	550-175222-9	Alluvium	14.8 - 39.6	--	<0.0083	--	--	--	--	--	--	--
SWFTS-MW11	EM40	12/15/2022	N	550-195103-5	Alluvium	14.8 - 39.6	--	<0.0083	--	--	--	--	--	--	--
SWFTS-MW11	EM40	12/15/2022	N	550-195103-6	Alluvium	14.8 - 39.6	--	--	--	--	--	--	--	--	--
SWFTS-MW11	EM40	12/15/2022	FD	550-195103-7	Alluvium	14.8 - 39.6	--	<0.0083	--	--	--	--	--	--	--
SWFTS-MW11	EM40	12/15/2022	FD	550-195103-8	Alluvium	14.8 - 39.6	--	--	--	--	--	--	--	--	--
SWFTS-MW12	BL02	7/13/2017	N	440-188324-6	Alluvium	15.8 - 40.6	--	<0.015	--	--	--	--	--	--	--
SWFTS-MW12	EM04	10/11/2017	N	440-194090-1	Alluvium	15.8 - 40.6	--	<0.015	--	--	--	--	--	--	--
SWFTS-MW12	EM06	11/14/2017	N	440-196558-5	Alluvium	15.8 - 40.6	--	--	--	--	--	--	--	--	--
SWFTS-MW12	EM07	12/14/2017	N	440-198571-15	Alluvium	15.8 - 40.6	--	--	--	--	--	--	--	--	--
SWFTS-MW12	EM08	2/22/2018	N	440-204033-2	Alluvium	15.8 - 40.6	--	--	--	--	--	--	--	--	--
SWFTS-MW12	EM09	3/28/2018	N	440-207497-5	Alluvium	15.8 - 40.6	--	--	--	--	--	--	--	--	--
SWFTS-MW12	EM10	5/3/2018	N	440-210534-4	Alluvium	15.8 - 40.6	--	--	--	--	--	--	--	--	--
SWFTS-MW12	EM11	7/12/2018	N	440-215717-16	Alluvium	15.8 - 40.6	--	<0.015	--	--	--	--	--	--	--
SWFTS-MW12	EM15	10/11/2018	N	440-222092-12	Alluvium	15.8 - 40.6	--	0.065	--	--	--	--	--	--	--
SWFTS-MW12	EM19	5/22/2019	N	440-242198-7	Alluvium	15.8 - 40.6	--	<0.015	--	--	--	--	--	--	--
SWFTS-MW12	EM22	11/7/2019	N	440-254150-2	Alluvium	15.8 - 40.6	--	46	--	--	--	--	--	--	--

Table D.2
Groundater Analytical Results Summary - Secondary Parameters
Seep Well Field Area Bioremediation Treatability Study

Well	Event	Sample Date	QC Type	Lab Sample ID	Lithology	Screened Interval (ft bgs)	Total Metals by SW6010	Total Metals by SW6010	Total Metals by SW6010	Total Metals by SW6010	Total Metals by SW6010	Total Metals by SW6010	Total Metals by SW6010	Total Metals by SW6010	Total Metals by SW6010
							Magnesium	Manganese	Molybdenum	Nickel	Phosphorus	Potassium	Silicon	Silver	Sodium
							mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
SWFTS-MW12	EM22	11/26/2019	N	440-255698-1	Alluvium	15.8 - 40.6	--	37 J-	--	--	--	--	--	--	--
SWFTS-MW12	EM22	11/26/2019	FD	440-255698-2	Alluvium	15.8 - 40.6	--	37 J-	--	--	--	--	--	--	--
SWFTS-MW12	EM26	4/30/2020	N	440-265383-3	Alluvium	15.8 - 40.6	--	1.7	--	--	--	--	--	--	--
SWFTS-MW12	EM29	10/16/2020	N	440-273433-6	Alluvium	15.8 - 40.6	--	2.2	--	--	--	--	--	--	--
SWFTS-MW12	EM33	6/4/2021	N	550-164930-5	Alluvium	15.8 - 40.6	--	2.0	--	--	--	--	--	--	--
SWFTS-MW12	EM33	6/4/2021	N	550-164930-6	Alluvium	15.8 - 40.6	--	--	--	--	--	--	--	--	--
SWFTS-MW12	EM36	12/2/2021	N	550-175153-19	Alluvium	15.8 - 40.6	--	0.58	--	--	--	--	--	--	--
SWFTS-MW12	EM36	12/2/2021	N	550-175153-20	Alluvium	15.8 - 40.6	--	--	--	--	--	--	--	--	--
SWFTS-MW12	EM40	12/15/2022	N	550-195103-10	Alluvium	15.8 - 40.6	--	--	--	--	--	--	--	--	--
SWFTS-MW12	EM40	12/15/2022	N	550-195103-9	Alluvium	15.8 - 40.6	--	0.57	--	--	--	--	--	--	--
SWFTS-MW13	BL02	7/12/2017	N	440-188244-6	Alluvium	17.8 - 47.6	--	0.18	--	--	--	--	--	--	--
SWFTS-MW13	EM04	10/10/2017	N	440-193989-4	Alluvium	17.8 - 47.6	--	<0.015	--	--	--	--	--	--	--
SWFTS-MW13	EM06	11/15/2017	N	440-196659-1	Alluvium	17.8 - 47.6	--	--	--	--	--	--	--	--	--
SWFTS-MW13	EM07	12/14/2017	N	440-198571-14	Alluvium	17.8 - 47.6	--	--	--	--	--	--	--	--	--
SWFTS-MW13	EM08	2/22/2018	N	440-204033-7	Alluvium	17.8 - 47.6	--	--	--	--	--	--	--	--	--
SWFTS-MW13	EM09	3/26/2018	N	440-207137-4	Alluvium	17.8 - 47.6	--	--	--	--	--	--	--	--	--
SWFTS-MW13	EM10	5/3/2018	N	440-210534-1	Alluvium	17.8 - 47.6	--	--	--	--	--	--	--	--	--
SWFTS-MW13	EM11	7/12/2018	N	440-215717-15	Alluvium	17.8 - 47.6	--	<0.015	--	--	--	--	--	--	--
SWFTS-MW13	EM15	10/11/2018	N	440-222092-14	Alluvium	17.8 - 47.6	--	<0.015	--	--	--	--	--	--	--
SWFTS-MW13	EM19	5/22/2019	N	440-242198-5	Alluvium	17.8 - 47.6	--	<0.015	--	--	--	--	--	--	--
SWFTS-MW13	EM22	11/6/2019	N	440-254051-6	Alluvium	17.8 - 47.6	--	<0.015	--	--	--	--	--	--	--
SWFTS-MW13	EM26	4/30/2020	N	440-265383-2	Alluvium	17.8 - 47.6	--	<0.015	--	--	--	--	--	--	--
SWFTS-MW13	EM29	10/15/2020	N	550-151259-6	Alluvium	17.8 - 47.6	--	<0.015	--	--	--	--	--	--	--
SWFTS-MW13	EM33	6/4/2021	N	550-164930-3	Alluvium	17.8 - 47.6	--	<0.0083	--	--	--	--	--	--	--
SWFTS-MW13	EM33	6/4/2021	N	550-164930-4	Alluvium	17.8 - 47.6	--	--	--	--	--	--	--	--	--
SWFTS-MW13	EM36	12/2/2021	N	550-175153-17	Alluvium	17.8 - 47.6	--	<0.0083	--	--	--	--	--	--	--
SWFTS-MW13	EM36	12/2/2021	N	550-175153-18	Alluvium	17.8 - 47.6	--	--	--	--	--	--	--	--	--
SWFTS-MW13	EM40	12/15/2022	N	550-195106-7	Alluvium	17.8 - 47.6	--	<0.0083	--	--	--	--	--	--	--
SWFTS-MW13	EM40	12/15/2022	N	550-195106-8	Alluvium	17.8 - 47.6	--	--	--	--	--	--	--	--	--
SWFTS-MW14	BL02	7/12/2017	N	440-188244-8	Alluvium	16.8 - 36.6	--	0.66	--	--	--	--	--	--	--
SWFTS-MW14	BL02	7/12/2017	FD	440-188244-9	Alluvium	16.8 - 36.6	--	0.68	--	--	--	--	--	--	--
SWFTS-MW14	EM04	10/11/2017	N	440-194242-8	Alluvium	16.8 - 36.6	--	5.4	--	--	--	--	--	--	--
SWFTS-MW14	EM06	11/15/2017	N	440-196659-3	Alluvium	16.8 - 36.6	--	3.6 J-	--	--	--	--	--	--	--
SWFTS-MW14	EM07	12/12/2017	N	440-198371-12	Alluvium	16.8 - 36.6	--	--	--	--	--	--	--	--	--
SWFTS-MW14	EM08	2/20/2018	N	440-203841-11	Alluvium	16.8 - 36.6	--	7.1	--	--	--	--	--	--	--
SWFTS-MW14	EM09	3/26/2018	N	440-207137-9	Alluvium	16.8 - 36.6	--	1.4	--	--	--	--	--	--	--
SWFTS-MW14	EM10	4/30/2018	N	440-210173-9	Alluvium	16.8 - 36.6	--	0.65	--	--	--	--	--	--	--
SWFTS-MW14	EM11	7/10/2018	N	440-215437-8	Alluvium	16.8 - 36.6	--	0.80	--	--	--	--	--	--	--
SWFTS-MW14	EM13	8/14/2018	N	440-218109-11	Alluvium	16.8 - 36.6	--	0.49	--	--	--	--	--	--	--
SWFTS-MW14	EM14	9/11/2018	N	440-219886-17	Alluvium	16.8 - 36.6	--	0.45	--	--	--	--	--	--	--
SWFTS-MW14	EM15	10/9/2018	N	440-221855-10	Alluvium	16.8 - 36.6	--	0.42	--	--	--	--	--	--	--
SWFTS-MW14	EM19	5/21/2019	N	440-242084-1	Alluvium	16.8 - 36.6	--	0.33	--	--	--	--	--	--	--
SWFTS-MW14	EM22	11/6/2019	N	440-254051-2	Alluvium	16.8 - 36.6	--	0.44	--	--	--	--	--	--	--
SWFTS-MW14	EM26	5/1/2020	N	440-265414-2	Alluvium	16.8 - 36.6	--	1.3	--	--	--	--	--	--	--
SWFTS-MW14	EM29	10/14/2020	N	440-273303-5	Alluvium	16.8 - 36.6	--	1.7	--	--	--	--	--	--	--
SWFTS-MW14	EM33	6/4/2021	N	550-164930-1	Alluvium	16.8 - 36.6	--	1.8	--	--	--	--	--	--	--
SWFTS-MW14	EM33	6/4/2021	N	550-164930-2	Alluvium	16.8 - 36.6	--	--	--	--	--	--	--	--	--
SWFTS-MW14	EM36	12/3/2021	N	550-175222-1	Alluvium	16.8 - 36.6	--	1.7	--	--	--	--	--	--	--
SWFTS-MW14	EM36	12/3/2021	N	550-175222-2	Alluvium	16.8 - 36.6	--	--	--	--	--	--	--	--	--
SWFTS-MW14	EM40	12/15/2022	N	550-195106-3	Alluvium	16.8 - 36.6	--	2.5	--	--	--	--	--	--	--
SWFTS-MW14	EM40	12/15/2022	N	550-195106-4	Alluvium	16.8 - 36.6	--	--	--	--	--	--	--	--	--
SWFTS-MW15	BL02	7/13/2017	N	440-188325-3	Alluvium	14.8 - 34.6	--	0.29	--	--	--	--	--	--	--
SWFTS-MW15	EM04	10/10/2017	N	440-194094-1	Alluvium	14.8 - 34.6	--	0.13	--	--	--	--	--	--	--
SWFTS-MW15	EM06	11/14/2017	N	440-196558-4	Alluvium	14.8 - 34.6	--	--	--	--	--	--	--	--	--
SWFTS-MW15	EM07	12/13/2017	N	440-198508-13	Alluvium	14.8 - 34.6	--	0.022	--	--	--	--	--	--	--
SWFTS-MW15	EM08	2/19/2018	N	440-203775-4	Alluvium	14.8 - 34.6	--	--	--	--	--	--	--	--	--
SWFTS-MW15	EM09	3/26/2018	N	440-207137-10	Alluvium	14.8 - 34.6	--	--	--	--	--	--	--	--	--
SWFTS-MW15	EM10	5/2/2018	N	440-210430-3	Alluvium	14.8 - 34.6	--	--	--	--	--	--	--	--	--
SWFTS-MW15	EM11	7/11/2018	N	440-215717-1	Alluvium	14.8 - 34.6	--	0.65	--	--	--	--	--	--	--
SWFTS-MW15	EM15	10/9/2018	N	440-221855-11	Alluvium	14.8 - 34.6	--	5.0	--	--	--	--	--	--	--
SWFTS-MW15	EM19	5/20/2019	N	440-242014-1	Alluvium	14.8 - 34.6	--	0.66	--	--	--	--	--	--	--
SWFTS-MW15	EM22	11/6/2019	N	440-254051-3	Alluvium	14.8 - 34.6	--	0.13	--	--	--	--	--	--	--
SWFTS-MW15	EM26	4/29/2020	N	440-265342-3	Alluvium	14.8 - 34.6	--	0.50	--	--	--	--	--	--	--
SWFTS-MW15	EM29	10/15/2020	N	550-151259-4	Alluvium	14.8 - 34.6	--	1.8	--	--	--	--	--	--	--

Table D.2
Groundater Analytical Results Summary - Secondary Parameters
Seep Well Field Area Bioremediation Treatability Study

Well	Event	Sample Date	QC Type	Lab Sample ID	Lithology	Screened Interval (ft bgs)	Total Metals by SW6010	Total Metals by SW6010	Total Metals by SW6010	Total Metals by SW6010	Total Metals by SW6010	Total Metals by SW6010	Total Metals by SW6010	Total Metals by SW6010	Total Metals by SW6010
							Magnesium	Manganese	Molybdenum	Nickel	Phosphorus	Potassium	Silicon	Silver	Sodium
							mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
SWFTS-MW15	EM33	6/3/2021	N	550-164869-13	Alluvium	14.8 - 34.6	--	0.43	--	--	--	--	--	--	--
SWFTS-MW15	EM33	6/3/2021	N	550-164869-14	Alluvium	14.8 - 34.6	--	--	--	--	--	--	--	--	--
SWFTS-MW15	EM36	11/30/2021	N	550-174968-10	Alluvium	14.8 - 34.6	--	--	--	--	--	--	--	--	--
SWFTS-MW15	EM36	11/30/2021	N	550-174968-9	Alluvium	14.8 - 34.6	--	0.14	--	--	--	--	--	--	--
SWFTS-MW15	EM40	12/15/2022	N	550-195106-1	Alluvium	14.8 - 34.6	--	2.2	--	--	--	--	--	--	--
SWFTS-MW15	EM40	12/15/2022	N	550-195106-2	Alluvium	14.8 - 34.6	--	--	--	--	--	--	--	--	--
SWFTS-MW16	BL02	7/13/2017	N	440-188325-2	Alluvium	21.8 - 41.6	--	1.5	--	--	--	--	--	--	--
SWFTS-MW16	EM04	10/12/2017	N	440-194204-7	Alluvium	21.8 - 41.6	--	8.2	--	--	--	--	--	--	--
SWFTS-MW16	EM06	11/16/2017	N	440-196786-4	Alluvium	21.8 - 41.6	--	2.4	--	--	--	--	--	--	--
SWFTS-MW16	EM07	12/12/2017	N	440-198371-4	Alluvium	21.8 - 41.6	--	--	--	--	--	--	--	--	--
SWFTS-MW16	EM08	2/21/2018	N	440-203937-6	Alluvium	21.8 - 41.6	--	7.7	--	--	--	--	--	--	--
SWFTS-MW16	EM09	3/27/2018	N	440-207268-13	Alluvium	21.8 - 41.6	--	0.34	--	--	--	--	--	--	--
SWFTS-MW16	EM10	5/2/2018	N	440-210430-13	Alluvium	21.8 - 41.6	--	3.2	--	--	--	--	--	--	--
SWFTS-MW16	EM11	7/11/2018	N	440-215585-12	Alluvium	21.8 - 41.6	--	4.3	--	--	--	--	--	--	--
SWFTS-MW16	EM13	8/15/2018	N	440-218208-13	Alluvium	21.8 - 41.6	--	2.4 J-	--	--	--	--	--	--	--
SWFTS-MW16	EM14	9/10/2018	N	440-219797-6	Alluvium	21.8 - 41.6	--	2.9	--	--	--	--	--	--	--
SWFTS-MW16	EM15	10/11/2018	N	440-222092-3	Alluvium	21.8 - 41.6	--	3.2	--	--	--	--	--	--	--
SWFTS-MW16	EM19	5/20/2019	N	440-242014-3	Alluvium	21.8 - 41.6	--	2.0	--	--	--	--	--	--	--
SWFTS-MW16	EM22	11/6/2019	N	440-254051-5	Alluvium	21.8 - 41.6	--	1.3	--	--	--	--	--	--	--
SWFTS-MW16	EM26	4/30/2020	N	440-265383-1	Alluvium	21.8 - 41.6	--	2.2 J	--	--	--	--	--	--	--
SWFTS-MW16	EM29	10/15/2020	N	550-151259-1	Alluvium	21.8 - 41.6	--	1.5	--	--	--	--	--	--	--
SWFTS-MW16	EM33	6/3/2021	N	550-164869-11	Alluvium	21.8 - 41.6	--	1.7	--	--	--	--	--	--	--
SWFTS-MW16	EM33	6/3/2021	N	550-164869-12	Alluvium	21.8 - 41.6	--	--	--	--	--	--	--	--	--
SWFTS-MW16	EM36	11/30/2021	N	550-174968-11	Alluvium	21.8 - 41.6	--	1.8	--	--	--	--	--	--	--
SWFTS-MW16	EM36	11/30/2021	N	550-174968-12	Alluvium	21.8 - 41.6	--	--	--	--	--	--	--	--	--
SWFTS-MW16	EM40	12/14/2022	N	550-195013-15	Alluvium	21.8 - 41.6	--	1.5	--	--	--	--	--	--	--
SWFTS-MW16	EM40	12/14/2022	N	550-195013-16	Alluvium	21.8 - 41.6	--	--	--	--	--	--	--	--	--
SWFTS-MW17	BL02	7/12/2017	N	440-188244-1	Alluvium	22.8 - 52.6	--	<0.030	--	--	--	--	--	--	--
SWFTS-MW17	EM04	10/10/2017	N	440-193989-3	Alluvium	22.8 - 52.6	--	<0.015	--	--	--	--	--	--	--
SWFTS-MW17	EM06	11/15/2017	N	440-196659-5	Alluvium	22.8 - 52.6	--	--	--	--	--	--	--	--	--
SWFTS-MW17	EM06	11/15/2017	FD	440-196659-6	Alluvium	22.8 - 52.6	--	--	--	--	--	--	--	--	--
SWFTS-MW17	EM07	12/13/2017	N	440-198508-6	Alluvium	22.8 - 52.6	--	--	--	--	--	--	--	--	--
SWFTS-MW17	EM07	12/13/2017	FD	440-198508-7	Alluvium	22.8 - 52.6	--	--	--	--	--	--	--	--	--
SWFTS-MW17	EM08	2/22/2018	N	440-204033-11	Alluvium	22.8 - 52.6	--	--	--	--	--	--	--	--	--
SWFTS-MW17	EM09	3/28/2018	N	440-207497-11	Alluvium	22.8 - 52.6	--	--	--	--	--	--	--	--	--
SWFTS-MW17	EM10	5/3/2018	N	440-210534-3	Alluvium	22.8 - 52.6	--	--	--	--	--	--	--	--	--
SWFTS-MW17	EM11	7/11/2018	N	440-215585-13	Alluvium	22.8 - 52.6	--	<0.015	--	--	--	--	--	--	--
SWFTS-MW17	EM15	10/11/2018	N	440-222092-4	Alluvium	22.8 - 52.6	--	<0.015	--	--	--	--	--	--	--
SWFTS-MW17	EM19	5/22/2019	N	440-242198-6	Alluvium	22.8 - 52.6	--	<0.015	--	--	--	--	--	--	--
SWFTS-MW17	EM22	11/7/2019	N	440-254150-1	Alluvium	22.8 - 52.6	--	<0.015	--	--	--	--	--	--	--
SWFTS-MW17	EM26	4/30/2020	N	440-265383-6	Alluvium	22.8 - 52.6	--	<0.015	--	--	--	--	--	--	--
SWFTS-MW17	EM29	10/15/2020	N	550-151259-5	Alluvium	22.8 - 52.6	--	<0.015	--	--	--	--	--	--	--
SWFTS-MW17	EM33	6/3/2021	N	550-164869-10	Alluvium	22.8 - 52.6	--	--	--	--	--	--	--	--	--
SWFTS-MW17	EM33	6/3/2021	N	550-164869-9	Alluvium	22.8 - 52.6	--	<0.0083	--	--	--	--	--	--	--
SWFTS-MW17	EM36	12/2/2021	N	550-175153-21	Alluvium	22.8 - 52.6	--	0.016 J	--	--	--	--	--	--	--
SWFTS-MW17	EM36	12/2/2021	N	550-175153-22	Alluvium	22.8 - 52.6	--	--	--	--	--	--	--	--	--
SWFTS-MW17	EM40	12/14/2022	N	550-195013-13	Alluvium	22.8 - 52.6	--	<0.0083	--	--	--	--	--	--	--
SWFTS-MW17	EM40	12/14/2022	N	550-195013-14	Alluvium	22.8 - 52.6	--	--	--	--	--	--	--	--	--
SWFTS-MW18	BL02	7/11/2017	N	440-188133-17	Alluvium	16.8 - 36.6	--	0.10	--	--	--	--	--	--	--
SWFTS-MW18	EM04	10/10/2017	N	440-194094-3	Alluvium	16.8 - 36.6	--	0.86	--	--	--	--	--	--	--
SWFTS-MW18	EM06	11/15/2017	N	440-196690-11	Alluvium	16.8 - 36.6	--	--	--	--	--	--	--	--	--
SWFTS-MW18	EM07	12/13/2017	N	440-198508-5	Alluvium	16.8 - 36.6	--	0.49	--	--	--	--	--	--	--
SWFTS-MW18	EM08	2/22/2018	N	440-204033-4	Alluvium	16.8 - 36.6	--	--	--	--	--	--	--	--	--
SWFTS-MW18	EM09	3/27/2018	N	440-207268-11	Alluvium	16.8 - 36.6	--	--	--	--	--	--	--	--	--
SWFTS-MW18	EM09	3/27/2018	FD	440-207268-12	Alluvium	16.8 - 36.6	--	--	--	--	--	--	--	--	--
SWFTS-MW18	EM10	5/1/2018	N	440-210284-6	Alluvium	16.8 - 36.6	--	--	--	--	--	--	--	--	--
SWFTS-MW18	EM11	7/11/2018	N	440-215717-2	Alluvium	16.8 - 36.6	--	0.18	--	--	--	--	--	--	--
SWFTS-MW18	EM15	10/11/2018	N	440-222092-5	Alluvium	16.8 - 36.6	--	0.12	--	--	--	--	--	--	--
SWFTS-MW18	EM19	5/21/2019	N	440-242084-15	Alluvium	16.8 - 36.6	--	0.95	--	--	--	--	--	--	--
SWFTS-MW18	EM22	11/6/2019	N	440-254051-4	Alluvium	16.8 - 36.6	--	2.8	--	--	--	--	--	--	--
SWFTS-MW18	EM26	4/29/2020	N	440-265342-2	Alluvium	16.8 - 36.6	--	1.6	--	--	--	--	--	--	--
SWFTS-MW18	EM29	10/15/2020	N	550-151259-2	Alluvium	16.8 - 36.6	--	1.5	--	--	--	--	--	--	--
SWFTS-MW18	EM33	6/3/2021	N	550-164869-7	Alluvium	16.8 - 36.6	--	1.7	--	--	--	--	--	--	--
SWFTS-MW18	EM33	6/3/2021	N	550-164869-8	Alluvium	16.8 - 36.6	--	--	--	--	--	--	--	--	--

Table D.2
Groundater Analytical Results Summary - Secondary Parameters
Seep Well Field Area Bioremediation Treatability Study

Well	Event	Sample Date	QC Type	Lab Sample ID	Lithology	Screened Interval (ft bgs)	Total Metals by SW6010	Total Metals by SW6010	Total Metals by SW6010	Total Metals by SW6010	Total Metals by SW6010	Total Metals by SW6010	Total Metals by SW6010	Total Metals by SW6010	Total Metals by SW6010
							Magnesium	Manganese	Molybdenum	Nickel	Phosphorus	Potassium	Silicon	Silver	Sodium
							mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
SWFTS-MW18	EM36	12/1/2021	N	550-175045-5	Alluvium	16.8 - 36.6	--	3.0	--	--	--	--	--	--	--
SWFTS-MW18	EM36	12/1/2021	N	550-175045-6	Alluvium	16.8 - 36.6	--	--	--	--	--	--	--	--	--
SWFTS-MW18	EM40	12/14/2022	N	550-195013-11	Alluvium	16.8 - 36.6	--	1.1	--	--	--	--	--	--	--
SWFTS-MW18	EM40	12/14/2022	N	550-195013-12	Alluvium	16.8 - 36.6	--	--	--	--	--	--	--	--	--
SWFTS-MW19	BL02	7/12/2017	N	440-188244-2	Alluvium	11.3 - 31.1	--	<0.015	--	--	--	--	--	--	--
SWFTS-MW19	EM04	10/12/2017	N	440-194204-1	Alluvium	11.3 - 31.1	--	0.043	--	--	--	--	--	--	--
SWFTS-MW19	EM06	11/16/2017	N	440-196786-12	Alluvium	11.3 - 31.1	--	--	--	--	--	--	--	--	--
SWFTS-MW19	EM07	12/12/2017	N	440-198371-8	Alluvium	11.3 - 31.1	--	--	--	--	--	--	--	--	--
SWFTS-MW19	EM08	2/20/2018	N	440-203841-6	Alluvium	11.3 - 31.1	--	--	--	--	--	--	--	--	--
SWFTS-MW19	EM09	3/27/2018	N	440-207268-3	Alluvium	11.3 - 31.1	--	--	--	--	--	--	--	--	--
SWFTS-MW19	EM10	4/30/2018	N	440-210173-4	Alluvium	11.3 - 31.1	--	--	--	--	--	--	--	--	--
SWFTS-MW19	EM10	4/30/2018	FD	440-210173-5	Alluvium	11.3 - 31.1	--	--	--	--	--	--	--	--	--
SWFTS-MW19	EM11	7/10/2018	N	440-215437-10	Alluvium	11.3 - 31.1	--	<0.015	--	--	--	--	--	--	--
SWFTS-MW19	EM11	7/10/2018	FD	440-215437-11	Alluvium	11.3 - 31.1	--	<0.015	--	--	--	--	--	--	--
SWFTS-MW19	EM15	10/9/2018	N	440-221855-4	Alluvium	11.3 - 31.1	--	<0.015	--	--	--	--	--	--	--
SWFTS-MW19	EM15	10/9/2018	FD	440-221855-5	Alluvium	11.3 - 31.1	--	<0.015	--	--	--	--	--	--	--
SWFTS-MW19	EM19	5/21/2019	N	440-242084-6	Alluvium	11.3 - 31.1	--	<0.015	--	--	--	--	--	--	--
SWFTS-MW19	EM19	5/21/2019	FD	440-242084-7	Alluvium	11.3 - 31.1	--	<0.015	--	--	--	--	--	--	--
SWFTS-MW19	EM22	11/5/2019	N	440-253891-6	Alluvium	11.3 - 31.1	--	<0.015	--	--	--	--	--	--	--
SWFTS-MW19	EM22	11/5/2019	FD	440-253891-7	Alluvium	11.3 - 31.1	--	0.029	--	--	--	--	--	--	--
SWFTS-MW19	EM26	4/28/2020	N	440-265288-4	Alluvium	11.3 - 31.1	--	<0.015	--	--	--	--	--	--	--
SWFTS-MW19	EM26	4/28/2020	FD	440-265288-7	Alluvium	11.3 - 31.1	--	<0.015	--	--	--	--	--	--	--
SWFTS-MW19	EM29	10/14/2020	N	440-273303-2	Alluvium	11.3 - 31.1	--	<0.015	--	--	--	--	--	--	--
SWFTS-MW19	EM29	10/14/2020	FD	440-273303-3	Alluvium	11.3 - 31.1	--	<0.015	--	--	--	--	--	--	--
SWFTS-MW19	EM33	6/3/2021	N	550-164869-3	Alluvium	11.3 - 31.1	--	<0.0083	--	--	--	--	--	--	--
SWFTS-MW19	EM33	6/3/2021	N	550-164869-4	Alluvium	11.3 - 31.1	--	--	--	--	--	--	--	--	--
SWFTS-MW19	EM33	6/3/2021	FD	550-164869-5	Alluvium	11.3 - 31.1	--	<0.0083	--	--	--	--	--	--	--
SWFTS-MW19	EM33	6/3/2021	FD	550-164869-6	Alluvium	11.3 - 31.1	--	--	--	--	--	--	--	--	--
SWFTS-MW19	EM36	12/1/2021	N	550-175045-13	Alluvium	11.3 - 31.1	--	<0.0083	--	--	--	--	--	--	--
SWFTS-MW19	EM36	12/1/2021	N	550-175045-14	Alluvium	11.3 - 31.1	--	--	--	--	--	--	--	--	--
SWFTS-MW19	EM36	12/1/2021	FD	550-175045-15	Alluvium	11.3 - 31.1	--	<0.0083	--	--	--	--	--	--	--
SWFTS-MW19	EM36	12/1/2021	FD	550-175045-16	Alluvium	11.3 - 31.1	--	--	--	--	--	--	--	--	--
SWFTS-MW19	EM40	12/14/2022	N	550-195013-3	Alluvium	11.3 - 31.1	--	0.015 J	--	--	--	--	--	--	--
SWFTS-MW19	EM40	12/14/2022	N	550-195013-4	Alluvium	11.3 - 31.1	--	--	--	--	--	--	--	--	--
SWFTS-MW19	EM40	12/14/2022	FD	550-195013-5	Alluvium	11.3 - 31.1	--	<0.0083	--	--	--	--	--	--	--
SWFTS-MW19	EM40	12/14/2022	FD	550-195013-6	Alluvium	11.3 - 31.1	--	--	--	--	--	--	--	--	--
SWFTS-MW20	BL02	7/12/2017	N	440-188244-5	Alluvium	12.8 - 37.6	--	0.38	--	--	--	--	--	--	--
SWFTS-MW20	EM04	10/12/2017	N	440-194202-1	Alluvium	12.8 - 37.6	--	1.3 J	--	--	--	--	--	--	--
SWFTS-MW20	EM04	10/12/2017	FD	440-194202-2	Alluvium	12.8 - 37.6	--	2.2 J	--	--	--	--	--	--	--
SWFTS-MW20	EM06	11/16/2017	N	440-196786-7	Alluvium	12.8 - 37.6	--	--	--	--	--	--	--	--	--
SWFTS-MW20	EM07	12/12/2017	N	440-198371-3	Alluvium	12.8 - 37.6	--	--	--	--	--	--	--	--	--
SWFTS-MW20	EM08	2/19/2018	N	440-203775-5	Alluvium	12.8 - 37.6	--	--	--	--	--	--	--	--	--
SWFTS-MW20	EM09	3/27/2018	N	440-207268-9	Alluvium	12.8 - 37.6	--	--	--	--	--	--	--	--	--
SWFTS-MW20	EM10	4/30/2018	N	440-210173-10	Alluvium	12.8 - 37.6	--	--	--	--	--	--	--	--	--
SWFTS-MW20	EM11	7/11/2018	N	440-215717-8	Alluvium	12.8 - 37.6	--	2.6	--	--	--	--	--	--	--
SWFTS-MW20	EM15	10/9/2018	N	440-221855-1	Alluvium	12.8 - 37.6	--	2.2	--	--	--	--	--	--	--
SWFTS-MW20	EM19	5/21/2019	N	440-242084-3	Alluvium	12.8 - 37.6	--	5.6	--	--	--	--	--	--	--
SWFTS-MW20	EM22	11/5/2019	N	440-253918-6	Alluvium	12.8 - 37.6	--	3.6	--	--	--	--	--	--	--
SWFTS-MW20	EM26	4/29/2020	N	440-265342-5	Alluvium	12.8 - 37.6	--	3.9	--	--	--	--	--	--	--
SWFTS-MW20	EM29	10/14/2020	N	440-273303-6	Alluvium	12.8 - 37.6	--	2.3	--	--	--	--	--	--	--
SWFTS-MW20	EM33	6/3/2021	N	550-164869-1	Alluvium	12.8 - 37.6	--	3.2	--	--	--	--	--	--	--
SWFTS-MW20	EM33	6/3/2021	N	550-164869-2	Alluvium	12.8 - 37.6	--	--	--	--	--	--	--	--	--
SWFTS-MW20	EM36	11/29/2021	N	550-174897-1	Alluvium	12.8 - 37.6	--	3.5	--	--	--	--	--	--	--
SWFTS-MW20	EM36	11/29/2021	N	550-174897-2	Alluvium	12.8 - 37.6	--	--	--	--	--	--	--	--	--
SWFTS-MW20	EM40	12/13/2022	N	550-194919-7	Alluvium	12.8 - 37.6	--	5.2	--	--	--	--	--	--	--
SWFTS-MW20	EM40	12/13/2022	N	550-194919-8	Alluvium	12.8 - 37.6	--	--	--	--	--	--	--	--	--
SWFTS-MW21	BL02	7/13/2017	N	440-188324-5	Alluvium	14.8 - 39.6	--	0.44	--	--	--	--	--	--	--
SWFTS-MW21	EM04	10/11/2017	N	440-194090-8	Alluvium	14.8 - 39.6	--	2.2	--	--	--	--	--	--	--
SWFTS-MW21	EM06	11/15/2017	N	440-196665-5	Alluvium	14.8 - 39.6	--	--	--	--	--	--	--	--	--
SWFTS-MW21	EM07	12/13/2017	N	440-198508-10	Alluvium	14.8 - 39.6	--	1.5	--	--	--	--	--	--	--
SWFTS-MW21	EM08	2/20/2018	N	440-203841-9	Alluvium	14.8 - 39.6	--	--	--	--	--	--	--	--	--
SWFTS-MW21	EM08	2/20/2018	FD	440-203841-10	Alluvium	14.8 - 39.6	--	--	--	--	--	--	--	--	--
SWFTS-MW21	EM09	3/27/2018	N	440-207268-14	Alluvium	14.8 - 39.6	--	--	--	--	--	--	--	--	--
SWFTS-MW21	EM10	4/30/2018	N	440-210173-7	Alluvium	14.8 - 39.6	--	--	--	--	--	--	--	--	--

Table D.2
Groundater Analytical Results Summary - Secondary Parameters
Seep Well Field Area Bioremediation Treatability Study

Well	Event	Sample Date	QC Type	Lab Sample ID	Lithology	Screened Interval (ft bgs)	Total Metals by SW6010	Total Metals by SW6010	Total Metals by SW6010	Total Metals by SW6010	Total Metals by SW6010	Total Metals by SW6010	Total Metals by SW6010	Total Metals by SW6010	Total Metals by SW6010
							Magnesium	Manganese	Molybdenum	Nickel	Phosphorus	Potassium	Silicon	Silver	Sodium
							mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
SWFTS-MW21	EM11	7/12/2018	N	440-215717-3	Alluvium	14.8 - 39.6	--	2.2	--	--	--	--	--	--	--
SWFTS-MW21	EM15	10/9/2018	N	440-221855-3	Alluvium	14.8 - 39.6	--	2.9	--	--	--	--	--	--	--
SWFTS-MW21	EM19	5/22/2019	N	440-242198-3	Alluvium	14.8 - 39.6	--	5.9	--	--	--	--	--	--	--
SWFTS-MW21	EM22	11/4/2019	N	440-253773-3	Alluvium	14.8 - 39.6	--	5.4	--	--	--	--	--	--	--
SWFTS-MW21	EM26	4/29/2020	N	440-265342-1	Alluvium	14.8 - 39.6	--	1.8	--	--	--	--	--	--	--
SWFTS-MW21	EM29	10/14/2020	N	440-273303-7	Alluvium	14.8 - 39.6	--	5.2	--	--	--	--	--	--	--
SWFTS-MW21	EM33	6/2/2021	N	550-164872-15	Alluvium	14.8 - 39.6	--	4.8	--	--	--	--	--	--	--
SWFTS-MW21	EM33	6/2/2021	N	550-164872-16	Alluvium	14.8 - 39.6	--	--	--	--	--	--	--	--	--
SWFTS-MW21	EM36	12/1/2021	N	550-175045-3	Alluvium	14.8 - 39.6	--	4.5	--	--	--	--	--	--	--
SWFTS-MW21	EM36	12/1/2021	N	550-175045-4	Alluvium	14.8 - 39.6	--	--	--	--	--	--	--	--	--
SWFTS-MW21	EM40	12/15/2022	N	550-195106-5	Alluvium	14.8 - 39.6	--	3.6	--	--	--	--	--	--	--
SWFTS-MW21	EM40	12/15/2022	N	550-195106-6	Alluvium	14.8 - 39.6	--	--	--	--	--	--	--	--	--
SWFTS-MW22	BL02	7/13/2017	N	440-188324-1	Alluvium	11.8 - 31.6	--	2.3	--	--	--	--	--	--	--
SWFTS-MW22	EM04	10/12/2017	N	440-194242-9	Alluvium	11.8 - 31.6	--	1.5	--	--	--	--	--	--	--
SWFTS-MW22	EM06	11/16/2017	N	440-196786-18	Alluvium	11.8 - 31.6	--	--	--	--	--	--	--	--	--
SWFTS-MW22	EM07	12/14/2017	N	440-198571-17	Alluvium	11.8 - 31.6	--	--	--	--	--	--	--	--	--
SWFTS-MW22	EM08	2/21/2018	N	440-203937-1	Alluvium	11.8 - 31.6	--	--	--	--	--	--	--	--	--
SWFTS-MW22	EM09	3/28/2018	N	440-207497-1	Alluvium	11.8 - 31.6	--	--	--	--	--	--	--	--	--
SWFTS-MW22	EM10	4/30/2018	N	440-210173-6	Alluvium	11.8 - 31.6	--	--	--	--	--	--	--	--	--
SWFTS-MW22	EM11	7/10/2018	N	440-215437-9	Alluvium	11.8 - 31.6	--	0.75	--	--	--	--	--	--	--
SWFTS-MW22	EM15	10/9/2018	N	440-221855-2	Alluvium	11.8 - 31.6	--	0.42	--	--	--	--	--	--	--
SWFTS-MW22	EM19	5/21/2019	N	440-242084-4	Alluvium	11.8 - 31.6	--	1.1	--	--	--	--	--	--	--
SWFTS-MW22	EM22	11/5/2019	N	440-253891-4	Alluvium	11.8 - 31.6	--	0.38	--	--	--	--	--	--	--
SWFTS-MW22	EM26	4/28/2020	N	440-265288-5	Alluvium	11.8 - 31.6	--	0.57	--	--	--	--	--	--	--
SWFTS-MW22	EM29	10/14/2020	N	440-273303-1	Alluvium	11.8 - 31.6	--	0.59	--	--	--	--	--	--	--
SWFTS-MW22	EM33	6/2/2021	N	550-164872-11	Alluvium	11.8 - 31.6	--	0.49	--	--	--	--	--	--	--
SWFTS-MW22	EM33	6/2/2021	N	550-164872-12	Alluvium	11.8 - 31.6	--	--	--	--	--	--	--	--	--
SWFTS-MW22	EM36	12/2/2021	N	550-175153-1	Alluvium	11.8 - 31.6	--	1.5	--	--	--	--	--	--	--
SWFTS-MW22	EM36	12/2/2021	N	550-175153-2	Alluvium	11.8 - 31.6	--	--	--	--	--	--	--	--	--
SWFTS-MW22	EM40	12/14/2022	N	550-195013-1	Alluvium	11.8 - 31.6	--	0.75	--	--	--	--	--	--	--
SWFTS-MW22	EM40	12/14/2022	N	550-195013-2	Alluvium	11.8 - 31.6	--	--	--	--	--	--	--	--	--
SWFTS-MW23	BL02	7/13/2017	N	440-188325-7	Alluvium	13.8 - 33.6	--	0.086	--	--	--	--	--	--	--
SWFTS-MW23	EM04	10/11/2017	N	440-194090-7	Alluvium	13.8 - 33.6	--	0.10	--	--	--	--	--	--	--
SWFTS-MW23	EM06	11/15/2017	N	440-196665-3	Alluvium	13.8 - 33.6	--	--	--	--	--	--	--	--	--
SWFTS-MW23	EM07	12/12/2017	N	440-198371-2	Alluvium	13.8 - 33.6	--	--	--	--	--	--	--	--	--
SWFTS-MW23	EM08	2/21/2018	N	440-203937-14	Alluvium	13.8 - 33.6	--	--	--	--	--	--	--	--	--
SWFTS-MW23	EM09	3/28/2018	N	440-207497-9	Alluvium	13.8 - 33.6	--	--	--	--	--	--	--	--	--
SWFTS-MW23	EM10	5/2/2018	N	440-210430-5	Alluvium	13.8 - 33.6	--	--	--	--	--	--	--	--	--
SWFTS-MW23	EM11	7/10/2018	N	440-215437-7	Alluvium	13.8 - 33.6	--	0.14	--	--	--	--	--	--	--
SWFTS-MW23	EM15	10/11/2018	N	440-222092-7	Alluvium	13.8 - 33.6	--	0.095	--	--	--	--	--	--	--
SWFTS-MW23	EM19	5/22/2019	N	440-242201-7	Alluvium	13.8 - 33.6	--	0.12	--	--	--	--	--	--	--
SWFTS-MW23	EM22	11/5/2019	N	440-253891-5	Alluvium	13.8 - 33.6	--	0.14	--	--	--	--	--	--	--
SWFTS-MW23	EM26	4/28/2020	N	440-265288-3	Alluvium	13.8 - 33.6	--	0.13	--	--	--	--	--	--	--
SWFTS-MW23	EM29	10/13/2020	N	440-273236-1	Alluvium	13.8 - 33.6	--	0.15	--	--	--	--	--	--	--
SWFTS-MW23	EM33	6/2/2021	N	550-164872-3	Alluvium	13.8 - 33.6	--	0.16	--	--	--	--	--	--	--
SWFTS-MW23	EM33	6/2/2021	N	550-164872-4	Alluvium	13.8 - 33.6	--	--	--	--	--	--	--	--	--
SWFTS-MW23	EM36	12/2/2021	N	550-175153-15	Alluvium	13.8 - 33.6	--	0.16	--	--	--	--	--	--	--
SWFTS-MW23	EM36	12/2/2021	N	550-175153-16	Alluvium	13.8 - 33.6	--	--	--	--	--	--	--	--	--
SWFTS-MW23	EM40	12/13/2022	N	550-194919-5	Alluvium	13.8 - 33.6	--	0.16	--	--	--	--	--	--	--
SWFTS-MW23	EM40	12/13/2022	N	550-194919-6	Alluvium	13.8 - 33.6	--	--	--	--	--	--	--	--	--
SWFTS-MW24	BL02	7/13/2017	N	440-188324-2	Alluvium	12.8 - 37.6	--	0.051	--	--	--	--	--	--	--
SWFTS-MW24	EM04	10/11/2017	N	440-194242-2	Alluvium	12.8 - 37.6	--	0.16	--	--	--	--	--	--	--
SWFTS-MW24	EM06	11/15/2017	N	440-196665-1	Alluvium	12.8 - 37.6	--	--	--	--	--	--	--	--	--
SWFTS-MW24	EM07	12/12/2017	N	440-198371-5	Alluvium	12.8 - 37.6	--	--	--	--	--	--	--	--	--
SWFTS-MW24	EM08	2/21/2018	N	440-203937-8	Alluvium	12.8 - 37.6	--	--	--	--	--	--	--	--	--
SWFTS-MW24	EM09	3/28/2018	N	440-207497-12	Alluvium	12.8 - 37.6	--	--	--	--	--	--	--	--	--
SWFTS-MW24	EM10	5/2/2018	N	440-210430-7	Alluvium	12.8 - 37.6	--	--	--	--	--	--	--	--	--
SWFTS-MW24	EM11	7/12/2018	N	440-215717-5	Alluvium	12.8 - 37.6	--	0.64	--	--	--	--	--	--	--
SWFTS-MW24	EM15	10/10/2018	N	440-221975-7	Alluvium	12.8 - 37.6	--	0.69	--	--	--	--	--	--	--
SWFTS-MW24	EM19	5/22/2019	N	440-242198-1	Alluvium	12.8 - 37.6	--	0.21	--	--	--	--	--	--	--
SWFTS-MW24	EM22	11/5/2019	N	440-253891-2	Alluvium	12.8 - 37.6	--	<0.015	--	--	--	--	--	--	--
SWFTS-MW24	EM26	4/28/2020	N	440-265288-1	Alluvium	12.8 - 37.6	--	1.4	--	--	--	--	--	--	--
SWFTS-MW24	EM29	10/12/2020	N	440-273153-1	Alluvium	12.8 - 37.6	--	<0.015	--	--	--	--	--	--	--
SWFTS-MW24	EM33	6/2/2021	N	550-164872-7	Alluvium	12.8 - 37.6	--	0.089	--	--	--	--	--	--	--

Table D.2
Groundater Analytical Results Summary - Secondary Parameters
Seep Well Field Area Bioremediation Treatability Study

Well	Event	Sample Date	QC Type	Lab Sample ID	Lithology	Screened Interval (ft bgs)	Total Metals by SW6010	Total Metals by SW6010	Total Metals by SW6010	Total Metals by SW6010	Total Metals by SW6010	Total Metals by SW6010	Total Metals by SW6010	Total Metals by SW6010	Total Metals by SW6010
							Magnesium	Manganese	Molybdenum	Nickel	Phosphorus	Potassium	Silicon	Silver	Sodium
							mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
SWFTS-MW24	EM33	6/2/2021	N	550-164872-8	Alluvium	12.8 - 37.6	--	--	--	--	--	--	--	--	--
SWFTS-MW24	EM36	12/1/2021	N	550-175045-17	Alluvium	12.8 - 37.6	--	0.15	--	--	--	--	--	--	--
SWFTS-MW24	EM36	12/1/2021	N	550-175045-18	Alluvium	12.8 - 37.6	--	--	--	--	--	--	--	--	--
SWFTS-MW24	EM40	12/13/2022	N	550-194919-3	Alluvium	12.8 - 37.6	--	0.90	--	--	--	--	--	--	--
SWFTS-MW24	EM40	12/13/2022	N	550-194919-4	Alluvium	12.8 - 37.6	--	--	--	--	--	--	--	--	--
SWFTS-MW25	BL02	7/13/2017	N	440-188324-4	Alluvium	12.8 - 42.6	--	1.1	--	--	--	--	--	--	--
SWFTS-MW25	EM04	10/11/2017	N	440-194242-1	Alluvium	12.8 - 42.6	--	4.9	--	--	--	--	--	--	--
SWFTS-MW25	EM06	11/15/2017	N	440-196665-2	Alluvium	12.8 - 42.6	--	6.3	--	--	--	--	--	--	--
SWFTS-MW25	EM07	12/12/2017	N	440-198371-1	Alluvium	12.8 - 42.6	--	7.2	--	--	--	--	--	--	--
SWFTS-MW25	EM08	2/21/2018	N	440-203937-7	Alluvium	12.8 - 42.6	--	6.7	--	--	--	--	--	--	--
SWFTS-MW25	EM09	3/28/2018	N	440-207497-13	Alluvium	12.8 - 42.6	--	5.6	--	--	--	--	--	--	--
SWFTS-MW25	EM10	5/3/2018	N	440-210534-2	Alluvium	12.8 - 42.6	--	5.3	--	--	--	--	--	--	--
SWFTS-MW25	EM11	7/10/2018	N	440-215437-12	Alluvium	12.8 - 42.6	--	4.4	--	--	--	--	--	--	--
SWFTS-MW25	EM13	8/15/2018	N	440-218208-10	Alluvium	12.8 - 42.6	--	4.3	--	--	--	--	--	--	--
SWFTS-MW25	EM14	9/12/2018	N	440-220031-2	Alluvium	12.8 - 42.6	--	3.8	--	--	--	--	--	--	--
SWFTS-MW25	EM15	10/11/2018	N	440-222092-6	Alluvium	12.8 - 42.6	--	3.5	--	--	--	--	--	--	--
SWFTS-MW25	EM19	5/22/2019	N	440-242201-6	Alluvium	12.8 - 42.6	--	3.9	--	--	--	--	--	--	--
SWFTS-MW25	EM22	11/5/2019	N	440-253918-4	Alluvium	12.8 - 42.6	--	2.6	--	--	--	--	--	--	--
SWFTS-MW25	EM26	4/28/2020	N	440-265288-2	Alluvium	12.8 - 42.6	--	4.6	--	--	--	--	--	--	--
SWFTS-MW25	EM29	10/13/2020	N	440-273236-2	Alluvium	12.8 - 42.6	--	2.9	--	--	--	--	--	--	--
SWFTS-MW25	EM33	6/2/2021	N	550-164872-5	Alluvium	12.8 - 42.6	--	3.0	--	--	--	--	--	--	--
SWFTS-MW25	EM33	6/2/2021	N	550-164872-6	Alluvium	12.8 - 42.6	--	--	--	--	--	--	--	--	--
SWFTS-MW25	EM36	12/1/2021	N	550-175045-19	Alluvium	12.8 - 42.6	--	2.7	--	--	--	--	--	--	--
SWFTS-MW25	EM36	12/1/2021	N	550-175045-20	Alluvium	12.8 - 42.6	--	--	--	--	--	--	--	--	--
SWFTS-MW25	EM40	12/13/2022	N	550-194919-1	Alluvium	12.8 - 42.6	--	2.0	--	--	--	--	--	--	--
SWFTS-MW25	EM40	12/13/2022	N	550-194919-2	Alluvium	12.8 - 42.6	--	--	--	--	--	--	--	--	--

Notes:
1. Lithology of monitoring well COH-2B1 was inferred from state records of well construction and generalized stratigraphy.
FD - Field duplicate
J The result is an estimated quantity. The associated numerical value is the approximate concentration of the analyte.
J- The result is an estimated quantity, but the result may be biased low.
J+ The result is an estimated quantity, but the result may be biased high.
mg/L - milligrams per liter
µg/L - micrograms per liter
N - Normal field sample
UMCf- Upper Muddy Creek Formation
R The data are unusable. The sample results are rejected due to serious deficiencies in meeting QC criteria. The
< The analyte was analyzed for, but was not detected above the level of the reported sample quantitation limit.
--- Not tested.

Table D.2
Groundater Analytical Results Summary - Secondary Parameters
Seep Well Field Area Bioremediation Treatability Study

Well	Event	Sample Date	QC Type	Lab Sample ID	Lithology	Screened Interval (ft bgs)	Total Metals by SW6010	Total Metals by SW6010	Total Metals by SW6010	Total Metals by SW6010	Total Metals by SW6010	Total Metals by SW6010	Total Metals by SW6020	Total Metals by SW6020	Total Metals by SW6020
							Strontium	Tin	Titanium	Tungsten	Vanadium	Zinc	Antimony	Arsenic	Selenium
							mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	µg/L	µg/L	µg/L
COH-2B1	BL02	8/9/2017	N	440-189933-1	Alluvium/UMCf	36.0 - 66.0	--	--	--	--	--	--	--	--	--
COH-2B1	EM04	10/12/2017	N	440-194204-2	Alluvium/UMCf	36.0 - 66.0	--	--	--	--	--	--	--	--	--
COH-2B1	EM07	12/14/2017	N	440-198571-5	Alluvium/UMCf	36.0 - 66.0	--	--	--	--	--	--	--	--	--
COH-2B1	EM08	2/22/2018	N	440-204033-6	Alluvium/UMCf	36.0 - 66.0	--	--	--	--	--	--	--	--	--
COH-2B1	EM09	3/29/2018	N	440-207586-2	Alluvium/UMCf	36.0 - 66.0	--	--	--	--	--	--	--	--	--
COH-2B1	EM10	5/2/2018	N	440-210430-11	Alluvium/UMCf	36.0 - 66.0	--	--	--	--	--	--	--	--	--
COH-2B1	EM11	7/10/2018	N	440-215437-6	Alluvium/UMCf	36.0 - 66.0	--	--	--	--	--	--	--	--	--
COH-2B1	EM15	10/11/2018	N	440-222092-1	Alluvium/UMCf	36.0 - 66.0	--	--	--	--	--	--	--	--	--
COH-2B1	EM19	5/22/2019	N	440-242201-5	Alluvium/UMCf	36.0 - 66.0	--	--	--	--	--	--	--	--	--
COH-2B1	EM22	11/4/2019	N	440-253773-1	Alluvium/UMCf	36.0 - 66.0	--	--	--	--	--	--	--	--	--
COH-2B1	EM26	4/27/2020	N	440-265243-1	Alluvium/UMCf	36.0 - 66.0	--	--	--	--	--	--	--	--	--
COH-2B1	EM29	10/13/2020	N	440-273236-9	Alluvium/UMCf	36.0 - 66.0	--	--	--	--	--	--	--	--	--
PC-58	BL01	3/28/2017	N	440-180820-1	Alluvium	7.8 - 32.8	6.0	<0.050	<0.0025	<0.050	0.060	<0.012	<0.50	91	50
PC-58	BL02	7/13/2017	N	440-188324-3	Alluvium	7.8 - 32.8	--	--	--	--	--	--	--	--	--
PC-58	EM04	10/11/2017	N	440-194094-6	Alluvium	7.8 - 32.8	--	--	--	--	--	--	--	--	--
PC-58	EM06	11/16/2017	N	440-196786-11	Alluvium	7.8 - 32.8	--	--	--	--	--	--	--	--	--
PC-58	EM07	12/14/2017	N	440-198571-9	Alluvium	7.8 - 32.8	--	--	--	--	--	--	--	--	--
PC-58	EM08	2/21/2018	N	440-203937-13	Alluvium	7.8 - 32.8	--	--	--	--	--	--	--	--	--
PC-58	EM09	3/28/2018	N	440-207497-6	Alluvium	7.8 - 32.8	--	--	--	--	--	--	--	--	--
PC-58	EM10	5/2/2018	N	440-210430-10	Alluvium	7.8 - 32.8	--	--	--	--	--	--	--	--	--
PC-58	EM11	7/11/2018	N	440-215717-7	Alluvium	7.8 - 32.8	--	--	--	--	--	--	--	--	--
PC-58	EM15	10/11/2018	N	440-222092-19	Alluvium	7.8 - 32.8	--	--	--	--	--	--	--	--	--
PC-58	EM19	5/22/2019	N	440-242200-7	Alluvium	7.8 - 32.8	--	--	--	--	--	--	--	--	--
PC-58	EM22	11/7/2019	N	440-254148-1	Alluvium	7.8 - 32.8	--	--	--	--	--	--	--	--	--
PC-58	EM26	5/1/2020	N	440-265414-3	Alluvium	7.8 - 32.8	--	--	--	--	--	--	--	--	--
PC-58	EM29	10/16/2020	N	440-273433-5	Alluvium	7.8 - 32.8	--	--	--	--	--	--	--	--	--
PC-58	EM33	6/2/2021	N	550-164872-23	Alluvium	7.8 - 32.8	--	--	--	--	--	--	--	--	--
PC-58	EM33	6/2/2021	N	550-164872-24	Alluvium	7.8 - 32.8	--	--	--	--	--	--	--	--	--
PC-58	EM36	12/3/2021	N	550-175222-11	Alluvium	7.8 - 32.8	--	--	--	--	--	--	--	--	--
PC-58	EM36	12/3/2021	N	550-175222-12	Alluvium	7.8 - 32.8	--	--	--	--	--	--	--	--	--
PC-58	EM40	12/12/2022	N	550-194841-5	Alluvium	7.8 - 32.8	--	--	--	--	--	--	--	--	--
PC-58	EM40	12/12/2022	N	550-194841-6	Alluvium	7.8 - 32.8	--	--	--	--	--	--	--	--	--
PC-88	EM04	10/11/2017	N	440-194090-2	Alluvium	40.0 - 50.0	--	--	--	--	--	--	--	--	--
PC-88	EM04	10/11/2017	FD	440-194090-3	Alluvium	40.0 - 50.0	--	--	--	--	--	--	--	--	--
PC-88	EM06	11/15/2017	N	440-196690-9	Alluvium	40.0 - 50.0	--	--	--	--	--	--	--	--	--
PC-88	EM06	11/15/2017	FD	440-196690-10	Alluvium	40.0 - 50.0	--	--	--	--	--	--	--	--	--
PC-88	EM07	12/14/2017	N	440-198571-11	Alluvium	40.0 - 50.0	--	--	--	--	--	--	--	--	--
PC-88	EM08	2/22/2018	N	440-204033-10	Alluvium	40.0 - 50.0	--	--	--	--	--	--	--	--	--
PC-88	EM09	3/29/2018	N	440-207586-3	Alluvium	40.0 - 50.0	--	--	--	--	--	--	--	--	--
PC-88	EM10	5/2/2018	N	440-210430-8	Alluvium	40.0 - 50.0	--	--	--	--	--	--	--	--	--
PC-88	EM10	5/2/2018	FD	440-210430-9	Alluvium	40.0 - 50.0	--	--	--	--	--	--	--	--	--
PC-88	EM11	7/12/2018	N	440-215717-11	Alluvium	40.0 - 50.0	--	--	--	--	--	--	--	--	--
PC-88	EM11	7/12/2018	FD	440-215717-12	Alluvium	40.0 - 50.0	--	--	--	--	--	--	--	--	--
PC-88	EM15	10/11/2018	N	440-222092-15	Alluvium	40.0 - 50.0	--	--	--	--	--	--	--	--	--
PC-88	EM15	10/11/2018	FD	440-222092-16	Alluvium	40.0 - 50.0	--	--	--	--	--	--	--	--	--
PC-88	EM19	5/22/2019	N	440-242201-2	Alluvium	40.0 - 50.0	--	--	--	--	--	--	--	--	--
PC-88	EM19	5/22/2019	FD	440-242201-3	Alluvium	40.0 - 50.0	--	--	--	--	--	--	--	--	--
PC-88	EM22	11/7/2019	N	440-254148-2	Alluvium	40.0 - 50.0	--	--	--	--	--	--	--	--	--
PC-88	EM22	11/7/2019	FD	440-254148-3	Alluvium	40.0 - 50.0	--	--	--	--	--	--	--	--	--
PC-88	EM26	5/1/2020	N	440-265412-2	Alluvium	40.0 - 50.0	--	--	--	--	--	--	--	--	--
PC-88	EM26	5/1/2020	FD	440-265412-3	Alluvium	40.0 - 50.0	--	--	--	--	--	--	--	--	--
PC-88	EM29	10/15/2020	N	550-151259-10	Alluvium	40.0 - 50.0	--	--	--	--	--	--	--	--	--
PC-88	EM29	10/15/2020	FD	550-151259-11	Alluvium	40.0 - 50.0	--	--	--	--	--	--	--	--	--
PC-88	EM33	6/3/2021	N	550-164869-25	Alluvium	40.0 - 50.0	--	--	--	--	--	--	--	--	--
PC-88	EM33	6/3/2021	N	550-164869-26	Alluvium	40.0 - 50.0	--	--	--	--	--	--	--	--	--
PC-88	EM33	6/3/2021	FD	550-164869-27	Alluvium	40.0 - 50.0	--	--	--	--	--	--	--	--	--
PC-88	EM33	6/3/2021	FD	550-164869-28	Alluvium	40.0 - 50.0	--	--	--	--	--	--	--	--	--
PC-88	EM36	12/2/2021	N	550-175153-5	Alluvium	40.0 - 50.0	--	--	--	--	--	--	--	--	--
PC-88	EM36	12/2/2021	N	550-175153-6	Alluvium	40.0 - 50.0	--	--	--	--	--	--	--	--	--
PC-88	EM36	12/2/2021	FD	550-175153-7	Alluvium	40.0 - 50.0	--	--	--	--	--	--	--	--	--
PC-88	EM36	12/2/2021	FD	550-175153-8	Alluvium	40.0 - 50.0	--	--	--	--	--	--	--	--	--
PC-88	EM40	12/12/2022	N	550-194841-1	Alluvium	40.0 - 50.0	--	--	--	--	--	--	--	--	--
PC-88	EM40	12/12/2022	N	550-194841-2	Alluvium	40.0 - 50.0	--	--	--	--	--	--	--	--	--
PC-88	EM40	12/12/2022	FD	550-194841-3	Alluvium	40.0 - 50.0	--	--	--	--	--	--	--	--	--

Table D.2
Groundater Analytical Results Summary - Secondary Parameters
Seep Well Field Area Bioremediation Treatability Study

Well	Event	Sample Date	QC Type	Lab Sample ID	Lithology	Screened Interval (ft bgs)	Total Metals by SW6010	Total Metals by SW6010	Total Metals by SW6010	Total Metals by SW6010	Total Metals by SW6010	Total Metals by SW6010	Total Metals by SW6020	Total Metals by SW6020	Total Metals by SW6020
							Strontium	Tin	Titanium	Tungsten	Vanadium	Zinc	Antimony	Arsenic	Selenium
							mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	µg/L	µg/L	µg/L
PC-88	EM40	12/12/2022	FD	550-194841-4	Alluvium	40.0 - 50.0	--	--	--	--	--	--	--	--	--
PC-91	BL01	3/29/2017	N	440-180937-1	Alluvium	11.5 - 21.5	--	--	--	--	--	--	--	--	--
PC-91	BL02	7/12/2017	N	440-188247-5	Alluvium	11.5 - 21.5	--	--	--	--	--	--	--	--	--
PC-91	BL02	7/12/2017	FD	440-188244-4	Alluvium	11.5 - 21.5	--	--	--	--	--	--	--	--	--
PC-91	EM04	10/12/2017	N	440-194204-3	Alluvium	11.5 - 21.5	--	--	--	--	--	--	--	--	--
PC-91	EM06	11/16/2017	N	440-196786-8	Alluvium	11.5 - 21.5	--	--	--	--	--	--	--	--	--
PC-91	EM07	12/13/2017	N	440-198508-9	Alluvium	11.5 - 21.5	--	--	--	--	--	--	--	--	--
PC-91	EM08	2/20/2018	N	440-203841-1	Alluvium	11.5 - 21.5	--	--	--	--	--	--	--	--	--
PC-91	EM09	3/26/2018	N	440-207137-1	Alluvium	11.5 - 21.5	--	--	--	--	--	--	--	--	--
PC-91	EM10	5/1/2018	N	440-210284-3	Alluvium	11.5 - 21.5	--	--	--	--	--	--	--	--	--
PC-91	EM11	7/11/2018	N	440-215585-6	Alluvium	11.5 - 21.5	--	--	--	--	--	--	--	--	--
PC-91	EM15	10/10/2018	N	440-221975-16	Alluvium	11.5 - 21.5	--	--	--	--	--	--	--	--	--
PC-91	EM19	5/21/2019	N	440-242084-9	Alluvium	11.5 - 21.5	--	--	--	--	--	--	--	--	--
PC-91	EM22	11/6/2019	N	440-254027-3	Alluvium	11.5 - 21.5	--	--	--	--	--	--	--	--	--
PC-91	EM26	4/30/2020	N	440-265382-2	Alluvium	11.5 - 21.5	--	--	--	--	--	--	--	--	--
PC-91	EM29	10/14/2020	N	440-273303-11	Alluvium	11.5 - 21.5	--	--	--	--	--	--	--	--	--
PC-91	EM33	6/2/2021	N	550-164872-17	Alluvium	11.5 - 21.5	--	--	--	--	--	--	--	--	--
PC-91	EM33	6/2/2021	N	550-164872-18	Alluvium	11.5 - 21.5	--	--	--	--	--	--	--	--	--
PC-91	EM36	11/30/2021	N	550-174968-1	Alluvium	11.5 - 21.5	--	--	--	--	--	--	--	--	--
PC-91	EM36	11/30/2021	N	550-174968-2	Alluvium	11.5 - 21.5	--	--	--	--	--	--	--	--	--
PC-91	EM40	12/12/2022	N	550-194841-7	Alluvium	11.5 - 21.5	--	--	--	--	--	--	--	--	--
PC-91	EM40	12/12/2022	N	550-194841-8	Alluvium	11.5 - 21.5	--	--	--	--	--	--	--	--	--
PC-92	BL01	3/29/2017	N	440-180937-2	Alluvium	26.5 - 36.5	--	--	--	--	--	--	--	--	--
PC-92	BL02	7/12/2017	N	440-188247-6	Alluvium	26.5 - 36.5	--	--	--	--	--	--	--	--	--
PC-92	EM04	10/12/2017	N	440-194204-4	Alluvium	26.5 - 36.5	--	--	--	--	--	--	--	--	--
PC-92	EM04	10/12/2017	FD	440-194204-5	Alluvium	26.5 - 36.5	--	--	--	--	--	--	--	--	--
PC-92	EM06	11/16/2017	N	440-196786-9	Alluvium	26.5 - 36.5	--	--	--	--	--	--	--	--	--
PC-92	EM06	11/16/2017	FD	440-196786-10	Alluvium	26.5 - 36.5	--	--	--	--	--	--	--	--	--
PC-92	EM07	12/14/2017	N	440-198571-7	Alluvium	26.5 - 36.5	--	--	--	--	--	--	--	--	--
PC-92	EM07	12/14/2017	FD	440-198571-8	Alluvium	26.5 - 36.5	--	--	--	--	--	--	--	--	--
PC-92	EM08	2/20/2018	N	440-203841-2	Alluvium	26.5 - 36.5	--	--	--	--	--	--	--	--	--
PC-92	EM08	2/20/2018	FD	440-203841-3	Alluvium	26.5 - 36.5	--	--	--	--	--	--	--	--	--
PC-92	EM09	3/26/2018	N	440-207137-2	Alluvium	26.5 - 36.5	--	--	--	--	--	--	--	--	--
PC-92	EM09	3/26/2018	FD	440-207137-3	Alluvium	26.5 - 36.5	--	--	--	--	--	--	--	--	--
PC-92	EM10	5/1/2018	N	440-210284-4	Alluvium	26.5 - 36.5	--	--	--	--	--	--	--	--	--
PC-92	EM11	7/11/2018	N	440-215585-5	Alluvium	26.5 - 36.5	--	--	--	--	--	--	--	--	--
PC-92	EM15	10/11/2018	N	440-222092-17	Alluvium	26.5 - 36.5	--	--	--	--	--	--	--	--	--
PC-92	EM19	5/21/2019	N	440-242084-10	Alluvium	26.5 - 36.5	--	--	--	--	--	--	--	--	--
PC-92	EM22	11/6/2019	N	440-254027-2	Alluvium	26.5 - 36.5	--	--	--	--	--	--	--	--	--
PC-92	EM26	4/30/2020	N	440-265382-1	Alluvium	26.5 - 36.5	--	--	--	--	--	--	--	--	--
PC-92	EM29	10/14/2020	N	440-273303-10	Alluvium	26.5 - 36.5	--	--	--	--	--	--	--	--	--
PC-92	EM33	6/2/2021	N	550-164872-19	Alluvium	26.5 - 36.5	--	--	--	--	--	--	--	--	--
PC-92	EM33	6/2/2021	N	550-164872-20	Alluvium	26.5 - 36.5	--	--	--	--	--	--	--	--	--
PC-92	EM36	11/30/2021	N	550-174968-3	Alluvium	26.5 - 36.5	--	--	--	--	--	--	--	--	--
PC-92	EM36	11/30/2021	N	550-174968-4	Alluvium	26.5 - 36.5	--	--	--	--	--	--	--	--	--
PC-92	EM40	12/13/2022	N	550-194920-1	Alluvium	26.5 - 36.5	--	--	--	--	--	--	--	--	--
PC-92	EM40	12/13/2022	N	550-194920-2	Alluvium	26.5 - 36.5	--	--	--	--	--	--	--	--	--
PC-94	BL01	3/28/2017	N	440-180820-2	Alluvium	9.5 - 19.5	11	<0.10	0.050	<0.10	0.044	<0.024	<0.50	66	26
PC-94	BL02	7/13/2017	N	440-188325-1	Alluvium	9.5 - 19.5	--	--	--	--	--	--	--	--	--
PC-94	EM04	10/11/2017	N	440-194090-6	Alluvium	9.5 - 19.5	--	--	--	--	--	--	--	--	--
PC-94	EM06	11/16/2017	N	440-196786-17	Alluvium	9.5 - 19.5	--	--	--	--	--	--	--	--	--
PC-94	EM07	12/12/2017	N	440-198371-14	Alluvium	9.5 - 19.5	--	--	--	--	--	--	--	--	--
PC-94	EM08	2/21/2018	N	440-203937-12	Alluvium	9.5 - 19.5	--	--	--	--	--	--	--	--	--
PC-94	EM09	3/27/2018	N	440-207268-8	Alluvium	9.5 - 19.5	--	--	--	--	--	--	--	--	--
PC-94	EM10	5/1/2018	N	440-210284-14	Alluvium	9.5 - 19.5	--	--	--	--	--	--	--	--	--
PC-94	EM11	7/10/2018	N	440-215437-1	Alluvium	9.5 - 19.5	--	--	--	--	--	--	--	--	--
PC-94	EM13	8/15/2018	N	440-218208-2	Alluvium	9.5 - 19.5	--	--	--	--	--	--	--	--	--
PC-94	EM14	9/11/2018	N	440-219886-9	Alluvium	9.5 - 19.5	--	--	--	--	--	--	--	--	--
PC-94	EM15	10/11/2018	N	440-222092-18	Alluvium	9.5 - 19.5	--	--	--	--	--	--	--	--	--
PC-94	EM19	5/22/2019	N	440-242201-4	Alluvium	9.5 - 19.5	--	--	--	--	--	--	--	--	--
PC-94	EM22	11/6/2019	N	440-254027-1	Alluvium	9.5 - 19.5	--	--	--	--	--	--	--	--	--
PC-94	EM26	4/28/2020	N	440-265289-2	Alluvium	9.5 - 19.5	--	--	--	--	--	--	--	--	--
PC-94	EM29	10/15/2020	N	550-151259-7	Alluvium	9.5 - 19.5	--	--	--	--	--	--	--	--	--
PC-94	EM33	6/2/2021	N	550-164872-21	Alluvium	9.5 - 19.5	--	--	--	--	--	--	--	--	--

Table D.2
Groundater Analytical Results Summary - Secondary Parameters
Seep Well Field Area Bioremediation Treatability Study

Well	Event	Sample Date	QC Type	Lab Sample ID	Lithology	Screened Interval (ft bgs)	Total Metals by SW6010	Total Metals by SW6010	Total Metals by SW6010	Total Metals by SW6010	Total Metals by SW6010	Total Metals by SW6010	Total Metals by SW6020	Total Metals by SW6020	Total Metals by SW6020
							Strontium	Tin	Titanium	Tungsten	Vanadium	Zinc	Antimony	Arsenic	Selenium
							mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	µg/L	µg/L	µg/L
PC-94	EM33	6/2/2021	N	550-164872-22	Alluvium	9.5 - 19.5	--	--	--	--	--	--	--	--	--
PC-94	EM36	11/30/2021	N	550-174968-5	Alluvium	9.5 - 19.5	--	--	--	--	--	--	--	--	--
PC-94	EM36	11/30/2021	N	550-174968-6	Alluvium	9.5 - 19.5	--	--	--	--	--	--	--	--	--
PC-94	EM40	12/13/2022	N	550-194920-7	Alluvium	9.5 - 19.5	--	--	--	--	--	--	--	--	--
PC-94	EM40	12/13/2022	N	550-194920-8	Alluvium	9.5 - 19.5	--	--	--	--	--	--	--	--	--
PC-97	BL02	7/13/2017	N	440-188325-8	Alluvium	23.0 - 33.0	--	--	--	--	--	--	--	--	--
PC-97	EM04	10/11/2017	N	440-194242-5	Alluvium	23.0 - 33.0	--	--	--	--	--	--	--	--	--
PC-97	EM04	10/11/2017	FD	440-194242-6	Alluvium	23.0 - 33.0	--	--	--	--	--	--	--	--	--
PC-97	EM06	11/16/2017	N	440-196786-13	Alluvium	23.0 - 33.0	--	--	--	--	--	--	--	--	--
PC-97	EM07	12/13/2017	N	440-198508-11	Alluvium	23.0 - 33.0	--	--	--	--	--	--	--	--	--
PC-97	EM07	12/13/2017	FD	440-198508-12	Alluvium	23.0 - 33.0	--	--	--	--	--	--	--	--	--
PC-97	EM08	2/21/2018	N	440-203937-4	Alluvium	23.0 - 33.0	--	--	--	--	--	--	--	--	--
PC-97	EM09	3/27/2018	N	440-207268-4	Alluvium	23.0 - 33.0	--	--	--	--	--	--	--	--	--
PC-97	EM10	5/1/2018	N	440-210284-7	Alluvium	23.0 - 33.0	--	--	--	--	--	--	--	--	--
PC-97	EM11	7/10/2018	N	440-215437-3	Alluvium	23.0 - 33.0	--	--	--	--	--	--	--	--	--
PC-97	EM15	10/11/2018	N	440-222092-13	Alluvium	23.0 - 33.0	--	--	--	--	--	--	--	--	--
PC-97	EM19	5/22/2019	N	440-242201-1	Alluvium	23.0 - 33.0	--	--	--	--	--	--	--	--	--
PC-97	EM22	11/6/2019	N	440-254027-7	Alluvium	23.0 - 33.0	--	--	--	--	--	--	--	--	--
PC-97	EM26	4/30/2020	N	440-265383-7	Alluvium	23.0 - 33.0	--	--	--	--	--	--	--	--	--
PC-97	EM29	10/15/2020	N	550-151259-9	Alluvium	23.0 - 33.0	--	--	--	--	--	--	--	--	--
SWFTS-IW01A	BL02	7/11/2017	N	440-188133-3	Alluvium	15.8 - 25.6	--	--	--	--	--	--	--	--	--
SWFTS-IW01B	BL02	7/11/2017	N	440-188133-13	Alluvium	26.9 - 36.7	--	--	--	--	--	--	--	--	--
SWFTS-IW02A	BL02	7/11/2017	N	440-188133-14	Alluvium	16.8 - 26.6	--	--	--	--	--	--	--	--	--
SWFTS-IW02B	BL02	7/11/2017	N	440-188133-2	Alluvium	26.3 - 36.1	--	--	--	--	--	--	--	--	--
SWFTS-IW03	BL02	7/11/2017	N	440-188133-4	Alluvium	16.8 - 36.6	--	--	--	--	--	--	--	--	--
SWFTS-IW03	BL02	7/11/2017	FD	440-188133-5	Alluvium	16.8 - 36.6	--	--	--	--	--	--	--	--	--
SWFTS-IW04	BL02	7/11/2017	N	440-188133-11	Alluvium	19.8 - 34.6	--	--	--	--	--	--	--	--	--
SWFTS-IW04	BL02	7/11/2017	FD	440-188133-12	Alluvium	19.8 - 34.6	--	--	--	--	--	--	--	--	--
SWFTS-IW05	BL02	7/11/2017	N	440-188133-16	Alluvium	14.6 - 34.4	--	--	--	--	--	--	--	--	--
SWFTS-IW06A	BL02	7/11/2017	N	440-188133-10	Alluvium	16.8 - 26.6	--	--	--	--	--	--	--	--	--
SWFTS-IW06B	BL02	7/11/2017	N	440-188133-6	Alluvium	28.8 - 33.6	--	--	--	--	--	--	--	--	--
SWFTS-IW07	BL02	7/11/2017	N	440-188133-7	Alluvium	17.3 - 37.1	--	--	--	--	--	--	--	--	--
SWFTS-IW08	BL02	7/12/2017	N	440-188247-7	Alluvium	17.5 - 37.3	--	--	--	--	--	--	--	--	--
SWFTS-IW09	BL02	7/12/2017	N	440-188247-8	Alluvium	26.6 - 46.4	--	--	--	--	--	--	--	--	--
SWFTS-IW09	BL02	7/12/2017	FD	440-188244-3	Alluvium	26.6 - 46.4	--	--	--	--	--	--	--	--	--
SWFTS-IW10	BL02	7/12/2017	N	440-188247-9	Alluvium	26.8 - 46.6	--	--	--	--	--	--	--	--	--
SWFTS-IW11	BL02	7/12/2017	N	440-188247-3	Alluvium	17.3 - 37.1	--	--	--	--	--	--	--	--	--
SWFTS-IW12	BL02	7/12/2017	N	440-188247-4	Alluvium	14.3 - 39.1	--	--	--	--	--	--	--	--	--
SWFTS-IW13A	BL02	7/11/2017	N	440-188133-1	Alluvium	15.8 - 25.6	--	--	--	--	--	--	--	--	--
SWFTS-IW13B	BL02	7/11/2017	N	440-188133-15	Alluvium	27.8 - 37.6	--	--	--	--	--	--	--	--	--
SWFTS-IW14	BL02	7/12/2017	N	440-188247-1	Alluvium	16.2 - 36.1	--	--	--	--	--	--	--	--	--
SWFTS-IW15	BL02	7/12/2017	N	440-188247-2	Alluvium	16.4 - 36.2	--	--	--	--	--	--	--	--	--
SWFTS-IW16A	BL02	7/11/2017	N	440-188133-9	Alluvium	17.3 - 27.1	--	--	--	--	--	--	--	--	--
SWFTS-IW16B	BL02	7/11/2017	N	440-188133-8	Alluvium	26.5 - 36.3	--	--	--	--	--	--	--	--	--
SWFTS-IW17	BL02	7/13/2017	N	440-188325-6	Alluvium	17.3 - 37.1	--	--	--	--	--	--	--	--	--
SWFTS-IW18	BL02	7/13/2017	N	440-188325-4	Alluvium	18.1 - 38.1	--	--	--	--	--	--	--	--	--
SWFTS-IW19	BL02	7/13/2017	N	440-188325-5	Alluvium	24.3 - 44.1	--	--	--	--	--	--	--	--	--
SWFTS-IW20	BL02	7/12/2017	N	440-188247-10	Alluvium	30.8 - 50.6	--	--	--	--	--	--	--	--	--
SWFTS-MW01	BL01	3/29/2017	N	440-180937-6	Alluvium	24.2 - 38.9	--	--	--	--	--	--	--	--	--
SWFTS-MW01	EM04	10/10/2017	N	440-194094-2	Alluvium	24.2 - 38.9	--	--	--	--	--	--	--	--	--
SWFTS-MW01	EM06	11/15/2017	N	440-196665-4	Alluvium	24.2 - 38.9	--	--	--	--	--	--	--	--	--
SWFTS-MW01	EM07	12/14/2017	N	440-198571-10	Alluvium	24.2 - 38.9	--	--	--	--	--	--	--	--	--
SWFTS-MW01	EM08	2/20/2018	N	440-203841-12	Alluvium	24.2 - 38.9	--	--	--	--	--	--	--	--	--
SWFTS-MW01	EM09	3/27/2018	N	440-207268-10	Alluvium	24.2 - 38.9	--	--	--	--	--	--	--	--	--
SWFTS-MW01	EM10	4/30/2018	N	440-210173-1	Alluvium	24.2 - 38.9	--	--	--	--	--	--	--	--	--
SWFTS-MW01	EM11	7/10/2018	N	440-215437-2	Alluvium	24.2 - 38.9	--	--	--	--	--	--	--	--	--
SWFTS-MW01	EM14	9/10/2018	N	440-219797-1	Alluvium	24.2 - 38.9	--	--	--	--	--	--	--	--	--
SWFTS-MW01	EM15	10/9/2018	N	440-221855-12	Alluvium	24.2 - 38.9	--	--	--	--	--	--	--	--	--
SWFTS-MW01	EM19	5/21/2019	N	440-242084-14	Alluvium	24.2 - 38.9	--	--	--	--	--	--	--	--	--
SWFTS-MW01	EM22	11/5/2019	N	440-253918-3	Alluvium	24.2 - 38.9	--	--	--	--	--	--	--	--	--
SWFTS-MW01	EM26	4/28/2020	N	440-265289-5	Alluvium	24.2 - 38.9	--	--	--	--	--	--	--	--	--
SWFTS-MW01	EM29	10/13/2020	N	440-273236-11	Alluvium	24.2 - 38.9	--	--	--	--	--	--	--	--	--
SWFTS-MW01	EM33	6/4/2021	N	550-164930-17	Alluvium	24.2 - 38.9	--	--	--	--	--	--	--	--	--
SWFTS-MW01	EM33	6/4/2021	N	550-164930-18	Alluvium	24.2 - 38.9	--	--	--	--	--	--	--	--	--

Table D.2
Groundater Analytical Results Summary - Secondary Parameters
Seep Well Field Area Bioremediation Treatability Study

Well	Event	Sample Date	QC Type	Lab Sample ID	Lithology	Screened Interval (ft bgs)	Total Metals by SW6010	Total Metals by SW6010	Total Metals by SW6010	Total Metals by SW6010	Total Metals by SW6010	Total Metals by SW6010	Total Metals by SW6020	Total Metals by SW6020	Total Metals by SW6020
							Strontium	Tin	Titanium	Tungsten	Vanadium	Zinc	Antimony	Arsenic	Selenium
							mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	µg/L	µg/L	µg/L
SWFTS-MW01	EM36	11/30/2021	N	550-174968-19	Alluvium	24.2 - 38.9	--	--	--	--	--	--	--	--	--
SWFTS-MW01	EM36	11/30/2021	N	550-174968-20	Alluvium	24.2 - 38.9	--	--	--	--	--	--	--	--	--
SWFTS-MW01	EM40	12/13/2022	N	550-194920-3	Alluvium	24.2 - 38.9	--	--	--	--	--	--	--	--	--
SWFTS-MW01	EM40	12/13/2022	N	550-194920-4	Alluvium	24.2 - 38.9	--	--	--	--	--	--	--	--	--
SWFTS-MW02	BL01	3/29/2017	N	440-180937-7	Alluvium	18.4 - 33.1	--	--	--	--	--	--	--	--	--
SWFTS-MW02	EM04	10/12/2017	N	440-194204-6	Alluvium	18.4 - 33.1	--	--	--	--	--	--	--	--	--
SWFTS-MW02	EM06	11/14/2017	N	440-196558-3	Alluvium	18.4 - 33.1	--	--	--	--	--	--	--	--	--
SWFTS-MW02	EM07	12/13/2017	N	440-198508-8	Alluvium	18.4 - 33.1	--	--	--	--	--	--	--	--	--
SWFTS-MW02	EM08	2/19/2018	N	440-203775-1	Alluvium	18.4 - 33.1	--	--	--	--	--	--	--	--	--
SWFTS-MW02	EM09	3/27/2018	N	440-207268-1	Alluvium	18.4 - 33.1	--	--	--	--	--	--	--	--	--
SWFTS-MW02	EM10	4/30/2018	N	440-210173-3	Alluvium	18.4 - 33.1	--	--	--	--	--	--	--	--	--
SWFTS-MW02	EM11	7/11/2018	N	440-215717-13	Alluvium	18.4 - 33.1	--	--	--	--	--	--	--	--	--
SWFTS-MW02	EM14	9/10/2018	N	440-219797-2	Alluvium	18.4 - 33.1	--	--	--	--	--	--	--	--	--
SWFTS-MW02	EM15	10/10/2018	N	440-221975-15	Alluvium	18.4 - 33.1	--	--	--	--	--	--	--	--	--
SWFTS-MW02	EM19	5/21/2019	N	440-242084-8	Alluvium	18.4 - 33.1	--	--	--	--	--	--	--	--	--
SWFTS-MW02	EM22	11/7/2019	N	440-254148-7	Alluvium	18.4 - 33.1	--	--	--	--	--	--	--	--	--
SWFTS-MW02	EM26	4/30/2020	N	440-265382-3	Alluvium	18.4 - 33.1	--	--	--	--	--	--	--	--	--
SWFTS-MW02	EM29	10/15/2020	N	550-151259-8	Alluvium	18.4 - 33.1	--	--	--	--	--	--	--	--	--
SWFTS-MW02	EM33	6/3/2021	N	550-164869-21	Alluvium	18.4 - 33.1	--	--	--	--	--	--	--	--	--
SWFTS-MW02	EM33	6/3/2021	N	550-164869-22	Alluvium	18.4 - 33.1	--	--	--	--	--	--	--	--	--
SWFTS-MW02	EM36	11/30/2021	N	550-174968-7	Alluvium	18.4 - 33.1	--	--	--	--	--	--	--	--	--
SWFTS-MW02	EM36	11/30/2021	N	550-174968-8	Alluvium	18.4 - 33.1	--	--	--	--	--	--	--	--	--
SWFTS-MW02	EM40	12/14/2022	N	550-195015-3	Alluvium	18.4 - 33.1	--	--	--	--	--	--	--	--	--
SWFTS-MW02	EM40	12/14/2022	N	550-195015-4	Alluvium	18.4 - 33.1	--	--	--	--	--	--	--	--	--
SWFTS-MW03	BL01	3/30/2017	N	440-181045-5	Alluvium	27.2 - 42.1	--	--	--	--	--	--	--	--	--
SWFTS-MW03	BL01	3/30/2017	FD	440-181045-6	Alluvium	27.2 - 42.1	--	--	--	--	--	--	--	--	--
SWFTS-MW03	EM04	10/12/2017	N	440-194204-8	Alluvium	27.2 - 42.1	--	--	--	--	--	--	--	--	--
SWFTS-MW03	EM06	11/16/2017	N	440-196786-16	Alluvium	27.2 - 42.1	--	--	--	--	--	--	--	--	--
SWFTS-MW03	EM07	12/12/2017	N	440-198371-13	Alluvium	27.2 - 42.1	--	--	--	--	--	--	--	--	--
SWFTS-MW03	EM08	2/21/2018	N	440-203937-5	Alluvium	27.2 - 42.1	--	--	--	--	--	--	--	--	--
SWFTS-MW03	EM09	3/27/2018	N	440-207268-15	Alluvium	27.2 - 42.1	--	--	--	--	--	--	--	--	--
SWFTS-MW03	EM10	5/2/2018	N	440-210430-6	Alluvium	27.2 - 42.1	--	--	--	--	--	--	--	--	--
SWFTS-MW03	EM11	7/10/2018	N	440-215437-5	Alluvium	27.2 - 42.1	--	--	--	--	--	--	--	--	--
SWFTS-MW03	EM13	8/15/2018	N	440-218208-4	Alluvium	27.2 - 42.1	--	--	--	--	--	--	--	--	--
SWFTS-MW03	EM14	9/11/2018	N	440-219886-11	Alluvium	27.2 - 42.1	--	--	--	--	--	--	--	--	--
SWFTS-MW03	EM15	10/9/2018	N	440-221855-13	Alluvium	27.2 - 42.1	--	--	--	--	--	--	--	--	--
SWFTS-MW03	EM19	5/21/2019	N	440-242084-12	Alluvium	27.2 - 42.1	--	--	--	--	--	--	--	--	--
SWFTS-MW03	EM22	11/4/2019	N	440-253773-2	Alluvium	27.2 - 42.1	--	--	--	--	--	--	--	--	--
SWFTS-MW03	EM26	4/28/2020	N	440-265289-1	Alluvium	27.2 - 42.1	--	--	--	--	--	--	--	--	--
SWFTS-MW03	EM29	10/13/2020	N	440-273236-10	Alluvium	27.2 - 42.1	--	--	--	--	--	--	--	--	--
SWFTS-MW03	EM33	6/3/2021	N	550-164869-15	Alluvium	27.2 - 42.1	--	--	--	--	--	--	--	--	--
SWFTS-MW03	EM33	6/3/2021	N	550-164869-16	Alluvium	27.2 - 42.1	--	--	--	--	--	--	--	--	--
SWFTS-MW03	EM36	12/1/2021	N	550-175045-1	Alluvium	27.2 - 42.1	--	--	--	--	--	--	--	--	--
SWFTS-MW03	EM36	12/1/2021	N	550-175045-2	Alluvium	27.2 - 42.1	--	--	--	--	--	--	--	--	--
SWFTS-MW03	EM40	12/13/2022	N	550-194920-15	Alluvium	27.2 - 42.1	--	--	--	--	--	--	--	--	--
SWFTS-MW03	EM40	12/13/2022	N	550-194920-16	Alluvium	27.2 - 42.1	--	--	--	--	--	--	--	--	--
SWFTS-MW04	BL01	3/31/2017	N	440-181122-1	Alluvium	25.8 - 40.4	--	--	--	--	--	--	--	--	--
SWFTS-MW04	EM04	10/11/2017	N	440-194242-7	Alluvium	25.8 - 40.4	--	--	--	--	--	--	--	--	--
SWFTS-MW04	EM06	11/15/2017	N	440-196659-2	Alluvium	25.8 - 40.4	--	--	--	--	--	--	--	--	--
SWFTS-MW04	EM07	12/14/2017	N	440-198571-12	Alluvium	25.8 - 40.4	--	--	--	--	--	--	--	--	--
SWFTS-MW04	EM08	2/21/2018	N	440-203937-2	Alluvium	25.8 - 40.4	--	--	--	--	--	--	--	--	--
SWFTS-MW04	EM09	3/27/2018	N	440-207268-5	Alluvium	25.8 - 40.4	--	--	--	--	--	--	--	--	--
SWFTS-MW04	EM10	5/1/2018	N	440-210284-5	Alluvium	25.8 - 40.4	--	--	--	--	--	--	--	--	--
SWFTS-MW04	EM11	7/10/2018	N	440-215437-4	Alluvium	25.8 - 40.4	--	--	--	--	--	--	--	--	--
SWFTS-MW04	EM15	10/11/2018	N	440-222092-9	Alluvium	25.8 - 40.4	--	--	--	--	--	--	--	--	--
SWFTS-MW04	EM19	5/21/2019	N	440-242084-11	Alluvium	25.8 - 40.4	--	--	--	--	--	--	--	--	--
SWFTS-MW04	EM22	11/7/2019	N	440-254150-6	Alluvium	25.8 - 40.4	--	--	--	--	--	--	--	--	--
SWFTS-MW04	EM26	5/1/2020	N	440-265412-1	Alluvium	25.8 - 40.4	--	--	--	--	--	--	--	--	--
SWFTS-MW04	EM29	10/14/2020	N	440-273303-12	Alluvium	25.8 - 40.4	--	--	--	--	--	--	--	--	--
SWFTS-MW04	EM33	6/3/2021	N	550-164869-23	Alluvium	25.8 - 40.4	--	--	--	--	--	--	--	--	--
SWFTS-MW04	EM33	6/3/2021	N	550-164869-24	Alluvium	25.8 - 40.4	--	--	--	--	--	--	--	--	--
SWFTS-MW04	EM36	12/2/2021	N	550-175153-3	Alluvium	25.8 - 40.4	--	--	--	--	--	--	--	--	--
SWFTS-MW04	EM36	12/2/2021	N	550-175153-4	Alluvium	25.8 - 40.4	--	--	--	--	--	--	--	--	--
SWFTS-MW04	EM40	12/14/2022	N	550-195015-1	Alluvium	25.8 - 40.4	--	--	--	--	--	--	--	--	--

Table D.2
Groundater Analytical Results Summary - Secondary Parameters
Seep Well Field Area Bioremediation Treatability Study

Well	Event	Sample Date	QC Type	Lab Sample ID	Lithology	Screened Interval (ft bgs)	Total Metals by SW6010	Total Metals by SW6010	Total Metals by SW6010	Total Metals by SW6010	Total Metals by SW6010	Total Metals by SW6010	Total Metals by SW6020	Total Metals by SW6020	Total Metals by SW6020
							Strontium	Tin	Titanium	Tungsten	Vanadium	Zinc	Antimony	Arsenic	Selenium
							mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	µg/L	µg/L	µg/L
SWFTS-MW04	EM40	12/14/2022	N	550-195015-2	Alluvium	25.8 - 40.4	--	--	--	--	--	--	--	--	--
SWFTS-MW05A	BL01	3/30/2017	N	440-181045-7	Alluvium	19.3 - 29.3	--	--	--	--	--	--	--	--	--
SWFTS-MW05A	EM04	10/10/2017	N	440-193989-2	Alluvium	19.3 - 29.3	--	--	--	--	--	--	--	--	--
SWFTS-MW05A	EM06	11/14/2017	N	440-196558-1	Alluvium	19.3 - 29.3	--	--	--	--	--	--	--	--	--
SWFTS-MW05A	EM07	12/13/2017	N	440-198508-3	Alluvium	19.3 - 29.3	--	--	--	--	--	--	--	--	--
SWFTS-MW05A	EM08	2/20/2018	N	440-203841-7	Alluvium	19.3 - 29.3	--	--	--	--	--	--	--	--	--
SWFTS-MW05A	EM09	3/26/2018	N	440-207137-5	Alluvium	19.3 - 29.3	--	--	--	--	--	--	--	--	--
SWFTS-MW05A	EM10	4/30/2018	N	440-210173-8	Alluvium	19.3 - 29.3	--	--	--	--	--	--	--	--	--
SWFTS-MW05A	EM11	7/11/2018	N	440-215585-14	Alluvium	19.3 - 29.3	--	--	--	--	--	--	--	--	--
SWFTS-MW05A	EM15	10/10/2018	N	440-221975-14	Alluvium	19.3 - 29.3	--	--	--	--	--	--	--	--	--
SWFTS-MW05A	EM19	5/21/2019	N	440-242084-17	Alluvium	19.3 - 29.3	--	--	--	--	--	--	--	--	--
SWFTS-MW05A	EM22	11/5/2019	N	440-253918-1	Alluvium	19.3 - 29.3	--	--	--	--	--	--	--	--	--
SWFTS-MW05A	EM26	4/29/2020	N	440-265346-2	Alluvium	19.3 - 29.3	--	--	--	--	--	--	--	--	--
SWFTS-MW05A	EM29	10/14/2020	N	440-273303-9	Alluvium	19.3 - 29.3	--	--	--	--	--	--	--	--	--
SWFTS-MW05A	EM33	6/3/2021	N	550-164869-17	Alluvium	19.3 - 29.3	--	--	--	--	--	--	--	--	--
SWFTS-MW05A	EM33	6/3/2021	N	550-164869-18	Alluvium	19.3 - 29.3	--	--	--	--	--	--	--	--	--
SWFTS-MW05A	EM36	11/29/2021	N	550-174897-3	Alluvium	19.3 - 29.3	--	--	--	--	--	--	--	--	--
SWFTS-MW05A	EM36	11/29/2021	N	550-174897-4	Alluvium	19.3 - 29.3	--	--	--	--	--	--	--	--	--
SWFTS-MW05B	BL01	3/30/2017	N	440-181045-8	Alluvium	32.3 - 42.0	--	--	--	--	--	--	--	--	--
SWFTS-MW05B	EM04	10/10/2017	N	440-193989-1	Alluvium	32.3 - 42.0	--	--	--	--	--	--	--	--	--
SWFTS-MW05B	EM06	11/14/2017	N	440-196558-2	Alluvium	32.3 - 42.0	--	--	--	--	--	--	--	--	--
SWFTS-MW05B	EM07	12/13/2017	N	440-198508-4	Alluvium	32.3 - 42.0	--	--	--	--	--	--	--	--	--
SWFTS-MW05B	EM08	2/20/2018	N	440-203841-8	Alluvium	32.3 - 42.0	--	--	--	--	--	--	--	--	--
SWFTS-MW05B	EM09	3/26/2018	N	440-207137-6	Alluvium	32.3 - 42.0	--	--	--	--	--	--	--	--	--
SWFTS-MW05B	EM10	4/30/2018	N	440-210173-2	Alluvium	32.3 - 42.0	--	--	--	--	--	--	--	--	--
SWFTS-MW05B	EM11	7/10/2018	N	440-215585-10	Alluvium	32.3 - 42.0	--	--	--	--	--	--	--	--	--
SWFTS-MW05B	EM15	10/9/2018	N	440-221855-14	Alluvium	32.3 - 42.0	--	--	--	--	--	--	--	--	--
SWFTS-MW05B	EM19	5/21/2019	N	440-242084-18	Alluvium	32.3 - 42.0	--	--	--	--	--	--	--	--	--
SWFTS-MW05B	EM22	11/5/2019	N	440-253918-2	Alluvium	32.3 - 42.0	--	--	--	--	--	--	--	--	--
SWFTS-MW05B	EM26	4/29/2020	N	440-265346-1	Alluvium	32.3 - 42.0	--	--	--	--	--	--	--	--	--
SWFTS-MW05B	EM29	10/14/2020	N	440-273303-8	Alluvium	32.3 - 42.0	--	--	--	--	--	--	--	--	--
SWFTS-MW05B	EM33	6/3/2021	N	550-164869-19	Alluvium	32.3 - 42.0	--	--	--	--	--	--	--	--	--
SWFTS-MW05B	EM33	6/3/2021	N	550-164869-20	Alluvium	32.3 - 42.0	--	--	--	--	--	--	--	--	--
SWFTS-MW05B	EM36	11/30/2021	N	550-174968-15	Alluvium	32.3 - 42.0	--	--	--	--	--	--	--	--	--
SWFTS-MW05B	EM36	11/30/2021	N	550-174968-16	Alluvium	32.3 - 42.0	--	--	--	--	--	--	--	--	--
SWFTS-MW06A	BL01	3/30/2017	N	440-181045-1	Alluvium	11.8 - 21.4	--	--	--	--	--	--	--	--	--
SWFTS-MW06A	EM04	10/11/2017	N	440-194090-4	Alluvium	11.8 - 21.4	--	--	--	--	--	--	--	--	--
SWFTS-MW06A	EM06	11/16/2017	N	440-196786-19	Alluvium	11.8 - 21.4	--	--	--	--	--	--	--	--	--
SWFTS-MW06A	EM07	12/13/2017	N	440-198508-1	Alluvium	11.8 - 21.4	--	--	--	--	--	--	--	--	--
SWFTS-MW06A	EM08	2/22/2018	N	440-204033-1	Alluvium	11.8 - 21.4	--	--	--	--	--	--	--	--	--
SWFTS-MW06A	EM09	3/28/2018	N	440-207497-3	Alluvium	11.8 - 21.4	--	--	--	--	--	--	--	--	--
SWFTS-MW06A	EM10	5/1/2018	N	440-210284-9	Alluvium	11.8 - 21.4	--	--	--	--	--	--	--	--	--
SWFTS-MW06A	EM10	5/1/2018	FD	440-210284-10	Alluvium	11.8 - 21.4	--	--	--	--	--	--	--	--	--
SWFTS-MW06A	EM11	7/11/2018	N	440-215585-2	Alluvium	11.8 - 21.4	--	--	--	--	--	--	--	--	--
SWFTS-MW06A	EM11	7/11/2018	FD	440-215585-3	Alluvium	11.8 - 21.4	--	--	--	--	--	--	--	--	--
SWFTS-MW06A	EM15	10/10/2018	N	440-221975-8	Alluvium	11.8 - 21.4	--	--	--	--	--	--	--	--	--
SWFTS-MW06A	EM15	10/10/2018	FD	440-221975-10	Alluvium	11.8 - 21.4	--	--	--	--	--	--	--	--	--
SWFTS-MW06A	EM19	5/20/2019	N	440-242015-1	Alluvium	11.8 - 21.4	--	--	--	--	--	--	--	--	--
SWFTS-MW06A	EM19	5/20/2019	FD	440-242015-2	Alluvium	11.8 - 21.4	--	--	--	--	--	--	--	--	--
SWFTS-MW06A	EM22	11/6/2019	N	440-254027-4	Alluvium	11.8 - 21.4	--	--	--	--	--	--	--	--	--
SWFTS-MW06A	EM22	11/6/2019	FD	440-254027-5	Alluvium	11.8 - 21.4	--	--	--	--	--	--	--	--	--
SWFTS-MW06A	EM26	4/29/2020	N	440-265346-5	Alluvium	11.8 - 21.4	--	--	--	--	--	--	--	--	--
SWFTS-MW06A	EM26	4/29/2020	FD	440-265346-6	Alluvium	11.8 - 21.4	--	--	--	--	--	--	--	--	--
SWFTS-MW06A	EM29	10/13/2020	N	440-273236-7	Alluvium	11.8 - 21.4	--	--	--	--	--	--	--	--	--
SWFTS-MW06A	EM29	10/13/2020	FD	440-273236-8	Alluvium	11.8 - 21.4	--	--	--	--	--	--	--	--	--
SWFTS-MW06A	EM33	6/4/2021	N	550-164930-19	Alluvium	11.8 - 21.4	--	--	--	--	--	--	--	--	--
SWFTS-MW06A	EM33	6/4/2021	N	550-164930-20	Alluvium	11.8 - 21.4	--	--	--	--	--	--	--	--	--
SWFTS-MW06A	EM33	6/4/2021	FD	550-164930-21	Alluvium	11.8 - 21.4	--	--	--	--	--	--	--	--	--
SWFTS-MW06A	EM33	6/4/2021	FD	550-164930-22	Alluvium	11.8 - 21.4	--	--	--	--	--	--	--	--	--
SWFTS-MW06A	EM36	12/1/2021	N	550-175045-7	Alluvium	11.8 - 21.4	--	--	--	--	--	--	--	--	--
SWFTS-MW06A	EM36	12/1/2021	N	550-175045-8	Alluvium	11.8 - 21.4	--	--	--	--	--	--	--	--	--
SWFTS-MW06A	EM36	12/1/2021	FD	550-175045-10	Alluvium	11.8 - 21.4	--	--	--	--	--	--	--	--	--
SWFTS-MW06A	EM36	12/1/2021	FD	550-175045-9	Alluvium	11.8 - 21.4	--	--	--	--	--	--	--	--	--
SWFTS-MW06A	EM40	12/14/2022	N	550-195015-5	Alluvium	11.8 - 21.4	--	--	--	--	--	--	--	--	--

Table D.2
Groundater Analytical Results Summary - Secondary Parameters
Seep Well Field Area Bioremediation Treatability Study

Well	Event	Sample Date	QC Type	Lab Sample ID	Lithology	Screened Interval (ft bgs)	Total Metals by SW6010	Total Metals by SW6010	Total Metals by SW6010	Total Metals by SW6010	Total Metals by SW6010	Total Metals by SW6010	Total Metals by SW6020	Total Metals by SW6020	Total Metals by SW6020
							Strontium	Tin	Titanium	Tungsten	Vanadium	Zinc	Antimony	Arsenic	Selenium
							mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	µg/L	µg/L	µg/L
SWFTS-MW06A	EM40	12/14/2022	N	550-195015-6	Alluvium	11.8 - 21.4	--	--	--	--	--	--	--	--	--
SWFTS-MW06A	EM40	12/14/2022	FD	550-195015-7	Alluvium	11.8 - 21.4	--	--	--	--	--	--	--	--	--
SWFTS-MW06A	EM40	12/14/2022	FD	550-195015-8	Alluvium	11.8 - 21.4	--	--	--	--	--	--	--	--	--
SWFTS-MW06B	BL01	3/30/2017	N	440-181045-2	Alluvium	25.9 - 35.5	--	--	--	--	--	--	--	--	--
SWFTS-MW06B	EM04	10/11/2017	N	440-194090-5	Alluvium	25.9 - 35.5	--	--	--	--	--	--	--	--	--
SWFTS-MW06B	EM06	11/16/2017	N	440-196786-20	Alluvium	25.9 - 35.5	--	--	--	--	--	--	--	--	--
SWFTS-MW06B	EM07	12/13/2017	N	440-198508-2	Alluvium	25.9 - 35.5	--	--	--	--	--	--	--	--	--
SWFTS-MW06B	EM08	2/22/2018	N	440-204033-5	Alluvium	25.9 - 35.5	--	--	--	--	--	--	--	--	--
SWFTS-MW06B	EM09	3/28/2018	N	440-207497-2	Alluvium	25.9 - 35.5	--	--	--	--	--	--	--	--	--
SWFTS-MW06B	EM10	5/1/2018	N	440-210284-8	Alluvium	25.9 - 35.5	--	--	--	--	--	--	--	--	--
SWFTS-MW06B	EM11	7/11/2018	N	440-215585-4	Alluvium	25.9 - 35.5	--	--	--	--	--	--	--	--	--
SWFTS-MW06B	EM15	10/10/2018	N	440-221975-9	Alluvium	25.9 - 35.5	--	--	--	--	--	--	--	--	--
SWFTS-MW06B	EM19	5/21/2019	N	440-242084-5	Alluvium	25.9 - 35.5	--	--	--	--	--	--	--	--	--
SWFTS-MW06B	EM22	11/6/2019	N	440-254027-6	Alluvium	25.9 - 35.5	--	--	--	--	--	--	--	--	--
SWFTS-MW06B	EM26	4/29/2020	N	440-265346-4	Alluvium	25.9 - 35.5	--	--	--	--	--	--	--	--	--
SWFTS-MW06B	EM29	10/13/2020	N	440-273236-6	Alluvium	25.9 - 35.5	--	--	--	--	--	--	--	--	--
SWFTS-MW06B	EM33	6/4/2021	N	550-164930-23	Alluvium	25.9 - 35.5	--	--	--	--	--	--	--	--	--
SWFTS-MW06B	EM33	6/4/2021	N	550-164930-24	Alluvium	25.9 - 35.5	--	--	--	--	--	--	--	--	--
SWFTS-MW06B	EM36	12/1/2021	N	550-175045-11	Alluvium	25.9 - 35.5	--	--	--	--	--	--	--	--	--
SWFTS-MW06B	EM36	12/1/2021	N	550-175045-12	Alluvium	25.9 - 35.5	--	--	--	--	--	--	--	--	--
SWFTS-MW06B	EM40	12/14/2022	N	550-195015-10	Alluvium	25.9 - 35.5	--	--	--	--	--	--	--	--	--
SWFTS-MW06B	EM40	12/14/2022	N	550-195015-9	Alluvium	25.9 - 35.5	--	--	--	--	--	--	--	--	--
SWFTS-MW07A	BL01	3/30/2017	N	440-181045-3	Alluvium	15.0 - 29.5	--	--	--	--	--	--	--	--	--
SWFTS-MW07A	EM04	10/11/2017	N	440-194242-3	Alluvium	15.0 - 29.5	--	--	--	--	--	--	--	--	--
SWFTS-MW07A	EM06	11/15/2017	N	440-196659-7	Alluvium	15.0 - 29.5	--	--	--	--	--	--	--	--	--
SWFTS-MW07A	EM07	12/14/2017	N	440-198571-3	Alluvium	15.0 - 29.5	--	--	--	--	--	--	--	--	--
SWFTS-MW07A	EM08	2/19/2018	N	440-203775-3	Alluvium	15.0 - 29.5	--	--	--	--	--	--	--	--	--
SWFTS-MW07A	EM09	3/28/2018	N	440-207497-4	Alluvium	15.0 - 29.5	--	--	--	--	--	--	--	--	--
SWFTS-MW07A	EM10	5/2/2018	N	440-210430-2	Alluvium	15.0 - 29.5	--	--	--	--	--	--	--	--	--
SWFTS-MW07A	EM11	7/11/2018	N	440-215585-7	Alluvium	15.0 - 29.5	--	--	--	--	--	--	--	--	--
SWFTS-MW07A	EM15	10/10/2018	N	440-221975-11	Alluvium	15.0 - 29.5	--	--	--	--	--	--	--	--	--
SWFTS-MW07A	EM19	5/22/2019	N	440-242200-5	Alluvium	15.0 - 29.5	--	--	--	--	--	--	--	--	--
SWFTS-MW07A	EM22	11/7/2019	N	440-254148-4	Alluvium	15.0 - 29.5	--	--	--	--	--	--	--	--	--
SWFTS-MW07A	EM26	4/30/2020	N	440-265382-5	Alluvium	15.0 - 29.5	--	--	--	--	--	--	--	--	--
SWFTS-MW07A	EM29	10/16/2020	N	440-273433-1	Alluvium	15.0 - 29.5	--	--	--	--	--	--	--	--	--
SWFTS-MW07A	EM33	6/4/2021	N	550-164930-25	Alluvium	15.0 - 29.5	--	--	--	--	--	--	--	--	--
SWFTS-MW07A	EM33	6/4/2021	N	550-164930-26	Alluvium	15.0 - 29.5	--	--	--	--	--	--	--	--	--
SWFTS-MW07A	EM36	12/3/2021	N	550-175222-3	Alluvium	15.0 - 29.5	--	--	--	--	--	--	--	--	--
SWFTS-MW07A	EM36	12/3/2021	N	550-175222-4	Alluvium	15.0 - 29.5	--	--	--	--	--	--	--	--	--
SWFTS-MW07A	EM40	12/14/2022	N	550-195015-11	Alluvium	15.0 - 29.5	--	--	--	--	--	--	--	--	--
SWFTS-MW07A	EM40	12/14/2022	N	550-195015-12	Alluvium	15.0 - 29.5	--	--	--	--	--	--	--	--	--
SWFTS-MW07B	BL01	3/30/2017	N	440-181045-4	Alluvium	33.8 - 38.3	--	--	--	--	--	--	--	--	--
SWFTS-MW07B	EM04	10/11/2017	N	440-194242-4	Alluvium	33.8 - 38.3	--	--	--	--	--	--	--	--	--
SWFTS-MW07B	EM06	11/15/2017	N	440-196659-8	Alluvium	33.8 - 38.3	--	--	--	--	--	--	--	--	--
SWFTS-MW07B	EM07	12/14/2017	N	440-198571-4	Alluvium	33.8 - 38.3	--	--	--	--	--	--	--	--	--
SWFTS-MW07B	EM08	2/19/2018	N	440-203775-2	Alluvium	33.8 - 38.3	--	--	--	--	--	--	--	--	--
SWFTS-MW07B	EM09	3/28/2018	N	440-207497-10	Alluvium	33.8 - 38.3	--	--	--	--	--	--	--	--	--
SWFTS-MW07B	EM10	5/2/2018	N	440-210430-1	Alluvium	33.8 - 38.3	--	--	--	--	--	--	--	--	--
SWFTS-MW07B	EM11	7/11/2018	N	440-215585-8	Alluvium	33.8 - 38.3	--	--	--	--	--	--	--	--	--
SWFTS-MW07B	EM15	10/10/2018	N	440-221975-12	Alluvium	33.8 - 38.3	--	--	--	--	--	--	--	--	--
SWFTS-MW07B	EM19	5/22/2019	N	440-242200-6	Alluvium	33.8 - 38.3	--	--	--	--	--	--	--	--	--
SWFTS-MW07B	EM22	11/7/2019	N	440-254148-5	Alluvium	33.8 - 38.3	--	--	--	--	--	--	--	--	--
SWFTS-MW07B	EM26	4/30/2020	N	440-265382-4	Alluvium	33.8 - 38.3	--	--	--	--	--	--	--	--	--
SWFTS-MW07B	EM29	10/16/2020	N	440-273433-2	Alluvium	33.8 - 38.3	--	--	--	--	--	--	--	--	--
SWFTS-MW07B	EM33	6/4/2021	N	550-164930-27	Alluvium	33.8 - 38.3	--	--	--	--	--	--	--	--	--
SWFTS-MW07B	EM33	6/4/2021	N	550-164930-28	Alluvium	33.8 - 38.3	--	--	--	--	--	--	--	--	--
SWFTS-MW07B	EM36	12/3/2021	N	550-175222-5	Alluvium	33.8 - 38.3	--	--	--	--	--	--	--	--	--
SWFTS-MW07B	EM36	12/3/2021	N	550-175222-6	Alluvium	33.8 - 38.3	--	--	--	--	--	--	--	--	--
SWFTS-MW07B	EM40	12/14/2022	N	550-195015-13	Alluvium	33.8 - 38.3	--	--	--	--	--	--	--	--	--
SWFTS-MW07B	EM40	12/14/2022	N	550-195015-14	Alluvium	33.8 - 38.3	--	--	--	--	--	--	--	--	--
SWFTS-MW08A	BL01	3/30/2017	N	440-181045-9	Alluvium	20.2 - 34.8	--	--	--	--	--	--	--	--	--
SWFTS-MW08A	EM04	10/10/2017	N	440-194094-4	Alluvium	20.2 - 34.8	--	--	--	--	--	--	--	--	--
SWFTS-MW08A	EM06	11/15/2017	N	440-196659-4	Alluvium	20.2 - 34.8	--	--	--	--	--	--	--	--	--
SWFTS-MW08A	EM07	12/14/2017	N	440-198571-1	Alluvium	20.2 - 34.8	--	--	--	--	--	--	--	--	--

Table D.2
Groundater Analytical Results Summary - Secondary Parameters
Seep Well Field Area Bioremediation Treatability Study

Well	Event	Sample Date	QC Type	Lab Sample ID	Lithology	Screened Interval (ft bgs)	Total Metals by SW6010	Total Metals by SW6010	Total Metals by SW6010	Total Metals by SW6010	Total Metals by SW6010	Total Metals by SW6010	Total Metals by SW6020	Total Metals by SW6020	Total Metals by SW6020
							Strontium	Tin	Titanium	Tungsten	Vanadium	Zinc	Antimony	Arsenic	Selenium
							mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	µg/L	µg/L	µg/L
SWFTS-MW08A	EM08	2/22/2018	N	440-204033-8	Alluvium	20.2 - 34.8	--	--	--	--	--	--	--	--	--
SWFTS-MW08A	EM09	3/29/2018	N	440-207586-1	Alluvium	20.2 - 34.8	--	--	--	--	--	--	--	--	--
SWFTS-MW08A	EM10	5/3/2018	N	440-210534-5	Alluvium	20.2 - 34.8	--	--	--	--	--	--	--	--	--
SWFTS-MW08A	EM11	7/11/2018	N	440-215717-14	Alluvium	20.2 - 34.8	--	--	--	--	--	--	--	--	--
SWFTS-MW08A	EM15	10/10/2018	N	440-221975-13	Alluvium	20.2 - 34.8	--	--	--	--	--	--	--	--	--
SWFTS-MW08A	EM19	5/22/2019	N	440-242198-4	Alluvium	20.2 - 34.8	--	--	--	--	--	--	--	--	--
SWFTS-MW08A	EM22	11/7/2019	N	440-254148-6	Alluvium	20.2 - 34.8	--	--	--	--	--	--	--	--	--
SWFTS-MW08A	EM26	4/29/2020	N	440-265346-3	Alluvium	20.2 - 34.8	--	--	--	--	--	--	--	--	--
SWFTS-MW08A	EM29	10/16/2020	N	440-273433-4	Alluvium	20.2 - 34.8	--	--	--	--	--	--	--	--	--
SWFTS-MW08A	EM33	6/4/2021	N	550-164930-29	Alluvium	20.2 - 34.8	--	--	--	--	--	--	--	--	--
SWFTS-MW08A	EM33	6/4/2021	N	550-164930-30	Alluvium	20.2 - 34.8	--	--	--	--	--	--	--	--	--
SWFTS-MW08A	EM36	12/2/2021	N	550-175153-23	Alluvium	20.2 - 34.8	--	--	--	--	--	--	--	--	--
SWFTS-MW08A	EM36	12/2/2021	N	550-175153-24	Alluvium	20.2 - 34.8	--	--	--	--	--	--	--	--	--
SWFTS-MW08C	BL01	3/28/2017	N	440-180820-3	UMCf	49.9 - 69.5	--	--	--	--	--	--	--	--	--
SWFTS-MW08C	EM40	12/14/2022	N	550-195015-15	UMCf	49.9 - 69.5	--	--	--	--	--	--	--	--	--
SWFTS-MW08C	EM40	12/14/2022	N	550-195015-16	UMCf	49.9 - 69.5	--	--	--	--	--	--	--	--	--
SWFTS-MW09A	BL01	3/29/2017	N	440-180937-3	Alluvium	19.3 - 28.9	--	--	--	--	--	--	--	--	--
SWFTS-MW09A	EM04	10/11/2017	N	440-194094-7	Alluvium	19.3 - 28.9	--	--	--	--	--	--	--	--	--
SWFTS-MW09A	EM06	11/16/2017	N	440-196786-14	Alluvium	19.3 - 28.9	--	--	--	--	--	--	--	--	--
SWFTS-MW09A	EM07	12/12/2017	N	440-198371-6	Alluvium	19.3 - 28.9	--	--	--	--	--	--	--	--	--
SWFTS-MW09A	EM08	2/20/2018	N	440-203841-14	Alluvium	19.3 - 28.9	--	--	--	--	--	--	--	--	--
SWFTS-MW09A	EM09	3/27/2018	N	440-207268-7	Alluvium	19.3 - 28.9	--	--	--	--	--	--	--	--	--
SWFTS-MW09A	EM10	5/1/2018	N	440-210284-13	Alluvium	19.3 - 28.9	--	--	--	--	--	--	--	--	--
SWFTS-MW09A	EM11	7/12/2018	N	440-215717-10	Alluvium	19.3 - 28.9	--	--	--	--	--	--	--	--	--
SWFTS-MW09A	EM15	10/9/2018	N	440-221855-7	Alluvium	19.3 - 28.9	--	--	--	--	--	--	--	--	--
SWFTS-MW09A	EM19	5/22/2019	N	440-242200-1	Alluvium	19.3 - 28.9	--	--	--	--	--	--	--	--	--
SWFTS-MW09A	EM22	11/5/2019	N	440-253891-1	Alluvium	19.3 - 28.9	--	--	--	--	--	--	--	--	--
SWFTS-MW09A	EM26	4/28/2020	N	440-265289-4	Alluvium	19.3 - 28.9	--	--	--	--	--	--	--	--	--
SWFTS-MW09A	EM29	10/13/2020	N	440-273236-3	Alluvium	19.3 - 28.9	--	--	--	--	--	--	--	--	--
SWFTS-MW09A	EM33	6/1/2021	N	550-164699-1	Alluvium	19.3 - 28.9	--	--	--	--	--	--	--	--	--
SWFTS-MW09A	EM33	6/1/2021	N	550-164699-2	Alluvium	19.3 - 28.9	--	--	--	--	--	--	--	--	--
SWFTS-MW09A	EM36	12/2/2021	N	550-175153-10	Alluvium	19.3 - 28.9	--	--	--	--	--	--	--	--	--
SWFTS-MW09A	EM36	12/2/2021	N	550-175153-9	Alluvium	19.3 - 28.9	--	--	--	--	--	--	--	--	--
SWFTS-MW09A	EM40	12/13/2022	N	550-194920-10	Alluvium	19.3 - 28.9	--	--	--	--	--	--	--	--	--
SWFTS-MW09A	EM40	12/13/2022	N	550-194920-9	Alluvium	19.3 - 28.9	--	--	--	--	--	--	--	--	--
SWFTS-MW09B	BL01	3/29/2017	N	440-180937-4	Alluvium	34.4 - 39.0	--	--	--	--	--	--	--	--	--
SWFTS-MW09B	BL01	3/29/2017	FD	440-180937-5	Alluvium	34.4 - 39.0	--	--	--	--	--	--	--	--	--
SWFTS-MW09B	EM04	10/11/2017	N	440-194094-5	Alluvium	34.4 - 39.0	--	--	--	--	--	--	--	--	--
SWFTS-MW09B	EM06	11/16/2017	N	440-196786-15	Alluvium	34.4 - 39.0	--	--	--	--	--	--	--	--	--
SWFTS-MW09B	EM07	12/12/2017	N	440-198371-7	Alluvium	34.4 - 39.0	--	--	--	--	--	--	--	--	--
SWFTS-MW09B	EM08	2/20/2018	N	440-203841-13	Alluvium	34.4 - 39.0	--	--	--	--	--	--	--	--	--
SWFTS-MW09B	EM09	3/27/2018	N	440-207268-6	Alluvium	34.4 - 39.0	--	--	--	--	--	--	--	--	--
SWFTS-MW09B	EM10	4/30/2018	N	440-210173-11	Alluvium	34.4 - 39.0	--	--	--	--	--	--	--	--	--
SWFTS-MW09B	EM11	7/12/2018	N	440-215717-9	Alluvium	34.4 - 39.0	--	--	--	--	--	--	--	--	--
SWFTS-MW09B	EM15	10/9/2018	N	440-221855-8	Alluvium	34.4 - 39.0	--	--	--	--	--	--	--	--	--
SWFTS-MW09B	EM19	5/22/2019	N	440-242200-2	Alluvium	34.4 - 39.0	--	--	--	--	--	--	--	--	--
SWFTS-MW09B	EM22	11/5/2019	N	440-253891-3	Alluvium	34.4 - 39.0	--	--	--	--	--	--	--	--	--
SWFTS-MW09B	EM26	4/28/2020	N	440-265289-3	Alluvium	34.4 - 39.0	--	--	--	--	--	--	--	--	--
SWFTS-MW09B	EM29	10/13/2020	N	440-273236-4	Alluvium	34.4 - 39.0	--	--	--	--	--	--	--	--	--
SWFTS-MW09B	EM33	6/2/2021	N	550-164872-1	Alluvium	34.4 - 39.0	--	--	--	--	--	--	--	--	--
SWFTS-MW09B	EM33	6/2/2021	N	550-164872-2	Alluvium	34.4 - 39.0	--	--	--	--	--	--	--	--	--
SWFTS-MW09B	EM36	12/2/2021	N	550-175153-11	Alluvium	34.4 - 39.0	--	--	--	--	--	--	--	--	--
SWFTS-MW09B	EM36	12/2/2021	N	550-175153-12	Alluvium	34.4 - 39.0	--	--	--	--	--	--	--	--	--
SWFTS-MW09B	EM40	12/13/2022	N	550-194920-13	Alluvium	34.4 - 39.0	--	--	--	--	--	--	--	--	--
SWFTS-MW09B	EM40	12/13/2022	N	550-194920-14	Alluvium	34.4 - 39.0	--	--	--	--	--	--	--	--	--
SWFTS-MW10A	BL01	3/31/2017	N	440-181122-2	Alluvium	20.4 - 35.0	--	--	--	--	--	--	--	--	--
SWFTS-MW10A	EM04	10/12/2017	N	440-194242-10	Alluvium	20.4 - 35.0	--	--	--	--	--	--	--	--	--
SWFTS-MW10A	EM06	11/16/2017	N	440-196786-5	Alluvium	20.4 - 35.0	--	--	--	--	--	--	--	--	--
SWFTS-MW10A	EM06	11/16/2017	FD	440-196786-6	Alluvium	20.4 - 35.0	--	--	--	--	--	--	--	--	--
SWFTS-MW10A	EM07	12/12/2017	N	440-198371-10	Alluvium	20.4 - 35.0	--	--	--	--	--	--	--	--	--
SWFTS-MW10A	EM07	12/12/2017	FD	440-198371-11	Alluvium	20.4 - 35.0	--	--	--	--	--	--	--	--	--
SWFTS-MW10A	EM08	2/20/2018	N	440-203841-4	Alluvium	20.4 - 35.0	--	--	--	--	--	--	--	--	--
SWFTS-MW10A	EM08	2/20/2018	FD	440-203841-5	Alluvium	20.4 - 35.0	--	--	--	--	--	--	--	--	--
SWFTS-MW10A	EM09	3/26/2018	N	440-207137-7	Alluvium	20.4 - 35.0	--	--	--	--	--	--	--	--	--

Table D.2
Groundater Analytical Results Summary - Secondary Parameters
Seep Well Field Area Bioremediation Treatability Study

Well	Event	Sample Date	QC Type	Lab Sample ID	Lithology	Screened Interval (ft bgs)	Total Metals by SW6010	Total Metals by SW6010	Total Metals by SW6010	Total Metals by SW6010	Total Metals by SW6010	Total Metals by SW6010	Total Metals by SW6020	Total Metals by SW6020	Total Metals by SW6020
							Strontium	Tin	Titanium	Tungsten	Vanadium	Zinc	Antimony	Arsenic	Selenium
							mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	µg/L	µg/L	µg/L
SWFTS-MW10A	EM09	3/26/2018	FD	440-207137-8	Alluvium	20.4 - 35.0	--	--	--	--	--	--	--	--	--
SWFTS-MW10A	EM10	5/1/2018	N	440-210284-1	Alluvium	20.4 - 35.0	--	--	--	--	--	--	--	--	--
SWFTS-MW10A	EM11	7/11/2018	N	440-215585-9	Alluvium	20.4 - 35.0	--	--	--	--	--	--	--	--	--
SWFTS-MW10A	EM13	8/14/2018	N	440-218109-10	Alluvium	20.4 - 35.0	--	--	--	--	--	--	--	--	--
SWFTS-MW10A	EM14	9/10/2018	N	440-219797-4	Alluvium	20.4 - 35.0	--	--	--	--	--	--	--	--	--
SWFTS-MW10A	EM15	10/9/2018	N	440-221855-9	Alluvium	20.4 - 35.0	--	--	--	--	--	--	--	--	--
SWFTS-MW10A	EM19	5/21/2019	N	440-242084-2	Alluvium	20.4 - 35.0	--	--	--	--	--	--	--	--	--
SWFTS-MW10A	EM22	11/6/2019	N	440-254051-1	Alluvium	20.4 - 35.0	--	--	--	--	--	--	--	--	--
SWFTS-MW10A	EM26	4/29/2020	N	440-265342-6	Alluvium	20.4 - 35.0	--	--	--	--	--	--	--	--	--
SWFTS-MW10A	EM29	10/14/2020	N	440-273303-4	Alluvium	20.4 - 35.0	--	--	--	--	--	--	--	--	--
SWFTS-MW10A	EM33	6/4/2021	N	550-164930-13	Alluvium	20.4 - 35.0	--	--	--	--	--	--	--	--	--
SWFTS-MW10A	EM33	6/4/2021	N	550-164930-14	Alluvium	20.4 - 35.0	--	--	--	--	--	--	--	--	--
SWFTS-MW10A	EM36	11/30/2021	N	550-174968-17	Alluvium	20.4 - 35.0	--	--	--	--	--	--	--	--	--
SWFTS-MW10A	EM36	11/30/2021	N	550-174968-18	Alluvium	20.4 - 35.0	--	--	--	--	--	--	--	--	--
SWFTS-MW10A	EM40	12/15/2022	N	550-195103-1	Alluvium	20.4 - 35.0	--	--	--	--	--	--	--	--	--
SWFTS-MW10A	EM40	12/15/2022	N	550-195103-2	Alluvium	20.4 - 35.0	--	--	--	--	--	--	--	--	--
SWFTS-MW10C	BL01	3/28/2017	N	440-180820-4	UMCf	43.5 - 63.1	--	--	--	--	--	--	--	--	--
SWFTS-MW10C	EM40	12/15/2022	N	550-195103-3	UMCf	43.5 - 63.1	--	--	--	--	--	--	--	--	--
SWFTS-MW10C	EM40	12/15/2022	N	550-195103-4	UMCf	43.5 - 63.1	--	--	--	--	--	--	--	--	--
SWFTS-MW11	BL02	7/12/2017	N	440-188244-7	Alluvium	14.8 - 39.6	--	--	--	--	--	--	--	--	--
SWFTS-MW11	EM04	10/11/2017	N	440-194094-8	Alluvium	14.8 - 39.6	--	--	--	--	--	--	--	--	--
SWFTS-MW11	EM06	11/16/2017	N	440-196786-3	Alluvium	14.8 - 39.6	--	--	--	--	--	--	--	--	--
SWFTS-MW11	EM07	12/14/2017	N	440-198571-13	Alluvium	14.8 - 39.6	--	--	--	--	--	--	--	--	--
SWFTS-MW11	EM08	2/21/2018	N	440-203937-10	Alluvium	14.8 - 39.6	--	--	--	--	--	--	--	--	--
SWFTS-MW11	EM08	2/21/2018	FD	440-203937-11	Alluvium	14.8 - 39.6	--	--	--	--	--	--	--	--	--
SWFTS-MW11	EM09	3/28/2018	N	440-207497-7	Alluvium	14.8 - 39.6	--	--	--	--	--	--	--	--	--
SWFTS-MW11	EM09	3/28/2018	FD	440-207497-8	Alluvium	14.8 - 39.6	--	--	--	--	--	--	--	--	--
SWFTS-MW11	EM10	5/1/2018	N	440-210284-11	Alluvium	14.8 - 39.6	--	--	--	--	--	--	--	--	--
SWFTS-MW11	EM10	5/1/2018	FD	440-210367-1	Alluvium	14.8 - 39.6	--	--	--	--	--	--	--	--	--
SWFTS-MW11	EM11	7/12/2018	N	440-215717-17	Alluvium	14.8 - 39.6	--	--	--	--	--	--	--	--	--
SWFTS-MW11	EM11	7/12/2018	FD	440-215717-18	Alluvium	14.8 - 39.6	--	--	--	--	--	--	--	--	--
SWFTS-MW11	EM15	10/11/2018	N	440-222092-10	Alluvium	14.8 - 39.6	--	--	--	--	--	--	--	--	--
SWFTS-MW11	EM15	10/11/2018	FD	440-222092-11	Alluvium	14.8 - 39.6	--	--	--	--	--	--	--	--	--
SWFTS-MW11	EM19	5/22/2019	N	440-242200-3	Alluvium	14.8 - 39.6	--	--	--	--	--	--	--	--	--
SWFTS-MW11	EM19	5/22/2019	FD	440-242200-4	Alluvium	14.8 - 39.6	--	--	--	--	--	--	--	--	--
SWFTS-MW11	EM22	11/7/2019	N	440-254150-3	Alluvium	14.8 - 39.6	--	--	--	--	--	--	--	--	--
SWFTS-MW11	EM22	11/7/2019	FD	440-254150-4	Alluvium	14.8 - 39.6	--	--	--	--	--	--	--	--	--
SWFTS-MW11	EM26	4/30/2020	N	440-265383-4	Alluvium	14.8 - 39.6	--	--	--	--	--	--	--	--	--
SWFTS-MW11	EM26	4/30/2020	FD	440-265383-5	Alluvium	14.8 - 39.6	--	--	--	--	--	--	--	--	--
SWFTS-MW11	EM29	10/16/2020	N	440-273433-7	Alluvium	14.8 - 39.6	--	--	--	--	--	--	--	--	--
SWFTS-MW11	EM29	10/16/2020	FD	440-273433-8	Alluvium	14.8 - 39.6	--	--	--	--	--	--	--	--	--
SWFTS-MW11	EM33	6/4/2021	N	550-164930-7	Alluvium	14.8 - 39.6	--	--	--	--	--	--	--	--	--
SWFTS-MW11	EM33	6/4/2021	N	550-164930-8	Alluvium	14.8 - 39.6	--	--	--	--	--	--	--	--	--
SWFTS-MW11	EM33	6/4/2021	FD	550-164930-10	Alluvium	14.8 - 39.6	--	--	--	--	--	--	--	--	--
SWFTS-MW11	EM33	6/4/2021	FD	550-164930-9	Alluvium	14.8 - 39.6	--	--	--	--	--	--	--	--	--
SWFTS-MW11	EM36	12/3/2021	N	550-175222-7	Alluvium	14.8 - 39.6	--	--	--	--	--	--	--	--	--
SWFTS-MW11	EM36	12/3/2021	N	550-175222-8	Alluvium	14.8 - 39.6	--	--	--	--	--	--	--	--	--
SWFTS-MW11	EM36	12/3/2021	FD	550-175222-10	Alluvium	14.8 - 39.6	--	--	--	--	--	--	--	--	--
SWFTS-MW11	EM36	12/3/2021	FD	550-175222-9	Alluvium	14.8 - 39.6	--	--	--	--	--	--	--	--	--
SWFTS-MW11	EM40	12/15/2022	N	550-195103-5	Alluvium	14.8 - 39.6	--	--	--	--	--	--	--	--	--
SWFTS-MW11	EM40	12/15/2022	N	550-195103-6	Alluvium	14.8 - 39.6	--	--	--	--	--	--	--	--	--
SWFTS-MW11	EM40	12/15/2022	FD	550-195103-7	Alluvium	14.8 - 39.6	--	--	--	--	--	--	--	--	--
SWFTS-MW11	EM40	12/15/2022	FD	550-195103-8	Alluvium	14.8 - 39.6	--	--	--	--	--	--	--	--	--
SWFTS-MW12	BL02	7/13/2017	N	440-188324-6	Alluvium	15.8 - 40.6	--	--	--	--	--	--	--	--	--
SWFTS-MW12	EM04	10/11/2017	N	440-194090-1	Alluvium	15.8 - 40.6	--	--	--	--	--	--	--	--	--
SWFTS-MW12	EM06	11/14/2017	N	440-196558-5	Alluvium	15.8 - 40.6	--	--	--	--	--	--	--	--	--
SWFTS-MW12	EM07	12/14/2017	N	440-198571-15	Alluvium	15.8 - 40.6	--	--	--	--	--	--	--	--	--
SWFTS-MW12	EM08	2/22/2018	N	440-204033-2	Alluvium	15.8 - 40.6	--	--	--	--	--	--	--	--	--
SWFTS-MW12	EM09	3/28/2018	N	440-207497-5	Alluvium	15.8 - 40.6	--	--	--	--	--	--	--	--	--
SWFTS-MW12	EM10	5/3/2018	N	440-210534-4	Alluvium	15.8 - 40.6	--	--	--	--	--	--	--	--	--
SWFTS-MW12	EM11	7/12/2018	N	440-215717-16	Alluvium	15.8 - 40.6	--	--	--	--	--	--	--	--	--
SWFTS-MW12	EM15	10/11/2018	N	440-222092-12	Alluvium	15.8 - 40.6	--	--	--	--	--	--	--	--	--
SWFTS-MW12	EM19	5/22/2019	N	440-242198-7	Alluvium	15.8 - 40.6	--	--	--	--	--	--	--	--	--
SWFTS-MW12	EM22	11/7/2019	N	440-254150-2	Alluvium	15.8 - 40.6	--	--	--	--	--	--	--	--	--

Table D.2
Groundater Analytical Results Summary - Secondary Parameters
Seep Well Field Area Bioremediation Treatability Study

Well	Event	Sample Date	QC Type	Lab Sample ID	Lithology	Screened Interval (ft bgs)	Total Metals by SW6010	Total Metals by SW6010	Total Metals by SW6010	Total Metals by SW6010	Total Metals by SW6010	Total Metals by SW6010	Total Metals by SW6020	Total Metals by SW6020	Total Metals by SW6020
							Strontium	Tin	Titanium	Tungsten	Vanadium	Zinc	Antimony	Arsenic	Selenium
							mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	µg/L	µg/L	µg/L
SWFTS-MW12	EM22	11/26/2019	N	440-255698-1	Alluvium	15.8 - 40.6	--	--	--	--	--	--	--	--	--
SWFTS-MW12	EM22	11/26/2019	FD	440-255698-2	Alluvium	15.8 - 40.6	--	--	--	--	--	--	--	--	--
SWFTS-MW12	EM26	4/30/2020	N	440-265383-3	Alluvium	15.8 - 40.6	--	--	--	--	--	--	--	--	--
SWFTS-MW12	EM29	10/16/2020	N	440-273433-6	Alluvium	15.8 - 40.6	--	--	--	--	--	--	--	--	--
SWFTS-MW12	EM33	6/4/2021	N	550-164930-5	Alluvium	15.8 - 40.6	--	--	--	--	--	--	--	--	--
SWFTS-MW12	EM33	6/4/2021	N	550-164930-6	Alluvium	15.8 - 40.6	--	--	--	--	--	--	--	--	--
SWFTS-MW12	EM36	12/2/2021	N	550-175153-19	Alluvium	15.8 - 40.6	--	--	--	--	--	--	--	--	--
SWFTS-MW12	EM36	12/2/2021	N	550-175153-20	Alluvium	15.8 - 40.6	--	--	--	--	--	--	--	--	--
SWFTS-MW12	EM40	12/15/2022	N	550-195103-10	Alluvium	15.8 - 40.6	--	--	--	--	--	--	--	--	--
SWFTS-MW12	EM40	12/15/2022	N	550-195103-9	Alluvium	15.8 - 40.6	--	--	--	--	--	--	--	--	--
SWFTS-MW13	BL02	7/12/2017	N	440-188244-6	Alluvium	17.8 - 47.6	--	--	--	--	--	--	--	--	--
SWFTS-MW13	EM04	10/10/2017	N	440-193989-4	Alluvium	17.8 - 47.6	--	--	--	--	--	--	--	--	--
SWFTS-MW13	EM06	11/15/2017	N	440-196659-1	Alluvium	17.8 - 47.6	--	--	--	--	--	--	--	--	--
SWFTS-MW13	EM07	12/14/2017	N	440-198571-14	Alluvium	17.8 - 47.6	--	--	--	--	--	--	--	--	--
SWFTS-MW13	EM08	2/22/2018	N	440-204033-7	Alluvium	17.8 - 47.6	--	--	--	--	--	--	--	--	--
SWFTS-MW13	EM09	3/26/2018	N	440-207137-4	Alluvium	17.8 - 47.6	--	--	--	--	--	--	--	--	--
SWFTS-MW13	EM10	5/3/2018	N	440-210534-1	Alluvium	17.8 - 47.6	--	--	--	--	--	--	--	--	--
SWFTS-MW13	EM11	7/12/2018	N	440-215717-15	Alluvium	17.8 - 47.6	--	--	--	--	--	--	--	--	--
SWFTS-MW13	EM15	10/11/2018	N	440-222092-14	Alluvium	17.8 - 47.6	--	--	--	--	--	--	--	--	--
SWFTS-MW13	EM19	5/22/2019	N	440-242198-5	Alluvium	17.8 - 47.6	--	--	--	--	--	--	--	--	--
SWFTS-MW13	EM22	11/6/2019	N	440-254051-6	Alluvium	17.8 - 47.6	--	--	--	--	--	--	--	--	--
SWFTS-MW13	EM26	4/30/2020	N	440-265383-2	Alluvium	17.8 - 47.6	--	--	--	--	--	--	--	--	--
SWFTS-MW13	EM29	10/15/2020	N	550-151259-6	Alluvium	17.8 - 47.6	--	--	--	--	--	--	--	--	--
SWFTS-MW13	EM33	6/4/2021	N	550-164930-3	Alluvium	17.8 - 47.6	--	--	--	--	--	--	--	--	--
SWFTS-MW13	EM33	6/4/2021	N	550-164930-4	Alluvium	17.8 - 47.6	--	--	--	--	--	--	--	--	--
SWFTS-MW13	EM36	12/2/2021	N	550-175153-17	Alluvium	17.8 - 47.6	--	--	--	--	--	--	--	--	--
SWFTS-MW13	EM36	12/2/2021	N	550-175153-18	Alluvium	17.8 - 47.6	--	--	--	--	--	--	--	--	--
SWFTS-MW13	EM40	12/15/2022	N	550-195106-7	Alluvium	17.8 - 47.6	--	--	--	--	--	--	--	--	--
SWFTS-MW13	EM40	12/15/2022	N	550-195106-8	Alluvium	17.8 - 47.6	--	--	--	--	--	--	--	--	--
SWFTS-MW14	BL02	7/12/2017	N	440-188244-8	Alluvium	16.8 - 36.6	--	--	--	--	--	--	--	--	--
SWFTS-MW14	BL02	7/12/2017	FD	440-188244-9	Alluvium	16.8 - 36.6	--	--	--	--	--	--	--	--	--
SWFTS-MW14	EM04	10/11/2017	N	440-194242-8	Alluvium	16.8 - 36.6	--	--	--	--	--	--	--	--	--
SWFTS-MW14	EM06	11/15/2017	N	440-196659-3	Alluvium	16.8 - 36.6	--	--	--	--	--	--	--	--	--
SWFTS-MW14	EM07	12/12/2017	N	440-198371-12	Alluvium	16.8 - 36.6	--	--	--	--	--	--	--	--	--
SWFTS-MW14	EM08	2/20/2018	N	440-203841-11	Alluvium	16.8 - 36.6	--	--	--	--	--	--	--	--	--
SWFTS-MW14	EM09	3/26/2018	N	440-207137-9	Alluvium	16.8 - 36.6	--	--	--	--	--	--	--	--	--
SWFTS-MW14	EM10	4/30/2018	N	440-210173-9	Alluvium	16.8 - 36.6	--	--	--	--	--	--	--	--	--
SWFTS-MW14	EM11	7/10/2018	N	440-215437-8	Alluvium	16.8 - 36.6	--	--	--	--	--	--	--	--	--
SWFTS-MW14	EM13	8/14/2018	N	440-218109-11	Alluvium	16.8 - 36.6	--	--	--	--	--	--	--	--	--
SWFTS-MW14	EM14	9/11/2018	N	440-219886-17	Alluvium	16.8 - 36.6	--	--	--	--	--	--	--	--	--
SWFTS-MW14	EM15	10/9/2018	N	440-221855-10	Alluvium	16.8 - 36.6	--	--	--	--	--	--	--	--	--
SWFTS-MW14	EM19	5/21/2019	N	440-242084-1	Alluvium	16.8 - 36.6	--	--	--	--	--	--	--	--	--
SWFTS-MW14	EM22	11/6/2019	N	440-254051-2	Alluvium	16.8 - 36.6	--	--	--	--	--	--	--	--	--
SWFTS-MW14	EM26	5/1/2020	N	440-265414-2	Alluvium	16.8 - 36.6	--	--	--	--	--	--	--	--	--
SWFTS-MW14	EM29	10/14/2020	N	440-273303-5	Alluvium	16.8 - 36.6	--	--	--	--	--	--	--	--	--
SWFTS-MW14	EM33	6/4/2021	N	550-164930-1	Alluvium	16.8 - 36.6	--	--	--	--	--	--	--	--	--
SWFTS-MW14	EM33	6/4/2021	N	550-164930-2	Alluvium	16.8 - 36.6	--	--	--	--	--	--	--	--	--
SWFTS-MW14	EM36	12/3/2021	N	550-175222-1	Alluvium	16.8 - 36.6	--	--	--	--	--	--	--	--	--
SWFTS-MW14	EM36	12/3/2021	N	550-175222-2	Alluvium	16.8 - 36.6	--	--	--	--	--	--	--	--	--
SWFTS-MW14	EM40	12/15/2022	N	550-195106-3	Alluvium	16.8 - 36.6	--	--	--	--	--	--	--	--	--
SWFTS-MW14	EM40	12/15/2022	N	550-195106-4	Alluvium	16.8 - 36.6	--	--	--	--	--	--	--	--	--
SWFTS-MW15	BL02	7/13/2017	N	440-188325-3	Alluvium	14.8 - 34.6	--	--	--	--	--	--	--	--	--
SWFTS-MW15	EM04	10/10/2017	N	440-194094-1	Alluvium	14.8 - 34.6	--	--	--	--	--	--	--	--	--
SWFTS-MW15	EM06	11/14/2017	N	440-196558-4	Alluvium	14.8 - 34.6	--	--	--	--	--	--	--	--	--
SWFTS-MW15	EM07	12/13/2017	N	440-198508-13	Alluvium	14.8 - 34.6	--	--	--	--	--	--	--	--	--
SWFTS-MW15	EM08	2/19/2018	N	440-203775-4	Alluvium	14.8 - 34.6	--	--	--	--	--	--	--	--	--
SWFTS-MW15	EM09	3/26/2018	N	440-207137-10	Alluvium	14.8 - 34.6	--	--	--	--	--	--	--	--	--
SWFTS-MW15	EM10	5/2/2018	N	440-210430-3	Alluvium	14.8 - 34.6	--	--	--	--	--	--	--	--	--
SWFTS-MW15	EM11	7/11/2018	N	440-215717-1	Alluvium	14.8 - 34.6	--	--	--	--	--	--	--	--	--
SWFTS-MW15	EM15	10/9/2018	N	440-221855-11	Alluvium	14.8 - 34.6	--	--	--	--	--	--	--	--	--
SWFTS-MW15	EM19	5/20/2019	N	440-242014-1	Alluvium	14.8 - 34.6	--	--	--	--	--	--	--	--	--
SWFTS-MW15	EM22	11/6/2019	N	440-254051-3	Alluvium	14.8 - 34.6	--	--	--	--	--	--	--	--	--
SWFTS-MW15	EM26	4/29/2020	N	440-265342-3	Alluvium	14.8 - 34.6	--	--	--	--	--	--	--	--	--
SWFTS-MW15	EM29	10/15/2020	N	550-151259-4	Alluvium	14.8 - 34.6	--	--	--	--	--	--	--	--	--

Table D.2
Groundater Analytical Results Summary - Secondary Parameters
Seep Well Field Area Bioremediation Treatability Study

Well	Event	Sample Date	QC Type	Lab Sample ID	Lithology	Screened Interval (ft bgs)	Total Metals by SW6010	Total Metals by SW6010	Total Metals by SW6010	Total Metals by SW6010	Total Metals by SW6010	Total Metals by SW6010	Total Metals by SW6020	Total Metals by SW6020	Total Metals by SW6020
							Strontium	Tin	Titanium	Tungsten	Vanadium	Zinc	Antimony	Arsenic	Selenium
							mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	µg/L	µg/L	µg/L
SWFTS-MW15	EM33	6/3/2021	N	550-164869-13	Alluvium	14.8 - 34.6	--	--	--	--	--	--	--	--	--
SWFTS-MW15	EM33	6/3/2021	N	550-164869-14	Alluvium	14.8 - 34.6	--	--	--	--	--	--	--	--	--
SWFTS-MW15	EM36	11/30/2021	N	550-174968-10	Alluvium	14.8 - 34.6	--	--	--	--	--	--	--	--	--
SWFTS-MW15	EM36	11/30/2021	N	550-174968-9	Alluvium	14.8 - 34.6	--	--	--	--	--	--	--	--	--
SWFTS-MW15	EM40	12/15/2022	N	550-195106-1	Alluvium	14.8 - 34.6	--	--	--	--	--	--	--	--	--
SWFTS-MW15	EM40	12/15/2022	N	550-195106-2	Alluvium	14.8 - 34.6	--	--	--	--	--	--	--	--	--
SWFTS-MW16	BL02	7/13/2017	N	440-188325-2	Alluvium	21.8 - 41.6	--	--	--	--	--	--	--	--	--
SWFTS-MW16	EM04	10/12/2017	N	440-194204-7	Alluvium	21.8 - 41.6	--	--	--	--	--	--	--	--	--
SWFTS-MW16	EM06	11/16/2017	N	440-196786-4	Alluvium	21.8 - 41.6	--	--	--	--	--	--	--	--	--
SWFTS-MW16	EM07	12/12/2017	N	440-198371-4	Alluvium	21.8 - 41.6	--	--	--	--	--	--	--	--	--
SWFTS-MW16	EM08	2/21/2018	N	440-203937-6	Alluvium	21.8 - 41.6	--	--	--	--	--	--	--	--	--
SWFTS-MW16	EM09	3/27/2018	N	440-207268-13	Alluvium	21.8 - 41.6	--	--	--	--	--	--	--	--	--
SWFTS-MW16	EM10	5/2/2018	N	440-210430-13	Alluvium	21.8 - 41.6	--	--	--	--	--	--	--	--	--
SWFTS-MW16	EM11	7/11/2018	N	440-215585-12	Alluvium	21.8 - 41.6	--	--	--	--	--	--	--	--	--
SWFTS-MW16	EM13	8/15/2018	N	440-218208-13	Alluvium	21.8 - 41.6	--	--	--	--	--	--	--	--	--
SWFTS-MW16	EM14	9/10/2018	N	440-219797-6	Alluvium	21.8 - 41.6	--	--	--	--	--	--	--	--	--
SWFTS-MW16	EM15	10/11/2018	N	440-222092-3	Alluvium	21.8 - 41.6	--	--	--	--	--	--	--	--	--
SWFTS-MW16	EM19	5/20/2019	N	440-242014-3	Alluvium	21.8 - 41.6	--	--	--	--	--	--	--	--	--
SWFTS-MW16	EM22	11/6/2019	N	440-254051-5	Alluvium	21.8 - 41.6	--	--	--	--	--	--	--	--	--
SWFTS-MW16	EM26	4/30/2020	N	440-265383-1	Alluvium	21.8 - 41.6	--	--	--	--	--	--	--	--	--
SWFTS-MW16	EM29	10/15/2020	N	550-151259-1	Alluvium	21.8 - 41.6	--	--	--	--	--	--	--	--	--
SWFTS-MW16	EM33	6/3/2021	N	550-164869-11	Alluvium	21.8 - 41.6	--	--	--	--	--	--	--	--	--
SWFTS-MW16	EM33	6/3/2021	N	550-164869-12	Alluvium	21.8 - 41.6	--	--	--	--	--	--	--	--	--
SWFTS-MW16	EM36	11/30/2021	N	550-174968-11	Alluvium	21.8 - 41.6	--	--	--	--	--	--	--	--	--
SWFTS-MW16	EM36	11/30/2021	N	550-174968-12	Alluvium	21.8 - 41.6	--	--	--	--	--	--	--	--	--
SWFTS-MW16	EM40	12/14/2022	N	550-195013-15	Alluvium	21.8 - 41.6	--	--	--	--	--	--	--	--	--
SWFTS-MW16	EM40	12/14/2022	N	550-195013-16	Alluvium	21.8 - 41.6	--	--	--	--	--	--	--	--	--
SWFTS-MW17	BL02	7/12/2017	N	440-188244-1	Alluvium	22.8 - 52.6	--	--	--	--	--	--	--	--	--
SWFTS-MW17	EM04	10/10/2017	N	440-193989-3	Alluvium	22.8 - 52.6	--	--	--	--	--	--	--	--	--
SWFTS-MW17	EM06	11/15/2017	N	440-196659-5	Alluvium	22.8 - 52.6	--	--	--	--	--	--	--	--	--
SWFTS-MW17	EM06	11/15/2017	FD	440-196659-6	Alluvium	22.8 - 52.6	--	--	--	--	--	--	--	--	--
SWFTS-MW17	EM07	12/13/2017	N	440-198508-6	Alluvium	22.8 - 52.6	--	--	--	--	--	--	--	--	--
SWFTS-MW17	EM07	12/13/2017	FD	440-198508-7	Alluvium	22.8 - 52.6	--	--	--	--	--	--	--	--	--
SWFTS-MW17	EM08	2/22/2018	N	440-204033-11	Alluvium	22.8 - 52.6	--	--	--	--	--	--	--	--	--
SWFTS-MW17	EM09	3/28/2018	N	440-207497-11	Alluvium	22.8 - 52.6	--	--	--	--	--	--	--	--	--
SWFTS-MW17	EM10	5/3/2018	N	440-210534-3	Alluvium	22.8 - 52.6	--	--	--	--	--	--	--	--	--
SWFTS-MW17	EM11	7/11/2018	N	440-215585-13	Alluvium	22.8 - 52.6	--	--	--	--	--	--	--	--	--
SWFTS-MW17	EM15	10/11/2018	N	440-222092-4	Alluvium	22.8 - 52.6	--	--	--	--	--	--	--	--	--
SWFTS-MW17	EM19	5/22/2019	N	440-242198-6	Alluvium	22.8 - 52.6	--	--	--	--	--	--	--	--	--
SWFTS-MW17	EM22	11/7/2019	N	440-254150-1	Alluvium	22.8 - 52.6	--	--	--	--	--	--	--	--	--
SWFTS-MW17	EM26	4/30/2020	N	440-265383-6	Alluvium	22.8 - 52.6	--	--	--	--	--	--	--	--	--
SWFTS-MW17	EM29	10/15/2020	N	550-151259-5	Alluvium	22.8 - 52.6	--	--	--	--	--	--	--	--	--
SWFTS-MW17	EM33	6/3/2021	N	550-164869-10	Alluvium	22.8 - 52.6	--	--	--	--	--	--	--	--	--
SWFTS-MW17	EM33	6/3/2021	N	550-164869-9	Alluvium	22.8 - 52.6	--	--	--	--	--	--	--	--	--
SWFTS-MW17	EM36	12/2/2021	N	550-175153-21	Alluvium	22.8 - 52.6	--	--	--	--	--	--	--	--	--
SWFTS-MW17	EM36	12/2/2021	N	550-175153-22	Alluvium	22.8 - 52.6	--	--	--	--	--	--	--	--	--
SWFTS-MW17	EM40	12/14/2022	N	550-195013-13	Alluvium	22.8 - 52.6	--	--	--	--	--	--	--	--	--
SWFTS-MW17	EM40	12/14/2022	N	550-195013-14	Alluvium	22.8 - 52.6	--	--	--	--	--	--	--	--	--
SWFTS-MW18	BL02	7/11/2017	N	440-188133-17	Alluvium	16.8 - 36.6	--	--	--	--	--	--	--	--	--
SWFTS-MW18	EM04	10/10/2017	N	440-194094-3	Alluvium	16.8 - 36.6	--	--	--	--	--	--	--	--	--
SWFTS-MW18	EM06	11/15/2017	N	440-196690-11	Alluvium	16.8 - 36.6	--	--	--	--	--	--	--	--	--
SWFTS-MW18	EM07	12/13/2017	N	440-198508-5	Alluvium	16.8 - 36.6	--	--	--	--	--	--	--	--	--
SWFTS-MW18	EM08	2/22/2018	N	440-204033-4	Alluvium	16.8 - 36.6	--	--	--	--	--	--	--	--	--
SWFTS-MW18	EM09	3/27/2018	N	440-207268-11	Alluvium	16.8 - 36.6	--	--	--	--	--	--	--	--	--
SWFTS-MW18	EM09	3/27/2018	FD	440-207268-12	Alluvium	16.8 - 36.6	--	--	--	--	--	--	--	--	--
SWFTS-MW18	EM10	5/1/2018	N	440-210284-6	Alluvium	16.8 - 36.6	--	--	--	--	--	--	--	--	--
SWFTS-MW18	EM11	7/11/2018	N	440-215717-2	Alluvium	16.8 - 36.6	--	--	--	--	--	--	--	--	--
SWFTS-MW18	EM15	10/11/2018	N	440-222092-5	Alluvium	16.8 - 36.6	--	--	--	--	--	--	--	--	--
SWFTS-MW18	EM19	5/21/2019	N	440-242084-15	Alluvium	16.8 - 36.6	--	--	--	--	--	--	--	--	--
SWFTS-MW18	EM22	11/6/2019	N	440-254051-4	Alluvium	16.8 - 36.6	--	--	--	--	--	--	--	--	--
SWFTS-MW18	EM26	4/29/2020	N	440-265342-2	Alluvium	16.8 - 36.6	--	--	--	--	--	--	--	--	--
SWFTS-MW18	EM29	10/15/2020	N	550-151259-2	Alluvium	16.8 - 36.6	--	--	--	--	--	--	--	--	--
SWFTS-MW18	EM33	6/3/2021	N	550-164869-7	Alluvium	16.8 - 36.6	--	--	--	--	--	--	--	--	--
SWFTS-MW18	EM33	6/3/2021	N	550-164869-8	Alluvium	16.8 - 36.6	--	--	--	--	--	--	--	--	--

Table D.2
Groundater Analytical Results Summary - Secondary Parameters
Seep Well Field Area Bioremediation Treatability Study

Well	Event	Sample Date	QC Type	Lab Sample ID	Lithology	Screened Interval (ft bgs)	Total Metals by SW6010	Total Metals by SW6010	Total Metals by SW6010	Total Metals by SW6010	Total Metals by SW6010	Total Metals by SW6010	Total Metals by SW6020	Total Metals by SW6020	Total Metals by SW6020
							Strontium	Tin	Titanium	Tungsten	Vanadium	Zinc	Antimony	Arsenic	Selenium
							mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	µg/L	µg/L	µg/L
SWFTS-MW18	EM36	12/1/2021	N	550-175045-5	Alluvium	16.8 - 36.6	--	--	--	--	--	--	--	--	--
SWFTS-MW18	EM36	12/1/2021	N	550-175045-6	Alluvium	16.8 - 36.6	--	--	--	--	--	--	--	--	--
SWFTS-MW18	EM40	12/14/2022	N	550-195013-11	Alluvium	16.8 - 36.6	--	--	--	--	--	--	--	--	--
SWFTS-MW18	EM40	12/14/2022	N	550-195013-12	Alluvium	16.8 - 36.6	--	--	--	--	--	--	--	--	--
SWFTS-MW19	BL02	7/12/2017	N	440-188244-2	Alluvium	11.3 - 31.1	--	--	--	--	--	--	--	--	--
SWFTS-MW19	EM04	10/12/2017	N	440-194204-1	Alluvium	11.3 - 31.1	--	--	--	--	--	--	--	--	--
SWFTS-MW19	EM06	11/16/2017	N	440-196786-12	Alluvium	11.3 - 31.1	--	--	--	--	--	--	--	--	--
SWFTS-MW19	EM07	12/12/2017	N	440-198371-8	Alluvium	11.3 - 31.1	--	--	--	--	--	--	--	--	--
SWFTS-MW19	EM08	2/20/2018	N	440-203841-6	Alluvium	11.3 - 31.1	--	--	--	--	--	--	--	--	--
SWFTS-MW19	EM09	3/27/2018	N	440-207268-3	Alluvium	11.3 - 31.1	--	--	--	--	--	--	--	--	--
SWFTS-MW19	EM10	4/30/2018	N	440-210173-4	Alluvium	11.3 - 31.1	--	--	--	--	--	--	--	--	--
SWFTS-MW19	EM10	4/30/2018	FD	440-210173-5	Alluvium	11.3 - 31.1	--	--	--	--	--	--	--	--	--
SWFTS-MW19	EM11	7/10/2018	N	440-215437-10	Alluvium	11.3 - 31.1	--	--	--	--	--	--	--	--	--
SWFTS-MW19	EM11	7/10/2018	FD	440-215437-11	Alluvium	11.3 - 31.1	--	--	--	--	--	--	--	--	--
SWFTS-MW19	EM15	10/9/2018	N	440-221855-4	Alluvium	11.3 - 31.1	--	--	--	--	--	--	--	--	--
SWFTS-MW19	EM15	10/9/2018	FD	440-221855-5	Alluvium	11.3 - 31.1	--	--	--	--	--	--	--	--	--
SWFTS-MW19	EM19	5/21/2019	N	440-242084-6	Alluvium	11.3 - 31.1	--	--	--	--	--	--	--	--	--
SWFTS-MW19	EM19	5/21/2019	FD	440-242084-7	Alluvium	11.3 - 31.1	--	--	--	--	--	--	--	--	--
SWFTS-MW19	EM22	11/5/2019	N	440-253891-6	Alluvium	11.3 - 31.1	--	--	--	--	--	--	--	--	--
SWFTS-MW19	EM22	11/5/2019	FD	440-253891-7	Alluvium	11.3 - 31.1	--	--	--	--	--	--	--	--	--
SWFTS-MW19	EM26	4/28/2020	N	440-265288-4	Alluvium	11.3 - 31.1	--	--	--	--	--	--	--	--	--
SWFTS-MW19	EM26	4/28/2020	FD	440-265288-7	Alluvium	11.3 - 31.1	--	--	--	--	--	--	--	--	--
SWFTS-MW19	EM29	10/14/2020	N	440-273303-2	Alluvium	11.3 - 31.1	--	--	--	--	--	--	--	--	--
SWFTS-MW19	EM29	10/14/2020	FD	440-273303-3	Alluvium	11.3 - 31.1	--	--	--	--	--	--	--	--	--
SWFTS-MW19	EM33	6/3/2021	N	550-164869-3	Alluvium	11.3 - 31.1	--	--	--	--	--	--	--	--	--
SWFTS-MW19	EM33	6/3/2021	N	550-164869-4	Alluvium	11.3 - 31.1	--	--	--	--	--	--	--	--	--
SWFTS-MW19	EM33	6/3/2021	FD	550-164869-5	Alluvium	11.3 - 31.1	--	--	--	--	--	--	--	--	--
SWFTS-MW19	EM33	6/3/2021	FD	550-164869-6	Alluvium	11.3 - 31.1	--	--	--	--	--	--	--	--	--
SWFTS-MW19	EM36	12/1/2021	N	550-175045-13	Alluvium	11.3 - 31.1	--	--	--	--	--	--	--	--	--
SWFTS-MW19	EM36	12/1/2021	N	550-175045-14	Alluvium	11.3 - 31.1	--	--	--	--	--	--	--	--	--
SWFTS-MW19	EM36	12/1/2021	FD	550-175045-15	Alluvium	11.3 - 31.1	--	--	--	--	--	--	--	--	--
SWFTS-MW19	EM36	12/1/2021	FD	550-175045-16	Alluvium	11.3 - 31.1	--	--	--	--	--	--	--	--	--
SWFTS-MW19	EM40	12/14/2022	N	550-195013-3	Alluvium	11.3 - 31.1	--	--	--	--	--	--	--	--	--
SWFTS-MW19	EM40	12/14/2022	N	550-195013-4	Alluvium	11.3 - 31.1	--	--	--	--	--	--	--	--	--
SWFTS-MW19	EM40	12/14/2022	FD	550-195013-5	Alluvium	11.3 - 31.1	--	--	--	--	--	--	--	--	--
SWFTS-MW19	EM40	12/14/2022	FD	550-195013-6	Alluvium	11.3 - 31.1	--	--	--	--	--	--	--	--	--
SWFTS-MW20	BL02	7/12/2017	N	440-188244-5	Alluvium	12.8 - 37.6	--	--	--	--	--	--	--	--	--
SWFTS-MW20	EM04	10/12/2017	N	440-194202-1	Alluvium	12.8 - 37.6	--	--	--	--	--	--	--	--	--
SWFTS-MW20	EM04	10/12/2017	FD	440-194202-2	Alluvium	12.8 - 37.6	--	--	--	--	--	--	--	--	--
SWFTS-MW20	EM06	11/16/2017	N	440-196786-7	Alluvium	12.8 - 37.6	--	--	--	--	--	--	--	--	--
SWFTS-MW20	EM07	12/12/2017	N	440-198371-3	Alluvium	12.8 - 37.6	--	--	--	--	--	--	--	--	--
SWFTS-MW20	EM08	2/19/2018	N	440-203775-5	Alluvium	12.8 - 37.6	--	--	--	--	--	--	--	--	--
SWFTS-MW20	EM09	3/27/2018	N	440-207268-9	Alluvium	12.8 - 37.6	--	--	--	--	--	--	--	--	--
SWFTS-MW20	EM10	4/30/2018	N	440-210173-10	Alluvium	12.8 - 37.6	--	--	--	--	--	--	--	--	--
SWFTS-MW20	EM11	7/11/2018	N	440-215717-8	Alluvium	12.8 - 37.6	--	--	--	--	--	--	--	--	--
SWFTS-MW20	EM15	10/9/2018	N	440-221855-1	Alluvium	12.8 - 37.6	--	--	--	--	--	--	--	--	--
SWFTS-MW20	EM19	5/21/2019	N	440-242084-3	Alluvium	12.8 - 37.6	--	--	--	--	--	--	--	--	--
SWFTS-MW20	EM22	11/5/2019	N	440-253918-6	Alluvium	12.8 - 37.6	--	--	--	--	--	--	--	--	--
SWFTS-MW20	EM26	4/29/2020	N	440-265342-5	Alluvium	12.8 - 37.6	--	--	--	--	--	--	--	--	--
SWFTS-MW20	EM29	10/14/2020	N	440-273303-6	Alluvium	12.8 - 37.6	--	--	--	--	--	--	--	--	--
SWFTS-MW20	EM33	6/3/2021	N	550-164869-1	Alluvium	12.8 - 37.6	--	--	--	--	--	--	--	--	--
SWFTS-MW20	EM33	6/3/2021	N	550-164869-2	Alluvium	12.8 - 37.6	--	--	--	--	--	--	--	--	--
SWFTS-MW20	EM36	11/29/2021	N	550-174897-1	Alluvium	12.8 - 37.6	--	--	--	--	--	--	--	--	--
SWFTS-MW20	EM36	11/29/2021	N	550-174897-2	Alluvium	12.8 - 37.6	--	--	--	--	--	--	--	--	--
SWFTS-MW20	EM40	12/13/2022	N	550-194919-7	Alluvium	12.8 - 37.6	--	--	--	--	--	--	--	--	--
SWFTS-MW20	EM40	12/13/2022	N	550-194919-8	Alluvium	12.8 - 37.6	--	--	--	--	--	--	--	--	--
SWFTS-MW21	BL02	7/13/2017	N	440-188324-5	Alluvium	14.8 - 39.6	--	--	--	--	--	--	--	--	--
SWFTS-MW21	EM04	10/11/2017	N	440-194090-8	Alluvium	14.8 - 39.6	--	--	--	--	--	--	--	--	--
SWFTS-MW21	EM06	11/15/2017	N	440-196665-5	Alluvium	14.8 - 39.6	--	--	--	--	--	--	--	--	--
SWFTS-MW21	EM07	12/13/2017	N	440-198508-10	Alluvium	14.8 - 39.6	--	--	--	--	--	--	--	--	--
SWFTS-MW21	EM08	2/20/2018	N	440-203841-9	Alluvium	14.8 - 39.6	--	--	--	--	--	--	--	--	--
SWFTS-MW21	EM08	2/20/2018	FD	440-203841-10	Alluvium	14.8 - 39.6	--	--	--	--	--	--	--	--	--
SWFTS-MW21	EM09	3/27/2018	N	440-207268-14	Alluvium	14.8 - 39.6	--	--	--	--	--	--	--	--	--
SWFTS-MW21	EM10	4/30/2018	N	440-210173-7	Alluvium	14.8 - 39.6	--	--	--	--	--	--	--	--	--

Table D.2
Groundater Analytical Results Summary - Secondary Parameters
Seep Well Field Area Bioremediation Treatability Study

Well	Event	Sample Date	QC Type	Lab Sample ID	Lithology	Screened Interval (ft bgs)	Total Metals by SW6010	Total Metals by SW6010	Total Metals by SW6010	Total Metals by SW6010	Total Metals by SW6010	Total Metals by SW6010	Total Metals by SW6020	Total Metals by SW6020	Total Metals by SW6020
							Strontium	Tin	Titanium	Tungsten	Vanadium	Zinc	Antimony	Arsenic	Selenium
							mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	µg/L	µg/L	µg/L
SWFTS-MW21	EM11	7/12/2018	N	440-215717-3	Alluvium	14.8 - 39.6	--	--	--	--	--	--	--	--	--
SWFTS-MW21	EM15	10/9/2018	N	440-221855-3	Alluvium	14.8 - 39.6	--	--	--	--	--	--	--	--	--
SWFTS-MW21	EM19	5/22/2019	N	440-242198-3	Alluvium	14.8 - 39.6	--	--	--	--	--	--	--	--	--
SWFTS-MW21	EM22	11/4/2019	N	440-253773-3	Alluvium	14.8 - 39.6	--	--	--	--	--	--	--	--	--
SWFTS-MW21	EM26	4/29/2020	N	440-265342-1	Alluvium	14.8 - 39.6	--	--	--	--	--	--	--	--	--
SWFTS-MW21	EM29	10/14/2020	N	440-273303-7	Alluvium	14.8 - 39.6	--	--	--	--	--	--	--	--	--
SWFTS-MW21	EM33	6/2/2021	N	550-164872-15	Alluvium	14.8 - 39.6	--	--	--	--	--	--	--	--	--
SWFTS-MW21	EM33	6/2/2021	N	550-164872-16	Alluvium	14.8 - 39.6	--	--	--	--	--	--	--	--	--
SWFTS-MW21	EM36	12/1/2021	N	550-175045-3	Alluvium	14.8 - 39.6	--	--	--	--	--	--	--	--	--
SWFTS-MW21	EM36	12/1/2021	N	550-175045-4	Alluvium	14.8 - 39.6	--	--	--	--	--	--	--	--	--
SWFTS-MW21	EM40	12/15/2022	N	550-195106-5	Alluvium	14.8 - 39.6	--	--	--	--	--	--	--	--	--
SWFTS-MW21	EM40	12/15/2022	N	550-195106-6	Alluvium	14.8 - 39.6	--	--	--	--	--	--	--	--	--
SWFTS-MW22	BL02	7/13/2017	N	440-188324-1	Alluvium	11.8 - 31.6	--	--	--	--	--	--	--	--	--
SWFTS-MW22	EM04	10/12/2017	N	440-194242-9	Alluvium	11.8 - 31.6	--	--	--	--	--	--	--	--	--
SWFTS-MW22	EM06	11/16/2017	N	440-196786-18	Alluvium	11.8 - 31.6	--	--	--	--	--	--	--	--	--
SWFTS-MW22	EM07	12/14/2017	N	440-198571-17	Alluvium	11.8 - 31.6	--	--	--	--	--	--	--	--	--
SWFTS-MW22	EM08	2/21/2018	N	440-203937-1	Alluvium	11.8 - 31.6	--	--	--	--	--	--	--	--	--
SWFTS-MW22	EM09	3/28/2018	N	440-207497-1	Alluvium	11.8 - 31.6	--	--	--	--	--	--	--	--	--
SWFTS-MW22	EM10	4/30/2018	N	440-210173-6	Alluvium	11.8 - 31.6	--	--	--	--	--	--	--	--	--
SWFTS-MW22	EM11	7/10/2018	N	440-215437-9	Alluvium	11.8 - 31.6	--	--	--	--	--	--	--	--	--
SWFTS-MW22	EM15	10/9/2018	N	440-221855-2	Alluvium	11.8 - 31.6	--	--	--	--	--	--	--	--	--
SWFTS-MW22	EM19	5/21/2019	N	440-242084-4	Alluvium	11.8 - 31.6	--	--	--	--	--	--	--	--	--
SWFTS-MW22	EM22	11/5/2019	N	440-253891-4	Alluvium	11.8 - 31.6	--	--	--	--	--	--	--	--	--
SWFTS-MW22	EM26	4/28/2020	N	440-265288-5	Alluvium	11.8 - 31.6	--	--	--	--	--	--	--	--	--
SWFTS-MW22	EM29	10/14/2020	N	440-273303-1	Alluvium	11.8 - 31.6	--	--	--	--	--	--	--	--	--
SWFTS-MW22	EM33	6/2/2021	N	550-164872-11	Alluvium	11.8 - 31.6	--	--	--	--	--	--	--	--	--
SWFTS-MW22	EM33	6/2/2021	N	550-164872-12	Alluvium	11.8 - 31.6	--	--	--	--	--	--	--	--	--
SWFTS-MW22	EM36	12/2/2021	N	550-175153-1	Alluvium	11.8 - 31.6	--	--	--	--	--	--	--	--	--
SWFTS-MW22	EM36	12/2/2021	N	550-175153-2	Alluvium	11.8 - 31.6	--	--	--	--	--	--	--	--	--
SWFTS-MW22	EM40	12/14/2022	N	550-195013-1	Alluvium	11.8 - 31.6	--	--	--	--	--	--	--	--	--
SWFTS-MW22	EM40	12/14/2022	N	550-195013-2	Alluvium	11.8 - 31.6	--	--	--	--	--	--	--	--	--
SWFTS-MW23	BL02	7/13/2017	N	440-188325-7	Alluvium	13.8 - 33.6	--	--	--	--	--	--	--	--	--
SWFTS-MW23	EM04	10/11/2017	N	440-194090-7	Alluvium	13.8 - 33.6	--	--	--	--	--	--	--	--	--
SWFTS-MW23	EM06	11/15/2017	N	440-196665-3	Alluvium	13.8 - 33.6	--	--	--	--	--	--	--	--	--
SWFTS-MW23	EM07	12/12/2017	N	440-198371-2	Alluvium	13.8 - 33.6	--	--	--	--	--	--	--	--	--
SWFTS-MW23	EM08	2/21/2018	N	440-203937-14	Alluvium	13.8 - 33.6	--	--	--	--	--	--	--	--	--
SWFTS-MW23	EM09	3/28/2018	N	440-207497-9	Alluvium	13.8 - 33.6	--	--	--	--	--	--	--	--	--
SWFTS-MW23	EM10	5/2/2018	N	440-210430-5	Alluvium	13.8 - 33.6	--	--	--	--	--	--	--	--	--
SWFTS-MW23	EM11	7/10/2018	N	440-215437-7	Alluvium	13.8 - 33.6	--	--	--	--	--	--	--	--	--
SWFTS-MW23	EM15	10/11/2018	N	440-222092-7	Alluvium	13.8 - 33.6	--	--	--	--	--	--	--	--	--
SWFTS-MW23	EM19	5/22/2019	N	440-242201-7	Alluvium	13.8 - 33.6	--	--	--	--	--	--	--	--	--
SWFTS-MW23	EM22	11/5/2019	N	440-253891-5	Alluvium	13.8 - 33.6	--	--	--	--	--	--	--	--	--
SWFTS-MW23	EM26	4/28/2020	N	440-265288-3	Alluvium	13.8 - 33.6	--	--	--	--	--	--	--	--	--
SWFTS-MW23	EM29	10/13/2020	N	440-273236-1	Alluvium	13.8 - 33.6	--	--	--	--	--	--	--	--	--
SWFTS-MW23	EM33	6/2/2021	N	550-164872-3	Alluvium	13.8 - 33.6	--	--	--	--	--	--	--	--	--
SWFTS-MW23	EM33	6/2/2021	N	550-164872-4	Alluvium	13.8 - 33.6	--	--	--	--	--	--	--	--	--
SWFTS-MW23	EM36	12/2/2021	N	550-175153-15	Alluvium	13.8 - 33.6	--	--	--	--	--	--	--	--	--
SWFTS-MW23	EM36	12/2/2021	N	550-175153-16	Alluvium	13.8 - 33.6	--	--	--	--	--	--	--	--	--
SWFTS-MW23	EM40	12/13/2022	N	550-194919-5	Alluvium	13.8 - 33.6	--	--	--	--	--	--	--	--	--
SWFTS-MW23	EM40	12/13/2022	N	550-194919-6	Alluvium	13.8 - 33.6	--	--	--	--	--	--	--	--	--
SWFTS-MW24	BL02	7/13/2017	N	440-188324-2	Alluvium	12.8 - 37.6	--	--	--	--	--	--	--	--	--
SWFTS-MW24	EM04	10/11/2017	N	440-194242-2	Alluvium	12.8 - 37.6	--	--	--	--	--	--	--	--	--
SWFTS-MW24	EM06	11/15/2017	N	440-196665-1	Alluvium	12.8 - 37.6	--	--	--	--	--	--	--	--	--
SWFTS-MW24	EM07	12/12/2017	N	440-198371-5	Alluvium	12.8 - 37.6	--	--	--	--	--	--	--	--	--
SWFTS-MW24	EM08	2/21/2018	N	440-203937-8	Alluvium	12.8 - 37.6	--	--	--	--	--	--	--	--	--
SWFTS-MW24	EM09	3/28/2018	N	440-207497-12	Alluvium	12.8 - 37.6	--	--	--	--	--	--	--	--	--
SWFTS-MW24	EM10	5/2/2018	N	440-210430-7	Alluvium	12.8 - 37.6	--	--	--	--	--	--	--	--	--
SWFTS-MW24	EM11	7/12/2018	N	440-215717-5	Alluvium	12.8 - 37.6	--	--	--	--	--	--	--	--	--
SWFTS-MW24	EM15	10/10/2018	N	440-221975-7	Alluvium	12.8 - 37.6	--	--	--	--	--	--	--	--	--
SWFTS-MW24	EM19	5/22/2019	N	440-242198-1	Alluvium	12.8 - 37.6	--	--	--	--	--	--	--	--	--
SWFTS-MW24	EM22	11/5/2019	N	440-253891-2	Alluvium	12.8 - 37.6	--	--	--	--	--	--	--	--	--
SWFTS-MW24	EM26	4/28/2020	N	440-265288-1	Alluvium	12.8 - 37.6	--	--	--	--	--	--	--	--	--
SWFTS-MW24	EM29	10/12/2020	N	440-273153-1	Alluvium	12.8 - 37.6	--	--	--	--	--	--	--	--	--
SWFTS-MW24	EM33	6/2/2021	N	550-164872-7	Alluvium	12.8 - 37.6	--	--	--	--	--	--	--	--	--

Table D.2
Groundater Analytical Results Summary - Secondary Parameters
Seep Well Field Area Bioremediation Treatability Study

Well	Event	Sample Date	QC Type	Lab Sample ID	Lithology	Screened Interval (ft bgs)	Total Metals by SW6010	Total Metals by SW6010	Total Metals by SW6010	Total Metals by SW6010	Total Metals by SW6010	Total Metals by SW6010	Total Metals by SW6020	Total Metals by SW6020	Total Metals by SW6020
							Strontium	Tin	Titanium	Tungsten	Vanadium	Zinc	Antimony	Arsenic	Selenium
							mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	µg/L	µg/L	µg/L
SWFTS-MW24	EM33	6/2/2021	N	550-164872-8	Alluvium	12.8 - 37.6	--	--	--	--	--	--	--	--	--
SWFTS-MW24	EM36	12/1/2021	N	550-175045-17	Alluvium	12.8 - 37.6	--	--	--	--	--	--	--	--	--
SWFTS-MW24	EM36	12/1/2021	N	550-175045-18	Alluvium	12.8 - 37.6	--	--	--	--	--	--	--	--	--
SWFTS-MW24	EM40	12/13/2022	N	550-194919-3	Alluvium	12.8 - 37.6	--	--	--	--	--	--	--	--	--
SWFTS-MW24	EM40	12/13/2022	N	550-194919-4	Alluvium	12.8 - 37.6	--	--	--	--	--	--	--	--	--
SWFTS-MW25	BL02	7/13/2017	N	440-188324-4	Alluvium	12.8 - 42.6	--	--	--	--	--	--	--	--	--
SWFTS-MW25	EM04	10/11/2017	N	440-194242-1	Alluvium	12.8 - 42.6	--	--	--	--	--	--	--	--	--
SWFTS-MW25	EM06	11/15/2017	N	440-196665-2	Alluvium	12.8 - 42.6	--	--	--	--	--	--	--	--	--
SWFTS-MW25	EM07	12/12/2017	N	440-198371-1	Alluvium	12.8 - 42.6	--	--	--	--	--	--	--	--	--
SWFTS-MW25	EM08	2/21/2018	N	440-203937-7	Alluvium	12.8 - 42.6	--	--	--	--	--	--	--	--	--
SWFTS-MW25	EM09	3/28/2018	N	440-207497-13	Alluvium	12.8 - 42.6	--	--	--	--	--	--	--	--	--
SWFTS-MW25	EM10	5/3/2018	N	440-210534-2	Alluvium	12.8 - 42.6	--	--	--	--	--	--	--	--	--
SWFTS-MW25	EM11	7/10/2018	N	440-215437-12	Alluvium	12.8 - 42.6	--	--	--	--	--	--	--	--	--
SWFTS-MW25	EM13	8/15/2018	N	440-218208-10	Alluvium	12.8 - 42.6	--	--	--	--	--	--	--	--	--
SWFTS-MW25	EM14	9/12/2018	N	440-220031-2	Alluvium	12.8 - 42.6	--	--	--	--	--	--	--	--	--
SWFTS-MW25	EM15	10/11/2018	N	440-222092-6	Alluvium	12.8 - 42.6	--	--	--	--	--	--	--	--	--
SWFTS-MW25	EM19	5/22/2019	N	440-242201-6	Alluvium	12.8 - 42.6	--	--	--	--	--	--	--	--	--
SWFTS-MW25	EM22	11/5/2019	N	440-253918-4	Alluvium	12.8 - 42.6	--	--	--	--	--	--	--	--	--
SWFTS-MW25	EM26	4/28/2020	N	440-265288-2	Alluvium	12.8 - 42.6	--	--	--	--	--	--	--	--	--
SWFTS-MW25	EM29	10/13/2020	N	440-273236-2	Alluvium	12.8 - 42.6	--	--	--	--	--	--	--	--	--
SWFTS-MW25	EM33	6/2/2021	N	550-164872-5	Alluvium	12.8 - 42.6	--	--	--	--	--	--	--	--	--
SWFTS-MW25	EM33	6/2/2021	N	550-164872-6	Alluvium	12.8 - 42.6	--	--	--	--	--	--	--	--	--
SWFTS-MW25	EM36	12/1/2021	N	550-175045-19	Alluvium	12.8 - 42.6	--	--	--	--	--	--	--	--	--
SWFTS-MW25	EM36	12/1/2021	N	550-175045-20	Alluvium	12.8 - 42.6	--	--	--	--	--	--	--	--	--
SWFTS-MW25	EM40	12/13/2022	N	550-194919-1	Alluvium	12.8 - 42.6	--	--	--	--	--	--	--	--	--
SWFTS-MW25	EM40	12/13/2022	N	550-194919-2	Alluvium	12.8 - 42.6	--	--	--	--	--	--	--	--	--

Notes:
1. Lithology of monitoring well COH-2B1 was inferred from state records of well construction and generalized stratigraphy.
FD - Field duplicate
J The result is an estimated quantity. The associated numerical value is the approximate concentration of the analyte.
J- The result is an estimated quantity, but the result may be biased low.
J+ The result is an estimated quantity, but the result may be biased high.
mg/L - milligrams per liter
µg/L - micrograms per liter
N - Normal field sample
UMCf- Upper Muddy Creek Formation
R The data are unusable. The sample results are rejected due to serious deficiencies in meeting QC criteria. The
< The analyte was analyzed for, but was not detected above the level of the reported sample quantitation limit.
--- Not tested.

Table D.2
Groundater Analytical Results Summary - Secondary Parameters
Seep Well Field Area Bioremediation Treatability Study

Well	Event	Sample Date	QC Type	Lab Sample ID	Lithology	Screened Interval (ft bgs)	Total Metals by SW6020	Volatile Fatty Acids (IC)	Volatile Fatty Acids (IC)	Volatile Fatty Acids (IC)	Volatile Fatty Acids (IC)	Volatile Fatty Acids (IC)	Volatile Fatty Acids (IC)
							Thallium	Acetic Acid	Butyric Acid	Formic Acid	Lactic Acid	Propionic Acid	Pyruvic Acid
							µg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
COH-2B1	BL02	8/9/2017	N	440-189933-1	Alluvium/UMCf	36.0 - 66.0	--	--	--	--	--	--	--
COH-2B1	EM04	10/12/2017	N	440-194204-2	Alluvium/UMCf	36.0 - 66.0	--	--	--	--	--	--	--
COH-2B1	EM07	12/14/2017	N	440-198571-5	Alluvium/UMCf	36.0 - 66.0	--	--	--	--	--	--	--
COH-2B1	EM08	2/22/2018	N	440-204033-6	Alluvium/UMCf	36.0 - 66.0	--	--	--	--	--	--	--
COH-2B1	EM09	3/29/2018	N	440-207586-2	Alluvium/UMCf	36.0 - 66.0	--	--	--	--	--	--	--
COH-2B1	EM10	5/2/2018	N	440-210430-11	Alluvium/UMCf	36.0 - 66.0	--	--	--	--	--	--	--
COH-2B1	EM11	7/10/2018	N	440-215437-6	Alluvium/UMCf	36.0 - 66.0	--	--	--	--	--	--	--
COH-2B1	EM15	10/11/2018	N	440-222092-1	Alluvium/UMCf	36.0 - 66.0	--	--	--	--	--	--	--
COH-2B1	EM19	5/22/2019	N	440-242201-5	Alluvium/UMCf	36.0 - 66.0	--	--	--	--	--	--	--
COH-2B1	EM22	11/4/2019	N	440-253773-1	Alluvium/UMCf	36.0 - 66.0	--	--	--	--	--	--	--
COH-2B1	EM26	4/27/2020	N	440-265243-1	Alluvium/UMCf	36.0 - 66.0	--	--	--	--	--	--	--
COH-2B1	EM29	10/13/2020	N	440-273236-9	Alluvium/UMCf	36.0 - 66.0	--	--	--	--	--	--	--
PC-58	BL01	3/28/2017	N	440-180820-1	Alluvium	7.8 - 32.8	<0.50	--	--	--	--	--	--
PC-58	BL02	7/13/2017	N	440-188324-3	Alluvium	7.8 - 32.8	--	--	--	--	--	--	--
PC-58	EM04	10/11/2017	N	440-194094-6	Alluvium	7.8 - 32.8	--	--	--	--	--	--	--
PC-58	EM06	11/16/2017	N	440-196786-11	Alluvium	7.8 - 32.8	--	--	--	--	--	--	--
PC-58	EM07	12/14/2017	N	440-198571-9	Alluvium	7.8 - 32.8	--	--	--	--	--	--	--
PC-58	EM08	2/21/2018	N	440-203937-13	Alluvium	7.8 - 32.8	--	--	--	--	--	--	--
PC-58	EM09	3/28/2018	N	440-207497-6	Alluvium	7.8 - 32.8	--	--	--	--	--	--	--
PC-58	EM10	5/2/2018	N	440-210430-10	Alluvium	7.8 - 32.8	--	--	--	--	--	--	--
PC-58	EM11	7/11/2018	N	440-215717-7	Alluvium	7.8 - 32.8	--	--	--	--	--	--	--
PC-58	EM15	10/11/2018	N	440-222092-19	Alluvium	7.8 - 32.8	--	--	--	--	--	--	--
PC-58	EM19	5/22/2019	N	440-242200-7	Alluvium	7.8 - 32.8	--	--	--	--	--	--	--
PC-58	EM22	11/7/2019	N	440-254148-1	Alluvium	7.8 - 32.8	--	--	--	--	--	--	--
PC-58	EM26	5/1/2020	N	440-265414-3	Alluvium	7.8 - 32.8	--	--	--	--	--	--	--
PC-58	EM29	10/16/2020	N	440-273433-5	Alluvium	7.8 - 32.8	--	--	--	--	--	--	--
PC-58	EM33	6/2/2021	N	550-164872-23	Alluvium	7.8 - 32.8	--	--	--	--	--	--	--
PC-58	EM33	6/2/2021	N	550-164872-24	Alluvium	7.8 - 32.8	--	--	--	--	--	--	--
PC-58	EM36	12/3/2021	N	550-175222-11	Alluvium	7.8 - 32.8	--	--	--	--	--	--	--
PC-58	EM36	12/3/2021	N	550-175222-12	Alluvium	7.8 - 32.8	--	--	--	--	--	--	--
PC-58	EM40	12/12/2022	N	550-194841-5	Alluvium	7.8 - 32.8	--	--	--	--	--	--	--
PC-58	EM40	12/12/2022	N	550-194841-6	Alluvium	7.8 - 32.8	--	--	--	--	--	--	--
PC-88	EM04	10/11/2017	N	440-194090-2	Alluvium	40.0 - 50.0	--	--	--	--	--	--	--
PC-88	EM04	10/11/2017	FD	440-194090-3	Alluvium	40.0 - 50.0	--	--	--	--	--	--	--
PC-88	EM06	11/15/2017	N	440-196690-9	Alluvium	40.0 - 50.0	--	--	--	--	--	--	--
PC-88	EM06	11/15/2017	FD	440-196690-10	Alluvium	40.0 - 50.0	--	--	--	--	--	--	--
PC-88	EM07	12/14/2017	N	440-198571-11	Alluvium	40.0 - 50.0	--	--	--	--	--	--	--
PC-88	EM08	2/22/2018	N	440-204033-10	Alluvium	40.0 - 50.0	--	--	--	--	--	--	--
PC-88	EM09	3/29/2018	N	440-207586-3	Alluvium	40.0 - 50.0	--	--	--	--	--	--	--
PC-88	EM10	5/2/2018	N	440-210430-8	Alluvium	40.0 - 50.0	--	--	--	--	--	--	--
PC-88	EM10	5/2/2018	FD	440-210430-9	Alluvium	40.0 - 50.0	--	--	--	--	--	--	--
PC-88	EM11	7/12/2018	N	440-215717-11	Alluvium	40.0 - 50.0	--	--	--	--	--	--	--
PC-88	EM11	7/12/2018	FD	440-215717-12	Alluvium	40.0 - 50.0	--	--	--	--	--	--	--
PC-88	EM15	10/11/2018	N	440-222092-15	Alluvium	40.0 - 50.0	--	--	--	--	--	--	--
PC-88	EM15	10/11/2018	FD	440-222092-16	Alluvium	40.0 - 50.0	--	--	--	--	--	--	--
PC-88	EM19	5/22/2019	N	440-242201-2	Alluvium	40.0 - 50.0	--	--	--	--	--	--	--
PC-88	EM19	5/22/2019	FD	440-242201-3	Alluvium	40.0 - 50.0	--	--	--	--	--	--	--
PC-88	EM22	11/7/2019	N	440-254148-2	Alluvium	40.0 - 50.0	--	--	--	--	--	--	--
PC-88	EM22	11/7/2019	FD	440-254148-3	Alluvium	40.0 - 50.0	--	--	--	--	--	--	--
PC-88	EM26	5/1/2020	N	440-265412-2	Alluvium	40.0 - 50.0	--	--	--	--	--	--	--
PC-88	EM26	5/1/2020	FD	440-265412-3	Alluvium	40.0 - 50.0	--	--	--	--	--	--	--
PC-88	EM29	10/15/2020	N	550-151259-10	Alluvium	40.0 - 50.0	--	--	--	--	--	--	--
PC-88	EM29	10/15/2020	FD	550-151259-11	Alluvium	40.0 - 50.0	--	--	--	--	--	--	--
PC-88	EM33	6/3/2021	N	550-164869-25	Alluvium	40.0 - 50.0	--	--	--	--	--	--	--
PC-88	EM33	6/3/2021	N	550-164869-26	Alluvium	40.0 - 50.0	--	--	--	--	--	--	--
PC-88	EM33	6/3/2021	FD	550-164869-27	Alluvium	40.0 - 50.0	--	--	--	--	--	--	--
PC-88	EM33	6/3/2021	FD	550-164869-28	Alluvium	40.0 - 50.0	--	--	--	--	--	--	--
PC-88	EM36	12/2/2021	N	550-175153-5	Alluvium	40.0 - 50.0	--	--	--	--	--	--	--
PC-88	EM36	12/2/2021	N	550-175153-6	Alluvium	40.0 - 50.0	--	--	--	--	--	--	--
PC-88	EM36	12/2/2021	FD	550-175153-7	Alluvium	40.0 - 50.0	--	--	--	--	--	--	--
PC-88	EM36	12/2/2021	FD	550-175153-8	Alluvium	40.0 - 50.0	--	--	--	--	--	--	--
PC-88	EM40	12/12/2022	N	550-194841-1	Alluvium	40.0 - 50.0	--	--	--	--	--	--	--
PC-88	EM40	12/12/2022	N	550-194841-2	Alluvium	40.0 - 50.0	--	--	--	--	--	--	--
PC-88	EM40	12/12/2022	FD	550-194841-3	Alluvium	40.0 - 50.0	--	--	--	--	--	--	--

Table D.2
Groundater Analytical Results Summary - Secondary Parameters
Seep Well Field Area Bioremediation Treatability Study

Well	Event	Sample Date	QC Type	Lab Sample ID	Lithology	Screened Interval (ft bgs)	Total Metals by SW6020	Volatile Fatty Acids (IC)	Volatile Fatty Acids (IC)	Volatile Fatty Acids (IC)	Volatile Fatty Acids (IC)	Volatile Fatty Acids (IC)	Volatile Fatty Acids (IC)
							Thallium	Acetic Acid	Butyric Acid	Formic Acid	Lactic Acid	Propionic Acid	Pyruvic Acid
							µg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
PC-88	EM40	12/12/2022	FD	550-194841-4	Alluvium	40.0 - 50.0	--	--	--	--	--	--	--
PC-91	BL01	3/29/2017	N	440-180937-1	Alluvium	11.5 - 21.5	--	--	--	--	--	--	--
PC-91	BL02	7/12/2017	N	440-188247-5	Alluvium	11.5 - 21.5	--	--	--	--	--	--	--
PC-91	BL02	7/12/2017	FD	440-188244-4	Alluvium	11.5 - 21.5	--	--	--	--	--	--	--
PC-91	EM04	10/12/2017	N	440-194204-3	Alluvium	11.5 - 21.5	--	--	--	--	--	--	--
PC-91	EM06	11/16/2017	N	440-196786-8	Alluvium	11.5 - 21.5	--	--	--	--	--	--	--
PC-91	EM07	12/13/2017	N	440-198508-9	Alluvium	11.5 - 21.5	--	--	--	--	--	--	--
PC-91	EM08	2/20/2018	N	440-203841-1	Alluvium	11.5 - 21.5	--	--	--	--	--	--	--
PC-91	EM09	3/26/2018	N	440-207137-1	Alluvium	11.5 - 21.5	--	--	--	--	--	--	--
PC-91	EM10	5/1/2018	N	440-210284-3	Alluvium	11.5 - 21.5	--	--	--	--	--	--	--
PC-91	EM11	7/11/2018	N	440-215585-6	Alluvium	11.5 - 21.5	--	--	--	--	--	--	--
PC-91	EM15	10/10/2018	N	440-221975-16	Alluvium	11.5 - 21.5	--	--	--	--	--	--	--
PC-91	EM19	5/21/2019	N	440-242084-9	Alluvium	11.5 - 21.5	--	--	--	--	--	--	--
PC-91	EM22	11/6/2019	N	440-254027-3	Alluvium	11.5 - 21.5	--	--	--	--	--	--	--
PC-91	EM26	4/30/2020	N	440-265382-2	Alluvium	11.5 - 21.5	--	--	--	--	--	--	--
PC-91	EM29	10/14/2020	N	440-273303-11	Alluvium	11.5 - 21.5	--	--	--	--	--	--	--
PC-91	EM33	6/2/2021	N	550-164872-17	Alluvium	11.5 - 21.5	--	--	--	--	--	--	--
PC-91	EM33	6/2/2021	N	550-164872-18	Alluvium	11.5 - 21.5	--	--	--	--	--	--	--
PC-91	EM36	11/30/2021	N	550-174968-1	Alluvium	11.5 - 21.5	--	--	--	--	--	--	--
PC-91	EM36	11/30/2021	N	550-174968-2	Alluvium	11.5 - 21.5	--	--	--	--	--	--	--
PC-91	EM40	12/12/2022	N	550-194841-7	Alluvium	11.5 - 21.5	--	--	--	--	--	--	--
PC-91	EM40	12/12/2022	N	550-194841-8	Alluvium	11.5 - 21.5	--	--	--	--	--	--	--
PC-92	BL01	3/29/2017	N	440-180937-2	Alluvium	26.5 - 36.5	--	--	--	--	--	--	--
PC-92	BL02	7/12/2017	N	440-188247-6	Alluvium	26.5 - 36.5	--	--	--	--	--	--	--
PC-92	EM04	10/12/2017	N	440-194204-4	Alluvium	26.5 - 36.5	--	<1.5	<1.3	<1.3	<1.6	<1.8	<1.9
PC-92	EM04	10/12/2017	FD	440-194204-5	Alluvium	26.5 - 36.5	--	<1.5	<1.3	<1.3	<1.6	<1.8	<1.9
PC-92	EM06	11/16/2017	N	440-196786-9	Alluvium	26.5 - 36.5	--	--	--	--	--	--	--
PC-92	EM06	11/16/2017	FD	440-196786-10	Alluvium	26.5 - 36.5	--	--	--	--	--	--	--
PC-92	EM07	12/14/2017	N	440-198571-7	Alluvium	26.5 - 36.5	--	<1.5	<1.3	<1.3	<1.6	<1.8	<1.9
PC-92	EM07	12/14/2017	FD	440-198571-8	Alluvium	26.5 - 36.5	--	<1.5	<1.3	<1.3	<1.6	<1.8	<1.9
PC-92	EM08	2/20/2018	N	440-203841-2	Alluvium	26.5 - 36.5	--	--	--	--	--	--	--
PC-92	EM08	2/20/2018	FD	440-203841-3	Alluvium	26.5 - 36.5	--	--	--	--	--	--	--
PC-92	EM09	3/26/2018	N	440-207137-2	Alluvium	26.5 - 36.5	--	--	--	--	--	--	--
PC-92	EM09	3/26/2018	FD	440-207137-3	Alluvium	26.5 - 36.5	--	--	--	--	--	--	--
PC-92	EM10	5/1/2018	N	440-210284-4	Alluvium	26.5 - 36.5	--	--	--	--	--	--	--
PC-92	EM11	7/11/2018	N	440-215585-5	Alluvium	26.5 - 36.5	--	--	--	--	--	--	--
PC-92	EM15	10/11/2018	N	440-222092-17	Alluvium	26.5 - 36.5	--	--	--	--	--	--	--
PC-92	EM19	5/21/2019	N	440-242084-10	Alluvium	26.5 - 36.5	--	--	--	--	--	--	--
PC-92	EM22	11/6/2019	N	440-254027-2	Alluvium	26.5 - 36.5	--	--	--	--	--	--	--
PC-92	EM26	4/30/2020	N	440-265382-1	Alluvium	26.5 - 36.5	--	--	--	--	--	--	--
PC-92	EM29	10/14/2020	N	440-273303-10	Alluvium	26.5 - 36.5	--	--	--	--	--	--	--
PC-92	EM33	6/2/2021	N	550-164872-19	Alluvium	26.5 - 36.5	--	--	--	--	--	--	--
PC-92	EM33	6/2/2021	N	550-164872-20	Alluvium	26.5 - 36.5	--	--	--	--	--	--	--
PC-92	EM36	11/30/2021	N	550-174968-3	Alluvium	26.5 - 36.5	--	--	--	--	--	--	--
PC-92	EM36	11/30/2021	N	550-174968-4	Alluvium	26.5 - 36.5	--	--	--	--	--	--	--
PC-92	EM40	12/13/2022	N	550-194920-1	Alluvium	26.5 - 36.5	--	--	--	--	--	--	--
PC-92	EM40	12/13/2022	N	550-194920-2	Alluvium	26.5 - 36.5	--	--	--	--	--	--	--
PC-94	BL01	3/28/2017	N	440-180820-2	Alluvium	9.5 - 19.5	<0.50	--	--	--	--	--	--
PC-94	BL02	7/13/2017	N	440-188325-1	Alluvium	9.5 - 19.5	--	--	--	--	--	--	--
PC-94	EM04	10/11/2017	N	440-194090-6	Alluvium	9.5 - 19.5	--	<2.9	<2.6	<2.6	<3.1	<3.5	<3.7
PC-94	EM06	11/16/2017	N	440-196786-17	Alluvium	9.5 - 19.5	--	--	--	--	--	--	--
PC-94	EM07	12/12/2017	N	440-198371-14	Alluvium	9.5 - 19.5	--	--	--	--	--	--	--
PC-94	EM08	2/21/2018	N	440-203937-12	Alluvium	9.5 - 19.5	--	--	--	--	--	--	--
PC-94	EM09	3/27/2018	N	440-207268-8	Alluvium	9.5 - 19.5	--	--	--	--	--	--	--
PC-94	EM10	5/1/2018	N	440-210284-14	Alluvium	9.5 - 19.5	--	--	--	--	--	--	--
PC-94	EM11	7/10/2018	N	440-215437-1	Alluvium	9.5 - 19.5	--	--	--	--	--	--	--
PC-94	EM13	8/15/2018	N	440-218208-2	Alluvium	9.5 - 19.5	--	--	--	--	--	--	--
PC-94	EM14	9/11/2018	N	440-219886-9	Alluvium	9.5 - 19.5	--	--	--	--	--	--	--
PC-94	EM15	10/11/2018	N	440-222092-18	Alluvium	9.5 - 19.5	--	--	--	--	--	--	--
PC-94	EM19	5/22/2019	N	440-242201-4	Alluvium	9.5 - 19.5	--	--	--	--	--	--	--
PC-94	EM22	11/6/2019	N	440-254027-1	Alluvium	9.5 - 19.5	--	--	--	--	--	--	--
PC-94	EM26	4/28/2020	N	440-265289-2	Alluvium	9.5 - 19.5	--	--	--	--	--	--	--
PC-94	EM29	10/15/2020	N	550-151259-7	Alluvium	9.5 - 19.5	--	--	--	--	--	--	--
PC-94	EM33	6/2/2021	N	550-164872-21	Alluvium	9.5 - 19.5	--	--	--	--	--	--	--

Table D.2
Groundater Analytical Results Summary - Secondary Parameters
Seep Well Field Area Bioremediation Treatability Study

Well	Event	Sample Date	QC Type	Lab Sample ID	Lithology	Screened Interval (ft bgs)	Total Metals by SW6020	Volatile Fatty Acids (IC)	Volatile Fatty Acids (IC)	Volatile Fatty Acids (IC)	Volatile Fatty Acids (IC)	Volatile Fatty Acids (IC)	Volatile Fatty Acids (IC)
							Thallium	Acetic Acid	Butyric Acid	Formic Acid	Lactic Acid	Propionic Acid	Pyruvic Acid
							µg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
PC-94	EM33	6/2/2021	N	550-164872-22	Alluvium	9.5 - 19.5	--	--	--	--	--	--	--
PC-94	EM36	11/30/2021	N	550-174968-5	Alluvium	9.5 - 19.5	--	--	--	--	--	--	--
PC-94	EM36	11/30/2021	N	550-174968-6	Alluvium	9.5 - 19.5	--	--	--	--	--	--	--
PC-94	EM40	12/13/2022	N	550-194920-7	Alluvium	9.5 - 19.5	--	--	--	--	--	--	--
PC-94	EM40	12/13/2022	N	550-194920-8	Alluvium	9.5 - 19.5	--	--	--	--	--	--	--
PC-97	BL02	7/13/2017	N	440-188325-8	Alluvium	23.0 - 33.0	--	--	--	--	--	--	--
PC-97	EM04	10/11/2017	N	440-194242-5	Alluvium	23.0 - 33.0	--	--	--	--	--	--	--
PC-97	EM04	10/11/2017	FD	440-194242-6	Alluvium	23.0 - 33.0	--	--	--	--	--	--	--
PC-97	EM06	11/16/2017	N	440-196786-13	Alluvium	23.0 - 33.0	--	--	--	--	--	--	--
PC-97	EM07	12/13/2017	N	440-198508-11	Alluvium	23.0 - 33.0	--	--	--	--	--	--	--
PC-97	EM07	12/13/2017	FD	440-198508-12	Alluvium	23.0 - 33.0	--	--	--	--	--	--	--
PC-97	EM08	2/21/2018	N	440-203937-4	Alluvium	23.0 - 33.0	--	--	--	--	--	--	--
PC-97	EM09	3/27/2018	N	440-207268-4	Alluvium	23.0 - 33.0	--	--	--	--	--	--	--
PC-97	EM10	5/1/2018	N	440-210284-7	Alluvium	23.0 - 33.0	--	--	--	--	--	--	--
PC-97	EM11	7/10/2018	N	440-215437-3	Alluvium	23.0 - 33.0	--	--	--	--	--	--	--
PC-97	EM15	10/11/2018	N	440-222092-13	Alluvium	23.0 - 33.0	--	--	--	--	--	--	--
PC-97	EM19	5/22/2019	N	440-242201-1	Alluvium	23.0 - 33.0	--	--	--	--	--	--	--
PC-97	EM22	11/6/2019	N	440-254027-7	Alluvium	23.0 - 33.0	--	--	--	--	--	--	--
PC-97	EM26	4/30/2020	N	440-265383-7	Alluvium	23.0 - 33.0	--	--	--	--	--	--	--
PC-97	EM29	10/15/2020	N	550-151259-9	Alluvium	23.0 - 33.0	--	--	--	--	--	--	--
SWFTS-IW01A	BL02	7/11/2017	N	440-188133-3	Alluvium	15.8 - 25.6	--	--	--	--	--	--	--
SWFTS-IW01B	BL02	7/11/2017	N	440-188133-13	Alluvium	26.9 - 36.7	--	--	--	--	--	--	--
SWFTS-IW02A	BL02	7/11/2017	N	440-188133-14	Alluvium	16.8 - 26.6	--	--	--	--	--	--	--
SWFTS-IW02B	BL02	7/11/2017	N	440-188133-2	Alluvium	26.3 - 36.1	--	--	--	--	--	--	--
SWFTS-IW03	BL02	7/11/2017	N	440-188133-4	Alluvium	16.8 - 36.6	--	--	--	--	--	--	--
SWFTS-IW03	BL02	7/11/2017	FD	440-188133-5	Alluvium	16.8 - 36.6	--	--	--	--	--	--	--
SWFTS-IW04	BL02	7/11/2017	N	440-188133-11	Alluvium	19.8 - 34.6	--	--	--	--	--	--	--
SWFTS-IW04	BL02	7/11/2017	FD	440-188133-12	Alluvium	19.8 - 34.6	--	--	--	--	--	--	--
SWFTS-IW05	BL02	7/11/2017	N	440-188133-16	Alluvium	14.6 - 34.4	--	--	--	--	--	--	--
SWFTS-IW06A	BL02	7/11/2017	N	440-188133-10	Alluvium	16.8 - 26.6	--	--	--	--	--	--	--
SWFTS-IW06B	BL02	7/11/2017	N	440-188133-6	Alluvium	28.8 - 33.6	--	--	--	--	--	--	--
SWFTS-IW07	BL02	7/11/2017	N	440-188133-7	Alluvium	17.3 - 37.1	--	--	--	--	--	--	--
SWFTS-IW08	BL02	7/12/2017	N	440-188247-7	Alluvium	17.5 - 37.3	--	--	--	--	--	--	--
SWFTS-IW09	BL02	7/12/2017	N	440-188247-8	Alluvium	26.6 - 46.4	--	--	--	--	--	--	--
SWFTS-IW09	BL02	7/12/2017	FD	440-188244-3	Alluvium	26.6 - 46.4	--	--	--	--	--	--	--
SWFTS-IW10	BL02	7/12/2017	N	440-188247-9	Alluvium	26.8 - 46.6	--	--	--	--	--	--	--
SWFTS-IW11	BL02	7/12/2017	N	440-188247-3	Alluvium	17.3 - 37.1	--	--	--	--	--	--	--
SWFTS-IW12	BL02	7/12/2017	N	440-188247-4	Alluvium	14.3 - 39.1	--	--	--	--	--	--	--
SWFTS-IW13A	BL02	7/11/2017	N	440-188133-1	Alluvium	15.8 - 25.6	--	--	--	--	--	--	--
SWFTS-IW13B	BL02	7/11/2017	N	440-188133-15	Alluvium	27.8 - 37.6	--	--	--	--	--	--	--
SWFTS-IW14	BL02	7/12/2017	N	440-188247-1	Alluvium	16.2 - 36.1	--	--	--	--	--	--	--
SWFTS-IW15	BL02	7/12/2017	N	440-188247-2	Alluvium	16.4 - 36.2	--	--	--	--	--	--	--
SWFTS-IW16A	BL02	7/11/2017	N	440-188133-9	Alluvium	17.3 - 27.1	--	--	--	--	--	--	--
SWFTS-IW16B	BL02	7/11/2017	N	440-188133-8	Alluvium	26.5 - 36.3	--	--	--	--	--	--	--
SWFTS-IW17	BL02	7/13/2017	N	440-188325-6	Alluvium	17.3 - 37.1	--	--	--	--	--	--	--
SWFTS-IW18	BL02	7/13/2017	N	440-188325-4	Alluvium	18.1 - 38.1	--	--	--	--	--	--	--
SWFTS-IW19	BL02	7/13/2017	N	440-188325-5	Alluvium	24.3 - 44.1	--	--	--	--	--	--	--
SWFTS-IW20	BL02	7/12/2017	N	440-188247-10	Alluvium	30.8 - 50.6	--	--	--	--	--	--	--
SWFTS-MW01	BL01	3/29/2017	N	440-180937-6	Alluvium	24.2 - 38.9	--	--	--	--	--	--	--
SWFTS-MW01	EM04	10/10/2017	N	440-194094-2	Alluvium	24.2 - 38.9	--	<2.9	<2.6	<2.6	<3.1	<3.5	<3.7
SWFTS-MW01	EM06	11/15/2017	N	440-196665-4	Alluvium	24.2 - 38.9	--	--	--	--	--	--	--
SWFTS-MW01	EM07	12/14/2017	N	440-198571-10	Alluvium	24.2 - 38.9	--	--	--	--	--	--	--
SWFTS-MW01	EM08	2/20/2018	N	440-203841-12	Alluvium	24.2 - 38.9	--	--	--	--	--	--	--
SWFTS-MW01	EM09	3/27/2018	N	440-207268-10	Alluvium	24.2 - 38.9	--	--	--	--	--	--	--
SWFTS-MW01	EM10	4/30/2018	N	440-210173-1	Alluvium	24.2 - 38.9	--	--	--	--	--	--	--
SWFTS-MW01	EM11	7/10/2018	N	440-215437-2	Alluvium	24.2 - 38.9	--	--	--	--	--	--	--
SWFTS-MW01	EM14	9/10/2018	N	440-219797-1	Alluvium	24.2 - 38.9	--	--	--	--	--	--	--
SWFTS-MW01	EM15	10/9/2018	N	440-221855-12	Alluvium	24.2 - 38.9	--	--	--	--	--	--	--
SWFTS-MW01	EM19	5/21/2019	N	440-242084-14	Alluvium	24.2 - 38.9	--	--	--	--	--	--	--
SWFTS-MW01	EM22	11/5/2019	N	440-253918-3	Alluvium	24.2 - 38.9	--	--	--	--	--	--	--
SWFTS-MW01	EM26	4/28/2020	N	440-265289-5	Alluvium	24.2 - 38.9	--	--	--	--	--	--	--
SWFTS-MW01	EM29	10/13/2020	N	440-273236-11	Alluvium	24.2 - 38.9	--	--	--	--	--	--	--
SWFTS-MW01	EM33	6/4/2021	N	550-164930-17	Alluvium	24.2 - 38.9	--	--	--	--	--	--	--
SWFTS-MW01	EM33	6/4/2021	N	550-164930-18	Alluvium	24.2 - 38.9	--	--	--	--	--	--	--

Table D.2
Groundater Analytical Results Summary - Secondary Parameters
Seep Well Field Area Bioremediation Treatability Study

Well	Event	Sample Date	QC Type	Lab Sample ID	Lithology	Screened Interval (ft bgs)	Total Metals by SW6020	Volatile Fatty Acids (IC)	Volatile Fatty Acids (IC)	Volatile Fatty Acids (IC)	Volatile Fatty Acids (IC)	Volatile Fatty Acids (IC)	Volatile Fatty Acids (IC)
							Thallium	Acetic Acid	Butyric Acid	Formic Acid	Lactic Acid	Propionic Acid	Pyruvic Acid
							µg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
SWFTS-MW01	EM36	11/30/2021	N	550-174968-19	Alluvium	24.2 - 38.9	--	--	--	--	--	--	--
SWFTS-MW01	EM36	11/30/2021	N	550-174968-20	Alluvium	24.2 - 38.9	--	--	--	--	--	--	--
SWFTS-MW01	EM40	12/13/2022	N	550-194920-3	Alluvium	24.2 - 38.9	--	--	--	--	--	--	--
SWFTS-MW01	EM40	12/13/2022	N	550-194920-4	Alluvium	24.2 - 38.9	--	--	--	--	--	--	--
SWFTS-MW02	BL01	3/29/2017	N	440-180937-7	Alluvium	18.4 - 33.1	--	--	--	--	--	--	--
SWFTS-MW02	EM04	10/12/2017	N	440-194204-6	Alluvium	18.4 - 33.1	--	<1.5	<1.3	<1.3	<1.6 UJ	<1.8 UJ	<19
SWFTS-MW02	EM06	11/14/2017	N	440-196558-3	Alluvium	18.4 - 33.1	--	--	--	--	--	--	--
SWFTS-MW02	EM07	12/13/2017	N	440-198508-8	Alluvium	18.4 - 33.1	--	--	--	--	--	--	--
SWFTS-MW02	EM08	2/19/2018	N	440-203775-1	Alluvium	18.4 - 33.1	--	--	--	--	--	--	--
SWFTS-MW02	EM09	3/27/2018	N	440-207268-1	Alluvium	18.4 - 33.1	--	--	--	--	--	--	--
SWFTS-MW02	EM10	4/30/2018	N	440-210173-3	Alluvium	18.4 - 33.1	--	--	--	--	--	--	--
SWFTS-MW02	EM11	7/11/2018	N	440-215717-13	Alluvium	18.4 - 33.1	--	--	--	--	--	--	--
SWFTS-MW02	EM14	9/10/2018	N	440-219797-2	Alluvium	18.4 - 33.1	--	--	--	--	--	--	--
SWFTS-MW02	EM15	10/10/2018	N	440-221975-15	Alluvium	18.4 - 33.1	--	--	--	--	--	--	--
SWFTS-MW02	EM19	5/21/2019	N	440-242084-8	Alluvium	18.4 - 33.1	--	--	--	--	--	--	--
SWFTS-MW02	EM22	11/7/2019	N	440-254148-7	Alluvium	18.4 - 33.1	--	--	--	--	--	--	--
SWFTS-MW02	EM26	4/30/2020	N	440-265382-3	Alluvium	18.4 - 33.1	--	--	--	--	--	--	--
SWFTS-MW02	EM29	10/15/2020	N	550-151259-8	Alluvium	18.4 - 33.1	--	--	--	--	--	--	--
SWFTS-MW02	EM33	6/3/2021	N	550-164869-21	Alluvium	18.4 - 33.1	--	--	--	--	--	--	--
SWFTS-MW02	EM33	6/3/2021	N	550-164869-22	Alluvium	18.4 - 33.1	--	--	--	--	--	--	--
SWFTS-MW02	EM36	11/30/2021	N	550-174968-7	Alluvium	18.4 - 33.1	--	--	--	--	--	--	--
SWFTS-MW02	EM36	11/30/2021	N	550-174968-8	Alluvium	18.4 - 33.1	--	--	--	--	--	--	--
SWFTS-MW02	EM40	12/14/2022	N	550-195015-3	Alluvium	18.4 - 33.1	--	--	--	--	--	--	--
SWFTS-MW02	EM40	12/14/2022	N	550-195015-4	Alluvium	18.4 - 33.1	--	--	--	--	--	--	--
SWFTS-MW03	BL01	3/30/2017	N	440-181045-5	Alluvium	27.2 - 42.1	--	--	--	--	--	--	--
SWFTS-MW03	BL01	3/30/2017	FD	440-181045-6	Alluvium	27.2 - 42.1	--	--	--	--	--	--	--
SWFTS-MW03	EM04	10/12/2017	N	440-194204-8	Alluvium	27.2 - 42.1	--	<1.5	<1.3	<1.3	<1.6	<1.8	<19
SWFTS-MW03	EM06	11/16/2017	N	440-196786-16	Alluvium	27.2 - 42.1	--	--	--	--	--	--	--
SWFTS-MW03	EM07	12/12/2017	N	440-198371-13	Alluvium	27.2 - 42.1	--	--	--	--	--	--	--
SWFTS-MW03	EM08	2/21/2018	N	440-203937-5	Alluvium	27.2 - 42.1	--	--	--	--	--	--	--
SWFTS-MW03	EM09	3/27/2018	N	440-207268-15	Alluvium	27.2 - 42.1	--	--	--	--	--	--	--
SWFTS-MW03	EM10	5/2/2018	N	440-210430-6	Alluvium	27.2 - 42.1	--	--	--	--	--	--	--
SWFTS-MW03	EM11	7/10/2018	N	440-215437-5	Alluvium	27.2 - 42.1	--	--	--	--	--	--	--
SWFTS-MW03	EM13	8/15/2018	N	440-218208-4	Alluvium	27.2 - 42.1	--	--	--	--	--	--	--
SWFTS-MW03	EM14	9/11/2018	N	440-219886-11	Alluvium	27.2 - 42.1	--	--	--	--	--	--	--
SWFTS-MW03	EM15	10/9/2018	N	440-221855-13	Alluvium	27.2 - 42.1	--	--	--	--	--	--	--
SWFTS-MW03	EM19	5/21/2019	N	440-242084-12	Alluvium	27.2 - 42.1	--	--	--	--	--	--	--
SWFTS-MW03	EM22	11/4/2019	N	440-253773-2	Alluvium	27.2 - 42.1	--	--	--	--	--	--	--
SWFTS-MW03	EM26	4/28/2020	N	440-265289-1	Alluvium	27.2 - 42.1	--	--	--	--	--	--	--
SWFTS-MW03	EM29	10/13/2020	N	440-273236-10	Alluvium	27.2 - 42.1	--	--	--	--	--	--	--
SWFTS-MW03	EM33	6/3/2021	N	550-164869-15	Alluvium	27.2 - 42.1	--	--	--	--	--	--	--
SWFTS-MW03	EM33	6/3/2021	N	550-164869-16	Alluvium	27.2 - 42.1	--	--	--	--	--	--	--
SWFTS-MW03	EM36	12/1/2021	N	550-175045-1	Alluvium	27.2 - 42.1	--	--	--	--	--	--	--
SWFTS-MW03	EM36	12/1/2021	N	550-175045-2	Alluvium	27.2 - 42.1	--	--	--	--	--	--	--
SWFTS-MW03	EM40	12/13/2022	N	550-194920-15	Alluvium	27.2 - 42.1	--	--	--	--	--	--	--
SWFTS-MW03	EM40	12/13/2022	N	550-194920-16	Alluvium	27.2 - 42.1	--	--	--	--	--	--	--
SWFTS-MW04	BL01	3/31/2017	N	440-181122-1	Alluvium	25.8 - 40.4	--	--	--	--	--	--	--
SWFTS-MW04	EM04	10/11/2017	N	440-194242-7	Alluvium	25.8 - 40.4	--	<0.29	<0.26	<0.26	<0.31	<0.35	<7.4
SWFTS-MW04	EM06	11/15/2017	N	440-196659-2	Alluvium	25.8 - 40.4	--	--	--	--	--	--	--
SWFTS-MW04	EM07	12/14/2017	N	440-198571-12	Alluvium	25.8 - 40.4	--	--	--	--	--	--	--
SWFTS-MW04	EM08	2/21/2018	N	440-203937-2	Alluvium	25.8 - 40.4	--	--	--	--	--	--	--
SWFTS-MW04	EM09	3/27/2018	N	440-207268-5	Alluvium	25.8 - 40.4	--	--	--	--	--	--	--
SWFTS-MW04	EM10	5/1/2018	N	440-210284-5	Alluvium	25.8 - 40.4	--	--	--	--	--	--	--
SWFTS-MW04	EM11	7/10/2018	N	440-215437-4	Alluvium	25.8 - 40.4	--	--	--	--	--	--	--
SWFTS-MW04	EM15	10/11/2018	N	440-222092-9	Alluvium	25.8 - 40.4	--	--	--	--	--	--	--
SWFTS-MW04	EM19	5/21/2019	N	440-242084-11	Alluvium	25.8 - 40.4	--	--	--	--	--	--	--
SWFTS-MW04	EM22	11/7/2019	N	440-254150-6	Alluvium	25.8 - 40.4	--	--	--	--	--	--	--
SWFTS-MW04	EM26	5/1/2020	N	440-265412-1	Alluvium	25.8 - 40.4	--	--	--	--	--	--	--
SWFTS-MW04	EM29	10/14/2020	N	440-273303-12	Alluvium	25.8 - 40.4	--	--	--	--	--	--	--
SWFTS-MW04	EM33	6/3/2021	N	550-164869-23	Alluvium	25.8 - 40.4	--	--	--	--	--	--	--
SWFTS-MW04	EM33	6/3/2021	N	550-164869-24	Alluvium	25.8 - 40.4	--	--	--	--	--	--	--
SWFTS-MW04	EM36	12/2/2021	N	550-175153-3	Alluvium	25.8 - 40.4	--	--	--	--	--	--	--
SWFTS-MW04	EM36	12/2/2021	N	550-175153-4	Alluvium	25.8 - 40.4	--	--	--	--	--	--	--
SWFTS-MW04	EM40	12/14/2022	N	550-195015-1	Alluvium	25.8 - 40.4	--	--	--	--	--	--	--

Table D.2
Groundater Analytical Results Summary - Secondary Parameters
Seep Well Field Area Bioremediation Treatability Study

Well	Event	Sample Date	QC Type	Lab Sample ID	Lithology	Screened Interval (ft bgs)	Total Metals by SW6020	Volatile Fatty Acids (IC)	Volatile Fatty Acids (IC)	Volatile Fatty Acids (IC)	Volatile Fatty Acids (IC)	Volatile Fatty Acids (IC)	Volatile Fatty Acids (IC)
							Thallium	Acetic Acid	Butyric Acid	Formic Acid	Lactic Acid	Propionic Acid	Pyruvic Acid
							µg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
SWFTS-MW04	EM40	12/14/2022	N	550-195015-2	Alluvium	25.8 - 40.4	--	--	--	--	--	--	--
SWFTS-MW05A	BL01	3/30/2017	N	440-181045-7	Alluvium	19.3 - 29.3	--	--	--	--	--	--	--
SWFTS-MW05A	EM04	10/10/2017	N	440-193989-2	Alluvium	19.3 - 29.3	--	--	--	--	--	--	--
SWFTS-MW05A	EM06	11/14/2017	N	440-196558-1	Alluvium	19.3 - 29.3	--	--	--	--	--	--	--
SWFTS-MW05A	EM07	12/13/2017	N	440-198508-3	Alluvium	19.3 - 29.3	--	--	--	--	--	--	--
SWFTS-MW05A	EM08	2/20/2018	N	440-203841-7	Alluvium	19.3 - 29.3	--	--	--	--	--	--	--
SWFTS-MW05A	EM09	3/26/2018	N	440-207137-5	Alluvium	19.3 - 29.3	--	--	--	--	--	--	--
SWFTS-MW05A	EM10	4/30/2018	N	440-210173-8	Alluvium	19.3 - 29.3	--	--	--	--	--	--	--
SWFTS-MW05A	EM11	7/11/2018	N	440-215585-14	Alluvium	19.3 - 29.3	--	--	--	--	--	--	--
SWFTS-MW05A	EM15	10/10/2018	N	440-221975-14	Alluvium	19.3 - 29.3	--	--	--	--	--	--	--
SWFTS-MW05A	EM19	5/21/2019	N	440-242084-17	Alluvium	19.3 - 29.3	--	--	--	--	--	--	--
SWFTS-MW05A	EM22	11/5/2019	N	440-253918-1	Alluvium	19.3 - 29.3	--	--	--	--	--	--	--
SWFTS-MW05A	EM26	4/29/2020	N	440-265346-2	Alluvium	19.3 - 29.3	--	--	--	--	--	--	--
SWFTS-MW05A	EM29	10/14/2020	N	440-273303-9	Alluvium	19.3 - 29.3	--	--	--	--	--	--	--
SWFTS-MW05A	EM33	6/3/2021	N	550-164869-17	Alluvium	19.3 - 29.3	--	--	--	--	--	--	--
SWFTS-MW05A	EM33	6/3/2021	N	550-164869-18	Alluvium	19.3 - 29.3	--	--	--	--	--	--	--
SWFTS-MW05A	EM36	11/29/2021	N	550-174897-3	Alluvium	19.3 - 29.3	--	--	--	--	--	--	--
SWFTS-MW05A	EM36	11/29/2021	N	550-174897-4	Alluvium	19.3 - 29.3	--	--	--	--	--	--	--
SWFTS-MW05B	BL01	3/30/2017	N	440-181045-8	Alluvium	32.3 - 42.0	--	--	--	--	--	--	--
SWFTS-MW05B	EM04	10/10/2017	N	440-193989-1	Alluvium	32.3 - 42.0	--	--	--	--	--	--	--
SWFTS-MW05B	EM06	11/14/2017	N	440-196558-2	Alluvium	32.3 - 42.0	--	--	--	--	--	--	--
SWFTS-MW05B	EM07	12/13/2017	N	440-198508-4	Alluvium	32.3 - 42.0	--	--	--	--	--	--	--
SWFTS-MW05B	EM08	2/20/2018	N	440-203841-8	Alluvium	32.3 - 42.0	--	--	--	--	--	--	--
SWFTS-MW05B	EM09	3/26/2018	N	440-207137-6	Alluvium	32.3 - 42.0	--	--	--	--	--	--	--
SWFTS-MW05B	EM10	4/30/2018	N	440-210173-2	Alluvium	32.3 - 42.0	--	--	--	--	--	--	--
SWFTS-MW05B	EM11	7/10/2018	N	440-215585-10	Alluvium	32.3 - 42.0	--	--	--	--	--	--	--
SWFTS-MW05B	EM15	10/9/2018	N	440-221855-14	Alluvium	32.3 - 42.0	--	--	--	--	--	--	--
SWFTS-MW05B	EM19	5/21/2019	N	440-242084-18	Alluvium	32.3 - 42.0	--	--	--	--	--	--	--
SWFTS-MW05B	EM22	11/5/2019	N	440-253918-2	Alluvium	32.3 - 42.0	--	--	--	--	--	--	--
SWFTS-MW05B	EM26	4/29/2020	N	440-265346-1	Alluvium	32.3 - 42.0	--	--	--	--	--	--	--
SWFTS-MW05B	EM29	10/14/2020	N	440-273303-8	Alluvium	32.3 - 42.0	--	--	--	--	--	--	--
SWFTS-MW05B	EM33	6/3/2021	N	550-164869-19	Alluvium	32.3 - 42.0	--	--	--	--	--	--	--
SWFTS-MW05B	EM33	6/3/2021	N	550-164869-20	Alluvium	32.3 - 42.0	--	--	--	--	--	--	--
SWFTS-MW05B	EM36	11/30/2021	N	550-174968-15	Alluvium	32.3 - 42.0	--	--	--	--	--	--	--
SWFTS-MW05B	EM36	11/30/2021	N	550-174968-16	Alluvium	32.3 - 42.0	--	--	--	--	--	--	--
SWFTS-MW06A	BL01	3/30/2017	N	440-181045-1	Alluvium	11.8 - 21.4	--	--	--	--	--	--	--
SWFTS-MW06A	EM04	10/11/2017	N	440-194090-4	Alluvium	11.8 - 21.4	--	--	--	--	--	--	--
SWFTS-MW06A	EM06	11/16/2017	N	440-196786-19	Alluvium	11.8 - 21.4	--	--	--	--	--	--	--
SWFTS-MW06A	EM07	12/13/2017	N	440-198508-1	Alluvium	11.8 - 21.4	--	--	--	--	--	--	--
SWFTS-MW06A	EM08	2/22/2018	N	440-204033-1	Alluvium	11.8 - 21.4	--	--	--	--	--	--	--
SWFTS-MW06A	EM09	3/28/2018	N	440-207497-3	Alluvium	11.8 - 21.4	--	--	--	--	--	--	--
SWFTS-MW06A	EM10	5/1/2018	N	440-210284-9	Alluvium	11.8 - 21.4	--	--	--	--	--	--	--
SWFTS-MW06A	EM10	5/1/2018	FD	440-210284-10	Alluvium	11.8 - 21.4	--	--	--	--	--	--	--
SWFTS-MW06A	EM11	7/11/2018	N	440-215585-2	Alluvium	11.8 - 21.4	--	--	--	--	--	--	--
SWFTS-MW06A	EM11	7/11/2018	FD	440-215585-3	Alluvium	11.8 - 21.4	--	--	--	--	--	--	--
SWFTS-MW06A	EM15	10/10/2018	N	440-221975-8	Alluvium	11.8 - 21.4	--	--	--	--	--	--	--
SWFTS-MW06A	EM15	10/10/2018	FD	440-221975-10	Alluvium	11.8 - 21.4	--	--	--	--	--	--	--
SWFTS-MW06A	EM19	5/20/2019	N	440-242015-1	Alluvium	11.8 - 21.4	--	--	--	--	--	--	--
SWFTS-MW06A	EM19	5/20/2019	FD	440-242015-2	Alluvium	11.8 - 21.4	--	--	--	--	--	--	--
SWFTS-MW06A	EM22	11/6/2019	N	440-254027-4	Alluvium	11.8 - 21.4	--	--	--	--	--	--	--
SWFTS-MW06A	EM22	11/6/2019	FD	440-254027-5	Alluvium	11.8 - 21.4	--	--	--	--	--	--	--
SWFTS-MW06A	EM26	4/29/2020	N	440-265346-5	Alluvium	11.8 - 21.4	--	--	--	--	--	--	--
SWFTS-MW06A	EM26	4/29/2020	FD	440-265346-6	Alluvium	11.8 - 21.4	--	--	--	--	--	--	--
SWFTS-MW06A	EM29	10/13/2020	N	440-273236-7	Alluvium	11.8 - 21.4	--	--	--	--	--	--	--
SWFTS-MW06A	EM29	10/13/2020	FD	440-273236-8	Alluvium	11.8 - 21.4	--	--	--	--	--	--	--
SWFTS-MW06A	EM33	6/4/2021	N	550-164930-19	Alluvium	11.8 - 21.4	--	--	--	--	--	--	--
SWFTS-MW06A	EM33	6/4/2021	N	550-164930-20	Alluvium	11.8 - 21.4	--	--	--	--	--	--	--
SWFTS-MW06A	EM33	6/4/2021	FD	550-164930-21	Alluvium	11.8 - 21.4	--	--	--	--	--	--	--
SWFTS-MW06A	EM33	6/4/2021	FD	550-164930-22	Alluvium	11.8 - 21.4	--	--	--	--	--	--	--
SWFTS-MW06A	EM36	12/1/2021	N	550-175045-7	Alluvium	11.8 - 21.4	--	--	--	--	--	--	--
SWFTS-MW06A	EM36	12/1/2021	N	550-175045-8	Alluvium	11.8 - 21.4	--	--	--	--	--	--	--
SWFTS-MW06A	EM36	12/1/2021	FD	550-175045-10	Alluvium	11.8 - 21.4	--	--	--	--	--	--	--
SWFTS-MW06A	EM36	12/1/2021	FD	550-175045-9	Alluvium	11.8 - 21.4	--	--	--	--	--	--	--
SWFTS-MW06A	EM40	12/14/2022	N	550-195015-5	Alluvium	11.8 - 21.4	--	--	--	--	--	--	--

Table D.2
Groundater Analytical Results Summary - Secondary Parameters
Seep Well Field Area Bioremediation Treatability Study

Well	Event	Sample Date	QC Type	Lab Sample ID	Lithology	Screened Interval (ft bgs)	Total Metals by SW6020	Volatile Fatty Acids (IC)	Volatile Fatty Acids (IC)	Volatile Fatty Acids (IC)	Volatile Fatty Acids (IC)	Volatile Fatty Acids (IC)	Volatile Fatty Acids (IC)
							Thallium	Acetic Acid	Butyric Acid	Formic Acid	Lactic Acid	Propionic Acid	Pyruvic Acid
							µg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
SWFTS-MW06A	EM40	12/14/2022	N	550-195015-6	Alluvium	11.8 - 21.4	--	--	--	--	--	--	--
SWFTS-MW06A	EM40	12/14/2022	FD	550-195015-7	Alluvium	11.8 - 21.4	--	--	--	--	--	--	--
SWFTS-MW06A	EM40	12/14/2022	FD	550-195015-8	Alluvium	11.8 - 21.4	--	--	--	--	--	--	--
SWFTS-MW06B	BL01	3/30/2017	N	440-181045-2	Alluvium	25.9 - 35.5	--	--	--	--	--	--	--
SWFTS-MW06B	EM04	10/11/2017	N	440-194090-5	Alluvium	25.9 - 35.5	--	--	--	--	--	--	--
SWFTS-MW06B	EM06	11/16/2017	N	440-196786-20	Alluvium	25.9 - 35.5	--	--	--	--	--	--	--
SWFTS-MW06B	EM07	12/13/2017	N	440-198508-2	Alluvium	25.9 - 35.5	--	--	--	--	--	--	--
SWFTS-MW06B	EM08	2/22/2018	N	440-204033-5	Alluvium	25.9 - 35.5	--	--	--	--	--	--	--
SWFTS-MW06B	EM09	3/28/2018	N	440-207497-2	Alluvium	25.9 - 35.5	--	--	--	--	--	--	--
SWFTS-MW06B	EM10	5/1/2018	N	440-210284-8	Alluvium	25.9 - 35.5	--	--	--	--	--	--	--
SWFTS-MW06B	EM11	7/11/2018	N	440-215585-4	Alluvium	25.9 - 35.5	--	--	--	--	--	--	--
SWFTS-MW06B	EM15	10/10/2018	N	440-221975-9	Alluvium	25.9 - 35.5	--	--	--	--	--	--	--
SWFTS-MW06B	EM19	5/21/2019	N	440-242084-5	Alluvium	25.9 - 35.5	--	--	--	--	--	--	--
SWFTS-MW06B	EM22	11/6/2019	N	440-254027-6	Alluvium	25.9 - 35.5	--	--	--	--	--	--	--
SWFTS-MW06B	EM26	4/29/2020	N	440-265346-4	Alluvium	25.9 - 35.5	--	--	--	--	--	--	--
SWFTS-MW06B	EM29	10/13/2020	N	440-273236-6	Alluvium	25.9 - 35.5	--	--	--	--	--	--	--
SWFTS-MW06B	EM33	6/4/2021	N	550-164930-23	Alluvium	25.9 - 35.5	--	--	--	--	--	--	--
SWFTS-MW06B	EM33	6/4/2021	N	550-164930-24	Alluvium	25.9 - 35.5	--	--	--	--	--	--	--
SWFTS-MW06B	EM36	12/1/2021	N	550-175045-11	Alluvium	25.9 - 35.5	--	--	--	--	--	--	--
SWFTS-MW06B	EM36	12/1/2021	N	550-175045-12	Alluvium	25.9 - 35.5	--	--	--	--	--	--	--
SWFTS-MW06B	EM40	12/14/2022	N	550-195015-10	Alluvium	25.9 - 35.5	--	--	--	--	--	--	--
SWFTS-MW06B	EM40	12/14/2022	N	550-195015-9	Alluvium	25.9 - 35.5	--	--	--	--	--	--	--
SWFTS-MW07A	BL01	3/30/2017	N	440-181045-3	Alluvium	15.0 - 29.5	--	--	--	--	--	--	--
SWFTS-MW07A	EM04	10/11/2017	N	440-194242-3	Alluvium	15.0 - 29.5	--	--	--	--	--	--	--
SWFTS-MW07A	EM06	11/15/2017	N	440-196659-7	Alluvium	15.0 - 29.5	--	--	--	--	--	--	--
SWFTS-MW07A	EM07	12/14/2017	N	440-198571-3	Alluvium	15.0 - 29.5	--	--	--	--	--	--	--
SWFTS-MW07A	EM08	2/19/2018	N	440-203775-3	Alluvium	15.0 - 29.5	--	--	--	--	--	--	--
SWFTS-MW07A	EM09	3/28/2018	N	440-207497-4	Alluvium	15.0 - 29.5	--	--	--	--	--	--	--
SWFTS-MW07A	EM10	5/2/2018	N	440-210430-2	Alluvium	15.0 - 29.5	--	--	--	--	--	--	--
SWFTS-MW07A	EM11	7/11/2018	N	440-215585-7	Alluvium	15.0 - 29.5	--	--	--	--	--	--	--
SWFTS-MW07A	EM15	10/10/2018	N	440-221975-11	Alluvium	15.0 - 29.5	--	--	--	--	--	--	--
SWFTS-MW07A	EM19	5/22/2019	N	440-242200-5	Alluvium	15.0 - 29.5	--	--	--	--	--	--	--
SWFTS-MW07A	EM22	11/7/2019	N	440-254148-4	Alluvium	15.0 - 29.5	--	--	--	--	--	--	--
SWFTS-MW07A	EM26	4/30/2020	N	440-265382-5	Alluvium	15.0 - 29.5	--	--	--	--	--	--	--
SWFTS-MW07A	EM29	10/16/2020	N	440-273433-1	Alluvium	15.0 - 29.5	--	--	--	--	--	--	--
SWFTS-MW07A	EM33	6/4/2021	N	550-164930-25	Alluvium	15.0 - 29.5	--	--	--	--	--	--	--
SWFTS-MW07A	EM33	6/4/2021	N	550-164930-26	Alluvium	15.0 - 29.5	--	--	--	--	--	--	--
SWFTS-MW07A	EM36	12/3/2021	N	550-175222-3	Alluvium	15.0 - 29.5	--	--	--	--	--	--	--
SWFTS-MW07A	EM36	12/3/2021	N	550-175222-4	Alluvium	15.0 - 29.5	--	--	--	--	--	--	--
SWFTS-MW07A	EM40	12/14/2022	N	550-195015-11	Alluvium	15.0 - 29.5	--	--	--	--	--	--	--
SWFTS-MW07A	EM40	12/14/2022	N	550-195015-12	Alluvium	15.0 - 29.5	--	--	--	--	--	--	--
SWFTS-MW07B	BL01	3/30/2017	N	440-181045-4	Alluvium	33.8 - 38.3	--	--	--	--	--	--	--
SWFTS-MW07B	EM04	10/11/2017	N	440-194242-4	Alluvium	33.8 - 38.3	--	--	--	--	--	--	--
SWFTS-MW07B	EM06	11/15/2017	N	440-196659-8	Alluvium	33.8 - 38.3	--	--	--	--	--	--	--
SWFTS-MW07B	EM07	12/14/2017	N	440-198571-4	Alluvium	33.8 - 38.3	--	--	--	--	--	--	--
SWFTS-MW07B	EM08	2/19/2018	N	440-203775-2	Alluvium	33.8 - 38.3	--	--	--	--	--	--	--
SWFTS-MW07B	EM09	3/28/2018	N	440-207497-10	Alluvium	33.8 - 38.3	--	--	--	--	--	--	--
SWFTS-MW07B	EM10	5/2/2018	N	440-210430-1	Alluvium	33.8 - 38.3	--	--	--	--	--	--	--
SWFTS-MW07B	EM11	7/11/2018	N	440-215585-8	Alluvium	33.8 - 38.3	--	--	--	--	--	--	--
SWFTS-MW07B	EM15	10/10/2018	N	440-221975-12	Alluvium	33.8 - 38.3	--	--	--	--	--	--	--
SWFTS-MW07B	EM19	5/22/2019	N	440-242200-6	Alluvium	33.8 - 38.3	--	--	--	--	--	--	--
SWFTS-MW07B	EM22	11/7/2019	N	440-254148-5	Alluvium	33.8 - 38.3	--	--	--	--	--	--	--
SWFTS-MW07B	EM26	4/30/2020	N	440-265382-4	Alluvium	33.8 - 38.3	--	--	--	--	--	--	--
SWFTS-MW07B	EM29	10/16/2020	N	440-273433-2	Alluvium	33.8 - 38.3	--	--	--	--	--	--	--
SWFTS-MW07B	EM33	6/4/2021	N	550-164930-27	Alluvium	33.8 - 38.3	--	--	--	--	--	--	--
SWFTS-MW07B	EM33	6/4/2021	N	550-164930-28	Alluvium	33.8 - 38.3	--	--	--	--	--	--	--
SWFTS-MW07B	EM36	12/3/2021	N	550-175222-5	Alluvium	33.8 - 38.3	--	--	--	--	--	--	--
SWFTS-MW07B	EM36	12/3/2021	N	550-175222-6	Alluvium	33.8 - 38.3	--	--	--	--	--	--	--
SWFTS-MW07B	EM40	12/14/2022	N	550-195015-13	Alluvium	33.8 - 38.3	--	--	--	--	--	--	--
SWFTS-MW07B	EM40	12/14/2022	N	550-195015-14	Alluvium	33.8 - 38.3	--	--	--	--	--	--	--
SWFTS-MW08A	BL01	3/30/2017	N	440-181045-9	Alluvium	20.2 - 34.8	--	--	--	--	--	--	--
SWFTS-MW08A	EM04	10/10/2017	N	440-194094-4	Alluvium	20.2 - 34.8	--	--	--	--	--	--	--
SWFTS-MW08A	EM06	11/15/2017	N	440-196659-4	Alluvium	20.2 - 34.8	--	--	--	--	--	--	--
SWFTS-MW08A	EM07	12/14/2017	N	440-198571-1	Alluvium	20.2 - 34.8	--	--	--	--	--	--	--

Table D.2
Groundater Analytical Results Summary - Secondary Parameters
Seep Well Field Area Bioremediation Treatability Study

Well	Event	Sample Date	QC Type	Lab Sample ID	Lithology	Screened Interval (ft bgs)	Total Metals by SW6020	Volatile Fatty Acids (IC)	Volatile Fatty Acids (IC)	Volatile Fatty Acids (IC)	Volatile Fatty Acids (IC)	Volatile Fatty Acids (IC)	Volatile Fatty Acids (IC)
							Thallium	Acetic Acid	Butyric Acid	Formic Acid	Lactic Acid	Propionic Acid	Pyruvic Acid
							µg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
SWFTS-MW08A	EM08	2/22/2018	N	440-204033-8	Alluvium	20.2 - 34.8	--	--	--	--	--	--	--
SWFTS-MW08A	EM09	3/29/2018	N	440-207586-1	Alluvium	20.2 - 34.8	--	--	--	--	--	--	--
SWFTS-MW08A	EM10	5/3/2018	N	440-210534-5	Alluvium	20.2 - 34.8	--	--	--	--	--	--	--
SWFTS-MW08A	EM11	7/11/2018	N	440-215717-14	Alluvium	20.2 - 34.8	--	--	--	--	--	--	--
SWFTS-MW08A	EM15	10/10/2018	N	440-221975-13	Alluvium	20.2 - 34.8	--	--	--	--	--	--	--
SWFTS-MW08A	EM19	5/22/2019	N	440-242198-4	Alluvium	20.2 - 34.8	--	--	--	--	--	--	--
SWFTS-MW08A	EM22	11/7/2019	N	440-254148-6	Alluvium	20.2 - 34.8	--	--	--	--	--	--	--
SWFTS-MW08A	EM26	4/29/2020	N	440-265346-3	Alluvium	20.2 - 34.8	--	--	--	--	--	--	--
SWFTS-MW08A	EM29	10/16/2020	N	440-273433-4	Alluvium	20.2 - 34.8	--	--	--	--	--	--	--
SWFTS-MW08A	EM33	6/4/2021	N	550-164930-29	Alluvium	20.2 - 34.8	--	--	--	--	--	--	--
SWFTS-MW08A	EM33	6/4/2021	N	550-164930-30	Alluvium	20.2 - 34.8	--	--	--	--	--	--	--
SWFTS-MW08A	EM36	12/2/2021	N	550-175153-23	Alluvium	20.2 - 34.8	--	--	--	--	--	--	--
SWFTS-MW08A	EM36	12/2/2021	N	550-175153-24	Alluvium	20.2 - 34.8	--	--	--	--	--	--	--
SWFTS-MW08C	BL01	3/28/2017	N	440-180820-3	UMCf	49.9 - 69.5	--	--	--	--	--	--	--
SWFTS-MW08C	EM40	12/14/2022	N	550-195015-15	UMCf	49.9 - 69.5	--	--	--	--	--	--	--
SWFTS-MW08C	EM40	12/14/2022	N	550-195015-16	UMCf	49.9 - 69.5	--	--	--	--	--	--	--
SWFTS-MW09A	BL01	3/29/2017	N	440-180937-3	Alluvium	19.3 - 28.9	--	--	--	--	--	--	--
SWFTS-MW09A	EM04	10/11/2017	N	440-194094-7	Alluvium	19.3 - 28.9	--	--	--	--	--	--	--
SWFTS-MW09A	EM06	11/16/2017	N	440-196786-14	Alluvium	19.3 - 28.9	--	--	--	--	--	--	--
SWFTS-MW09A	EM07	12/12/2017	N	440-198371-6	Alluvium	19.3 - 28.9	--	--	--	--	--	--	--
SWFTS-MW09A	EM08	2/20/2018	N	440-203841-14	Alluvium	19.3 - 28.9	--	--	--	--	--	--	--
SWFTS-MW09A	EM09	3/27/2018	N	440-207268-7	Alluvium	19.3 - 28.9	--	--	--	--	--	--	--
SWFTS-MW09A	EM10	5/1/2018	N	440-210284-13	Alluvium	19.3 - 28.9	--	--	--	--	--	--	--
SWFTS-MW09A	EM11	7/12/2018	N	440-215717-10	Alluvium	19.3 - 28.9	--	--	--	--	--	--	--
SWFTS-MW09A	EM15	10/9/2018	N	440-221855-7	Alluvium	19.3 - 28.9	--	--	--	--	--	--	--
SWFTS-MW09A	EM19	5/22/2019	N	440-242200-1	Alluvium	19.3 - 28.9	--	--	--	--	--	--	--
SWFTS-MW09A	EM22	11/5/2019	N	440-253891-1	Alluvium	19.3 - 28.9	--	--	--	--	--	--	--
SWFTS-MW09A	EM26	4/28/2020	N	440-265289-4	Alluvium	19.3 - 28.9	--	--	--	--	--	--	--
SWFTS-MW09A	EM29	10/13/2020	N	440-273236-3	Alluvium	19.3 - 28.9	--	--	--	--	--	--	--
SWFTS-MW09A	EM33	6/1/2021	N	550-164699-1	Alluvium	19.3 - 28.9	--	--	--	--	--	--	--
SWFTS-MW09A	EM33	6/1/2021	N	550-164699-2	Alluvium	19.3 - 28.9	--	--	--	--	--	--	--
SWFTS-MW09A	EM36	12/2/2021	N	550-175153-10	Alluvium	19.3 - 28.9	--	--	--	--	--	--	--
SWFTS-MW09A	EM36	12/2/2021	N	550-175153-9	Alluvium	19.3 - 28.9	--	--	--	--	--	--	--
SWFTS-MW09A	EM40	12/13/2022	N	550-194920-10	Alluvium	19.3 - 28.9	--	--	--	--	--	--	--
SWFTS-MW09A	EM40	12/13/2022	N	550-194920-9	Alluvium	19.3 - 28.9	--	--	--	--	--	--	--
SWFTS-MW09B	BL01	3/29/2017	N	440-180937-4	Alluvium	34.4 - 39.0	--	--	--	--	--	--	--
SWFTS-MW09B	BL01	3/29/2017	FD	440-180937-5	Alluvium	34.4 - 39.0	--	--	--	--	--	--	--
SWFTS-MW09B	EM04	10/11/2017	N	440-194094-5	Alluvium	34.4 - 39.0	--	--	--	--	--	--	--
SWFTS-MW09B	EM06	11/16/2017	N	440-196786-15	Alluvium	34.4 - 39.0	--	--	--	--	--	--	--
SWFTS-MW09B	EM07	12/12/2017	N	440-198371-7	Alluvium	34.4 - 39.0	--	--	--	--	--	--	--
SWFTS-MW09B	EM08	2/20/2018	N	440-203841-13	Alluvium	34.4 - 39.0	--	--	--	--	--	--	--
SWFTS-MW09B	EM09	3/27/2018	N	440-207268-6	Alluvium	34.4 - 39.0	--	--	--	--	--	--	--
SWFTS-MW09B	EM10	4/30/2018	N	440-210173-11	Alluvium	34.4 - 39.0	--	--	--	--	--	--	--
SWFTS-MW09B	EM11	7/12/2018	N	440-215717-9	Alluvium	34.4 - 39.0	--	--	--	--	--	--	--
SWFTS-MW09B	EM15	10/9/2018	N	440-221855-8	Alluvium	34.4 - 39.0	--	--	--	--	--	--	--
SWFTS-MW09B	EM19	5/22/2019	N	440-242200-2	Alluvium	34.4 - 39.0	--	--	--	--	--	--	--
SWFTS-MW09B	EM22	11/5/2019	N	440-253891-3	Alluvium	34.4 - 39.0	--	--	--	--	--	--	--
SWFTS-MW09B	EM26	4/28/2020	N	440-265289-3	Alluvium	34.4 - 39.0	--	--	--	--	--	--	--
SWFTS-MW09B	EM29	10/13/2020	N	440-273236-4	Alluvium	34.4 - 39.0	--	--	--	--	--	--	--
SWFTS-MW09B	EM33	6/2/2021	N	550-164872-1	Alluvium	34.4 - 39.0	--	--	--	--	--	--	--
SWFTS-MW09B	EM33	6/2/2021	N	550-164872-2	Alluvium	34.4 - 39.0	--	--	--	--	--	--	--
SWFTS-MW09B	EM36	12/2/2021	N	550-175153-11	Alluvium	34.4 - 39.0	--	--	--	--	--	--	--
SWFTS-MW09B	EM36	12/2/2021	N	550-175153-12	Alluvium	34.4 - 39.0	--	--	--	--	--	--	--
SWFTS-MW09B	EM40	12/13/2022	N	550-194920-13	Alluvium	34.4 - 39.0	--	--	--	--	--	--	--
SWFTS-MW09B	EM40	12/13/2022	N	550-194920-14	Alluvium	34.4 - 39.0	--	--	--	--	--	--	--
SWFTS-MW10A	BL01	3/31/2017	N	440-181122-2	Alluvium	20.4 - 35.0	--	--	--	--	--	--	--
SWFTS-MW10A	EM04	10/12/2017	N	440-194242-10	Alluvium	20.4 - 35.0	--	--	--	--	--	--	--
SWFTS-MW10A	EM06	11/16/2017	N	440-196786-5	Alluvium	20.4 - 35.0	--	<1.5	<1.3	<1.3	<1.6	<1.8	<1.9
SWFTS-MW10A	EM06	11/16/2017	FD	440-196786-6	Alluvium	20.4 - 35.0	--	<1.5	<1.3	<1.3	<1.6	<1.8	<1.9
SWFTS-MW10A	EM07	12/12/2017	N	440-198371-10	Alluvium	20.4 - 35.0	--	--	--	--	--	--	--
SWFTS-MW10A	EM07	12/12/2017	FD	440-198371-11	Alluvium	20.4 - 35.0	--	--	--	--	--	--	--
SWFTS-MW10A	EM08	2/20/2018	N	440-203841-4	Alluvium	20.4 - 35.0	--	<2.9	<2.6	<2.6	5.8 J	<3.5	<3.7
SWFTS-MW10A	EM08	2/20/2018	FD	440-203841-5	Alluvium	20.4 - 35.0	--	<2.9	<2.6	<2.6	5.3 J	<3.5	<3.7
SWFTS-MW10A	EM09	3/26/2018	N	440-207137-7	Alluvium	20.4 - 35.0	--	<1.5	<1.3	<1.3 UJ	<1.6 UJ	<1.8	<1.9

Table D.2
Groundater Analytical Results Summary - Secondary Parameters
Seep Well Field Area Bioremediation Treatability Study

Well	Event	Sample Date	QC Type	Lab Sample ID	Lithology	Screened Interval (ft bgs)	Total Metals by SW6020	Volatile Fatty Acids (IC)	Volatile Fatty Acids (IC)	Volatile Fatty Acids (IC)	Volatile Fatty Acids (IC)	Volatile Fatty Acids (IC)	Volatile Fatty Acids (IC)
							Thallium	Acetic Acid	Butyric Acid	Formic Acid	Lactic Acid	Propionic Acid	Pyruvic Acid
							µg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
SWFTS-MW10A	EM09	3/26/2018	FD	440-207137-8	Alluvium	20.4 - 35.0	--	<1.5	<1.3	<1.3	<1.6	<1.8	<1.9
SWFTS-MW10A	EM10	5/1/2018	N	440-210284-1	Alluvium	20.4 - 35.0	--	<2.9 UJ	<2.6 UJ	<2.6 UJ	<3.1 UJ	<3.5 UJ	<3.7 UJ
SWFTS-MW10A	EM11	7/11/2018	N	440-215585-9	Alluvium	20.4 - 35.0	--	<1.5	<1.3	<1.3	<1.6	<1.8	<1.9 UJ
SWFTS-MW10A	EM13	8/14/2018	N	440-218109-10	Alluvium	20.4 - 35.0	--	<2.9	<2.6	<2.6	<3.1	<3.5	<3.7
SWFTS-MW10A	EM14	9/10/2018	N	440-219797-4	Alluvium	20.4 - 35.0	--	<2.9	<2.6	<2.6	<3.1	<3.5	<3.7
SWFTS-MW10A	EM15	10/9/2018	N	440-221855-9	Alluvium	20.4 - 35.0	--	<2.9	<2.6	<2.6	<3.1	<3.5	<3.7 UJ
SWFTS-MW10A	EM19	5/21/2019	N	440-242084-2	Alluvium	20.4 - 35.0	--	--	--	--	--	--	--
SWFTS-MW10A	EM22	11/6/2019	N	440-254051-1	Alluvium	20.4 - 35.0	--	--	--	--	--	--	--
SWFTS-MW10A	EM26	4/29/2020	N	440-265342-6	Alluvium	20.4 - 35.0	--	--	--	--	--	--	--
SWFTS-MW10A	EM29	10/14/2020	N	440-273303-4	Alluvium	20.4 - 35.0	--	--	--	--	--	--	--
SWFTS-MW10A	EM33	6/4/2021	N	550-164930-13	Alluvium	20.4 - 35.0	--	--	--	--	--	--	--
SWFTS-MW10A	EM33	6/4/2021	N	550-164930-14	Alluvium	20.4 - 35.0	--	--	--	--	--	--	--
SWFTS-MW10A	EM36	11/30/2021	N	550-174968-17	Alluvium	20.4 - 35.0	--	--	--	--	--	--	--
SWFTS-MW10A	EM36	11/30/2021	N	550-174968-18	Alluvium	20.4 - 35.0	--	--	--	--	--	--	--
SWFTS-MW10A	EM40	12/15/2022	N	550-195103-1	Alluvium	20.4 - 35.0	--	--	--	--	--	--	--
SWFTS-MW10A	EM40	12/15/2022	N	550-195103-2	Alluvium	20.4 - 35.0	--	--	--	--	--	--	--
SWFTS-MW10C	BL01	3/28/2017	N	440-180820-4	UMCf	43.5 - 63.1	--	--	--	--	--	--	--
SWFTS-MW10C	EM40	12/15/2022	N	550-195103-3	UMCf	43.5 - 63.1	--	--	--	--	--	--	--
SWFTS-MW10C	EM40	12/15/2022	N	550-195103-4	UMCf	43.5 - 63.1	--	--	--	--	--	--	--
SWFTS-MW11	BL02	7/12/2017	N	440-188244-7	Alluvium	14.8 - 39.6	--	<5.8	<5.2	<5.2 UJ	<6.2	<7.0	<7.4 UJ
SWFTS-MW11	EM04	10/11/2017	N	440-194094-8	Alluvium	14.8 - 39.6	--	<2.9	<2.6	<2.6	<3.1	<3.5	<3.7 UJ
SWFTS-MW11	EM06	11/16/2017	N	440-196786-3	Alluvium	14.8 - 39.6	--	--	--	--	--	--	--
SWFTS-MW11	EM07	12/14/2017	N	440-198571-13	Alluvium	14.8 - 39.6	--	--	--	--	--	--	--
SWFTS-MW11	EM08	2/21/2018	N	440-203937-10	Alluvium	14.8 - 39.6	--	--	--	--	--	--	--
SWFTS-MW11	EM08	2/21/2018	FD	440-203937-11	Alluvium	14.8 - 39.6	--	--	--	--	--	--	--
SWFTS-MW11	EM09	3/28/2018	N	440-207497-7	Alluvium	14.8 - 39.6	--	--	--	--	--	--	--
SWFTS-MW11	EM09	3/28/2018	FD	440-207497-8	Alluvium	14.8 - 39.6	--	--	--	--	--	--	--
SWFTS-MW11	EM10	5/1/2018	N	440-210284-11	Alluvium	14.8 - 39.6	--	--	--	--	--	--	--
SWFTS-MW11	EM10	5/1/2018	FD	440-210367-1	Alluvium	14.8 - 39.6	--	--	--	--	--	--	--
SWFTS-MW11	EM11	7/12/2018	N	440-215717-17	Alluvium	14.8 - 39.6	--	<1.5	<1.3	<1.3	<1.6	<1.8	<1.9
SWFTS-MW11	EM11	7/12/2018	FD	440-215717-18	Alluvium	14.8 - 39.6	--	<1.5	<1.3	<1.3	<1.6	<1.8	<1.9
SWFTS-MW11	EM15	10/11/2018	N	440-222092-10	Alluvium	14.8 - 39.6	--	<2.9	<2.6	<2.6	<3.1	<3.5	<3.7 UJ
SWFTS-MW11	EM15	10/11/2018	FD	440-222092-11	Alluvium	14.8 - 39.6	--	<2.9	<2.6	<2.6	<3.1	<3.5	<3.7
SWFTS-MW11	EM19	5/22/2019	N	440-242200-3	Alluvium	14.8 - 39.6	--	--	--	--	--	--	--
SWFTS-MW11	EM19	5/22/2019	FD	440-242200-4	Alluvium	14.8 - 39.6	--	--	--	--	--	--	--
SWFTS-MW11	EM22	11/7/2019	N	440-254150-3	Alluvium	14.8 - 39.6	--	--	--	--	--	--	--
SWFTS-MW11	EM22	11/7/2019	FD	440-254150-4	Alluvium	14.8 - 39.6	--	--	--	--	--	--	--
SWFTS-MW11	EM26	4/30/2020	N	440-265383-4	Alluvium	14.8 - 39.6	--	--	--	--	--	--	--
SWFTS-MW11	EM26	4/30/2020	FD	440-265383-5	Alluvium	14.8 - 39.6	--	--	--	--	--	--	--
SWFTS-MW11	EM29	10/16/2020	N	440-273433-7	Alluvium	14.8 - 39.6	--	--	--	--	--	--	--
SWFTS-MW11	EM29	10/16/2020	FD	440-273433-8	Alluvium	14.8 - 39.6	--	--	--	--	--	--	--
SWFTS-MW11	EM33	6/4/2021	N	550-164930-7	Alluvium	14.8 - 39.6	--	--	--	--	--	--	--
SWFTS-MW11	EM33	6/4/2021	N	550-164930-8	Alluvium	14.8 - 39.6	--	--	--	--	--	--	--
SWFTS-MW11	EM33	6/4/2021	FD	550-164930-10	Alluvium	14.8 - 39.6	--	--	--	--	--	--	--
SWFTS-MW11	EM33	6/4/2021	FD	550-164930-9	Alluvium	14.8 - 39.6	--	--	--	--	--	--	--
SWFTS-MW11	EM36	12/3/2021	N	550-175222-7	Alluvium	14.8 - 39.6	--	--	--	--	--	--	--
SWFTS-MW11	EM36	12/3/2021	N	550-175222-8	Alluvium	14.8 - 39.6	--	--	--	--	--	--	--
SWFTS-MW11	EM36	12/3/2021	FD	550-175222-10	Alluvium	14.8 - 39.6	--	--	--	--	--	--	--
SWFTS-MW11	EM36	12/3/2021	FD	550-175222-9	Alluvium	14.8 - 39.6	--	--	--	--	--	--	--
SWFTS-MW11	EM40	12/15/2022	N	550-195103-5	Alluvium	14.8 - 39.6	--	--	--	--	--	--	--
SWFTS-MW11	EM40	12/15/2022	N	550-195103-6	Alluvium	14.8 - 39.6	--	--	--	--	--	--	--
SWFTS-MW11	EM40	12/15/2022	FD	550-195103-7	Alluvium	14.8 - 39.6	--	--	--	--	--	--	--
SWFTS-MW11	EM40	12/15/2022	FD	550-195103-8	Alluvium	14.8 - 39.6	--	--	--	--	--	--	--
SWFTS-MW12	BL02	7/13/2017	N	440-188324-6	Alluvium	15.8 - 40.6	--	--	--	--	--	--	--
SWFTS-MW12	EM04	10/11/2017	N	440-194090-1	Alluvium	15.8 - 40.6	--	<2.9	<2.6	<2.6	<3.1	<3.5	<3.7
SWFTS-MW12	EM06	11/14/2017	N	440-196558-5	Alluvium	15.8 - 40.6	--	--	--	--	--	--	--
SWFTS-MW12	EM07	12/14/2017	N	440-198571-15	Alluvium	15.8 - 40.6	--	--	--	--	--	--	--
SWFTS-MW12	EM08	2/22/2018	N	440-204033-2	Alluvium	15.8 - 40.6	--	--	--	--	--	--	--
SWFTS-MW12	EM09	3/28/2018	N	440-207497-5	Alluvium	15.8 - 40.6	--	--	--	--	--	--	--
SWFTS-MW12	EM10	5/3/2018	N	440-210534-4	Alluvium	15.8 - 40.6	--	--	--	--	--	--	--
SWFTS-MW12	EM11	7/12/2018	N	440-215717-16	Alluvium	15.8 - 40.6	--	--	--	--	--	--	--
SWFTS-MW12	EM15	10/11/2018	N	440-222092-12	Alluvium	15.8 - 40.6	--	--	--	--	--	--	--
SWFTS-MW12	EM19	5/22/2019	N	440-242198-7	Alluvium	15.8 - 40.6	--	--	--	--	--	--	--
SWFTS-MW12	EM22	11/7/2019	N	440-254150-2	Alluvium	15.8 - 40.6	--	--	--	--	--	--	--

Table D.2
Groundater Analytical Results Summary - Secondary Parameters
Seep Well Field Area Bioremediation Treatability Study

Well	Event	Sample Date	QC Type	Lab Sample ID	Lithology	Screened Interval (ft bgs)	Total Metals by SW6020	Volatile Fatty Acids (IC)	Volatile Fatty Acids (IC)	Volatile Fatty Acids (IC)	Volatile Fatty Acids (IC)	Volatile Fatty Acids (IC)	Volatile Fatty Acids (IC)
							Thallium	Acetic Acid	Butyric Acid	Formic Acid	Lactic Acid	Propionic Acid	Pyruvic Acid
							µg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
SWFTS-MW12	EM22	11/26/2019	N	440-255698-1	Alluvium	15.8 - 40.6	--	--	--	--	--	--	--
SWFTS-MW12	EM22	11/26/2019	FD	440-255698-2	Alluvium	15.8 - 40.6	--	--	--	--	--	--	--
SWFTS-MW12	EM26	4/30/2020	N	440-265383-3	Alluvium	15.8 - 40.6	--	--	--	--	--	--	--
SWFTS-MW12	EM29	10/16/2020	N	440-273433-6	Alluvium	15.8 - 40.6	--	--	--	--	--	--	--
SWFTS-MW12	EM33	6/4/2021	N	550-164930-5	Alluvium	15.8 - 40.6	--	--	--	--	--	--	--
SWFTS-MW12	EM33	6/4/2021	N	550-164930-6	Alluvium	15.8 - 40.6	--	--	--	--	--	--	--
SWFTS-MW12	EM36	12/2/2021	N	550-175153-19	Alluvium	15.8 - 40.6	--	--	--	--	--	--	--
SWFTS-MW12	EM36	12/2/2021	N	550-175153-20	Alluvium	15.8 - 40.6	--	--	--	--	--	--	--
SWFTS-MW12	EM40	12/15/2022	N	550-195103-10	Alluvium	15.8 - 40.6	--	--	--	--	--	--	--
SWFTS-MW12	EM40	12/15/2022	N	550-195103-9	Alluvium	15.8 - 40.6	--	--	--	--	--	--	--
SWFTS-MW13	BL02	7/12/2017	N	440-188244-6	Alluvium	17.8 - 47.6	--	<5.8	<5.2	<5.2	<6.2	<7.0	<7.4
SWFTS-MW13	EM04	10/10/2017	N	440-193989-4	Alluvium	17.8 - 47.6	--	--	--	--	--	--	--
SWFTS-MW13	EM06	11/15/2017	N	440-196659-1	Alluvium	17.8 - 47.6	--	--	--	--	--	--	--
SWFTS-MW13	EM07	12/14/2017	N	440-198571-14	Alluvium	17.8 - 47.6	--	--	--	--	--	--	--
SWFTS-MW13	EM08	2/22/2018	N	440-204033-7	Alluvium	17.8 - 47.6	--	--	--	--	--	--	--
SWFTS-MW13	EM09	3/26/2018	N	440-207137-4	Alluvium	17.8 - 47.6	--	--	--	--	--	--	--
SWFTS-MW13	EM10	5/3/2018	N	440-210534-1	Alluvium	17.8 - 47.6	--	--	--	--	--	--	--
SWFTS-MW13	EM11	7/12/2018	N	440-215717-15	Alluvium	17.8 - 47.6	--	--	--	--	--	--	--
SWFTS-MW13	EM15	10/11/2018	N	440-222092-14	Alluvium	17.8 - 47.6	--	--	--	--	--	--	--
SWFTS-MW13	EM19	5/22/2019	N	440-242198-5	Alluvium	17.8 - 47.6	--	--	--	--	--	--	--
SWFTS-MW13	EM22	11/6/2019	N	440-254051-6	Alluvium	17.8 - 47.6	--	--	--	--	--	--	--
SWFTS-MW13	EM26	4/30/2020	N	440-265383-2	Alluvium	17.8 - 47.6	--	--	--	--	--	--	--
SWFTS-MW13	EM29	10/15/2020	N	550-151259-6	Alluvium	17.8 - 47.6	--	--	--	--	--	--	--
SWFTS-MW13	EM33	6/4/2021	N	550-164930-3	Alluvium	17.8 - 47.6	--	--	--	--	--	--	--
SWFTS-MW13	EM33	6/4/2021	N	550-164930-4	Alluvium	17.8 - 47.6	--	--	--	--	--	--	--
SWFTS-MW13	EM36	12/2/2021	N	550-175153-17	Alluvium	17.8 - 47.6	--	--	--	--	--	--	--
SWFTS-MW13	EM36	12/2/2021	N	550-175153-18	Alluvium	17.8 - 47.6	--	--	--	--	--	--	--
SWFTS-MW13	EM40	12/15/2022	N	550-195106-7	Alluvium	17.8 - 47.6	--	--	--	--	--	--	--
SWFTS-MW13	EM40	12/15/2022	N	550-195106-8	Alluvium	17.8 - 47.6	--	--	--	--	--	--	--
SWFTS-MW13	EM40	12/15/2022	N	550-195106-18	Alluvium	17.8 - 47.6	--	--	--	--	--	--	--
SWFTS-MW14	BL02	7/12/2017	N	440-188244-8	Alluvium	16.8 - 36.6	--	<5.8	<5.2	<5.2	<6.2	<7.0	<7.4
SWFTS-MW14	BL02	7/12/2017	FD	440-188244-9	Alluvium	16.8 - 36.6	--	<5.8	<5.2	<5.2	<6.2	<7.0	<7.4
SWFTS-MW14	EM04	10/11/2017	N	440-194242-8	Alluvium	16.8 - 36.6	--	<0.29	<0.26	<0.26	<0.31	<0.35	<7.4
SWFTS-MW14	EM06	11/15/2017	N	440-196659-3	Alluvium	16.8 - 36.6	--	<2.9	<2.6	<2.6	<3.1	<3.5	<3.7 UJ
SWFTS-MW14	EM07	12/12/2017	N	440-198371-12	Alluvium	16.8 - 36.6	--	--	--	--	--	--	--
SWFTS-MW14	EM08	2/20/2018	N	440-203841-11	Alluvium	16.8 - 36.6	--	1,400	<5.2	6.9 J	<6.2	100 J+	<7.4
SWFTS-MW14	EM09	3/26/2018	N	440-207137-9	Alluvium	16.8 - 36.6	--	460	<13	<13	<16	<18	<19
SWFTS-MW14	EM10	4/30/2018	N	440-210173-9	Alluvium	16.8 - 36.6	--	160	<13	<13	<16	<18	<19
SWFTS-MW14	EM11	7/10/2018	N	440-215437-8	Alluvium	16.8 - 36.6	--	420	<13	<13	<16	<18	<19
SWFTS-MW14	EM13	8/14/2018	N	440-218109-11	Alluvium	16.8 - 36.6	--	330	<13	<13	<16	<18	<19
SWFTS-MW14	EM14	9/11/2018	N	440-219886-17	Alluvium	16.8 - 36.6	--	230	<2.6	<2.6	<3.1	<3.5	<3.7
SWFTS-MW14	EM15	10/9/2018	N	440-221855-10	Alluvium	16.8 - 36.6	--	190	<2.6	<2.6	<3.1	<3.5	<3.7
SWFTS-MW14	EM19	5/21/2019	N	440-242084-1	Alluvium	16.8 - 36.6	--	--	--	--	--	--	--
SWFTS-MW14	EM22	11/6/2019	N	440-254051-2	Alluvium	16.8 - 36.6	--	--	--	--	--	--	--
SWFTS-MW14	EM26	5/1/2020	N	440-265414-2	Alluvium	16.8 - 36.6	--	--	--	--	--	--	--
SWFTS-MW14	EM29	10/14/2020	N	440-273303-5	Alluvium	16.8 - 36.6	--	--	--	--	--	--	--
SWFTS-MW14	EM33	6/4/2021	N	550-164930-1	Alluvium	16.8 - 36.6	--	--	--	--	--	--	--
SWFTS-MW14	EM33	6/4/2021	N	550-164930-2	Alluvium	16.8 - 36.6	--	--	--	--	--	--	--
SWFTS-MW14	EM36	12/3/2021	N	550-175222-1	Alluvium	16.8 - 36.6	--	--	--	--	--	--	--
SWFTS-MW14	EM36	12/3/2021	N	550-175222-2	Alluvium	16.8 - 36.6	--	--	--	--	--	--	--
SWFTS-MW14	EM40	12/15/2022	N	550-195106-3	Alluvium	16.8 - 36.6	--	--	--	--	--	--	--
SWFTS-MW14	EM40	12/15/2022	N	550-195106-4	Alluvium	16.8 - 36.6	--	--	--	--	--	--	--
SWFTS-MW15	BL02	7/13/2017	N	440-188325-3	Alluvium	14.8 - 34.6	--	<5.8 UJ	<5.2 UJ	<5.2 UJ	<6.2 UJ	<7.0 UJ	<7.4 UJ
SWFTS-MW15	EM04	10/10/2017	N	440-194094-1	Alluvium	14.8 - 34.6	--	<2.9	<2.6	<2.6	<3.1	<3.5	<3.7
SWFTS-MW15	EM06	11/14/2017	N	440-196558-4	Alluvium	14.8 - 34.6	--	--	--	--	--	--	--
SWFTS-MW15	EM07	12/13/2017	N	440-198508-13	Alluvium	14.8 - 34.6	--	--	--	--	--	--	--
SWFTS-MW15	EM08	2/19/2018	N	440-203775-4	Alluvium	14.8 - 34.6	--	--	--	--	--	--	--
SWFTS-MW15	EM09	3/26/2018	N	440-207137-10	Alluvium	14.8 - 34.6	--	--	--	--	--	--	--
SWFTS-MW15	EM10	5/2/2018	N	440-210430-3	Alluvium	14.8 - 34.6	--	--	--	--	--	--	--
SWFTS-MW15	EM11	7/11/2018	N	440-215717-1	Alluvium	14.8 - 34.6	--	--	--	--	--	--	--
SWFTS-MW15	EM15	10/9/2018	N	440-221855-11	Alluvium	14.8 - 34.6	--	--	--	--	--	--	--
SWFTS-MW15	EM19	5/20/2019	N	440-242014-1	Alluvium	14.8 - 34.6	--	--	--	--	--	--	--
SWFTS-MW15	EM22	11/6/2019	N	440-254051-3	Alluvium	14.8 - 34.6	--	--	--	--	--	--	--
SWFTS-MW15	EM26	4/29/2020	N	440-265342-3	Alluvium	14.8 - 34.6	--	--	--	--	--	--	--
SWFTS-MW15	EM29	10/15/2020	N	550-151259-4	Alluvium	14.8 - 34.6	--	--	--	--	--	--	--

Table D.2
Groundater Analytical Results Summary - Secondary Parameters
Seep Well Field Area Bioremediation Treatability Study

Well	Event	Sample Date	QC Type	Lab Sample ID	Lithology	Screened Interval (ft bgs)	Total Metals by SW6020	Volatile Fatty Acids (IC)	Volatile Fatty Acids (IC)	Volatile Fatty Acids (IC)	Volatile Fatty Acids (IC)	Volatile Fatty Acids (IC)	Volatile Fatty Acids (IC)
							Thallium	Acetic Acid	Butyric Acid	Formic Acid	Lactic Acid	Propionic Acid	Pyruvic Acid
							µg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
SWFTS-MW15	EM33	6/3/2021	N	550-164869-13	Alluvium	14.8 - 34.6	--	--	--	--	--	--	--
SWFTS-MW15	EM33	6/3/2021	N	550-164869-14	Alluvium	14.8 - 34.6	--	--	--	--	--	--	--
SWFTS-MW15	EM36	11/30/2021	N	550-174968-10	Alluvium	14.8 - 34.6	--	--	--	--	--	--	--
SWFTS-MW15	EM36	11/30/2021	N	550-174968-9	Alluvium	14.8 - 34.6	--	--	--	--	--	--	--
SWFTS-MW15	EM40	12/15/2022	N	550-195106-1	Alluvium	14.8 - 34.6	--	--	--	--	--	--	--
SWFTS-MW15	EM40	12/15/2022	N	550-195106-2	Alluvium	14.8 - 34.6	--	--	--	--	--	--	--
SWFTS-MW16	BL02	7/13/2017	N	440-188325-2	Alluvium	21.8 - 41.6	--	--	--	--	--	--	--
SWFTS-MW16	EM04	10/12/2017	N	440-194204-7	Alluvium	21.8 - 41.6	--	490	<5.2	<5.2	<6.2	<7.0	<7.4
SWFTS-MW16	EM06	11/16/2017	N	440-196786-4	Alluvium	21.8 - 41.6	--	270	<2.6	<2.6	<3.1	<3.5	<3.7
SWFTS-MW16	EM07	12/12/2017	N	440-198371-4	Alluvium	21.8 - 41.6	--	--	--	--	--	--	--
SWFTS-MW16	EM08	2/21/2018	N	440-203937-6	Alluvium	21.8 - 41.6	--	<2.9	<2.6	<2.6	7.0 J	<3.5	<3.7
SWFTS-MW16	EM09	3/27/2018	N	440-207268-13	Alluvium	21.8 - 41.6	--	<0.29	<0.26	<0.26	<0.31	<0.35	<3.7
SWFTS-MW16	EM10	5/2/2018	N	440-210430-13	Alluvium	21.8 - 41.6	--	<2.9	<2.6	<2.6	<3.1	<3.5	<3.7 UJ
SWFTS-MW16	EM11	7/11/2018	N	440-215585-12	Alluvium	21.8 - 41.6	--	8.2	<1.3	<1.3	<1.6	<1.8	<1.9
SWFTS-MW16	EM13	8/15/2018	N	440-218208-13	Alluvium	21.8 - 41.6	--	<2.9	<2.6	<2.6	<3.1	<3.5	<3.7 UJ
SWFTS-MW16	EM14	9/10/2018	N	440-219797-6	Alluvium	21.8 - 41.6	--	<2.9	<2.6	<2.6	<3.1	<3.5	<3.7 UJ
SWFTS-MW16	EM15	10/11/2018	N	440-222092-3	Alluvium	21.8 - 41.6	--	<2.9	<2.6	<2.6	<3.1	<3.5	<3.7
SWFTS-MW16	EM19	5/20/2019	N	440-242014-3	Alluvium	21.8 - 41.6	--	--	--	--	--	--	--
SWFTS-MW16	EM22	11/6/2019	N	440-254051-5	Alluvium	21.8 - 41.6	--	--	--	--	--	--	--
SWFTS-MW16	EM26	4/30/2020	N	440-265383-1	Alluvium	21.8 - 41.6	--	--	--	--	--	--	--
SWFTS-MW16	EM29	10/15/2020	N	550-151259-1	Alluvium	21.8 - 41.6	--	--	--	--	--	--	--
SWFTS-MW16	EM33	6/3/2021	N	550-164869-11	Alluvium	21.8 - 41.6	--	--	--	--	--	--	--
SWFTS-MW16	EM33	6/3/2021	N	550-164869-12	Alluvium	21.8 - 41.6	--	--	--	--	--	--	--
SWFTS-MW16	EM36	11/30/2021	N	550-174968-11	Alluvium	21.8 - 41.6	--	--	--	--	--	--	--
SWFTS-MW16	EM36	11/30/2021	N	550-174968-12	Alluvium	21.8 - 41.6	--	--	--	--	--	--	--
SWFTS-MW16	EM40	12/14/2022	N	550-195013-15	Alluvium	21.8 - 41.6	--	--	--	--	--	--	--
SWFTS-MW16	EM40	12/14/2022	N	550-195013-16	Alluvium	21.8 - 41.6	--	--	--	--	--	--	--
SWFTS-MW17	BL02	7/12/2017	N	440-188244-1	Alluvium	22.8 - 52.6	--	--	--	--	--	--	--
SWFTS-MW17	EM04	10/10/2017	N	440-193989-3	Alluvium	22.8 - 52.6	--	<2.9	<2.6	<2.6	<3.1	<3.5	<3.7 UJ
SWFTS-MW17	EM06	11/15/2017	N	440-196659-5	Alluvium	22.8 - 52.6	--	--	--	--	--	--	--
SWFTS-MW17	EM06	11/15/2017	FD	440-196659-6	Alluvium	22.8 - 52.6	--	--	--	--	--	--	--
SWFTS-MW17	EM07	12/13/2017	N	440-198508-6	Alluvium	22.8 - 52.6	--	--	--	--	--	--	--
SWFTS-MW17	EM07	12/13/2017	FD	440-198508-7	Alluvium	22.8 - 52.6	--	--	--	--	--	--	--
SWFTS-MW17	EM08	2/22/2018	N	440-204033-11	Alluvium	22.8 - 52.6	--	--	--	--	--	--	--
SWFTS-MW17	EM09	3/28/2018	N	440-207497-11	Alluvium	22.8 - 52.6	--	--	--	--	--	--	--
SWFTS-MW17	EM10	5/3/2018	N	440-210534-3	Alluvium	22.8 - 52.6	--	--	--	--	--	--	--
SWFTS-MW17	EM11	7/11/2018	N	440-215585-13	Alluvium	22.8 - 52.6	--	--	--	--	--	--	--
SWFTS-MW17	EM15	10/11/2018	N	440-222092-4	Alluvium	22.8 - 52.6	--	--	--	--	--	--	--
SWFTS-MW17	EM19	5/22/2019	N	440-242198-6	Alluvium	22.8 - 52.6	--	--	--	--	--	--	--
SWFTS-MW17	EM22	11/7/2019	N	440-254150-1	Alluvium	22.8 - 52.6	--	--	--	--	--	--	--
SWFTS-MW17	EM26	4/30/2020	N	440-265383-6	Alluvium	22.8 - 52.6	--	--	--	--	--	--	--
SWFTS-MW17	EM29	10/15/2020	N	550-151259-5	Alluvium	22.8 - 52.6	--	--	--	--	--	--	--
SWFTS-MW17	EM33	6/3/2021	N	550-164869-10	Alluvium	22.8 - 52.6	--	--	--	--	--	--	--
SWFTS-MW17	EM33	6/3/2021	N	550-164869-9	Alluvium	22.8 - 52.6	--	--	--	--	--	--	--
SWFTS-MW17	EM36	12/2/2021	N	550-175153-21	Alluvium	22.8 - 52.6	--	--	--	--	--	--	--
SWFTS-MW17	EM36	12/2/2021	N	550-175153-22	Alluvium	22.8 - 52.6	--	--	--	--	--	--	--
SWFTS-MW17	EM40	12/14/2022	N	550-195013-13	Alluvium	22.8 - 52.6	--	--	--	--	--	--	--
SWFTS-MW17	EM40	12/14/2022	N	550-195013-14	Alluvium	22.8 - 52.6	--	--	--	--	--	--	--
SWFTS-MW18	BL02	7/11/2017	N	440-188133-17	Alluvium	16.8 - 36.6	--	<5.8	<5.2	<5.2	<6.2	<7.0	<7.4
SWFTS-MW18	EM04	10/10/2017	N	440-194094-3	Alluvium	16.8 - 36.6	--	--	--	--	--	--	--
SWFTS-MW18	EM06	11/15/2017	N	440-196690-11	Alluvium	16.8 - 36.6	--	--	--	--	--	--	--
SWFTS-MW18	EM07	12/13/2017	N	440-198508-5	Alluvium	16.8 - 36.6	--	<2.9	<2.6	<2.6	<3.1	<3.5	<3.7
SWFTS-MW18	EM08	2/22/2018	N	440-204033-4	Alluvium	16.8 - 36.6	--	--	--	--	--	--	--
SWFTS-MW18	EM09	3/27/2018	N	440-207268-11	Alluvium	16.8 - 36.6	--	--	--	--	--	--	--
SWFTS-MW18	EM09	3/27/2018	FD	440-207268-12	Alluvium	16.8 - 36.6	--	--	--	--	--	--	--
SWFTS-MW18	EM10	5/1/2018	N	440-210284-6	Alluvium	16.8 - 36.6	--	--	--	--	--	--	--
SWFTS-MW18	EM11	7/11/2018	N	440-215717-2	Alluvium	16.8 - 36.6	--	--	--	--	--	--	--
SWFTS-MW18	EM15	10/11/2018	N	440-222092-5	Alluvium	16.8 - 36.6	--	--	--	--	--	--	--
SWFTS-MW18	EM19	5/21/2019	N	440-242084-15	Alluvium	16.8 - 36.6	--	--	--	--	--	--	--
SWFTS-MW18	EM22	11/6/2019	N	440-254051-4	Alluvium	16.8 - 36.6	--	--	--	--	--	--	--
SWFTS-MW18	EM26	4/29/2020	N	440-265342-2	Alluvium	16.8 - 36.6	--	--	--	--	--	--	--
SWFTS-MW18	EM29	10/15/2020	N	550-151259-2	Alluvium	16.8 - 36.6	--	--	--	--	--	--	--
SWFTS-MW18	EM33	6/3/2021	N	550-164869-7	Alluvium	16.8 - 36.6	--	--	--	--	--	--	--
SWFTS-MW18	EM33	6/3/2021	N	550-164869-8	Alluvium	16.8 - 36.6	--	--	--	--	--	--	--

Table D.2
Groundater Analytical Results Summary - Secondary Parameters
Seep Well Field Area Bioremediation Treatability Study

Well	Event	Sample Date	QC Type	Lab Sample ID	Lithology	Screened Interval (ft bgs)	Total Metals by SW6020	Volatile Fatty Acids (IC)	Volatile Fatty Acids (IC)	Volatile Fatty Acids (IC)	Volatile Fatty Acids (IC)	Volatile Fatty Acids (IC)	Volatile Fatty Acids (IC)
							Thallium	Acetic Acid	Butyric Acid	Formic Acid	Lactic Acid	Propionic Acid	Pyruvic Acid
							µg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
SWFTS-MW18	EM36	12/1/2021	N	550-175045-5	Alluvium	16.8 - 36.6	--	--	--	--	--	--	--
SWFTS-MW18	EM36	12/1/2021	N	550-175045-6	Alluvium	16.8 - 36.6	--	--	--	--	--	--	--
SWFTS-MW18	EM40	12/14/2022	N	550-195013-11	Alluvium	16.8 - 36.6	--	--	--	--	--	--	--
SWFTS-MW18	EM40	12/14/2022	N	550-195013-12	Alluvium	16.8 - 36.6	--	--	--	--	--	--	--
SWFTS-MW19	BL02	7/12/2017	N	440-188244-2	Alluvium	11.3 - 31.1	--	<5.8	<5.2	<5.2	<6.2	<7.0	<7.4
SWFTS-MW19	EM04	10/12/2017	N	440-194204-1	Alluvium	11.3 - 31.1	--	--	--	--	--	--	--
SWFTS-MW19	EM06	11/16/2017	N	440-196786-12	Alluvium	11.3 - 31.1	--	--	--	--	--	--	--
SWFTS-MW19	EM07	12/12/2017	N	440-198371-8	Alluvium	11.3 - 31.1	--	--	--	--	--	--	--
SWFTS-MW19	EM08	2/20/2018	N	440-203841-6	Alluvium	11.3 - 31.1	--	--	--	--	--	--	--
SWFTS-MW19	EM09	3/27/2018	N	440-207268-3	Alluvium	11.3 - 31.1	--	--	--	--	--	--	--
SWFTS-MW19	EM10	4/30/2018	N	440-210173-4	Alluvium	11.3 - 31.1	--	--	--	--	--	--	--
SWFTS-MW19	EM10	4/30/2018	FD	440-210173-5	Alluvium	11.3 - 31.1	--	--	--	--	--	--	--
SWFTS-MW19	EM11	7/10/2018	N	440-215437-10	Alluvium	11.3 - 31.1	--	--	--	--	--	--	--
SWFTS-MW19	EM11	7/10/2018	FD	440-215437-11	Alluvium	11.3 - 31.1	--	--	--	--	--	--	--
SWFTS-MW19	EM15	10/9/2018	N	440-221855-4	Alluvium	11.3 - 31.1	--	--	--	--	--	--	--
SWFTS-MW19	EM15	10/9/2018	FD	440-221855-5	Alluvium	11.3 - 31.1	--	--	--	--	--	--	--
SWFTS-MW19	EM19	5/21/2019	N	440-242084-6	Alluvium	11.3 - 31.1	--	--	--	--	--	--	--
SWFTS-MW19	EM19	5/21/2019	FD	440-242084-7	Alluvium	11.3 - 31.1	--	--	--	--	--	--	--
SWFTS-MW19	EM22	11/5/2019	N	440-253891-6	Alluvium	11.3 - 31.1	--	--	--	--	--	--	--
SWFTS-MW19	EM22	11/5/2019	FD	440-253891-7	Alluvium	11.3 - 31.1	--	--	--	--	--	--	--
SWFTS-MW19	EM26	4/28/2020	N	440-265288-4	Alluvium	11.3 - 31.1	--	--	--	--	--	--	--
SWFTS-MW19	EM26	4/28/2020	FD	440-265288-7	Alluvium	11.3 - 31.1	--	--	--	--	--	--	--
SWFTS-MW19	EM29	10/14/2020	N	440-273303-2	Alluvium	11.3 - 31.1	--	--	--	--	--	--	--
SWFTS-MW19	EM29	10/14/2020	FD	440-273303-3	Alluvium	11.3 - 31.1	--	--	--	--	--	--	--
SWFTS-MW19	EM33	6/3/2021	N	550-164869-3	Alluvium	11.3 - 31.1	--	--	--	--	--	--	--
SWFTS-MW19	EM33	6/3/2021	N	550-164869-4	Alluvium	11.3 - 31.1	--	--	--	--	--	--	--
SWFTS-MW19	EM33	6/3/2021	FD	550-164869-5	Alluvium	11.3 - 31.1	--	--	--	--	--	--	--
SWFTS-MW19	EM33	6/3/2021	FD	550-164869-6	Alluvium	11.3 - 31.1	--	--	--	--	--	--	--
SWFTS-MW19	EM36	12/1/2021	N	550-175045-13	Alluvium	11.3 - 31.1	--	--	--	--	--	--	--
SWFTS-MW19	EM36	12/1/2021	N	550-175045-14	Alluvium	11.3 - 31.1	--	--	--	--	--	--	--
SWFTS-MW19	EM36	12/1/2021	FD	550-175045-15	Alluvium	11.3 - 31.1	--	--	--	--	--	--	--
SWFTS-MW19	EM36	12/1/2021	FD	550-175045-16	Alluvium	11.3 - 31.1	--	--	--	--	--	--	--
SWFTS-MW19	EM40	12/14/2022	N	550-195013-3	Alluvium	11.3 - 31.1	--	--	--	--	--	--	--
SWFTS-MW19	EM40	12/14/2022	N	550-195013-4	Alluvium	11.3 - 31.1	--	--	--	--	--	--	--
SWFTS-MW19	EM40	12/14/2022	FD	550-195013-5	Alluvium	11.3 - 31.1	--	--	--	--	--	--	--
SWFTS-MW19	EM40	12/14/2022	FD	550-195013-6	Alluvium	11.3 - 31.1	--	--	--	--	--	--	--
SWFTS-MW20	BL02	7/12/2017	N	440-188244-5	Alluvium	12.8 - 37.6	--	--	--	--	--	--	--
SWFTS-MW20	EM04	10/12/2017	N	440-194202-1	Alluvium	12.8 - 37.6	--	<1.5	<1.3	<1.3	<1.6	<1.8	<19
SWFTS-MW20	EM04	10/12/2017	FD	440-194202-2	Alluvium	12.8 - 37.6	--	<2.9	<2.6	<2.6	<3.1	<3.5	<3.7
SWFTS-MW20	EM06	11/16/2017	N	440-196786-7	Alluvium	12.8 - 37.6	--	--	--	--	--	--	--
SWFTS-MW20	EM07	12/12/2017	N	440-198371-3	Alluvium	12.8 - 37.6	--	--	--	--	--	--	--
SWFTS-MW20	EM08	2/19/2018	N	440-203775-5	Alluvium	12.8 - 37.6	--	--	--	--	--	--	--
SWFTS-MW20	EM09	3/27/2018	N	440-207268-9	Alluvium	12.8 - 37.6	--	--	--	--	--	--	--
SWFTS-MW20	EM10	4/30/2018	N	440-210173-10	Alluvium	12.8 - 37.6	--	--	--	--	--	--	--
SWFTS-MW20	EM11	7/11/2018	N	440-215717-8	Alluvium	12.8 - 37.6	--	--	--	--	--	--	--
SWFTS-MW20	EM15	10/9/2018	N	440-221855-1	Alluvium	12.8 - 37.6	--	--	--	--	--	--	--
SWFTS-MW20	EM19	5/21/2019	N	440-242084-3	Alluvium	12.8 - 37.6	--	--	--	--	--	--	--
SWFTS-MW20	EM22	11/5/2019	N	440-253918-6	Alluvium	12.8 - 37.6	--	--	--	--	--	--	--
SWFTS-MW20	EM26	4/29/2020	N	440-265342-5	Alluvium	12.8 - 37.6	--	--	--	--	--	--	--
SWFTS-MW20	EM29	10/14/2020	N	440-273303-6	Alluvium	12.8 - 37.6	--	--	--	--	--	--	--
SWFTS-MW20	EM33	6/3/2021	N	550-164869-1	Alluvium	12.8 - 37.6	--	--	--	--	--	--	--
SWFTS-MW20	EM33	6/3/2021	N	550-164869-2	Alluvium	12.8 - 37.6	--	--	--	--	--	--	--
SWFTS-MW20	EM36	11/29/2021	N	550-174897-1	Alluvium	12.8 - 37.6	--	--	--	--	--	--	--
SWFTS-MW20	EM36	11/29/2021	N	550-174897-2	Alluvium	12.8 - 37.6	--	--	--	--	--	--	--
SWFTS-MW20	EM40	12/13/2022	N	550-194919-7	Alluvium	12.8 - 37.6	--	--	--	--	--	--	--
SWFTS-MW20	EM40	12/13/2022	N	550-194919-8	Alluvium	12.8 - 37.6	--	--	--	--	--	--	--
SWFTS-MW21	BL02	7/13/2017	N	440-188324-5	Alluvium	14.8 - 39.6	--	<5.8 UJ	<5.2 UJ	<5.2 UJ	<6.2 UJ	<7.0 UJ	<7.4 UJ
SWFTS-MW21	EM04	10/11/2017	N	440-194090-8	Alluvium	14.8 - 39.6	--	<2.9	<2.6	<2.6	10	36	<3.7
SWFTS-MW21	EM06	11/15/2017	N	440-196665-5	Alluvium	14.8 - 39.6	--	--	--	--	--	--	--
SWFTS-MW21	EM07	12/13/2017	N	440-198508-10	Alluvium	14.8 - 39.6	--	<2.9	<2.6	<2.6	<3.1	<3.5	<3.7 UJ
SWFTS-MW21	EM08	2/20/2018	N	440-203841-9	Alluvium	14.8 - 39.6	--	--	--	--	--	--	--
SWFTS-MW21	EM08	2/20/2018	FD	440-203841-10	Alluvium	14.8 - 39.6	--	--	--	--	--	--	--
SWFTS-MW21	EM09	3/27/2018	N	440-207268-14	Alluvium	14.8 - 39.6	--	--	--	--	--	--	--
SWFTS-MW21	EM10	4/30/2018	N	440-210173-7	Alluvium	14.8 - 39.6	--	--	--	--	--	--	--

Table D.2
Groundater Analytical Results Summary - Secondary Parameters
Seep Well Field Area Bioremediation Treatability Study

Well	Event	Sample Date	QC Type	Lab Sample ID	Lithology	Screened Interval (ft bgs)	Total Metals by SW6020	Volatile Fatty Acids (IC)	Volatile Fatty Acids (IC)	Volatile Fatty Acids (IC)	Volatile Fatty Acids (IC)	Volatile Fatty Acids (IC)	Volatile Fatty Acids (IC)
							Thallium	Acetic Acid	Butyric Acid	Formic Acid	Lactic Acid	Propionic Acid	Pyruvic Acid
							µg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
SWFTS-MW21	EM11	7/12/2018	N	440-215717-3	Alluvium	14.8 - 39.6	--	--	--	--	--	--	--
SWFTS-MW21	EM15	10/9/2018	N	440-221855-3	Alluvium	14.8 - 39.6	--	--	--	--	--	--	--
SWFTS-MW21	EM19	5/22/2019	N	440-242198-3	Alluvium	14.8 - 39.6	--	--	--	--	--	--	--
SWFTS-MW21	EM22	11/4/2019	N	440-253773-3	Alluvium	14.8 - 39.6	--	--	--	--	--	--	--
SWFTS-MW21	EM26	4/29/2020	N	440-265342-1	Alluvium	14.8 - 39.6	--	--	--	--	--	--	--
SWFTS-MW21	EM29	10/14/2020	N	440-273303-7	Alluvium	14.8 - 39.6	--	--	--	--	--	--	--
SWFTS-MW21	EM33	6/2/2021	N	550-164872-15	Alluvium	14.8 - 39.6	--	--	--	--	--	--	--
SWFTS-MW21	EM33	6/2/2021	N	550-164872-16	Alluvium	14.8 - 39.6	--	--	--	--	--	--	--
SWFTS-MW21	EM36	12/1/2021	N	550-175045-3	Alluvium	14.8 - 39.6	--	--	--	--	--	--	--
SWFTS-MW21	EM36	12/1/2021	N	550-175045-4	Alluvium	14.8 - 39.6	--	--	--	--	--	--	--
SWFTS-MW21	EM40	12/15/2022	N	550-195106-5	Alluvium	14.8 - 39.6	--	--	--	--	--	--	--
SWFTS-MW21	EM40	12/15/2022	N	550-195106-6	Alluvium	14.8 - 39.6	--	--	--	--	--	--	--
SWFTS-MW22	BL02	7/13/2017	N	440-188324-1	Alluvium	11.8 - 31.6	--	<5.8 UJ	<5.2 UJ	<5.2 UJ	<6.2 UJ	<7.0 UJ	<7.4 UJ
SWFTS-MW22	EM04	10/12/2017	N	440-194242-9	Alluvium	11.8 - 31.6	--	--	--	--	--	--	--
SWFTS-MW22	EM06	11/16/2017	N	440-196786-18	Alluvium	11.8 - 31.6	--	--	--	--	--	--	--
SWFTS-MW22	EM07	12/14/2017	N	440-198571-17	Alluvium	11.8 - 31.6	--	--	--	--	--	--	--
SWFTS-MW22	EM08	2/21/2018	N	440-203937-1	Alluvium	11.8 - 31.6	--	--	--	--	--	--	--
SWFTS-MW22	EM09	3/28/2018	N	440-207497-1	Alluvium	11.8 - 31.6	--	--	--	--	--	--	--
SWFTS-MW22	EM10	4/30/2018	N	440-210173-6	Alluvium	11.8 - 31.6	--	--	--	--	--	--	--
SWFTS-MW22	EM11	7/10/2018	N	440-215437-9	Alluvium	11.8 - 31.6	--	--	--	--	--	--	--
SWFTS-MW22	EM15	10/9/2018	N	440-221855-2	Alluvium	11.8 - 31.6	--	--	--	--	--	--	--
SWFTS-MW22	EM19	5/21/2019	N	440-242084-4	Alluvium	11.8 - 31.6	--	--	--	--	--	--	--
SWFTS-MW22	EM22	11/5/2019	N	440-253891-4	Alluvium	11.8 - 31.6	--	--	--	--	--	--	--
SWFTS-MW22	EM26	4/28/2020	N	440-265288-5	Alluvium	11.8 - 31.6	--	--	--	--	--	--	--
SWFTS-MW22	EM29	10/14/2020	N	440-273303-1	Alluvium	11.8 - 31.6	--	--	--	--	--	--	--
SWFTS-MW22	EM33	6/2/2021	N	550-164872-11	Alluvium	11.8 - 31.6	--	--	--	--	--	--	--
SWFTS-MW22	EM33	6/2/2021	N	550-164872-12	Alluvium	11.8 - 31.6	--	--	--	--	--	--	--
SWFTS-MW22	EM36	12/2/2021	N	550-175153-1	Alluvium	11.8 - 31.6	--	--	--	--	--	--	--
SWFTS-MW22	EM36	12/2/2021	N	550-175153-2	Alluvium	11.8 - 31.6	--	--	--	--	--	--	--
SWFTS-MW22	EM40	12/14/2022	N	550-195013-1	Alluvium	11.8 - 31.6	--	--	--	--	--	--	--
SWFTS-MW22	EM40	12/14/2022	N	550-195013-2	Alluvium	11.8 - 31.6	--	--	--	--	--	--	--
SWFTS-MW23	BL02	7/13/2017	N	440-188325-7	Alluvium	13.8 - 33.6	--	--	--	--	--	--	--
SWFTS-MW23	EM04	10/11/2017	N	440-194090-7	Alluvium	13.8 - 33.6	--	<2.9	<2.6	<2.6	<3.1	<3.5	<3.7
SWFTS-MW23	EM06	11/15/2017	N	440-196665-3	Alluvium	13.8 - 33.6	--	--	--	--	--	--	--
SWFTS-MW23	EM07	12/12/2017	N	440-198371-2	Alluvium	13.8 - 33.6	--	--	--	--	--	--	--
SWFTS-MW23	EM08	2/21/2018	N	440-203937-14	Alluvium	13.8 - 33.6	--	--	--	--	--	--	--
SWFTS-MW23	EM09	3/28/2018	N	440-207497-9	Alluvium	13.8 - 33.6	--	--	--	--	--	--	--
SWFTS-MW23	EM10	5/2/2018	N	440-210430-5	Alluvium	13.8 - 33.6	--	--	--	--	--	--	--
SWFTS-MW23	EM11	7/10/2018	N	440-215437-7	Alluvium	13.8 - 33.6	--	--	--	--	--	--	--
SWFTS-MW23	EM15	10/11/2018	N	440-222092-7	Alluvium	13.8 - 33.6	--	--	--	--	--	--	--
SWFTS-MW23	EM19	5/22/2019	N	440-242201-7	Alluvium	13.8 - 33.6	--	--	--	--	--	--	--
SWFTS-MW23	EM22	11/5/2019	N	440-253891-5	Alluvium	13.8 - 33.6	--	--	--	--	--	--	--
SWFTS-MW23	EM26	4/28/2020	N	440-265288-3	Alluvium	13.8 - 33.6	--	--	--	--	--	--	--
SWFTS-MW23	EM29	10/13/2020	N	440-273236-1	Alluvium	13.8 - 33.6	--	--	--	--	--	--	--
SWFTS-MW23	EM33	6/2/2021	N	550-164872-3	Alluvium	13.8 - 33.6	--	--	--	--	--	--	--
SWFTS-MW23	EM33	6/2/2021	N	550-164872-4	Alluvium	13.8 - 33.6	--	--	--	--	--	--	--
SWFTS-MW23	EM36	12/2/2021	N	550-175153-15	Alluvium	13.8 - 33.6	--	--	--	--	--	--	--
SWFTS-MW23	EM36	12/2/2021	N	550-175153-16	Alluvium	13.8 - 33.6	--	--	--	--	--	--	--
SWFTS-MW23	EM40	12/13/2022	N	550-194919-5	Alluvium	13.8 - 33.6	--	--	--	--	--	--	--
SWFTS-MW23	EM40	12/13/2022	N	550-194919-6	Alluvium	13.8 - 33.6	--	--	--	--	--	--	--
SWFTS-MW24	BL02	7/13/2017	N	440-188324-2	Alluvium	12.8 - 37.6	--	<5.8 UJ	<5.2 UJ	<5.2 UJ	<6.2 UJ	<7.0 UJ	<7.4 UJ
SWFTS-MW24	EM04	10/11/2017	N	440-194242-2	Alluvium	12.8 - 37.6	--	--	--	--	--	--	--
SWFTS-MW24	EM06	11/15/2017	N	440-196665-1	Alluvium	12.8 - 37.6	--	--	--	--	--	--	--
SWFTS-MW24	EM07	12/12/2017	N	440-198371-5	Alluvium	12.8 - 37.6	--	--	--	--	--	--	--
SWFTS-MW24	EM08	2/21/2018	N	440-203937-8	Alluvium	12.8 - 37.6	--	--	--	--	--	--	--
SWFTS-MW24	EM09	3/28/2018	N	440-207497-12	Alluvium	12.8 - 37.6	--	--	--	--	--	--	--
SWFTS-MW24	EM10	5/2/2018	N	440-210430-7	Alluvium	12.8 - 37.6	--	--	--	--	--	--	--
SWFTS-MW24	EM11	7/12/2018	N	440-215717-5	Alluvium	12.8 - 37.6	--	--	--	--	--	--	--
SWFTS-MW24	EM15	10/10/2018	N	440-221975-7	Alluvium	12.8 - 37.6	--	--	--	--	--	--	--
SWFTS-MW24	EM19	5/22/2019	N	440-242198-1	Alluvium	12.8 - 37.6	--	--	--	--	--	--	--
SWFTS-MW24	EM22	11/5/2019	N	440-253891-2	Alluvium	12.8 - 37.6	--	--	--	--	--	--	--
SWFTS-MW24	EM26	4/28/2020	N	440-265288-1	Alluvium	12.8 - 37.6	--	--	--	--	--	--	--
SWFTS-MW24	EM29	10/12/2020	N	440-273153-1	Alluvium	12.8 - 37.6	--	--	--	--	--	--	--
SWFTS-MW24	EM33	6/2/2021	N	550-164872-7	Alluvium	12.8 - 37.6	--	--	--	--	--	--	--

Table D.2
Groundater Analytical Results Summary - Secondary Parameters
Seep Well Field Area Bioremediation Treatability Study

Well	Event	Sample Date	QC Type	Lab Sample ID	Lithology	Screened Interval (ft bgs)	Total Metals by SW6020	Volatile Fatty Acids (IC)	Volatile Fatty Acids (IC)	Volatile Fatty Acids (IC)	Volatile Fatty Acids (IC)	Volatile Fatty Acids (IC)	Volatile Fatty Acids (IC)
							Thallium	Acetic Acid	Butyric Acid	Formic Acid	Lactic Acid	Propionic Acid	Pyruvic Acid
							µg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
SWFTS-MW24	EM33	6/2/2021	N	550-164872-8	Alluvium	12.8 - 37.6	--	--	--	--	--	--	--
SWFTS-MW24	EM36	12/1/2021	N	550-175045-17	Alluvium	12.8 - 37.6	--	--	--	--	--	--	--
SWFTS-MW24	EM36	12/1/2021	N	550-175045-18	Alluvium	12.8 - 37.6	--	--	--	--	--	--	--
SWFTS-MW24	EM40	12/13/2022	N	550-194919-3	Alluvium	12.8 - 37.6	--	--	--	--	--	--	--
SWFTS-MW24	EM40	12/13/2022	N	550-194919-4	Alluvium	12.8 - 37.6	--	--	--	--	--	--	--
SWFTS-MW25	BL02	7/13/2017	N	440-188324-4	Alluvium	12.8 - 42.6	--	<5.8 UJ	<5.2 UJ	<5.2 UJ	<6.2 UJ	<7.0 UJ	<7.4 UJ
SWFTS-MW25	EM04	10/11/2017	N	440-194242-1	Alluvium	12.8 - 42.6	--	--	--	--	--	--	--
SWFTS-MW25	EM06	11/15/2017	N	440-196665-2	Alluvium	12.8 - 42.6	--	--	--	--	--	--	--
SWFTS-MW25	EM07	12/12/2017	N	440-198371-1	Alluvium	12.8 - 42.6	--	--	--	--	--	--	--
SWFTS-MW25	EM08	2/21/2018	N	440-203937-7	Alluvium	12.8 - 42.6	--	--	--	--	--	--	--
SWFTS-MW25	EM09	3/28/2018	N	440-207497-13	Alluvium	12.8 - 42.6	--	--	--	--	--	--	--
SWFTS-MW25	EM10	5/3/2018	N	440-210534-2	Alluvium	12.8 - 42.6	--	--	--	--	--	--	--
SWFTS-MW25	EM11	7/10/2018	N	440-215437-12	Alluvium	12.8 - 42.6	--	--	--	--	--	--	--
SWFTS-MW25	EM13	8/15/2018	N	440-218208-10	Alluvium	12.8 - 42.6	--	--	--	--	--	--	--
SWFTS-MW25	EM14	9/12/2018	N	440-220031-2	Alluvium	12.8 - 42.6	--	--	--	--	--	--	--
SWFTS-MW25	EM15	10/11/2018	N	440-222092-6	Alluvium	12.8 - 42.6	--	--	--	--	--	--	--
SWFTS-MW25	EM19	5/22/2019	N	440-242201-6	Alluvium	12.8 - 42.6	--	--	--	--	--	--	--
SWFTS-MW25	EM22	11/5/2019	N	440-253918-4	Alluvium	12.8 - 42.6	--	--	--	--	--	--	--
SWFTS-MW25	EM26	4/28/2020	N	440-265288-2	Alluvium	12.8 - 42.6	--	--	--	--	--	--	--
SWFTS-MW25	EM29	10/13/2020	N	440-273236-2	Alluvium	12.8 - 42.6	--	--	--	--	--	--	--
SWFTS-MW25	EM33	6/2/2021	N	550-164872-5	Alluvium	12.8 - 42.6	--	--	--	--	--	--	--
SWFTS-MW25	EM33	6/2/2021	N	550-164872-6	Alluvium	12.8 - 42.6	--	--	--	--	--	--	--
SWFTS-MW25	EM36	12/1/2021	N	550-175045-19	Alluvium	12.8 - 42.6	--	--	--	--	--	--	--
SWFTS-MW25	EM36	12/1/2021	N	550-175045-20	Alluvium	12.8 - 42.6	--	--	--	--	--	--	--
SWFTS-MW25	EM40	12/13/2022	N	550-194919-1	Alluvium	12.8 - 42.6	--	--	--	--	--	--	--
SWFTS-MW25	EM40	12/13/2022	N	550-194919-2	Alluvium	12.8 - 42.6	--	--	--	--	--	--	--

Notes:
1. Lithology of monitoring well COH-2B1 was inferred from state records of well construction and generalized stratigraphy.
FD - Field duplicate
J The result is an estimated quantity. The associated numerical value is the approximate concentration of the analyte.
J- The result is an estimated quantity, but the result may be biased low.
J+ The result is an estimated quantity, but the result may be biased high.
mg/L - milligrams per liter
µg/L - micrograms per liter
N - Normal field sample
UMCf- Upper Muddy Creek Formation
R The data are unusable. The sample results are rejected due to serious deficiencies in meeting QC criteria. The
< The analyte was analyzed for, but was not detected above the level of the reported sample quantitation limit.
--- Not tested.

Table D.3
Groundwater Field Test Results Summary
Seep Well Field Area Bioremediation Treatability Study

Well	Event	Sample Date	QC Type	Lithology	Screened Interval (ft bgs)	FIELD TESTS							
						Conductivity	Dissolved Oxygen	Ferrous Iron	Oxidation-Reduction Potential	pH	Sulfide	Temperature	Turbidity
						mS/cm	mg/L	mg/L	mV	SU	mg/L	C	NTU
COH-2B1	BL02	8/9/2017	N	Alluvium/UMCf	36.0 - 66.0	3.590	1.14	0.0 U	358	6.21	0.0 U	--	0.00
COH-2B1	EM01	9/22/2017	N	Alluvium/UMCf	36.0 - 66.0	3.555	1.19	--	30.4	7.01	--	--	294
COH-2B1	EM03	10/5/2017	N	Alluvium/UMCf	36.0 - 66.0	4.054	0.14	--	-6.3	6.93	--	--	13.87
COH-2B1	EM04	10/12/2017	N	Alluvium/UMCf	36.0 - 66.0	3.913	7.92	0.0 U	146.6	6.98	0.0 U	--	99.0
COH-2B1	EM05	10/26/2017	N	Alluvium/UMCf	36.0 - 66.0	4.260	0.40	--	97.5	7.08	--	--	8.43
COH-2B1	EM07	12/14/2017	N	Alluvium/UMCf	36.0 - 66.0	4.180	-0.06 E	0.0 U	-95.4	7.32	0.0 U	--	7.56
COH-2B1	EM08	2/22/2018	N	Alluvium/UMCf	36.0 - 66.0	4.046	0.34	0.0 U	-5.1	7.26	0.0 U	--	7.16
COH-2B1	EM09	3/29/2018	N	Alluvium/UMCf	36.0 - 66.0	3.974	0.41	--	96.9	7.21	--	--	20.9
COH-2B1	EM10	5/2/2018	N	Alluvium/UMCf	36.0 - 66.0	3.81	0.00	--	114	7.26	--	22.25	31.2
COH-2B1	EM11	7/10/2018	N	Alluvium/UMCf	36.0 - 66.0	4.627	0.47	0.0 U	-32.2	7.19	0.0 U	25.09	350
COH-2B1	EM13	8/16/2018	N	Alluvium/UMCf	36.0 - 66.0	4.033	0.50	--	-136	7.10	--	28.08 E	20.4
COH-2B1	EM14	9/11/2018	N	Alluvium/UMCf	36.0 - 66.0	4.710	2.18	--	57	7.29	--	19.41	182
COH-2B1	EM15	10/11/2018	N	Alluvium/UMCf	36.0 - 66.0	4.07	2.79	0.0 U	39	7.27	0.0 U	20.28	138
COH-2B1	EM16	1/3/2019	N	Alluvium/UMCf	36.0 - 66.0	4.624	0.97	--	93.7	7.24	--	21.51	179
COH-2B1	EM17	2/25/2019	N	Alluvium/UMCf	36.0 - 66.0	4.84	0.00	0.0 U	-44	8.05	0.0 U	22.22	200
COH-2B1	EM18	4/9/2019	N	Alluvium/UMCf	36.0 - 66.0	3.282	0.56	--	174.6	6.99	--	22.6	41.5
COH-2B1	EM19	5/22/2019	N	Alluvium/UMCf	36.0 - 66.0	3.507	0.12	0.0 U	219.5	7.13	0.0 U	20.5	7.7
COH-2B1	EM20	7/1/2019	N	Alluvium/UMCf	36.0 - 66.0	3.167	0.37	--	7.6	7.24	--	24.6	153.2
COH-2B1	EM21	8/15/2019	N	Alluvium/UMCf	36.0 - 66.0	3.635	0.43	0.0 U	80.2	7.29	0.0 U	23.9	20.3
COH-2B1	EM22	11/4/2019	N	Alluvium/UMCf	36.0 - 66.0	4.322	0.61	0.0 U	118.2	7.21	0.0 U	24.1	106.5
COH-2B1	EM23	12/18/2019	N	Alluvium/UMCf	36.0 - 66.0	3.386	0.91	--	-6.3	7.21	--	21.4	56.27
COH-2B1	EM24	1/28/2020	N	Alluvium/UMCf	36.0 - 66.0	4.766	5.11	0.0 U	114.3	7.32	0.0 U	21.8	124.6
COH-2B1	EM25	3/9/2020	N	Alluvium/UMCf	36.0 - 66.0	4.554	2.35	--	140.2	7.2	--	22.3	101.2
COH-2B1	EM26	4/27/2020	N	Alluvium/UMCf	36.0 - 66.0	3.595	3.28	0.0 U	70.1	7.14	0.0 U	24.1	21.6
COH-2B1	EM27	7/7/2020	N	Alluvium/UMCf	36.0 - 66.0	4.096	1.01	--	128.8	7.19	--	26.9	25.58
COH-2B1	EM29	10/13/2020	N	Alluvium/UMCf	36.0 - 66.0	3.631	0.55	0.0 U	79	7.19	0.0 U	23.5	97.2
LVWPS-MW101A	EM11	7/12/2018	N	Alluvium	23.3 - 33.0	5.82	2.10	0.0 U	210	7.4	0.0 U	26.2	72
LVWPS-MW104	EM11	7/12/2018	N	Alluvium	23.8 - 33.5	6.61	1.92	0.0 U	411	7.31	0.0 U	26.63	19.2
LVWPS-MW104	EM13	8/15/2018	N	Alluvium	23.8 - 33.5	20.4 E	3.79	--	226	7.20	--	20.43	17.4
LVWPS-MW104	EM14	9/13/2018	N	Alluvium	23.8 - 33.5	4.690	2.84	--	-21.9	7.56	--	23.93	20.9
LVWPS-MW104	EM15	10/10/2018	N	Alluvium	23.8 - 33.5	6.79	4.3	0.0 U	143	7.82	0.0 U	20.39	16.7
LVWPS-MW107A	EM11	7/12/2018	N	Alluvium	24.8 - 34.5	6.6	4.00	0.0 U	144	7.51	0.0 U	19.77	0
LVWPS-MW108A	EM11	7/12/2018	N	Alluvium	20.8 - 40.7	6.48	3.86	0.0 U	253	7.39	0.0 U	20.42	0
LVWPS-MW108A	EM13	8/15/2018	N	Alluvium	20.8 - 40.7	20 E	2.73	--	105	6.94	--	20.32	8.8
LVWPS-MW108A	EM14	9/13/2018	N	Alluvium	20.8 - 40.7	6.210	3.08	--	237	7.29	--	20.81	24.7
LVWPS-MW108A	EM15	10/10/2018	N	Alluvium	20.8 - 40.7	6.37	2.96	0.0 U	167	7.18	0.0 U	23.63	24.8
LVWPS-MW109	EM11	7/12/2018	N	Alluvium	36.8 - 51.5	6.738	0.40	0.0 U	-11.6	6.73	0.0 U	25.69	128
LVWPS-MW109	EM13	8/15/2018	N	Alluvium	36.8 - 51.5	19.6 E	2.30	--	236	7.05	--	20.79	0.9
LVWPS-MW109	EM14	9/13/2018	N	Alluvium	36.8 - 51.5	5.965	0.59	--	173.5	6.99	--	24.60	13.33
LVWPS-MW109	EM15	10/10/2018	N	Alluvium	36.8 - 51.5	6.4	2.71	0.0 U	163	7.38	0.0 U	21.18	4.1
LVWPS-MW111A	EM11	7/12/2018	N	Alluvium	20.8 - 40.5	6.54	3.34	0.0 U	177	7.31	0.0 U	26.55	1000
LVWPS-MW111A	EM13	8/15/2018	N	Alluvium	20.8 - 40.5	20.2 E	2.23	--	153	7.17	--	20.83	2.6
LVWPS-MW111A	EM14	9/13/2018	N	Alluvium	20.8 - 40.5	6.253	0.35	--	131	7.10	--	24.85	52.7
LVWPS-MW111A	EM15	10/10/2018	N	Alluvium	20.8 - 40.5	6.62	0.95	0.0 U	118	7.13	0.0 U	25.07	51.2
LVWPS-MW112A	EM11	7/12/2018	N	Alluvium	28.8 - 48.0	6.534	0.89	0.0 U	8	6.81	0.0 U	25.78	441
LVWPS-MW112A	EM15	10/10/2018	N	Alluvium	28.8 - 48.0	6.26	1.91	0.0 U	176	7.12	0.0 U	26.3	43.5
PC-58	BL01	3/28/2017	N	Alluvium	7.8 - 32.8	4.525	0.15	--	-112.6	7.06	--	--	1.35
PC-58	BL02	7/13/2017	N	Alluvium	7.8 - 32.8	4.560	0.00	0.0 U	92.0	7.40	0.0 U	--	2.20
PC-58	EM04	10/11/2017	N	Alluvium	7.8 - 32.8	3.738	3.40	0.0 U	107.1	7.14	0.0 U	--	8.17

Table D.3
Groundwater Field Test Results Summary
Seep Well Field Area Bioremediation Treatability Study

Well	Event	Sample Date	QC Type	Lithology	Screened Interval (ft bgs)	FIELD TESTS							
						Conductivity	Dissolved Oxygen	Ferrous Iron	Oxidation-Reduction Potential	pH	Sulfide	Temperature	Turbidity
						mS/cm	mg/L	mg/L	mV	SU	mg/L	C	NTU
PC-58	EM06	11/16/2017	N	Alluvium	7.8 - 32.8	4.250	0.65	0.0 U	7.4	7.25	0.0 U	--	46.10
PC-58	EM07	12/14/2017	N	Alluvium	7.8 - 32.8	4.602	0.29	0.0 U	-70.5	6.45	0.0 U	--	13.30
PC-58	EM08	2/21/2018	N	Alluvium	7.8 - 32.8	4.500	2.49	0.0 U	143.0	7.92	0.0 U	--	0.00
PC-58	EM09	3/28/2018	N	Alluvium	7.8 - 32.8	4.100	4.31	--	229	7.35	--	--	33.0
PC-58	EM10	5/2/2018	N	Alluvium	7.8 - 32.8	4.119	0.71	--	-168.4	7.59	--	22.83	4.25
PC-58	EM11	7/11/2018	N	Alluvium	7.8 - 32.8	4.69	1.17	0.0 U	-30.00	7.24	0.0 U	27.38 E	4.01
PC-58	EM13	8/15/2018	N	Alluvium	7.8 - 32.8	4.596	0.38	--	-145.3	7.11	--	26.24	6.22
PC-58	EM14	9/13/2018	N	Alluvium	7.8 - 32.8	3.970	2.74	--	160	7.51	--	20.99	3.6
PC-58	EM15	10/11/2018	N	Alluvium	7.8 - 32.8	3.51	0	0.0 U	131	7	0.0 U	24.61	17.6
PC-58	EM16	1/3/2019	N	Alluvium	7.8 - 32.8	3.607	0.83	--	103.9	7.29	--	22.06	4.32
PC-58	EM17	3/1/2019	N	Alluvium	7.8 - 32.8	4.129	0.41	0.0 U	29.5	7.22	0.0 U	21.92	1.27
PC-58	EM18	4/9/2019	N	Alluvium	7.8 - 32.8	3.761	3.68	--	131.2	7.39	--	24.2	36.3
PC-58	EM19	5/22/2019	N	Alluvium	7.8 - 32.8	4.270	1.68	0.0 U	87.7	7.27	0.0 U	21.4	38.9
PC-58	EM20	7/5/2019	N	Alluvium	7.8 - 32.8	3.772	0.43	--	147.6	7.16	--	23.5	14.1
PC-58	EM21	8/15/2019	N	Alluvium	7.8 - 32.8	3.714	0.47	0.0 U	97.8	7.36	0.0 U	24.5	9.3
PC-58	EM22	11/7/2019	N	Alluvium	7.8 - 32.8	3.531	0.64	0.0 U	201.3	7.32	0.0 U	21.4	5.6
PC-58	EM23	12/20/2019	N	Alluvium	7.8 - 32.8	3.688	1.00	--	52.5	7.24	--	21.8	1.15
PC-58	EM24	1/30/2020	N	Alluvium	7.8 - 32.8	2.755	2.79	0.0 U	111.4	7.30	0.0 U	20.9	0.0
PC-58	EM25	3/11/2020	N	Alluvium	7.8 - 32.8	4.058	1.69	--	132.2	7.16	--	21.5	1.4
PC-58	EM26	5/1/2020	N	Alluvium	7.8 - 32.8	3.21	3.13	0.0 U	77.3	7.22	0.0 U	22.9	30.1
PC-58	EM27	7/9/2020	N	Alluvium	7.8 - 32.8	4.673	1.08	--	106.6	8.16	--	26.3	13.05
PC-58	EM28	8/19/2020	N	Alluvium	7.8 - 32.8	3.333	0.64	0.0 U	258.1	7.33	0.0 U	25.3	40.3
PC-58	EM29	10/16/2020	N	Alluvium	7.8 - 32.8	3.532	1.28	0.0 U	78.3	7.47	0.0 U	24.6	22.37
PC-58	EM30	12/10/2020	N	Alluvium	7.8 - 32.8	2.399	0.4	--	137.7	7.45	--	21.3	9.66
PC-58	EM31	2/1/2021	N	Alluvium	7.8 - 32.8	2.864	0.6	0.0 U	350.7	7.79	0.0 U	22.9	75.2
PC-58	EM32	4/1/2021	N	Alluvium	7.8 - 32.8	2.864	0.60	--	350.7	7.79	--	22.9	75.2
PC-58	EM33	6/2/2021	N	Alluvium	7.8 - 32.8	2.274	0.20	0.0 U	46.0	7.33	0.0 U	26.1	49.3
PC-58	EM34	7/22/2021	N	Alluvium	7.8 - 32.8	3.080	0.48	0.0 U	133.7	7.21	0.0 U	24.5	7.7
PC-58	EM35	9/16/2021	N	Alluvium	7.8 - 32.8	3.712	0.08	0.0 U	-18.6	7.20	0.0 U	25.3	66.9
PC-58	EM36	12/3/2021	N	Alluvium	7.8 - 32.8	3.418	1.09	0.0 U	100.3	7.35	0.0 U	22.2	21.6
PC-58	EM37	3/7/2022	N	Alluvium	7.8 - 32.8	4.125	0.85	--	328.7	7.13	--	21.1	4.7
PC-58	EM38	6/21/2022	N	Alluvium	7.8 - 32.8	3.470	1.22	0.0 U	27.3	7.25	0.0 U	23.0	62.1
PC-58	EM39	9/15/2022	N	Alluvium	7.8 - 32.8	4.013	0.74	--	61.6	7.22	--	24.7	15.5
PC-58	EM40	12/12/2022	N	Alluvium	7.8 - 32.8	3.768	1.32	0.0 U	78.1	7.19	0.0 U	21.6	21.7
PC-88	EM01	9/22/2017	N	Alluvium	40.0 - 50.0	4.962	4.15	--	14.1	7.12	--	--	95.2
PC-88	EM02	9/28/2017	N	Alluvium	40.0 - 50.0	8.435	1.13	--	87.5	6.96	--	--	10.03
PC-88	EM03	10/4/2017	N	Alluvium	40.0 - 50.0	9.584	0.21	--	20.0	6.97	--	--	3.74
PC-88	EM04	10/11/2017	N	Alluvium	40.0 - 50.0	5.160	0.37	0.0 U	233	4.64 E	0.0 U	--	0.40
PC-88	EM05	10/25/2017	N	Alluvium	40.0 - 50.0	5.483	0.37	--	61.8	7.27	--	--	13.9
PC-88	EM06	11/15/2017	N	Alluvium	40.0 - 50.0	5.020	0.46	0.0 U	165.1	6.83	0.0 U	--	5.71
PC-88	EM07	12/14/2017	N	Alluvium	40.0 - 50.0	5.310	0.68	0.0 U	32.0	7.63	0.0 U	--	9.26
PC-88	EM08	2/22/2018	N	Alluvium	40.0 - 50.0	3.963	0.29	0.0 U	-43.2	6.82	0.0 U	--	5.35
PC-88	EM09	3/29/2018	N	Alluvium	40.0 - 50.0	3.784	0.45	--	-82.5	7.59	--	--	0.71
PC-88	EM10	5/2/2018	N	Alluvium	40.0 - 50.0	3.701	0.50	--	-192.8	7.81	--	24.21	3.45
PC-88	EM11	7/12/2018	N	Alluvium	40.0 - 50.0	4.99	0.89	0.0 U	-2.80	7.07	0.0 U	26.54	15.42
PC-88	EM13	8/16/2018	N	Alluvium	40.0 - 50.0	4.446	3.31	--	-133	7.23	--	27.27 E	8.8
PC-88	EM14	9/12/2018	N	Alluvium	40.0 - 50.0	4.930	2.28	--	146	7.35	--	21.15	3.9
PC-88	EM15	10/11/2018	N	Alluvium	40.0 - 50.0	4.83	0	0.0 U	125	7.02	0.0 U	23.51	30.2
PC-88	EM16	1/3/2019	N	Alluvium	40.0 - 50.0	4.026	0.93	--	105.2	7.35	--	21.63	4.03

Table D.3
Groundwater Field Test Results Summary
Seep Well Field Area Bioremediation Treatability Study

Well	Event	Sample Date	QC Type	Lithology	Screened Interval (ft bgs)	FIELD TESTS							
						Conductivity	Dissolved Oxygen	Ferrous Iron	Oxidation-Reduction Potential	pH	Sulfide	Temperature	Turbidity
						mS/cm	mg/L	mg/L	mV	SU	mg/L	C	NTU
PC-88	EM17	2/28/2019	N	Alluvium	40.0 - 50.0	3.812	0.35	0.0 U	86.5	7.31	0.0 U	22.90	3.95
PC-88	EM18	4/9/2019	N	Alluvium	40.0 - 50.0	3.706	0.54	--	147.9	7.23	--	24.1	8.7
PC-88	EM19	5/22/2019	N	Alluvium	40.0 - 50.0	3.674	0.05	0.0 U	213.5	7.22	0.0 U	23.6	4.9
PC-88	EM20	7/5/2019	N	Alluvium	40.0 - 50.0	3.475	0.39	--	138.9	7.24	--	24.7	4.9
PC-88	EM21	8/15/2019	N	Alluvium	40.0 - 50.0	3.505	0.39	0.0 U	100.1	7.43	0.0 U	25.7	12.8
PC-88	EM22	11/7/2019	N	Alluvium	40.0 - 50.0	4.149	0.64	0.0 U	194.9	7.34	0.0 U	23.0	2.8
PC-88	EM23	12/20/2019	N	Alluvium	40.0 - 50.0	3.724	0.83	--	45.3	7.31	--	22.1	9.17
PC-88	EM24	1/30/2020	N	Alluvium	40.0 - 50.0	2.742	2.65	0.0 U	144.7	7.38	0.0 U	21.8	10.5
PC-88	EM25	3/12/2020	N	Alluvium	40.0 - 50.0	3.648	1.6	--	110.2	7.3	--	22.5	2.4
PC-88	EM26	5/1/2020	N	Alluvium	40.0 - 50.0	3.627	0.26	0.0 U	166.3	7.29	0.0 U	23.2	7.3
PC-88	EM27	7/9/2020	N	Alluvium	40.0 - 50.0	4.439	0.74	--	98.9	8.64	--	26.2	10.79
PC-88	EM28	8/19/2020	N	Alluvium	40.0 - 50.0	3.824	0.63	0.0 U	254.5	7.29	0.0 U	26.6	11.8
PC-88	EM29	10/15/2020	N	Alluvium	40.0 - 50.0	4.22	0.49	0.0 U	101.8	7.26	0.0 U	24.1	7
PC-88	EM30	12/10/2020	N	Alluvium	40.0 - 50.0	3.102	0.3	--	125	7.4	--	21.1	22.46
PC-88	EM31	2/2/2021	N	Alluvium	40.0 - 50.0	2.679	0.51	0.0 U	211.1	7.13	0.0 U	21.1	6.5
PC-88	EM32	3/30/2021	N	Alluvium	40.0 - 50.0	2.679	0.51	--	211.1	7.13	--	21.1	6.5
PC-88	EM33	6/3/2021	N	Alluvium	40.0 - 50.0	1.898	0.07	0.0 U	55.6	7.44	0.0 U	26.2	16.0
PC-88	EM34	7/22/2021	N	Alluvium	40.0 - 50.0	2.417	0.38	0.0 U	32.3	7.42	0.0 U	24.4	18.7
PC-88	EM35	9/16/2021	N	Alluvium	40.0 - 50.0	3.501	-0.01	0.0 U	-52.9	7.23	0.0 U	24.4	45.7
PC-88	EM36	12/2/2021	N	Alluvium	40.0 - 50.0	2.909	1.58	0.0 U	92.4	7.31	0.0 U	21.2	7.5
PC-88	EM37	3/8/2022	N	Alluvium	40.0 - 50.0	3.005	0.58	--	60.3	7.30	--	21.7	6.3
PC-88	EM38	6/21/2022	N	Alluvium	40.0 - 50.0	3.060	0.48	0.0 U	36.7	7.39	0.0 U	23.4	202.1
PC-88	EM39	9/15/2022	N	Alluvium	40.0 - 50.0	4.984	0.50	--	87.9	7.13	--	23.8	12.0
PC-88	EM40	12/12/2022	N	Alluvium	40.0 - 50.0	3.979	3.76	0.0 U	73.1	7.14	0.0 U	19.8	20.9
PC-91	BL01	3/29/2017	N	Alluvium	11.5 - 21.5	3.855	0.25	--	-160.1	7.77	--	--	3.84
PC-91	BL02	7/12/2017	N	Alluvium	11.5 - 21.5	3.740	0.31	0.0 U	132.5	7.28	0.0 U	--	10.20
PC-91	EM01	9/21/2017	N	Alluvium	11.5 - 21.5	3.512	0.47	--	72.8	7.00	--	--	9.77
PC-91	EM02	9/27/2017	N	Alluvium	11.5 - 21.5	3.589	0.72	--	31.5	7.11	--	--	18.61
PC-91	EM03	10/4/2017	N	Alluvium	11.5 - 21.5	6.863	0.19	--	-13.3	6.98	--	--	1.82
PC-91	EM04	10/12/2017	N	Alluvium	11.5 - 21.5	3.810	0.38 E	0.0 U	214 E	4.58 E	0.0 U	--	0.0
PC-91	EM05	10/25/2017	N	Alluvium	11.5 - 21.5	3.868	0.55	--	10.6	7.52	--	--	2.00
PC-91	EM06	11/16/2017	N	Alluvium	11.5 - 21.5	3.700	0.82	0.0 U	-21.1	7.29	0.0 U	--	4.57
PC-91	EM07	12/13/2017	N	Alluvium	11.5 - 21.5	3.860	0.37	0.0 U	-72.9	7.20	0.0 U	--	3.91
PC-91	EM08	2/20/2018	N	Alluvium	11.5 - 21.5	3.989	0.82	0.0 U	74.9	7.15	0.0 U	--	4.49
PC-91	EM09	3/26/2018	N	Alluvium	11.5 - 21.5	4.343	1.02	0.0 U	66.8	6.96	0.0 U	22.67	4.69
PC-91	EM10	5/1/2018	N	Alluvium	11.5 - 21.5	4.077	0.64	--	-193.2	7.22	--	22.28	8.00
PC-91	EM11	7/11/2018	N	Alluvium	11.5 - 21.5	4.39	3.08	0.0 U	-29.6	6.75	0.0 U	25.53	7.06
PC-91	EM12	7/27/2018	N	Alluvium	11.5 - 21.5	4.02	0.77	--	31.8	6.95	--	24.55	5.01
PC-91	EM13	8/14/2018	N	Alluvium	11.5 - 21.5	3.849	1.08	--	312.3	4.42 E	--	24.09	30.3
PC-91	EM14	9/12/2018	N	Alluvium	11.5 - 21.5	4.070	3.12	--	64	6.83	--	20.05	4.4
PC-91	EM15	10/10/2018	N	Alluvium	11.5 - 21.5	4.26	0	--	127	7.05	--	26.07	14.2
PC-91	EM16	12/20/2018	N	Alluvium	11.5 - 21.5	4.702	0.68	--	-99.2	6.76	--	24.37	6.02
PC-91	EM17	2/26/2019	N	Alluvium	11.5 - 21.5	4.134	0.47	0.0 U	26.4	6.63	0.0 U	24.23	2.40
PC-91	EM18	4/10/2019	N	Alluvium	11.5 - 21.5	4.448	1.41	--	70.0	6.58	--	24.06	4.01
PC-91	EM19	5/21/2019	N	Alluvium	11.5 - 21.5	4.170	0.05	0.0 U	169.0	6.54	0.0 U	25.1	18.6
PC-91	EM20	7/1/2019	N	Alluvium	11.5 - 21.5	4.451	0.42	--	65.2	6.65	--	25.8	9.4
PC-91	EM21	8/12/2019	N	Alluvium	11.5 - 21.5	4.222	0.44	0.0 U	159.2	6.64	0.0 U	24.4	6.7
PC-91	EM22	11/6/2019	N	Alluvium	11.5 - 21.5	5.149	0.56	0.0 U	221.6	6.66	0.0 U	26.9	16.2
PC-91	EM23	12/17/2019	N	Alluvium	11.5 - 21.5	4.563	8.61	--	-59.4	6.55	--	25.0	29.22

Table D.3
Groundwater Field Test Results Summary
Seep Well Field Area Bioremediation Treatability Study

Well	Event	Sample Date	QC Type	Lithology	Screened Interval (ft bgs)	FIELD TESTS							
						Conductivity	Dissolved Oxygen	Ferrous Iron	Oxidation-Reduction Potential	pH	Sulfide	Temperature	Turbidity
						mS/cm	mg/L	mg/L	mV	SU	mg/L	C	NTU
PC-91	EM24	1/28/2020	N	Alluvium	11.5 - 21.5	3.802	5.81	0.0 U	139.1	6.93	0.0 U	24.0	5.5
PC-91	EM25	3/12/2020	N	Alluvium	11.5 - 21.5	3.995	1.49	--	50	6.65	--	24.7	10.1
PC-91	EM26	4/30/2020	N	Alluvium	11.5 - 21.5	3.531	0.37	0.0 U	108.3	6.7	0.0 U	26	2.1
PC-91	EM27	7/7/2020	N	Alluvium	11.5 - 21.5	5.472	0.65	--	-249.1	6.63	--	30.6	11.09
PC-91	EM28	8/17/2020	N	Alluvium	11.5 - 21.5	5.202	0.52	1	-63.6	6.49	0.0 U	29.3	17.2
PC-91	EM29	10/14/2020	N	Alluvium	11.5 - 21.5	4.421	0.43	1.25	-28	6.48	0.0 U	27.1	11.8
PC-91	EM30	12/9/2020	N	Alluvium	11.5 - 21.5	3.621	1.68	--	-153.3	6.57	--	26.1	29.8
PC-91	EM31	2/1/2021	N	Alluvium	11.5 - 21.5	4.267	0.83	1.5	-185.5	6.27	0.0 U	20.4	128.3
PC-91	EM32	3/29/2021	N	Alluvium	11.5 - 21.5	4.267	0.83	--	-185.5	6.27	--	20.4	128.3
PC-91	EM33	6/2/2021	N	Alluvium	11.5 - 21.5	3.394	0.04	4.0	-194.2	6.56	2.0	27.1	124.9
PC-91	EM34	7/20/2021	N	Alluvium	11.5 - 21.5	3.067	0.04	1.0	-161.6	6.58	4.0	27.7	16.6
PC-91	EM35	9/16/2021	N	Alluvium	11.5 - 21.5	4.007	-0.11	0.5	-320.9	6.61	0.6	28.8	3.6
PC-91	EM36	11/30/2021	N	Alluvium	11.5 - 21.5	3.283	1.78	1.5	-183.3	6.20	2.0	20.3	152.7
PC-91	EM37	3/7/2022	N	Alluvium	11.5 - 21.5	3.579	0.36	--	-326.9	6.65	--	24.4	8.7
PC-91	EM38	6/21/2022	N	Alluvium	11.5 - 21.5	4.090	0.28	0.0 U	-340.1	6.88	0.1	28.6	74.0
PC-91	EM39	9/14/2022	N	Alluvium	11.5 - 21.5	4.885	0.20	--	-301.3	6.74	--	26.1	6.2
PC-91	EM40	12/12/2022	N	Alluvium	11.5 - 21.5	4.798	0.65	0.5	-306.9	6.94	0.6	24.8	2.6
PC-92	BL01	3/29/2017	N	Alluvium	26.5 - 36.5	5.528	0.35	--	92.4	7.23	--	--	13.40
PC-92	BL02	7/12/2017	N	Alluvium	26.5 - 36.5	4.500	0.31	0.0 U	109.3	7.24	0.0 U	--	151.00
PC-92	EM01	9/21/2017	N	Alluvium	26.5 - 36.5	3.809	0.41	--	49.4	7.04	--	--	65.7
PC-92	EM02	9/27/2017	N	Alluvium	26.5 - 36.5	3.957	0.45	--	-10.3	7.12	--	--	32.70
PC-92	EM03	10/4/2017	N	Alluvium	26.5 - 36.5	7.421	0.12	--	-17.2	6.98	--	--	43.20
PC-92	EM04	10/12/2017	N	Alluvium	26.5 - 36.5	4.650	9.88 E	0.0 U	361 E	0 E	0.0 U	--	26.30
PC-92	EM05	10/25/2017	N	Alluvium	26.5 - 36.5	4.699	0.30	--	-77.9	7.45	--	--	19.66
PC-92	EM06	11/16/2017	N	Alluvium	26.5 - 36.5	3.750	0.42	0.0 U	-197.9	7.35	0.40	--	73.50
PC-92	EM07	12/14/2017	N	Alluvium	26.5 - 36.5	4.062	3.78	0.0 U	-214.2	7.46	0.0 U	--	22.60
PC-92	EM08	2/20/2018	N	Alluvium	26.5 - 36.5	4.013	4.60	0.0 U	52.5	7.52	0.0 U	--	16.89
PC-92	EM09	3/26/2018	N	Alluvium	26.5 - 36.5	4.900	0.51	--	63.4	7.12	--	22.19	14.32
PC-92	EM10	5/1/2018	N	Alluvium	26.5 - 36.5	5.014	0.70	--	-180.5	7.49	--	23.09	8.30
PC-92	EM11	7/11/2018	N	Alluvium	26.5 - 36.5	5.26	1.47	0.0 U	-31.3	7.1	0.0 U	27.1 E	50.2
PC-92	EM12	7/27/2018	N	Alluvium	26.5 - 36.5	4.47	0.28	--	40.1	7.35	--	24.22	4.68
PC-92	EM13	8/15/2018	N	Alluvium	26.5 - 36.5	4.109	0.98	--	-175.4	7.15	--	23.97	7.2
PC-92	EM14	9/12/2018	N	Alluvium	26.5 - 36.5	4.270	2.95	--	93	7.35	--	19.28	28.2
PC-92	EM15	10/11/2018	N	Alluvium	26.5 - 36.5	4.42	0	0.0 U	--	7.02	0.0 U	23.47	--
PC-92	EM16	12/20/2018	N	Alluvium	26.5 - 36.5	4.381	0.72	--	-76	7.24	--	22.08	45.6
PC-92	EM17	2/26/2019	N	Alluvium	26.5 - 36.5	3.560	0.56	0.0 U	-54.1	7.18	0.0 U	21.80	9.33
PC-92	EM18	4/10/2019	N	Alluvium	26.5 - 36.5	3.728	0.84	--	70.4	7.17	--	24.13	7.11
PC-92	EM19	5/21/2019	N	Alluvium	26.5 - 36.5	3.275	0.09	0.0 U	185.1	7.20	0.0 U	23.9	9.5
PC-92	EM20	7/1/2019	N	Alluvium	26.5 - 36.5	3.685	0.42	--	74.1	7.25	--	23.8	25.8
PC-92	EM21	8/12/2019	N	Alluvium	26.5 - 36.5	3.310	0.41	0.0 U	132.7	7.26	0.0 U	24.2	7.2
PC-92	EM22	11/6/2019	N	Alluvium	26.5 - 36.5	4.301	0.56	0.0 U	202.7	7.24	0.0 U	22.9	8.2
PC-92	EM23	12/17/2019	N	Alluvium	26.5 - 36.5	3.282	0.67	--	-60.0	7.18	--	21.9	9.03
PC-92	EM24	1/28/2020	N	Alluvium	26.5 - 36.5	4.302	4.93	0.0 U	164.5	7.31	0.0 U	22.4	92.0
PC-92	EM25	3/12/2020	N	Alluvium	26.5 - 36.5	5.051	1.63	--	156.3	7.07	--	22.7	18.4
PC-92	EM26	4/30/2020	N	Alluvium	26.5 - 36.5	3.228	5.37	0.0 U	151.2	7.53	0.0 U	24.7	3.5
PC-92	EM27	7/7/2020	N	Alluvium	26.5 - 36.5	5.106	0.72	--	-216.6	7.30	--	28.3	15.40
PC-92	EM28	8/17/2020	N	Alluvium	26.5 - 36.5	4.026	0.64	0.0 U	141.3	7.18	0.0 U	25	49.2
PC-92	EM29	10/14/2020	N	Alluvium	26.5 - 36.5	4.43	0.48	0.0 U	91.8	7.21	0.0 U	23.3	44.7
PC-92	EM30	12/9/2020	N	Alluvium	26.5 - 36.5	3.465	1.92	--	29.1	7.18	--	22.6	35.8

Table D.3
Groundwater Field Test Results Summary
Seep Well Field Area Bioremediation Treatability Study

Well	Event	Sample Date	QC Type	Lithology	Screened Interval (ft bgs)	FIELD TESTS							
						Conductivity	Dissolved Oxygen	Ferrous Iron	Oxidation-Reduction Potential	pH	Sulfide	Temperature	Turbidity
						mS/cm	mg/L	mg/L	mV	SU	mg/L	C	NTU
PC-92	EM31	2/1/2021	N	Alluvium	26.5 - 36.5	4.125	0.9	0.0 U	118	7.56	0.0 U	25.3	23.3
PC-92	EM32	3/29/2021	N	Alluvium	26.5 - 36.5	4.125	0.90	--	118.0	7.56	--	25.3	23.3
PC-92	EM33	6/2/2021	N	Alluvium	26.5 - 36.5	3.221	0.18	0.0 U	0.9	7.19	0.0 U	24.7	30.3
PC-92	EM34	7/20/2021	N	Alluvium	26.5 - 36.5	2.731	0.23	0.0 U	-5.4	7.22	0.0 U	24.8	16.6
PC-92	EM35	9/16/2021	N	Alluvium	26.5 - 36.5	4.890	0.19	0.0 U	8.6	7.05	0.0 U	24.2	21.0
PC-92	EM36	11/30/2021	N	Alluvium	26.5 - 36.5	5.077	1.58	0.0 U	-81.8	6.75	0.0 U	23.1	73.2
PC-92	EM37	3/7/2022	N	Alluvium	26.5 - 36.5	5.454	0.48	--	-232.6	7.19	--	22.6	7.9
PC-92	EM38	6/21/2022	N	Alluvium	26.5 - 36.5	5.669	0.37	0.0 U	-230.0	7.06	0.0 U	24.7	7.2
PC-92	EM39	9/14/2022	N	Alluvium	26.5 - 36.5	5.172	0.63	--	-126.9	7.01	--	24.5	30.0
PC-92	EM40	12/13/2022	N	Alluvium	26.5 - 36.5	3.856	0.98	0.0 U	45.3	7.08	0.0 U	22.1	15.5
PC-94	BL01	3/28/2017	N	Alluvium	9.5 - 19.5	7.390	0.33	--	-30.5	6.93	--	--	11.40
PC-94	BL02	7/13/2017	N	Alluvium	9.5 - 19.5	7.210	0.41	0.0 U	113.9	7.07	0.0 U	--	120.00
PC-94	EM01	9/20/2017	N	Alluvium	9.5 - 19.5	7.409	0.15	--	38.2	7.11	--	--	47.2
PC-94	EM02	9/26/2017	N	Alluvium	9.5 - 19.5	8.264	0.19	--	-67.8	7.14	--	--	61.0
PC-94	EM03	10/5/2017	N	Alluvium	9.5 - 19.5	7.347	0.13	--	-162.2	6.61	--	--	27.5
PC-94	EM04	10/11/2017	N	Alluvium	9.5 - 19.5	7.232	0.55	0.50	-112.4	6.64	0.0 U	--	125
PC-94	EM05	10/26/2017	N	Alluvium	9.5 - 19.5	7.197	3.80	--	28.1	7.06	--	--	353
PC-94	EM06	11/16/2017	N	Alluvium	9.5 - 19.5	6.900	0.50	0.0 U	-63.2	6.94	0.0 U	--	298
PC-94	EM07	12/12/2017	N	Alluvium	9.5 - 19.5	7.086	0.19	0.0 U	-24.6	7.26	0.0 U	--	269
PC-94	EM08	2/21/2018	N	Alluvium	9.5 - 19.5	6.330	3.75	0.0 U	177	7.92	0.0 U	--	90.5
PC-94	EM09	3/27/2018	N	Alluvium	9.5 - 19.5	6.270	2.07	--	204	7.27	--	--	50.1
PC-94	EM10	5/1/2018	N	Alluvium	9.5 - 19.5	6.29	0.00	--	170	7.14	--	25.10	69.2
PC-94	EM11	7/10/2018	N	Alluvium	9.5 - 19.5	6.22	0.10	0.0 U	214	6.99	0.0 U	25.96	1000
PC-94	EM12	7/27/2018	N	Alluvium	9.5 - 19.5	7.10	0.25	--	31.6	7.08	--	30.4 E	143
PC-94	EM13	8/15/2018	N	Alluvium	9.5 - 19.5	6.458	1.53	--	-145.3	6.86	--	27.01 E	159
PC-94	EM14	9/11/2018	N	Alluvium	9.5 - 19.5	5.770	1.67	--	135	7.04	--	23.59	83.7
PC-94	EM15	10/11/2018	N	Alluvium	9.5 - 19.5	5.91	0	0.0 U	129	6.77	0.0 U	27.39 E	168
PC-94	EM16	12/28/2018	N	Alluvium	9.5 - 19.5	5.259	4.54	--	152	7.01	--	21.73	669
PC-94	EM17	2/27/2019	N	Alluvium	9.5 - 19.5	4.952	0.74	0.0 U	100.5	6.99	0.0 U	21.74	97
PC-94	EM18	4/11/2019	N	Alluvium	9.5 - 19.5	4.884	1.43	--	122.6	6.84	--	24.3	72.2
PC-94	EM19	5/22/2019	N	Alluvium	9.5 - 19.5	5.208	0.05	0.0 U	210.0	6.83	0.0 U	23.3	9.1
PC-94	EM20	7/5/2019	N	Alluvium	9.5 - 19.5	4.668	4.35	--	201.7	7.25	--	25.1	115.5
PC-94	EM21	8/12/2019	N	Alluvium	9.5 - 19.5	5.275	1.19	0.0 U	142.6	7.01	0.0 U	25.4	15
PC-94	EM22	11/6/2019	N	Alluvium	9.5 - 19.5	5.175	3.82	0.0 U	330.2	7.28	0.0 U	21.7	6.2
PC-94	EM23	12/19/2019	N	Alluvium	9.5 - 19.5	4.653	1.78	--	129.7	7.07	--	21.4	1000 >
PC-94	EM24	1/30/2020	N	Alluvium	9.5 - 19.5	3.621	4.11	0.0 U	174.6	7.20	0.0 U	22.1	57.9
PC-94	EM25	3/10/2020	N	Alluvium	9.5 - 19.5	4.627	2.62	--	195	6.97	--	22.3	30.4
PC-94	EM26	4/28/2020	N	Alluvium	9.5 - 19.5	5.692	0.31	0.0 U	139.4	7.02	0.0 U	25.8	47.2
PC-94	EM27	7/6/2020	N	Alluvium	9.5 - 19.5	6.543	1.04	--	80.2	6.86	--	29.3	40.08
PC-94	EM28	8/18/2020	N	Alluvium	9.5 - 19.5	5.277	0.71	0.0 U	231.2	6.98	0.0 U	25.9	85.4
PC-94	EM29	10/15/2020	N	Alluvium	9.5 - 19.5	5.039	0.74	0.0 U	100.8	6.99	0.0 U	24	14
PC-94	EM30	12/8/2020	N	Alluvium	9.5 - 19.5	4.101	1.85	--	23.2	7.1	--	23.1	27.2
PC-94	EM31	2/1/2021	N	Alluvium	9.5 - 19.5	4.613	0.53	0.0 U	172.5	7.29	0.0 U	23.9	68.6
PC-94	EM32	3/29/2021	N	Alluvium	9.5 - 19.5	4.613	0.53	--	172.5	7.29	--	23.9	68.6
PC-94	EM33	6/2/2021	N	Alluvium	9.5 - 19.5	3.922	0.23	0.0 U	57.9	6.96	0.0 U	26.9	78.6
PC-94	EM34	7/20/2021	N	Alluvium	9.5 - 19.5	3.961	0.38	0.0 U	96.4	6.97	0.0 U	24.7	15.1
PC-94	EM35	9/15/2021	N	Alluvium	9.5 - 19.5	5.539	0.07	0.0 U	57.6	6.84	0.0 U	25.7	32.0
PC-94	EM36	11/30/2021	N	Alluvium	9.5 - 19.5	6.119	1.58	0.0 U	-9.6	6.72	0.0 U	23.5	201.2
PC-94	EM37	3/8/2022	N	Alluvium	9.5 - 19.5	6.233	0.49	--	90.5	6.79	--	23.2	28.3

Table D.3
Groundwater Field Test Results Summary
Seep Well Field Area Bioremediation Treatability Study

Well	Event	Sample Date	QC Type	Lithology	Screened Interval (ft bgs)	FIELD TESTS							
						Conductivity	Dissolved Oxygen	Ferrous Iron	Oxidation-Reduction Potential	pH	Sulfide	Temperature	Turbidity
						mS/cm	mg/L	mg/L	mV	SU	mg/L	C	NTU
PC-94	EM38	6/21/2022	N	Alluvium	9.5 - 19.5	6.152	0.49	0.0 U	-64.8	6.84	0.0 U	26.8	63.7
PC-94	EM39	9/15/2022	N	Alluvium	9.5 - 19.5	6.101	0.50	--	95.3	6.86	--	26.2	67.6
PC-94	EM40	12/13/2022	N	Alluvium	9.5 - 19.5	5.340	1.14	0.0 U	67.1	6.85	0.0 U	22.4	15.6
PC-97	BL02	7/13/2017	N	Alluvium	23.0 - 33.0	3.330	0.27	0.0 U	73.0	7.27	0.0 U	--	119.00
PC-97	EM01	9/22/2017	N	Alluvium	23.0 - 33.0	3.574	0.39	--	-4.2	7.01	--	--	135
PC-97	EM02	9/28/2017	N	Alluvium	23.0 - 33.0	6.338	4.28	--	92.6	7.05	--	--	98
PC-97	EM03	10/4/2017	N	Alluvium	23.0 - 33.0	7.059	0.19	--	-10.2	6.94	--	--	36.7
PC-97	EM04	10/11/2017	N	Alluvium	23.0 - 33.0	3.910	0.48	0.0 U	5.0	5.04 E	0.0 U	--	32.5
PC-97	EM05	10/25/2017	N	Alluvium	23.0 - 33.0	4.267	0.39	--	-130.5	7.21	--	--	85.6
PC-97	EM06	11/16/2017	N	Alluvium	23.0 - 33.0	3.940	0.48	0.0 U	-161.4	7.33	0.80	--	13.8
PC-97	EM07	12/13/2017	N	Alluvium	23.0 - 33.0	3.350	0.79	--	-20.0	7.75	--	--	43.0
PC-97	EM08	2/21/2018	N	Alluvium	23.0 - 33.0	3.142	2.47	0.0 U	-6.3	7.36	0.0 U	--	5.33
PC-97	EM09	3/27/2018	N	Alluvium	23.0 - 33.0	2.918	1.68	--	48.6	7.27	--	--	9.86
PC-97	EM10	5/1/2018	N	Alluvium	23.0 - 33.0	2.867	2.10	--	-122.8	7.40	--	22.92	8.91
PC-97	EM11	7/10/2018	N	Alluvium	23.0 - 33.0	3.03	3.45	0.0 U	144	7.27	0.0 U	27.14 E	128
PC-97	EM13	8/16/2018	N	Alluvium	23.0 - 33.0	3.087	2.94	--	-140	7.18	--	24.51	25
PC-97	EM14	9/12/2018	N	Alluvium	23.0 - 33.0	3.220	1.74	--	30	7.31	--	21.23	79.8
PC-97	EM15	10/11/2018	N	Alluvium	23.0 - 33.0	2.675	0.71	0.0 U	-41.2	8.35 E	0.0 U	22.69	9.54
PC-97	EM16	1/3/2019	N	Alluvium	23.0 - 33.0	2.934	1.07	--	115.2	7.29	--	20.05	60.9
PC-97	EM17	2/28/2019	N	Alluvium	23.0 - 33.0	2.909	0.44	0.0 U	85.8	7.24	0.0 U	21.12	36.0
PC-97	EM18	4/9/2019	N	Alluvium	23.0 - 33.0	2.701	0.53	--	125.6	7.22	--	22.7	45.3
PC-97	EM19	5/22/2019	N	Alluvium	23.0 - 33.0	3.182	0.07	0.0 U	264.5	7.12	0.0 U	21.8	8.1
PC-97	EM20	7/5/2019	N	Alluvium	23.0 - 33.0	3.185	0.41	--	135.2	7.12	--	22.3	9.0
PC-97	EM21	8/14/2019	N	Alluvium	23.0 - 33.0	3.45	0.39	0.0 U	58.9	7.28	0.0 U	24.0	9
PC-97	EM22	11/6/2019	N	Alluvium	23.0 - 33.0	3.211	0.56	0.0 U	192.0	7.28	0.0 U	22.2	5.8
PC-97	EM23	12/20/2019	N	Alluvium	23.0 - 33.0	2.693	0.81	--	25.4	7.28	--	21.0	92.22
PC-97	EM24	1/30/2020	N	Alluvium	23.0 - 33.0	1.838	4.31	0.0 U	120.1	7.48	0.0 U	20.8	66.9
PC-97	EM25	3/12/2020	N	Alluvium	23.0 - 33.0	2.709	1.65	--	61.5	7.25	--	20.9	7.2
PC-97	EM26	4/30/2020	N	Alluvium	23.0 - 33.0	2.351	4.82	0.0 U	85.1	7.33	0.0 U	22.7	8.8
PC-97	EM27	7/9/2020	N	Alluvium	23.0 - 33.0	2.957	0.95	--	79.3	8.79	--	22.9	60.08
PC-97	EM29	10/15/2020	N	Alluvium	23.0 - 33.0	2.863	0.52	0.0 U	52.7	7.32	0.0 U	22.7	694
SWFTS-IW01A	BL02	7/11/2017	N	Alluvium	15.8 - 25.6	7.960	0.55	--	116.8	7.18	--	--	16.1
SWFTS-IW01A	EM06	11/14/2017	N	Alluvium	15.8 - 25.6	6.470	0.09	0.5	-306.6	6.74	0.60	--	739.00
SWFTS-IW01B	BL02	7/11/2017	N	Alluvium	26.9 - 36.7	8.060	0.61	--	155	7.02	--	--	101
SWFTS-IW01B	EM06	11/15/2017	N	Alluvium	26.9 - 36.7	6.470	0.17	0.5	-272.8	7.04	2.0.0 U	--	31.60
SWFTS-IW02A	BL02	7/11/2017	N	Alluvium	16.8 - 26.6	8.570	0.57	--	166.3	7.05	--	--	1000 >
SWFTS-IW02B	BL02	7/11/2017	N	Alluvium	26.3 - 36.1	8.110	0.46	--	179.8	7.15	--	--	752
SWFTS-IW03	BL02	7/11/2017	N	Alluvium	16.8 - 36.6	7.780	0.48	--	112.5	7.20	--	--	137
SWFTS-IW04	BL02	7/11/2017	N	Alluvium	19.8 - 34.6	7.350	0.42	--	159.9	7.02	--	--	1000 >
SWFTS-IW05	BL02	7/11/2017	N	Alluvium	14.6 - 34.4	7.250	0.53	--	98.3	7.02	--	--	1000 >
SWFTS-IW06A	BL02	7/11/2017	N	Alluvium	16.8 - 26.6	7.420	2.02	--	116.6	7.12	--	--	1000 >
SWFTS-IW06A	EM06	11/15/2017	N	Alluvium	16.8 - 26.6	6.340	0.16	0.5	-292.7	6.80	2.0.0 U	--	0.00 E
SWFTS-IW06B	BL02	7/11/2017	N	Alluvium	28.8 - 33.6	6.910	0.38	--	98.4	7.16	--	--	1000 >
SWFTS-IW06B	EM06	11/15/2017	N	Alluvium	28.8 - 33.6	6.780	0.36	1.5	-330.0	6.30	2.0	--	-15 E
SWFTS-IW07	BL02	7/11/2017	N	Alluvium	17.3 - 37.1	6.890	0.55	--	77	7.19	--	--	1000 >
SWFTS-IW08	BL02	7/12/2017	N	Alluvium	17.5 - 37.3	7.420	0.79	--	124.2	7.03	--	--	1000 >
SWFTS-IW09	BL02	7/12/2017	N	Alluvium	26.6 - 46.4	6.820	0.47	--	77.1	7.10	--	--	1000 >
SWFTS-IW10	BL02	7/12/2017	N	Alluvium	26.8 - 46.6	6.520	0.30	--	82.1	7.11	--	--	74
SWFTS-IW11	BL02	7/12/2017	N	Alluvium	17.3 - 37.1	4.880	0.38	--	124.6	7.18	--	--	150.0

Table D.3
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Seep Well Field Area Bioremediation Treatability Study

Well	Event	Sample Date	QC Type	Lithology	Screened Interval (ft bgs)	FIELD TESTS							
						Conductivity	Dissolved Oxygen	Ferrous Iron	Oxidation-Reduction Potential	pH	Sulfide	Temperature	Turbidity
						mS/cm	mg/L	mg/L	mV	SU	mg/L	C	NTU
SWFTS-IW12	BL02	7/12/2017	N	Alluvium	14.3 - 39.1	5.220	0.51	--	146.8	7.26	--	--	1000 >
SWFTS-IW13A	BL02	7/11/2017	N	Alluvium	15.8 - 25.6	8.070	0.54	--	203.1	7.13	--	--	85.7
SWFTS-IW13B	BL02	7/11/2017	N	Alluvium	27.8 - 37.6	8.410	0.46	--	133.0	6.99	--	--	1000 >
SWFTS-IW14	BL02	7/12/2017	N	Alluvium	16.2 - 36.1	8.500	0.49	--	156.8	6.92	--	--	1000 >
SWFTS-IW15	BL02	7/12/2017	N	Alluvium	16.4 - 36.2	7.300	0.32	--	193.3	7.08	--	--	1000 >
SWFTS-IW16A	BL02	7/11/2017	N	Alluvium	17.3 - 27.1	7.300	0.86	--	108.7	7.05	--	--	1000 >
SWFTS-IW16B	BL02	7/11/2017	N	Alluvium	26.5 - 36.3	6.900	0.42	--	32.0	7.19	--	--	1000 >
SWFTS-IW17	BL02	7/13/2017	N	Alluvium	17.3 - 37.1	7.330	0.41	--	129.1	7.14	--	--	1000 >
SWFTS-IW17	EM06	11/15/2017	N	Alluvium	17.3 - 37.1	9.930	0.36	7.0	-205.4	5.15 E	0.2	--	1502 E
SWFTS-IW18	BL02	7/13/2017	N	Alluvium	18.1 - 38.1	7.100	0.30	--	112.7	7.02	--	--	29.8
SWFTS-IW19	BL02	7/13/2017	N	Alluvium	24.3 - 44.1	7.820	3.30	--	168.2	7.16	--	--	35.1
SWFTS-IW20	BL02	7/12/2017	N	Alluvium	30.8 - 50.6	6.280	4.23	--	80.6	7.27	--	--	148
SWFTS-MW01	BL01	3/29/2017	N	Alluvium	24.2 - 38.9	7.604	1.07	--	-118.7	7.70	--	--	8.02
SWFTS-MW01	EM01	9/19/2017	N	Alluvium	24.2 - 38.9	6.548	1.38	--	-115.3	7.18	--	--	7.32
SWFTS-MW01	EM02	9/26/2017	N	Alluvium	24.2 - 38.9	7.216	0.23	--	17.6	5.09 E	--	--	3.71
SWFTS-MW01	EM03	10/4/2017	N	Alluvium	24.2 - 38.9	7.228	0.20	--	-194.3	6.98	--	--	1.01
SWFTS-MW01	EM04	10/10/2017	N	Alluvium	24.2 - 38.9	7.340	0.47	0.0 U	45.0	5.80 E	0.0 U	--	4.10
SWFTS-MW01	EM05	10/25/2017	N	Alluvium	24.2 - 38.9	8.078	0.89	--	-33.0	7.37	--	--	8.11
SWFTS-MW01	EM06	11/15/2017	N	Alluvium	24.2 - 38.9	7.079	0.81	--	-10.5	6.98	0.0 U	--	6.10
SWFTS-MW01	EM07	12/14/2017	N	Alluvium	24.2 - 38.9	7.321	0.20	0.0 U	-104.2	7.07	0.0 U	--	2.26
SWFTS-MW01	EM08	2/20/2018	N	Alluvium	24.2 - 38.9	6.540	2.85	0.0 U	-96.0	7.00	0.0 U	--	24.50
SWFTS-MW01	EM09	3/27/2018	N	Alluvium	24.2 - 38.9	6.560	2.42	--	223	7.12	--	--	19.0
SWFTS-MW01	EM10	4/30/2018	N	Alluvium	24.2 - 38.9	6.656	0.15	--	38.0	6.95	--	23.85	7.58
SWFTS-MW01	EM11	7/10/2018	N	Alluvium	24.2 - 38.9	6.49	0.04	0.0 U	-32	6.96	0.0 U	25.61	11.7
SWFTS-MW01	EM12	7/27/2018	N	Alluvium	24.2 - 38.9	7.01	0.29	--	30.5	7.13	--	26.33	7.78
SWFTS-MW01	EM13	8/16/2018	N	Alluvium	24.2 - 38.9	6.37	0.80	--	-135.4	7.05	--	24.80	7.55
SWFTS-MW01	EM14	9/10/2018	N	Alluvium	24.2 - 38.9	6.230	6.07	--	87	7.65	--	21.58	41.9
SWFTS-MW01	EM15	10/9/2018	N	Alluvium	24.2 - 38.9	6.09	0.09	0.0 U	85	7.49	0.0 U	24.98	0
SWFTS-MW01	EM16	12/27/2018	N	Alluvium	24.2 - 38.9	6.478	0.51	--	-11.3	6.89	--	23.84	5.19
SWFTS-MW01	EM17	2/26/2019	N	Alluvium	24.2 - 38.9	4.816	0.50	0.0 U	-182.5	7.09	0.0 U	23.44	1.64
SWFTS-MW01	EM18	4/10/2019	N	Alluvium	24.2 - 38.9	4.776	0.59	--	-26.3	7.06	--	23.5	45.8
SWFTS-MW01	EM19	5/21/2019	N	Alluvium	24.2 - 38.9	4.948	0.75	0.0 U	12.6	8.22	0.0 U	24.0	22.1
SWFTS-MW01	EM20	7/1/2019	N	Alluvium	24.2 - 38.9	4.802	0.29	--	2.1	7.01	--	25.7	120.3
SWFTS-MW01	EM21	8/12/2019	N	Alluvium	24.2 - 38.9	5.502	0.36	0.0 U	92.0	6.98	0.0 U	25.6	13.8
SWFTS-MW01	EM22	11/5/2019	N	Alluvium	24.2 - 38.9	5.219	0.49	0.0 U	66.6	6.95	0.0 U	24.7	73.8
SWFTS-MW01	EM23	12/18/2019	N	Alluvium	24.2 - 38.9	4.998	0.89	--	-111.1	7.02	--	23.9	87.33
SWFTS-MW01	EM24	1/29/2020	N	Alluvium	24.2 - 38.9	3.979	4.25	0.0 U	29.2	7.21	0.0 U	24.1	26.7
SWFTS-MW01	EM25	3/11/2020	N	Alluvium	24.2 - 38.9	5.747	2.34	--	218.3	6.9	--	23.8	8.6
SWFTS-MW01	EM26	4/28/2020	N	Alluvium	24.2 - 38.9	5.971	0.5	0.0 U	156.6	6.91	0.0 U	26.9	9.6
SWFTS-MW01	EM27	7/8/2020	N	Alluvium	24.2 - 38.9	6.430	2.49	--	74.8	7.96	--	26.9	39.22
SWFTS-MW01	EM28	8/18/2020	N	Alluvium	24.2 - 38.9	5.577	0.61	0.0 U	218.7	6.91	0.0 U	25.2	9.3
SWFTS-MW01	EM29	10/13/2020	N	Alluvium	24.2 - 38.9	4.283	0.98	0.0 U	108.8	6.84	0.0 U	25	17.3
SWFTS-MW01	EM30	12/9/2020	N	Alluvium	24.2 - 38.9	4.358	1.91	--	70.5	6.87	--	23.1	1.9
SWFTS-MW01	EM31	2/2/2021	N	Alluvium	24.2 - 38.9	5.226	0.56	0.0 U	294.6	6.57	0.0 U	22.6	5.5
SWFTS-MW01	EM32	3/30/2021	N	Alluvium	24.2 - 38.9	5.226	0.56	--	294.6	6.57	--	22.6	5.5
SWFTS-MW01	EM33	6/4/2021	N	Alluvium	24.2 - 38.9	3.867	0.17	0.0 U	81.5	6.82	0.0 U	25.1	59.9
SWFTS-MW01	EM34	7/20/2021	N	Alluvium	24.2 - 38.9	4.131	0.36	0.0 U	87.3	6.90	0.0 U	25.4	3.9
SWFTS-MW01	EM35	9/15/2021	N	Alluvium	24.2 - 38.9	5.704	0.08	0.0 U	38.1	6.74	0.0 U	25.8	3.3
SWFTS-MW01	EM36	11/30/2021	N	Alluvium	24.2 - 38.9	5.987	4.32	0.0 U	135.0	6.92	0.0 U	23.7	46.1

Table D.3
Groundwater Field Test Results Summary
Seep Well Field Area Bioremediation Treatability Study

Well	Event	Sample Date	QC Type	Lithology	Screened Interval (ft bgs)	FIELD TESTS							
						Conductivity	Dissolved Oxygen	Ferrous Iron	Oxidation-Reduction Potential	pH	Sulfide	Temperature	Turbidity
						mS/cm	mg/L	mg/L	mV	SU	mg/L	C	NTU
SWFTS-MW01	EM37	3/9/2022	N	Alluvium	24.2 - 38.9	6.934	0.54	--	94.3	6.68	--	23.8	9.4
SWFTS-MW01	EM38	6/21/2022	N	Alluvium	24.2 - 38.9	5.728	0.41	0.0 U	-38.5	6.83	0.0 U	25.0	27.6
SWFTS-MW01	EM39	9/13/2022	N	Alluvium	24.2 - 38.9	6.235	0.98	--	138.3	6.75	--	28.2	22.1
SWFTS-MW01	EM40	12/13/2022	N	Alluvium	24.2 - 38.9	4.925	1.24	0.0 U	65.5	6.82	0.0 U	20.7	0.9
SWFTS-MW02	BL01	3/29/2017	N	Alluvium	18.4 - 33.1	8.814	0.33	--	65.1	7.22	--	--	45.20
SWFTS-MW02	EM01	9/21/2017	N	Alluvium	18.4 - 33.1	8.024	0.16	--	24.8	6.78	--	--	259
SWFTS-MW02	EM02	9/27/2017	N	Alluvium	18.4 - 33.1	8.520	0.14	--	59.1	6.78	--	--	30.9
SWFTS-MW02	EM03	10/4/2017	N	Alluvium	18.4 - 33.1	16.565 E	1.76	--	-1.3	6.87	--	--	86.3
SWFTS-MW02	EM04	10/12/2017	N	Alluvium	18.4 - 33.1	9.110	0.25	0.0 U	108.0	5.77 E	0.0 U	--	9.30
SWFTS-MW02	EM05	10/26/2017	N	Alluvium	18.4 - 33.1	9.338	2.11	--	98.5	6.90	--	--	80.1
SWFTS-MW02	EM06	11/14/2017	N	Alluvium	18.4 - 33.1	8.760	0.90	0.0 U	42.5	7.10	0.0 U	--	197
SWFTS-MW02	EM07	12/13/2017	N	Alluvium	18.4 - 33.1	8.990	0.01	0.0 U	-82.1	6.78	0.0 U	--	139
SWFTS-MW02	EM08	2/19/2018	N	Alluvium	18.4 - 33.1	8.259	2.59	0.0 U	44.8	7.08	0.0 U	--	54
SWFTS-MW02	EM09	3/27/2018	N	Alluvium	18.4 - 33.1	7.732	1.76	--	80.9	6.87	--	--	55.2
SWFTS-MW02	EM10	4/30/2018	N	Alluvium	18.4 - 33.1	8.154	1.59	--	-22.5	6.60	--	24.59	157
SWFTS-MW02	EM11	7/11/2018	N	Alluvium	18.4 - 33.1	7.89	1.86	0.0 U	56	7.05	0.0 U	21.56	0
SWFTS-MW02	EM12	7/27/2018	N	Alluvium	18.4 - 33.1	8.06	0.24	--	26.1	6.94	--	26.46	111
SWFTS-MW02	EM13	8/15/2018	N	Alluvium	18.4 - 33.1	7.814	2.35	--	-132	6.83	--	25.00	518
SWFTS-MW02	EM14	9/10/2018	N	Alluvium	18.4 - 33.1	7.210	5.31	--	75	7.71	--	22.01	112
SWFTS-MW02	EM15	10/10/2018	N	Alluvium	18.4 - 33.1	7.42	0	0.0 U	115	7.09	0.0 U	24.91	148
SWFTS-MW02	EM16	12/20/2018	N	Alluvium	18.4 - 33.1	8.462	2.95	--	-220.3	6.9	--	23.66	65.3
SWFTS-MW02	EM17	2/25/2019	N	Alluvium	18.4 - 33.1	7.479	0.33	0.0 U	36.9	6.74	0.0 U	24.87	26.5
SWFTS-MW02	EM18	4/9/2019	N	Alluvium	18.4 - 33.1	7.705	0.40	--	70.8	6.72	--	26.16	55.1
SWFTS-MW02	EM19	5/21/2019	N	Alluvium	18.4 - 33.1	6.788	6.97	0.0 U	206.8	6.90	0.0 U	25.9	27.7
SWFTS-MW02	EM20	7/2/2019	N	Alluvium	18.4 - 33.1	6.545	0.34	--	-139.9	6.79	--	26.1	16.3
SWFTS-MW02	EM21	8/14/2019	N	Alluvium	18.4 - 33.1	6.901	0.36	0.0 U	103.9	6.92	0.0 U	25.6	11.9
SWFTS-MW02	EM22	11/7/2019	N	Alluvium	18.4 - 33.1	7.031	0.49	0.0 U	119.9	6.76	0.0 U	26.1	9.8
SWFTS-MW02	EM23	12/17/2019	N	Alluvium	18.4 - 33.1	5.987	0.60	--	-197.9	6.79	--	25.0	319.18
SWFTS-MW02	EM24	1/28/2020	N	Alluvium	18.4 - 33.1	6.138	4.00	0.0 U	161.3	6.99	0.0 U	24.4	60.8
SWFTS-MW02	EM25	3/12/2020	N	Alluvium	18.4 - 33.1	6.79	1.4	--	103.9	6.8	--	25.2	23.1
SWFTS-MW02	EM26	4/30/2020	N	Alluvium	18.4 - 33.1	6.146	0.49	0.0 U	186.5	6.92	0.0 U	27.3	57.5
SWFTS-MW02	EM27	7/8/2020	N	Alluvium	18.4 - 33.1	7.399	0.86	--	66.4	7.19	--	27.7	39.90
SWFTS-MW02	EM28	8/17/2020	N	Alluvium	18.4 - 33.1	6.276	0.6	0.0 U	185.2	6.86	0.0 U	27.4	41.2
SWFTS-MW02	EM29	10/15/2020	N	Alluvium	18.4 - 33.1	6.49	0.46	0.0 U	91.4	6.83	0.0 U	25.6	19.8
SWFTS-MW02	EM30	12/10/2020	N	Alluvium	18.4 - 33.1	6.109	1.95	--	45.8	6.89	--	24	49.7
SWFTS-MW02	EM31	2/2/2021	N	Alluvium	18.4 - 33.1	6.807	0.58	0.0 U	330.3	6.55	0.0 U	24	48.3
SWFTS-MW02	EM32	3/30/2021	N	Alluvium	18.4 - 33.1	6.807	0.58	--	330.3	6.55	--	24.0	48.3
SWFTS-MW02	EM33	6/3/2021	N	Alluvium	18.4 - 33.1	4.824	0.20	0.0 U	89.1	6.81	0.0 U	28.4	160.5
SWFTS-MW02	EM34	7/21/2021	N	Alluvium	18.4 - 33.1	7.011	0.66	0.0 U	32.7	6.65	0.0 U	27.7	21.0
SWFTS-MW02	EM35	9/16/2021	N	Alluvium	18.4 - 33.1	6.317	0.47	0.0 U	176.2	6.79	0.0 U	26.8	33.0
SWFTS-MW02	EM36	11/30/2021	N	Alluvium	18.4 - 33.1	6.926	1.49	0.0 U	-33.6	6.67	0.0 U	26.1	58.6
SWFTS-MW02	EM37	3/9/2022	N	Alluvium	18.4 - 33.1	11.146	0.50	--	74.4	6.47	--	26.3	3.7
SWFTS-MW02	EM38	6/22/2022	N	Alluvium	18.4 - 33.1	6.707	0.43	0.0 U	92.4	6.64	0.0 U	27.0	20.1
SWFTS-MW02	EM39	9/14/2022	N	Alluvium	18.4 - 33.1	7.371	0.39	--	-1.9	6.65	--	26.1	22.8
SWFTS-MW02	EM40	12/14/2022	N	Alluvium	18.4 - 33.1	7.530	3.56	0.0 U	80.6	6.73	0.0 U	24.5	18.4
SWFTS-MW03	BL01	3/30/2017	N	Alluvium	27.2 - 42.1	7.087	1.64	--	90.2	6.92	--	--	1000 >
SWFTS-MW03	EM01	9/21/2017	N	Alluvium	27.2 - 42.1	6.645	0.19	--	-19.2	7.03	--	--	291
SWFTS-MW03	EM02	9/27/2017	N	Alluvium	27.2 - 42.1	6.915	0.11	--	-66.4	6.92	--	--	212
SWFTS-MW03	EM03	10/4/2017	N	Alluvium	27.2 - 42.1	6.686	1.02	--	17.4	6.94	--	--	16.21

Table D.3
Groundwater Field Test Results Summary
Seep Well Field Area Bioremediation Treatability Study

Well	Event	Sample Date	QC Type	Lithology	Screened Interval (ft bgs)	FIELD TESTS							
						Conductivity	Dissolved Oxygen	Ferrous Iron	Oxidation-Reduction Potential	pH	Sulfide	Temperature	Turbidity
						mS/cm	mg/L	mg/L	mV	SU	mg/L	C	NTU
SWFTS-MW03	EM04	10/12/2017	N	Alluvium	27.2 - 42.1	7.104	0.14	0.0 U	-55.6	6.68	0.0 U	--	55.2
SWFTS-MW03	EM05	10/26/2017	N	Alluvium	27.2 - 42.1	7.339	1.59	--	92.0	6.79	--	--	51.7
SWFTS-MW03	EM06	11/16/2017	N	Alluvium	27.2 - 42.1	6.618	0.64	0.0 U	-46.0	6.83	0.0 U	--	130.00
SWFTS-MW03	EM07	12/12/2017	N	Alluvium	27.2 - 42.1	7.060	2.21	0.0 U	23.5	7.50	0.0 U	--	47.0
SWFTS-MW03	EM08	2/21/2018	N	Alluvium	27.2 - 42.1	6.717	0.30	0.0 U	1.9	6.36	0.0 U	--	68.4
SWFTS-MW03	EM09	3/27/2018	N	Alluvium	27.2 - 42.1	6.020	0.62	--	-43.9	6.98	--	--	72.4
SWFTS-MW03	EM10	5/2/2018	N	Alluvium	27.2 - 42.1	6.03	0.45	--	88	6.93	--	23.19	123
SWFTS-MW03	EM11	7/10/2018	N	Alluvium	27.2 - 42.1	6.82	0.79	0.0 U	-176.6	6.89	0.0 U	26.13	76
SWFTS-MW03	EM12	7/27/2018	N	Alluvium	27.2 - 42.1	6.80	0.23	--	-34.6	6.9	--	26.94	110
SWFTS-MW03	EM13	8/15/2018	N	Alluvium	27.2 - 42.1	6.79	0.48	--	-193.4	7.18	--	26.86	79.5
SWFTS-MW03	EM14	9/11/2018	N	Alluvium	27.2 - 42.1	6.050	1.84	--	12	6.96	--	21.31	65.3
SWFTS-MW03	EM15	10/9/2018	N	Alluvium	27.2 - 42.1	6.01	0	0.0 U	-63	7.51	0.0 U	26.13	0
SWFTS-MW03	EM16	1/2/2019	N	Alluvium	27.2 - 42.1	5.871	0.8	--	76	6.89	--	21.17	211
SWFTS-MW03	EM17	2/27/2019	N	Alluvium	27.2 - 42.1	5.394	0.95	0.0 U	-26.6	6.97	0.0 U	23.04	42.5
SWFTS-MW03	EM18	4/10/2019	N	Alluvium	27.2 - 42.1	5.363	0.95	--	115.5	6.93	--	24.1	21.2
SWFTS-MW03	EM19	5/21/2019	N	Alluvium	27.2 - 42.1	5.495	0.57	0.0 U	199.3	7.87	0.0 U	23.4	9.1
SWFTS-MW03	EM20	7/1/2019	N	Alluvium	27.2 - 42.1	5.334	0.34	--	107.5	6.95	--	27.0	190.3
SWFTS-MW03	EM21	8/14/2019	N	Alluvium	27.2 - 42.1	6.081	0.40	0.0 U	142.8	7.02	0.0 U	24.5	17.4
SWFTS-MW03	EM22	11/4/2019	N	Alluvium	27.2 - 42.1	5.704	0.52	0.0 U	188.0	6.93	0.0 U	24.2	25.3
SWFTS-MW03	EM23	12/19/2019	N	Alluvium	27.2 - 42.1	5.322	0.95	--	108.9	6.95	--	22.5	140.39
SWFTS-MW03	EM24	1/30/2020	N	Alluvium	27.2 - 42.1	4.124	2.58	0.0 U	166.7	6.99	0.0 U	23.5	0.2
SWFTS-MW03	EM25	3/9/2020	N	Alluvium	27.2 - 42.1	5.513	2.24	--	140.9	6.93	--	23.3	70
SWFTS-MW03	EM26	4/28/2020	N	Alluvium	27.2 - 42.1	5.743	0.58	0.0 U	121.9	6.97	0.0 U	23.6	14.9
SWFTS-MW03	EM27	7/6/2020	N	Alluvium	27.2 - 42.1	6.445	0.84	--	128.8	6.80	--	26.9	38.79
SWFTS-MW03	EM28	8/18/2020	N	Alluvium	27.2 - 42.1	5.764	0.66	0.0 U	248.1	6.92	0.0 U	26.1	60.3
SWFTS-MW03	EM29	10/13/2020	N	Alluvium	27.2 - 42.1	4.456	0.48	0.0 U	137.7	6.88	0.0 U	24.9	30.3
SWFTS-MW03	EM30	12/8/2020	N	Alluvium	27.2 - 42.1	4.559	1.97	--	64.6	7.02	--	21.8	9.2
SWFTS-MW03	EM31	2/2/2021	N	Alluvium	27.2 - 42.1	5.828	0.51	0.0 U	354.2	6.62	0.0 U	23.2	22.7
SWFTS-MW03	EM32	3/30/2021	N	Alluvium	27.2 - 42.1	5.828	0.51	--	354.2	6.62	--	23.2	22.7
SWFTS-MW03	EM33	6/3/2021	N	Alluvium	27.2 - 42.1	3.967	0.16	0.0 U	76.3	6.84	0.0 U	24.7	119.5
SWFTS-MW03	EM34	7/19/2021	N	Alluvium	27.2 - 42.1	5.765	0.31	0.0 U	113.6	6.79	0.0 U	25.6	20.0
SWFTS-MW03	EM35	9/15/2021	N	Alluvium	27.2 - 42.1	5.634	0.38	0.0 U	90.4	6.81	0.0 U	25.0	38.6
SWFTS-MW03	EM36	12/1/2021	N	Alluvium	27.2 - 42.1	6.105	1.53	0.0 U	82.7	6.75	0.0 U	22.5	53.8
SWFTS-MW03	EM37	3/9/2022	N	Alluvium	27.2 - 42.1	6.233	0.66	--	108.6	6.91	--	22.1	5.9
SWFTS-MW03	EM38	6/22/2022	N	Alluvium	27.2 - 42.1	5.617	1.06	0.0 U	82.4	6.86	0.0 U	25.4	102.5
SWFTS-MW03	EM39	9/13/2022	N	Alluvium	27.2 - 42.1	5.860	0.68	--	124.8	6.84	--	25.5	6.0
SWFTS-MW03	EM40	12/13/2022	N	Alluvium	27.2 - 42.1	5.927	1.02	0.0 U	74.9	6.85	0.0 U	23.5	32.3
SWFTS-MW04	BL01	3/31/2017	N	Alluvium	25.8 - 40.4	6.64	7.02	--	147.9	6.75	--	--	82.6
SWFTS-MW04	EM01	9/20/2017	N	Alluvium	25.8 - 40.4	3.835	0.85	--	18.1	7.16	--	--	79.0
SWFTS-MW04	EM02	9/27/2017	N	Alluvium	25.8 - 40.4	3.656	2.73	--	121.1	7.23	--	--	296
SWFTS-MW04	EM03	10/4/2017	N	Alluvium	25.8 - 40.4	7.346	0.11	--	-12.1	7.05	--	--	25.9
SWFTS-MW04	EM04	10/11/2017	N	Alluvium	25.8 - 40.4	3.850	1.39	0.0 U	155	4.97 E	0.0 U	--	0.0
SWFTS-MW04	EM05	10/24/2017	N	Alluvium	25.8 - 40.4	4.270	0.28	--	-74.1	7.43	--	--	33.8
SWFTS-MW04	EM06	11/15/2017	N	Alluvium	25.8 - 40.4	3.900	0.89	0.0 U	12.9	7.22	0.0 U	--	84.00
SWFTS-MW04	EM07	12/14/2017	N	Alluvium	25.8 - 40.4	3.600	0.45	--	19.0	7.67	--	--	25.70
SWFTS-MW04	EM08	2/21/2018	N	Alluvium	25.8 - 40.4	4.085	0.37	0.0 U	21.8	7.35	0.0 U	--	18.40
SWFTS-MW04	EM09	3/27/2018	N	Alluvium	25.8 - 40.4	4.377	0.43	--	50.9	7.22	--	--	4.23
SWFTS-MW04	EM10	5/1/2018	N	Alluvium	25.8 - 40.4	3.915	2.80	--	-126.1	7.73	--	24.78	3.25
SWFTS-MW04	EM11	7/10/2018	N	Alluvium	25.8 - 40.4	4.4	0.00	0.0 U	160	7.23	0.0 U	25.52	116

Table D.3
Groundwater Field Test Results Summary
Seep Well Field Area Bioremediation Treatability Study

Well	Event	Sample Date	QC Type	Lithology	Screened Interval (ft bgs)	FIELD TESTS							
						Conductivity	Dissolved Oxygen	Ferrous Iron	Oxidation-Reduction Potential	pH	Sulfide	Temperature	Turbidity
						mS/cm	mg/L	mg/L	mV	SU	mg/L	C	NTU
SWFTS-MW04	EM13	8/16/2018	N	Alluvium	25.8 - 40.4	4.075	0.91	--	-12.2	7.42	--	25.00	118
SWFTS-MW04	EM14	9/12/2018	N	Alluvium	25.8 - 40.4	3.810	2.64	--	132	7.34	--	20.45	37.9
SWFTS-MW04	EM15	10/11/2018	N	Alluvium	25.8 - 40.4	3.22	0.84	0.0 U	-16.7	8.04 E	0.0 U	21.88	35.6
SWFTS-MW04	EM16	1/3/2019	N	Alluvium	25.8 - 40.4	3.414	1.11	--	116.1	7.3	--	20.72	90.8
SWFTS-MW04	EM17	3/1/2019	N	Alluvium	25.8 - 40.4	3.825	0.55	0.0 U	125.9	7.24	0.0 U	22.47	78.7
SWFTS-MW04	EM18	4/9/2019	N	Alluvium	25.8 - 40.4	3.764	0.70	--	65.6	7.14	--	24.37	33.1
SWFTS-MW04	EM19	5/21/2019	N	Alluvium	25.8 - 40.4	3.173	0.05	0.0 U	197.4	7.20	0.0 U	23.8	19.7
SWFTS-MW04	EM20	7/5/2019	N	Alluvium	25.8 - 40.4	3.008	0.40	--	161.1	7.16	--	22.3	9.3
SWFTS-MW04	EM21	8/14/2019	N	Alluvium	25.8 - 40.4	3.445	0.39	0.0 U	59.1	7.31	0.0 U	24.5	13.9
SWFTS-MW04	EM22	11/7/2019	N	Alluvium	25.8 - 40.4	3.455	0.36	0.0 U	-7.2	7.23	0.0 U	24.9	12.9
SWFTS-MW04	EM23	12/19/2019	N	Alluvium	25.8 - 40.4	3.486	0.89	--	84.0	7.23	--	22.5	120.34
SWFTS-MW04	EM24	1/29/2020	N	Alluvium	25.8 - 40.4	3.108	2.89	0.0 U	169.9	7.24	0.0 U	21.5	33.3
SWFTS-MW04	EM25	3/12/2020	N	Alluvium	25.8 - 40.4	4.799	1.64	--	169.5	7.1	--	22.7	17.1
SWFTS-MW04	EM26	5/1/2020	N	Alluvium	25.8 - 40.4	4.235	0.11	0.0 U	152.8	7.14	0.0 U	22.7	22.6
SWFTS-MW04	EM27	7/7/2020	N	Alluvium	25.8 - 40.4	4.801	0.85	--	148.2	7.71	--	28.1	31.80
SWFTS-MW04	EM28	8/18/2020	N	Alluvium	25.8 - 40.4	3.817	0.63	0.0 U	158.6	7.28	0.0 U	24.6	53.4
SWFTS-MW04	EM29	10/14/2020	N	Alluvium	25.8 - 40.4	4.019	0.47	0.0 U	80.1	7.22	0.0 U	24.1	43.7
SWFTS-MW04	EM30	12/10/2020	N	Alluvium	25.8 - 40.4	3.544	1.89	--	32.3	7.2	--	21.8	27.8
SWFTS-MW04	EM31	2/2/2021	N	Alluvium	25.8 - 40.4	4.005	0.64	0.0 U	354.9	7.02	0.0 U	22.8	53.3
SWFTS-MW04	EM32	3/30/2021	N	Alluvium	25.8 - 40.4	4.005	0.64	--	354.9	7.02	--	22.8	53.3
SWFTS-MW04	EM33	6/3/2021	N	Alluvium	25.8 - 40.4	2.810	1.12	0.0 U	76.6	7.20	0.0 U	26.5	104.1
SWFTS-MW04	EM34	7/21/2021	N	Alluvium	25.8 - 40.4	3.681	0.11	0.0 U	25.5	7.14	0.0 U	24.6	34.3
SWFTS-MW04	EM35	9/16/2021	N	Alluvium	25.8 - 40.4	4.312	0.48	0.0 U	171.8	7.13	0.0 U	23.9	21.1
SWFTS-MW04	EM36	12/2/2021	N	Alluvium	25.8 - 40.4	4.331	1.57	0.0 U	101.3	7.11	0.0 U	21.9	63.9
SWFTS-MW04	EM37	3/9/2022	N	Alluvium	25.8 - 40.4	5.560	0.55	--	99.3	7.07	--	22.2	12.0
SWFTS-MW04	EM38	6/22/2022	N	Alluvium	25.8 - 40.4	5.085	0.42	0.0 U	71.9	7.04	0.0 U	24.7	34.4
SWFTS-MW04	EM39	9/14/2022	N	Alluvium	25.8 - 40.4	4.558	0.43	--	-23.0	7.04	--	24.4	54.5
SWFTS-MW04	EM40	12/14/2022	N	Alluvium	25.8 - 40.4	3.395	1.05	0.0 U	41.7	7.18	0.0 U	21.4	9.8
SWFTS-MW05A	BL01	3/30/2017	N	Alluvium	19.3 - 29.3	7.879	4.28	--	104.0	7.00	--	--	33
SWFTS-MW05A	EM01	9/20/2017	N	Alluvium	19.3 - 29.3	7.062	4.18	--	48.5	7.01	--	--	74.5
SWFTS-MW05A	EM02	9/27/2017	N	Alluvium	19.3 - 29.3	7.072	3.30	--	44.1	6.97	--	--	44.0
SWFTS-MW05A	EM03	10/3/2017	N	Alluvium	19.3 - 29.3	7.282	5.46	--	133.5	7.16	--	--	9.42
SWFTS-MW05A	EM04	10/10/2017	N	Alluvium	19.3 - 29.3	7.160	3.41	0.0 U	272.0	4.34 E	0.0 U	--	11.0
SWFTS-MW05A	EM05	10/23/2017	N	Alluvium	19.3 - 29.3	8.087	2.96	--	24.6	7.29	--	--	288
SWFTS-MW05A	EM06	11/14/2017	N	Alluvium	19.3 - 29.3	7.290	2.27	0.0 U	159.2	6.76	0.0 U	--	31.40
SWFTS-MW05A	EM07	12/13/2017	N	Alluvium	19.3 - 29.3	7.315	2.10	0.0 U	-77.3	7.15	0.0 U	--	10.80
SWFTS-MW05A	EM08	2/20/2018	N	Alluvium	19.3 - 29.3	7.820	2.78	0.0 U	52.9	6.12	0.0 U	--	49.70
SWFTS-MW05A	EM09	3/26/2018	N	Alluvium	19.3 - 29.3	7.353	0.99	--	-44.5	7.01	--	23.70	23.8
SWFTS-MW05A	EM10	4/30/2018	N	Alluvium	19.3 - 29.3	7.26	2.16	--	235	7.24	--	25.51	88.1
SWFTS-MW05A	EM11	7/11/2018	N	Alluvium	19.3 - 29.3	6.86	2.65	0.0 U	35	7.28	0.0 U	22.48	33
SWFTS-MW05A	EM12	7/27/2018	N	Alluvium	19.3 - 29.3	6.55	3.46	--	-35.9	6.4	--	26.31	30
SWFTS-MW05A	EM13	8/14/2018	N	Alluvium	19.3 - 29.3	7.286	0.93	--	9.7	7.15	--	26.00	28.9
SWFTS-MW05A	EM14	9/11/2018	N	Alluvium	19.3 - 29.3	6.460	2.59	--	210	7.07	--	19.81	23.2
SWFTS-MW05A	EM15	10/10/2018	N	Alluvium	19.3 - 29.3	6.75	2.08	0.0 U	195	7.22	0.0 U	24.12	116
SWFTS-MW05A	EM16	12/20/2018	N	Alluvium	19.3 - 29.3	8.279	0.68	--	-51	6.9	--	24.4	7.05
SWFTS-MW05A	EM17	2/27/2019	N	Alluvium	19.3 - 29.3	6.150	0.51	0.0 U	-30.7	6.81	0.0 U	23.94	0.91
SWFTS-MW05A	EM18	4/10/2019	N	Alluvium	19.3 - 29.3	6.093	0.70	--	119.3	6.79	--	24.7	7.3
SWFTS-MW05A	EM19	5/21/2019	N	Alluvium	19.3 - 29.3	6.048	0.65	0.0 U	127.6	9.22	0.0 U	24.7	8.0
SWFTS-MW05A	EM20	7/1/2019	N	Alluvium	19.3 - 29.3	5.743	0.44	--	58.2	6.87	--	26.1	16.8

Table D.3
Groundwater Field Test Results Summary
Seep Well Field Area Bioremediation Treatability Study

Well	Event	Sample Date	QC Type	Lithology	Screened Interval (ft bgs)	FIELD TESTS							
						Conductivity	Dissolved Oxygen	Ferrous Iron	Oxidation-Reduction Potential	pH	Sulfide	Temperature	Turbidity
						mS/cm	mg/L	mg/L	mV	SU	mg/L	C	NTU
SWFTS-MW05A	EM21	8/13/2019	N	Alluvium	19.3 - 29.3	6.575	0.3	0.0 U	-207.5	6.92	0.0 U	26.1	3.3
SWFTS-MW05A	EM22	11/5/2019	N	Alluvium	19.3 - 29.3	6.723	0.60	0.0 U	226.6	6.91	0.0 U	23.9	4.9
SWFTS-MW05A	EM23	12/18/2019	N	Alluvium	19.3 - 29.3	6.733	0.83	--	74.5	6.88	--	23.9	17.55
SWFTS-MW05A	EM24	1/29/2020	N	Alluvium	19.3 - 29.3	5.389	2.55	0.0 U	164.9	6.90	0.0 U	23.9	23.0
SWFTS-MW05A	EM25	3/11/2020	N	Alluvium	19.3 - 29.3	7.554	2.24	--	185.1	6.87	--	23.6	4
SWFTS-MW05A	EM26	4/29/2020	N	Alluvium	19.3 - 29.3	7.519	0.57	0.0 U	127.6	6.88	0.0 U	24.1	2.6
SWFTS-MW05A	EM27	7/8/2020	N	Alluvium	19.3 - 29.3	8.131	0.79	--	75.3	7.19	--	26.4	8.63
SWFTS-MW05A	EM28	8/18/2020	N	Alluvium	19.3 - 29.3	7.268	0.64	0.0 U	177.5	6.82	0.0 U	25.1	3.8
SWFTS-MW05A	EM29	10/14/2020	N	Alluvium	19.3 - 29.3	7.552	0.53	0.0 U	111.6	6.72	0.0 U	24.9	4.6
SWFTS-MW05A	EM30	12/8/2020	N	Alluvium	19.3 - 29.3	6.162	1.76	--	14.9	6.81	--	24.7	2.1
SWFTS-MW05A	EM31	2/2/2021	N	Alluvium	19.3 - 29.3	7.754	0.59	0.0 U	218.5	6.73	0.0 U	24.7	5.7
SWFTS-MW05A	EM32	3/30/2021	N	Alluvium	19.3 - 29.3	7.754	0.59	--	218.5	6.73	--	24.7	5.7
SWFTS-MW05A	EM33	6/3/2021	N	Alluvium	19.3 - 29.3	5.155	0.33	0.0 U	104.3	6.75	0.0 U	25.2	27.4
SWFTS-MW05A	EM34	7/20/2021	N	Alluvium	19.3 - 29.3	5.633	0.38	0.0 U	96.2	6.77	0.0 U	26.0	4.2
SWFTS-MW05A	EM35	9/17/2021	N	Alluvium	19.3 - 29.3	6.697	0.38	0.0 U	52.5	6.71	0.0 U	24.8	7.9
SWFTS-MW05A	EM36	11/29/2021	N	Alluvium	19.3 - 29.3	5.250	1.08	0.0 U	203.3	6.84	0.0 U	24.3	9.1
SWFTS-MW05B	BL01	3/30/2017	N	Alluvium	32.3 - 42.0	6.922	0.70	--	-0.8	7.00	--	--	112.00
SWFTS-MW05B	EM01	9/22/2017	N	Alluvium	32.3 - 42.0	6.092	0.24	--	-179.1	6.64	--	--	5.00
SWFTS-MW05B	EM02	9/27/2017	N	Alluvium	32.3 - 42.0	6.634	0.10	--	-182.3	6.61	--	--	29.7
SWFTS-MW05B	EM03	10/3/2017	N	Alluvium	32.3 - 42.0	6.198	0.10	--	-236.3	6.59	--	--	27.2
SWFTS-MW05B	EM04	10/10/2017	N	Alluvium	32.3 - 42.0	6.653	0.08	0.5	-235.9	6.67	0.04	--	12.10
SWFTS-MW05B	EM05	10/23/2017	N	Alluvium	32.3 - 42.0	7.361	0.34	--	-346.9	6.86	--	--	352
SWFTS-MW05B	EM06	11/14/2017	N	Alluvium	32.3 - 42.0	6.420	0.46	0.50	-186.2	6.83	0.50	--	46.00
SWFTS-MW05B	EM07	12/13/2017	N	Alluvium	32.3 - 42.0	6.617	0.30	0.0 U	-268.9	7.02	0.0 U	--	3.42
SWFTS-MW05B	EM08	2/20/2018	N	Alluvium	32.3 - 42.0	6.680	0.34	0.0 U	-202.4	6.17	0.04	--	5.47
SWFTS-MW05B	EM09	3/26/2018	N	Alluvium	32.3 - 42.0	6.364	0.49	--	-199.4	6.69	--	23.60	2.01
SWFTS-MW05B	EM10	4/30/2018	N	Alluvium	32.3 - 42.0	5.61	0.00	--	138	7.07	--	25.47	29.6
SWFTS-MW05B	EM11	7/10/2018	N	Alluvium	32.3 - 42.0	5.81	1.45	2.5	-135	6.83	0.0 U	26.74	21.2
SWFTS-MW05B	EM12	7/27/2018	N	Alluvium	32.3 - 42.0	5.86	4.21	--	70	3.38 E	--	27.46 E	3.38
SWFTS-MW05B	EM13	8/14/2018	N	Alluvium	32.3 - 42.0	6.429	0.80	--	-31.8	6.88	--	26.79	7.67
SWFTS-MW05B	EM14	9/11/2018	N	Alluvium	32.3 - 42.0	5.590	2.37	--	73	6.85	--	20.29	19.3
SWFTS-MW05B	EM15	10/9/2018	N	Alluvium	32.3 - 42.0	5.65	0	0.0 U	36	7.36	0.0 U	27.26 E	12.3
SWFTS-MW05B	EM16	12/20/2018	N	Alluvium	32.3 - 42.0	7.214	0.62	--	-109.2	6.86	--	24.1	4.23
SWFTS-MW05B	EM17	2/27/2019	N	Alluvium	32.3 - 42.0	5.334	0.61	0.0 U	-64.3	6.71	0.0 U	23.33	9.31
SWFTS-MW05B	EM18	4/10/2019	N	Alluvium	32.3 - 42.0	5.079	0.63	--	26.6	6.68	--	24.6	53.9
SWFTS-MW05B	EM19	5/21/2019	N	Alluvium	32.3 - 42.0	5.089	0.81	0.0 U	93.5	9.24	0.0 U	24.6	60.0
SWFTS-MW05B	EM20	7/1/2019	N	Alluvium	32.3 - 42.0	4.951	0.21	--	22.1	6.77	--	26.4	193.3
SWFTS-MW05B	EM21	8/13/2019	N	Alluvium	32.3 - 42.0	5.699	0.38	0.0 U	-93.2	6.81	0.0 U	26.6	9.0
SWFTS-MW05B	EM22	11/5/2019	N	Alluvium	32.3 - 42.0	5.626	0.48	0.0 U	162.8	6.76	0.0 U	24.3	160.1
SWFTS-MW05B	EM23	12/18/2019	N	Alluvium	32.3 - 42.0	5.646	0.72	--	-7.2	6.78	--	23.3	54.34
SWFTS-MW05B	EM24	1/29/2020	N	Alluvium	32.3 - 42.0	4.420	2.43	0.0 U	30.0	6.76	0.0 U	22.9	21.3
SWFTS-MW05B	EM25	3/11/2020	N	Alluvium	32.3 - 42.0	6.489	2.15	--	152.8	6.73	--	23.3	69.8
SWFTS-MW05B	EM26	4/29/2020	N	Alluvium	32.3 - 42.0	6.406	0.65	0.0 U	96.2	6.73	0.0 U	23.6	117.6
SWFTS-MW05B	EM27	7/8/2020	N	Alluvium	32.3 - 42.0	6.828	0.93	--	81.0	6.92	--	27.5	54.99
SWFTS-MW05B	EM28	8/18/2020	N	Alluvium	32.3 - 42.0	5.732	0.91	0.0 U	185.9	6.71	0.0 U	25.3	31.9
SWFTS-MW05B	EM29	10/14/2020	N	Alluvium	32.3 - 42.0	6.013	0.51	0.0 U	122.2	6.59	0.0 U	24.4	31.7
SWFTS-MW05B	EM30	12/8/2020	N	Alluvium	32.3 - 42.0	4.915	1.79	--	-0.9	6.73	--	24	1.4
SWFTS-MW05B	EM31	2/2/2021	N	Alluvium	32.3 - 42.0	6.335	0.46	0.0 U	-41.5	6.47	0.0 U	24.1	41.3
SWFTS-MW05B	EM32	3/30/2021	N	Alluvium	32.3 - 42.0	6.335	0.46	--	-41.5	6.47	--	24.1	41.3

Table D.3
Groundwater Field Test Results Summary
Seep Well Field Area Bioremediation Treatability Study

Well	Event	Sample Date	QC Type	Lithology	Screened Interval (ft bgs)	FIELD TESTS							
						Conductivity	Dissolved Oxygen	Ferrous Iron	Oxidation-Reduction Potential	pH	Sulfide	Temperature	Turbidity
						mS/cm	mg/L	mg/L	mV	SU	mg/L	C	NTU
SWFTS-MW05B	EM33	6/3/2021	N	Alluvium	32.3 - 42.0	4.283	0.02	1.0	-45.7	6.57	0.0 U	25.4	326.1
SWFTS-MW05B	EM34	7/21/2021	N	Alluvium	32.3 - 42.0	5.509	0.35	0.0 U	71.4	6.62	0.0 U	25.2	36.3
SWFTS-MW05B	EM35	9/16/2021	N	Alluvium	32.3 - 42.0	6.060	0.38	0.0 U	-4.3	6.64	0.0 U	25.3	16.8
SWFTS-MW05B	EM36	11/30/2021	N	Alluvium	32.3 - 42.0	6.108	1.15	0.0 U	63.6	6.54	0.0 U	22.6	73.5
SWFTS-MW06A	BL01	3/30/2017	N	Alluvium	11.8 - 21.4	2.874	0.38	--	-85.9	7.19	--	--	14.20
SWFTS-MW06A	EM01	9/21/2017	N	Alluvium	11.8 - 21.4	3.318	0.16	--	-46.1	6.98	--	--	82.0
SWFTS-MW06A	EM02	9/27/2017	N	Alluvium	11.8 - 21.4	3.537	0.30	--	-10.2	7.04	--	--	147
SWFTS-MW06A	EM03	10/3/2017	N	Alluvium	11.8 - 21.4	3.509	0.12	--	-62.1	7.02	--	--	30.9
SWFTS-MW06A	EM04	10/11/2017	N	Alluvium	11.8 - 21.4	3.800	0.37	0.0 U	-23.0	4.94 E	0.0 U	--	15.7
SWFTS-MW06A	EM05	10/23/2017	N	Alluvium	11.8 - 21.4	4.338	2.52	--	-211.5	7.26	--	--	268.00
SWFTS-MW06A	EM06	11/16/2017	N	Alluvium	11.8 - 21.4	3.881	0.42	0.0 U	-57.7	7.07	0.0 U	--	45.4
SWFTS-MW06A	EM07	12/13/2017	N	Alluvium	11.8 - 21.4	3.975	0.17	0.0 U	-135.6	7.17	0.0 U	--	25.40
SWFTS-MW06A	EM08	2/22/2018	N	Alluvium	11.8 - 21.4	3.276	0.37	0.0 U	-19.7	7.30	0.0 U	--	8.26
SWFTS-MW06A	EM09	3/28/2018	N	Alluvium	11.8 - 21.4	3.143	0.44	--	146.6	7.18	--	--	8.74
SWFTS-MW06A	EM10	5/1/2018	N	Alluvium	11.8 - 21.4	3.063	0.27	--	58.3	7.32	--	24.23	24.4
SWFTS-MW06A	EM11	7/11/2018	N	Alluvium	11.8 - 21.4	3.116	2.40	0.0 U	-83	7.19	0.0 U	23.71	34
SWFTS-MW06A	EM13	8/14/2018	N	Alluvium	11.8 - 21.4	33.46 E	0.69	--	-150.2	7.30	--	25.60	4.41
SWFTS-MW06A	EM14	9/11/2018	N	Alluvium	11.8 - 21.4	2.370	0.49	--	-273	8.90 E	--	25.04	188
SWFTS-MW06A	EM15	10/10/2018	N	Alluvium	11.8 - 21.4	2.969	0.2	0.0 U	-196.5	9.09 E	0.0 U	24.58	3.95
SWFTS-MW06A	EM16	12/28/2018	N	Alluvium	11.8 - 21.4	3.024	0.98	--	19.2	7.18	--	22.05	7.53
SWFTS-MW06A	EM17	2/27/2019	N	Alluvium	11.8 - 21.4	2.804	0.05	0.0 U	-17.4	7.17	0.0 U	21.89	9.23
SWFTS-MW06A	EM18	4/10/2019	N	Alluvium	11.8 - 21.4	2.967	0.61	--	40.8	7.17	--	21.30	56.9
SWFTS-MW06A	EM19	5/20/2019	N	Alluvium	11.8 - 21.4	3.029	0.09	0.0 U	170.2	7.21	0.0 U	22.1	5.4
SWFTS-MW06A	EM20	7/1/2019	N	Alluvium	11.8 - 21.4	3.553	0.40	--	-23.3	7.23	--	24.4	8.9
SWFTS-MW06A	EM21	8/14/2019	N	Alluvium	11.8 - 21.4	3.545	0.37	0.0 U	-13.8	7.26	0.0 U	24.4	12.5
SWFTS-MW06A	EM22	11/6/2019	N	Alluvium	11.8 - 21.4	3.522	0.62	0.0 U	88.4	7.23	0.0 U	23.8	7.4
SWFTS-MW06A	EM23	12/19/2019	N	Alluvium	11.8 - 21.4	2.974	0.80	--	28.6	7.24	--	21.8	99.90
SWFTS-MW06A	EM24	1/29/2020	N	Alluvium	11.8 - 21.4	1.997	4.31	0.0 U	112.0	7.38	0.0 U	21.2	47.8
SWFTS-MW06A	EM25	3/11/2020	N	Alluvium	11.8 - 21.4	2.814	2.6	--	67	7.22	--	20.7	19.5
SWFTS-MW06A	EM26	4/29/2020	N	Alluvium	11.8 - 21.4	3.027	0.84	0.0 U	81.3	7.27	0.0 U	30.6	29.9
SWFTS-MW06A	EM27	7/7/2020	N	Alluvium	11.8 - 21.4	3.031	0.99	--	126.3	7.20	--	26.0	60.18
SWFTS-MW06A	EM28	8/19/2020	N	Alluvium	11.8 - 21.4	2.891	0.6	0.0 U	135.5	7.27	0.0 U	24.5	169.8
SWFTS-MW06A	EM29	10/13/2020	N	Alluvium	11.8 - 21.4	2.343	0.46	0.0 U	69.8	7.23	0.0 U	23.4	37.2
SWFTS-MW06A	EM30	12/8/2020	N	Alluvium	11.8 - 21.4	2.549	1.9	--	-11.2	7.31	--	22.4	19.3
SWFTS-MW06A	EM31	2/3/2021	N	Alluvium	11.8 - 21.4	3.029	0.55	0.0 U	211.3	7.06	0.0 U	20	18.4
SWFTS-MW06A	EM32	3/31/2021	N	Alluvium	11.8 - 21.4	3.029	0.55	--	211.3	7.06	--	20.0	18.4
SWFTS-MW06A	EM33	6/4/2021	N	Alluvium	11.8 - 21.4	2.229	0.03	0.0 U	94.9	7.21	0.0 U	23.1	16.1
SWFTS-MW06A	EM34	7/19/2021	N	Alluvium	11.8 - 21.4	3.067	0.18	0.0 U	38.6	7.17	0.0 U	25.5	46.1
SWFTS-MW06A	EM35	9/16/2021	N	Alluvium	11.8 - 21.4	2.822	0.45	0.0 U	180.5	7.19	0.0 U	23.4	31.4
SWFTS-MW06A	EM36	12/1/2021	N	Alluvium	11.8 - 21.4	3.104	1.38	0.0 U	-57.3	7.14	0.0 U	23.6	57.0
SWFTS-MW06A	EM37	3/7/2022	N	Alluvium	11.8 - 21.4	2.538	0.60	--	30.0	7.22	--	21.9	11.2
SWFTS-MW06A	EM38	6/22/2022	N	Alluvium	11.8 - 21.4	2.457	0.70	0.0 U	57.8	7.23	0.0 U	23.6	131.8
SWFTS-MW06A	EM39	9/14/2022	N	Alluvium	11.8 - 21.4	2.846	0.34	--	-66.2	7.13	--	23.5	23.4
SWFTS-MW06A	EM40	12/14/2022	N	Alluvium	11.8 - 21.4	2.850	0.98	0.0 U	59.7	7.17	0.0 U	21.1	18.4
SWFTS-MW06B	BL01	3/30/2017	N	Alluvium	25.9 - 35.5	2.814	0.06	--	8.7	7.04	--	--	68.00
SWFTS-MW06B	EM01	9/21/2017	N	Alluvium	25.9 - 35.5	3.158	0.18	--	10.1	7.00	--	--	237
SWFTS-MW06B	EM02	9/27/2017	N	Alluvium	25.9 - 35.5	3.240	0.78	--	-76.2	7.09	--	--	492
SWFTS-MW06B	EM03	10/3/2017	N	Alluvium	25.9 - 35.5	3.191	0.11	--	-93.8	7.05	--	--	467
SWFTS-MW06B	EM04	10/11/2017	N	Alluvium	25.9 - 35.5	3.520	0.45	0.0 U	-36.0	4.70 E	0.0 U	--	455

Table D.3
Groundwater Field Test Results Summary
Seep Well Field Area Bioremediation Treatability Study

Well	Event	Sample Date	QC Type	Lithology	Screened Interval (ft bgs)	FIELD TESTS							
						Conductivity	Dissolved Oxygen	Ferrous Iron	Oxidation-Reduction Potential	pH	Sulfide	Temperature	Turbidity
						mS/cm	mg/L	mg/L	mV	SU	mg/L	C	NTU
SWFTS-MW06B	EM05	10/23/2017	N	Alluvium	25.9 - 35.5	3.811	1.14	--	-150.7	7.31	--	--	70.9
SWFTS-MW06B	EM06	11/16/2017	N	Alluvium	25.9 - 35.5	3.548	0.44	0.0 U	-133.5	7.10	0.0 U	--	68.80
SWFTS-MW06B	EM07	12/13/2017	N	Alluvium	25.9 - 35.5	3.795	0.91	0.0 U	-119.3	7.21	0.0 U	--	85.80
SWFTS-MW06B	EM08	2/22/2018	N	Alluvium	25.9 - 35.5	3.660	0.47	0.0 U	-29.7	7.22	0.0 U	--	4.39
SWFTS-MW06B	EM09	3/28/2018	N	Alluvium	25.9 - 35.5	3.455	0.59	--	166.8	7.15	--	--	8.38
SWFTS-MW06B	EM10	5/1/2018	N	Alluvium	25.9 - 35.5	3.251	1.31	--	79.9	7.31	--	23.0	205
SWFTS-MW06B	EM11	7/11/2018	N	Alluvium	25.9 - 35.5	3.271	2.05	0.0 U	-45.8	7.21	0.0 U	25.74	9.98
SWFTS-MW06B	EM13	8/14/2018	N	Alluvium	25.9 - 35.5	3.311	0.57	--	-67.2	7.30	--	26.27	38.7
SWFTS-MW06B	EM14	9/11/2018	N	Alluvium	25.9 - 35.5	2.240	0.71	--	-344	10.26 E	--	23.16	2.53
SWFTS-MW06B	EM15	10/10/2018	N	Alluvium	25.9 - 35.5	2.927	0.17	0.0 U	-100.4	8.39 E	0.0 U	23.74	84.6
SWFTS-MW06B	EM16	12/28/2018	N	Alluvium	25.9 - 35.5	3.083	0.7	--	20.9	7.18	--	21.18	294
SWFTS-MW06B	EM17	2/28/2019	N	Alluvium	25.9 - 35.5	3.006	0.45	0.0 U	87.9	7.21	0.0 U	21.41	69.4
SWFTS-MW06B	EM18	4/10/2019	N	Alluvium	25.9 - 35.5	2.984	0.54	--	61.1	7.17	--	21.74	255
SWFTS-MW06B	EM19	5/21/2019	N	Alluvium	25.9 - 35.5	2.920	0.09	0.0 U	259.0	7.18	0.0 U	21.7	58.2
SWFTS-MW06B	EM20	7/1/2019	N	Alluvium	25.9 - 35.5	3.348	0.43	--	70.3	7.25	--	25.0	9.2
SWFTS-MW06B	EM21	8/14/2019	N	Alluvium	25.9 - 35.5	3.402	0.39	0.0 U	19.6	7.27	0.0 U	24.9	11.4
SWFTS-MW06B	EM22	11/6/2019	N	Alluvium	25.9 - 35.5	3.634	0.59	0.0 U	171.6	7.22	0.0 U	23.4	51.9
SWFTS-MW06B	EM23	12/19/2019	N	Alluvium	25.9 - 35.5	3.155	0.82	--	83.4	7.22	--	21.6	99.97
SWFTS-MW06B	EM24	1/29/2020	N	Alluvium	25.9 - 35.5	2.196	3.56	0.0 U	142.5	7.38	0.0 U	21.3	38.1
SWFTS-MW06B	EM25	3/11/2020	N	Alluvium	25.9 - 35.5	3.054	1.54	--	134.9	7.18	--	21.3	44.6
SWFTS-MW06B	EM26	4/29/2020	N	Alluvium	25.9 - 35.5	2.777	0.73	0.0 U	131	7.22	0.0 U	24.5	86.7
SWFTS-MW06B	EM27	7/7/2020	N	Alluvium	25.9 - 35.5	2.966	0.79	--	139.7	7.19	--	26.4	30.90
SWFTS-MW06B	EM28	8/19/2020	N	Alluvium	25.9 - 35.5	2.725	0.58	0.0 U	209.6	7.27	0.0 U	24.3	93.2
SWFTS-MW06B	EM29	10/13/2020	N	Alluvium	25.9 - 35.5	2.217	0.48	0.0 U	101.5	7.23	0.0 U	22.5	87.4
SWFTS-MW06B	EM30	12/8/2020	N	Alluvium	25.9 - 35.5	0.028	6.39	--	19.6	7.5	--	36.3	2.9
SWFTS-MW06B	EM31	2/3/2021	N	Alluvium	25.9 - 35.5	3.083	0.68	0.0 U	281.6	7.13	0.0 U	20.9	97
SWFTS-MW06B	EM32	3/31/2021	N	Alluvium	25.9 - 35.5	3.083	0.68	--	281.6	7.13	--	20.9	97.0
SWFTS-MW06B	EM33	6/4/2021	N	Alluvium	25.9 - 35.5	2.236	0.20	0.0 U	102.9	7.21	0.0 U	23.5	77.8
SWFTS-MW06B	EM34	7/19/2021	N	Alluvium	25.9 - 35.5	3.216	0.35	0.0 U	88.8	7.15	0.0 U	28.4	54.4
SWFTS-MW06B	EM35	9/16/2021	N	Alluvium	25.9 - 35.5	2.919	0.43	0.0 U	146.4	7.19	0.0 U	23.3	58.7
SWFTS-MW06B	EM36	12/1/2021	N	Alluvium	25.9 - 35.5	3.058	1.39	0.0 U	-19.8	7.14	0.0 U	22.4	59.1
SWFTS-MW06B	EM37	3/7/2022	N	Alluvium	25.9 - 35.5	2.668	0.53	--	46.5	7.20	--	21.3	24.3
SWFTS-MW06B	EM38	6/22/2022	N	Alluvium	25.9 - 35.5	2.966	0.41	0.0 U	63.3	7.15	0.0 U	23.6	118.5
SWFTS-MW06B	EM39	9/14/2022	N	Alluvium	25.9 - 35.5	2.946	0.41	--	-37.4	7.12	--	23.5	140.1
SWFTS-MW06B	EM40	12/14/2022	N	Alluvium	25.9 - 35.5	2.821	1.13	0.0 U	60.9	7.19	0.0 U	21.1	48.8
SWFTS-MW07A	BL01	3/30/2017	N	Alluvium	15.0 - 29.5	6.980	0.16	--	291.7	6.60	--	--	2.28
SWFTS-MW07A	EM01	9/20/2017	N	Alluvium	15.0 - 29.5	7.179	0.20	--	52.3	6.90	--	--	1.62
SWFTS-MW07A	EM02	9/26/2017	N	Alluvium	15.0 - 29.5	6.884	0.49	--	95.8	6.80	--	--	1.78
SWFTS-MW07A	EM03	10/3/2017	N	Alluvium	15.0 - 29.5	6.982	0.22	--	-23.9	6.81	--	--	0.10
SWFTS-MW07A	EM04	10/11/2017	N	Alluvium	15.0 - 29.5	7.272	0.11	0.0 U	-16.3	6.55	0.0 U	--	1.43
SWFTS-MW07A	EM05	10/24/2017	N	Alluvium	15.0 - 29.5	8.189	0.43	--	-71.5	6.99	--	--	0.12
SWFTS-MW07A	EM06	11/15/2017	N	Alluvium	15.0 - 29.5	7.300	0.35	0.0 U	117.3	7.03	0.0 U	--	2.44
SWFTS-MW07A	EM07	12/14/2017	N	Alluvium	15.0 - 29.5	7.345	-0.02 E	0.0 U	-83.4	6.99	0.0 U	--	6.98
SWFTS-MW07A	EM08	2/19/2018	N	Alluvium	15.0 - 29.5	7.002	0.72	0.0 U	62.8	7.05	--	--	0.65
SWFTS-MW07A	EM09	3/28/2018	N	Alluvium	15.0 - 29.5	6.465	3.29	--	142.5	7.05	--	--	1.83
SWFTS-MW07A	EM10	5/2/2018	N	Alluvium	15.0 - 29.5	6.230	1.02	--	-186.7	7.44	--	23.72	1.98
SWFTS-MW07A	EM11	7/11/2018	N	Alluvium	15.0 - 29.5	6.5	1.42	--	201	7.28	0.0 U	25.35	0
SWFTS-MW07A	EM13	8/16/2018	N	Alluvium	15.0 - 29.5	6.604	0.58	--	-11.8	7.18	--	25.70	4.9
SWFTS-MW07A	EM14	9/12/2018	N	Alluvium	15.0 - 29.5	5.670	1.30	--	-34.6	7.50	--	24.36	1.94

Table D.3
Groundwater Field Test Results Summary
Seep Well Field Area Bioremediation Treatability Study

Well	Event	Sample Date	QC Type	Lithology	Screened Interval (ft bgs)	FIELD TESTS							
						Conductivity	Dissolved Oxygen	Ferrous Iron	Oxidation-Reduction Potential	pH	Sulfide	Temperature	Turbidity
						mS/cm	mg/L	mg/L	mV	SU	mg/L	C	NTU
SWFTS-MW07A	EM15	10/10/2018	N	Alluvium	15.0 - 29.5	5.48	0.08	0.0 U	-62.3	8.25 E	0.0 U	25.1	0.11
SWFTS-MW07A	EM16	1/2/2019	N	Alluvium	15.0 - 29.5	5.204	0.99	--	108.2	7.07	--	23.33	0.49
SWFTS-MW07A	EM17	2/28/2019	N	Alluvium	15.0 - 29.5	5.190	0.62	0.0 U	90.1	7.09	0.0 U	24.35	0.52
SWFTS-MW07A	EM18	4/12/2019	N	Alluvium	15.0 - 29.5	5.220	0.72	--	168.2	7.02	--	23.6	1.8
SWFTS-MW07A	EM19	5/22/2019	N	Alluvium	15.0 - 29.5	5.035	1.03	0.0 U	50.7	7.10	0.0 U	22.4	0.1
SWFTS-MW07A	EM20	7/3/2019	N	Alluvium	15.0 - 29.5	4.685	0.41	--	159.1	6.99	--	25.0	3.4
SWFTS-MW07A	EM21	8/15/2019	N	Alluvium	15.0 - 29.5	4.924	0.43	0.0 U	165.8	7.2	0.0 U	24.0	4.2
SWFTS-MW07A	EM22	11/7/2019	N	Alluvium	15.0 - 29.5	4.969	0.62	0.0 U	200.9	7.14	0.0 U	24.2	1.4
SWFTS-MW07A	EM23	12/20/2019	N	Alluvium	15.0 - 29.5	4.359	0.73	--	-11.8	7.16	--	23.5	1.74
SWFTS-MW07A	EM24	1/28/2020	N	Alluvium	15.0 - 29.5	4.555	0.59	0.0 U	109.7	7.16	0.0 U	23.7	2.24
SWFTS-MW07A	EM25	3/12/2020	N	Alluvium	15.0 - 29.5	4.888	2.25	--	131.8	7.07	--	23.2	0.4
SWFTS-MW07A	EM26	4/30/2020	N	Alluvium	15.0 - 29.5	4.944	0.3	0.0 U	145.7	7.13	0.0 U	25.6	1.6
SWFTS-MW07A	EM27	7/9/2020	N	Alluvium	15.0 - 29.5	5.798	0.75	--	119.7	8.41	--	25.4	4.71
SWFTS-MW07A	EM28	8/19/2020	N	Alluvium	15.0 - 29.5	5.144	0.61	0.0 U	240.8	7.09	0.0 U	24.8	7.6
SWFTS-MW07A	EM29	10/16/2020	N	Alluvium	15.0 - 29.5	6.482	0.6	0.0 U	159.5	7.16	0.0 U	24	2.42
SWFTS-MW07A	EM30	12/9/2020	N	Alluvium	15.0 - 29.5	4.052	2.09	--	-15.7	7.07	--	23.4	4.2
SWFTS-MW07A	EM31	2/3/2021	N	Alluvium	15.0 - 29.5	4.888	1	0.0 U	328.5	7.11	0.0 U	24.6	4.2
SWFTS-MW07A	EM32	3/31/2021	N	Alluvium	15.0 - 29.5	4.888	1.00	--	328.5	7.11	--	24.6	4.2
SWFTS-MW07A	EM33	6/4/2021	N	Alluvium	15.0 - 29.5	3.399	1.00	0.0 U	100.2	7.08	0.0 U	24.5	4.4
SWFTS-MW07A	EM34	7/22/2021	N	Alluvium	15.0 - 29.5	4.901	0.90	0.0 U	52.9	6.99	0.0 U	24.7	2.2
SWFTS-MW07A	EM35	9/16/2021	N	Alluvium	15.0 - 29.5	5.278	0.93	0.0 U	135.8	6.99	0.0 U	24.1	-3.1
SWFTS-MW07A	EM36	12/3/2021	N	Alluvium	15.0 - 29.5	5.409	2.83	0.0 U	37.4	7.06	0.0 U	21.3	2.0
SWFTS-MW07A	EM37	3/8/2022	N	Alluvium	15.0 - 29.5	6.362	0.76	--	74.1	7.04	--	23.9	0.2
SWFTS-MW07A	EM38	6/23/2022	N	Alluvium	15.0 - 29.5	5.785	1.53	0.0 U	73.8	6.94	0.0 U	24.7	1.4
SWFTS-MW07A	EM39	9/14/2022	N	Alluvium	15.0 - 29.5	6.552	0.88	--	18.2	6.82	--	25.4	6.1
SWFTS-MW07A	EM40	12/14/2022	N	Alluvium	15.0 - 29.5	5.408	1.14	0.0 U	85.0	6.93	0.0 U	22.9	4.2
SWFTS-MW07B	BL01	3/30/2017	N	Alluvium	33.8 - 38.3	7.033	1.29	--	83.8	6.89	--	--	40.30
SWFTS-MW07B	EM01	9/20/2017	N	Alluvium	33.8 - 38.3	6.425	0.35	--	49.1	6.95	--	--	17.01
SWFTS-MW07B	EM02	9/26/2017	N	Alluvium	33.8 - 38.3	6.153	0.60	--	67.4	6.86	--	--	9.38
SWFTS-MW07B	EM03	10/3/2017	N	Alluvium	33.8 - 38.3	6.134	1.38	--	-19.8	7.00	--	--	38.7
SWFTS-MW07B	EM04	10/11/2017	N	Alluvium	33.8 - 38.3	6.394	0.13	0.0 U	-29.8	6.68	0.0 U	--	7.99
SWFTS-MW07B	EM05	10/24/2017	N	Alluvium	33.8 - 38.3	7.044	0.33	--	-92.6	7.06	--	--	22.40
SWFTS-MW07B	EM06	11/15/2017	N	Alluvium	33.8 - 38.3	6.210	0.42	0.0 U	116.2	7.09	0.0 U	--	35.10
SWFTS-MW07B	EM07	12/14/2017	N	Alluvium	33.8 - 38.3	6.253	-0.09 E	0.0 U	-96.5	7.04	0.0 U	--	19.80
SWFTS-MW07B	EM08	2/19/2018	N	Alluvium	33.8 - 38.3	5.667	1.23	0.0 U	40.4	7.16	0.0 U	--	5.62
SWFTS-MW07B	EM09	3/28/2018	N	Alluvium	33.8 - 38.3	6.378	0.30	--	-162.9	6.93	--	--	8.31
SWFTS-MW07B	EM10	5/2/2018	N	Alluvium	33.8 - 38.3	5.517	4.67	--	-131.6	7.65	--	21.95	4.98
SWFTS-MW07B	EM11	7/11/2018	N	Alluvium	33.8 - 38.3	6.04	1.60	0.0 U	189	7.3	0.0 U	25.41	0
SWFTS-MW07B	EM13	8/16/2018	N	Alluvium	33.8 - 38.3	5.82	0.49	--	-16.1	7.23	--	26.01	5.8
SWFTS-MW07B	EM14	9/12/2018	N	Alluvium	33.8 - 38.3	5.130	1.69	--	-33	7.60	--	27.53 E	4.48
SWFTS-MW07B	EM15	10/10/2018	N	Alluvium	33.8 - 38.3	4.603	0.09	0.0 U	-48.2	8.29 E	0.0 U	25.6	2.31
SWFTS-MW07B	EM16	1/3/2019	N	Alluvium	33.8 - 38.3	4.399	1.35	--	128.8	7.22	--	21.73	4.73
SWFTS-MW07B	EM17	2/28/2019	N	Alluvium	33.8 - 38.3	4.968	0.40	0.0 U	91.7	7.11	0.0 U	24.28	3.80
SWFTS-MW07B	EM18	4/12/2019	N	Alluvium	33.8 - 38.3	5.031	0.52	--	201.0	7.06	--	22.8	2.2
SWFTS-MW07B	EM19	5/22/2019	N	Alluvium	33.8 - 38.3	4.671	0.87	0.0 U	83.8	7.12	0.0 U	22.2	9.7
SWFTS-MW07B	EM20	7/3/2019	N	Alluvium	33.8 - 38.3	4.176	0.47	--	169.2	7.02	--	24.6	3.4
SWFTS-MW07B	EM21	8/15/2019	N	Alluvium	33.8 - 38.3	4.314	0.42	0.0 U	194.9	7.22	0.0 U	23.8	4.8
SWFTS-MW07B	EM22	11/7/2019	N	Alluvium	33.8 - 38.3	4.347	0.59	--	192.2	7.18	--	24.1	3.2
SWFTS-MW07B	EM23	12/20/2019	N	Alluvium	33.8 - 38.3	4.260	0.81	--	-5.0	7.16	--	22.7	8.97

Table D.3
Groundwater Field Test Results Summary
Seep Well Field Area Bioremediation Treatability Study

Well	Event	Sample Date	QC Type	Lithology	Screened Interval (ft bgs)	FIELD TESTS							
						Conductivity	Dissolved Oxygen	Ferrous Iron	Oxidation-Reduction Potential	pH	Sulfide	Temperature	Turbidity
						mS/cm	mg/L	mg/L	mV	SU	mg/L	C	NTU
SWFTS-MW07B	EM24	1/28/2020	N	Alluvium	33.8 - 38.3	5.006	0.55	0.0 U	107.8	7.11	0.0 U	23.2	14.13
SWFTS-MW07B	EM25	3/12/2020	N	Alluvium	33.8 - 38.3	5.391	2.3	--	174.4	7.01	--	23	4.9
SWFTS-MW07B	EM26	4/30/2020	N	Alluvium	33.8 - 38.3	5.222	0.49	0.0 U	171	7.09	0.0 U	26.8	3.6
SWFTS-MW07B	EM27	7/9/2020	N	Alluvium	33.8 - 38.3	5.541	0.79	--	123.1	8.65	--	27.8	8.72
SWFTS-MW07B	EM28	8/19/2020	N	Alluvium	33.8 - 38.3	4.454	0.65	0.0 U	234.6	7.09	0.0 U	25.5	4.9
SWFTS-MW07B	EM29	10/16/2020	N	Alluvium	33.8 - 38.3	5.074	0.55	0.0 U	95.1	7.18	0.0 U	23.7	5.9
SWFTS-MW07B	EM30	12/9/2020	N	Alluvium	33.8 - 38.3	3.263	5.59	--	56.3	7.31	--	23.2	9.1
SWFTS-MW07B	EM31	2/3/2021	N	Alluvium	33.8 - 38.3	4.823	0.89	0.0 U	288	7.26	0.0 U	25.3	14.9
SWFTS-MW07B	EM32	3/31/2021	N	Alluvium	33.8 - 38.3	4.823	0.89	--	288.0	7.26	--	25.3	14.9
SWFTS-MW07B	EM33	6/4/2021	N	Alluvium	33.8 - 38.3	3.869	0.12	0.0 U	102.6	7.02	0.0 U	27.4	6.6
SWFTS-MW07B	EM34	7/22/2021	N	Alluvium	33.8 - 38.3	6.037	0.21	0.0 U	30.7	6.87	0.0 U	27.8	4.7
SWFTS-MW07B	EM35	9/16/2021	N	Alluvium	33.8 - 38.3	6.245	0.25	0.0 U	162.1	6.90	0.0 U	25.1	17.3
SWFTS-MW07B	EM36	12/3/2021	N	Alluvium	33.8 - 38.3	6.129	1.00	0.0 U	52.1	6.91	0.0 U	22.1	9.5
SWFTS-MW07B	EM37	3/8/2022	N	Alluvium	33.8 - 38.3	6.246	0.54	--	55.7	6.99	--	23.4	5.0
SWFTS-MW07B	EM38	6/23/2022	N	Alluvium	33.8 - 38.3	6.138	0.41	0.0 U	70.9	6.88	0.0 U	25.9	9.0
SWFTS-MW07B	EM39	9/14/2022	N	Alluvium	33.8 - 38.3	5.863	0.34	--	5.8	6.81	--	26.9	11.4
SWFTS-MW07B	EM40	12/14/2022	N	Alluvium	33.8 - 38.3	4.336	1.04	0.0 U	75.1	6.98	0.0 U	21.1	19.9
SWFTS-MW08A	BL01	3/30/2017	N	Alluvium	20.2 - 34.8	7.384	0.25	--	54.3	6.93	--	--	9.21
SWFTS-MW08A	EM01	9/20/2017	N	Alluvium	20.2 - 34.8	6.764	0.41	--	43.4	7.01	--	--	1.40
SWFTS-MW08A	EM02	9/26/2017	N	Alluvium	20.2 - 34.8	6.454	0.27	--	-243.7	6.88	--	--	0.31
SWFTS-MW08A	EM03	10/5/2017	N	Alluvium	20.2 - 34.8	6.493	4.16	--	110.1	6.90	--	--	0.68
SWFTS-MW08A	EM04	10/10/2017	N	Alluvium	20.2 - 34.8	6.660	44.01 E	0.0 U	403	1.17 E	0.0 U	--	0.3
SWFTS-MW08A	EM05	10/23/2017	N	Alluvium	20.2 - 34.8	7.298	1.49	--	63.3	7.28	--	--	0.0
SWFTS-MW08A	EM06	11/15/2017	N	Alluvium	20.2 - 34.8	6.490	0.60	0.0 U	92.8	7.16	0.0 U	--	10.98
SWFTS-MW08A	EM07	12/14/2017	N	Alluvium	20.2 - 34.8	6.694	0.11	0.0 U	-92.1	7.87	0.0 U	--	1.91
SWFTS-MW08A	EM08	2/22/2018	N	Alluvium	20.2 - 34.8	6.260	5.05	0.0 U	184.0	8.15 E	0.0 U	--	0.0
SWFTS-MW08A	EM09	3/29/2018	N	Alluvium	20.2 - 34.8	6.350	2.61	--	308.0	7.24	--	--	0.10
SWFTS-MW08A	EM10	5/3/2018	N	Alluvium	20.2 - 34.8	6.752	0.37	--	112.1	7.04	--	23.31	4.65
SWFTS-MW08A	EM11	7/11/2018	N	Alluvium	20.2 - 34.8	5.84	1.54	0.0 U	71	7.23	0.0 U	24.12	0
SWFTS-MW08A	EM13	8/16/2018	N	Alluvium	20.2 - 34.8	6.039	0.63	--	-15.2	7.23	--	26.15	5.01
SWFTS-MW08A	EM14	9/12/2018	N	Alluvium	20.2 - 34.8	5.210	0.77	--	-51.1	7.63	--	25.91	0.43
SWFTS-MW08A	EM15	10/10/2018	N	Alluvium	20.2 - 34.8	4.892	0.09	0.0 U	-36.4	8.33 E	0.0 U	25.44	0
SWFTS-MW08A	EM16	1/2/2019	N	Alluvium	20.2 - 34.8	5.114	1.23	--	101.4	7.08	--	20.01	3.03
SWFTS-MW08A	EM17	2/28/2019	N	Alluvium	20.2 - 34.8	5.300	0.40	0.0 U	-17.7	7.10	0.0 U	23.27	0.05
SWFTS-MW08A	EM18	4/12/2019	N	Alluvium	20.2 - 34.8	4.549	0.74	--	119.1	7.03	--	21.94	0.41
SWFTS-MW08A	EM19	5/22/2019	N	Alluvium	20.2 - 34.8	4.812	1.30	0.0 U	146.9	7.04	0.0 U	23.5	9.2
SWFTS-MW08A	EM20	7/1/2019	N	Alluvium	20.2 - 34.8	4.319	0.55	--	121.3	7.15	--	27.3	9.5
SWFTS-MW08A	EM21	8/15/2019	N	Alluvium	20.2 - 34.8	4.783	0.45	0.0 U	102.5	7.22	0.0 U	25.6	7.5
SWFTS-MW08A	EM22	11/7/2019	N	Alluvium	20.2 - 34.8	5.026	0.76	0.0 U	203.8	7.17	0.0 U	23.9	1.6
SWFTS-MW08A	EM23	12/19/2019	N	Alluvium	20.2 - 34.8	4.849	1.09	--	91.0	7.15	--	22.7	0.83
SWFTS-MW08A	EM24	1/28/2020	N	Alluvium	20.2 - 34.8	5.374	0.76	0.0 U	119.7	7.15	0.0 U	22.9	1.78
SWFTS-MW08A	EM25	3/12/2020	N	Alluvium	20.2 - 34.8	5.577	2.52	--	121.7	7.04	--	22.7	0
SWFTS-MW08A	EM26	4/29/2020	N	Alluvium	20.2 - 34.8	5.849	0.73	0.0 U	106.1	7.09	0.0 U	25.6	4.7
SWFTS-MW08A	EM27	7/8/2020	N	Alluvium	20.2 - 34.8	5.742	0.93	--	59.1	7.28	--	25.9	5.06
SWFTS-MW08A	EM28	8/17/2020	N	Alluvium	20.2 - 34.8	4.993	0.63	0.0 U	62.7	6.96	0.0 U	26.3	5.5
SWFTS-MW08A	EM29	10/16/2020	N	Alluvium	20.2 - 34.8	5.945	1.35	0.0 U	191.7	7.21	0.0 U	24.3	4.4
SWFTS-MW08A	EM30	12/9/2020	N	Alluvium	20.2 - 34.8	3.808	1.99	--	66.3	7.12	--	22.6	0
SWFTS-MW08A	EM31	2/3/2021	N	Alluvium	20.2 - 34.8	5.277	1	0.0 U	271.5	7.13	0.0 U	23.4	5.7
SWFTS-MW08A	EM32	3/31/2021	N	Alluvium	20.2 - 34.8	5.277	1.00	--	271.5	7.13	--	23.4	5.7

Table D.3
Groundwater Field Test Results Summary
Seep Well Field Area Bioremediation Treatability Study

Well	Event	Sample Date	QC Type	Lithology	Screened Interval (ft bgs)	FIELD TESTS							
						Conductivity	Dissolved Oxygen	Ferrous Iron	Oxidation-Reduction Potential	pH	Sulfide	Temperature	Turbidity
						mS/cm	mg/L	mg/L	mV	SU	mg/L	C	NTU
SWFTS-MW08A	EM33	6/4/2021	N	Alluvium	20.2 - 34.8	4.142	0.56	0.0 U	455.1	7.20	0.0 U	24.5	1.8
SWFTS-MW08A	EM34	7/22/2021	N	Alluvium	20.2 - 34.8	4.891	0.54	0.0 U	89.2	7.08	0.0 U	24.4	2.6
SWFTS-MW08A	EM35	9/16/2021	N	Alluvium	20.2 - 34.8	6.484	0.58	0.0 U	213.8	6.97	0.0 U	25.2	-1.2
SWFTS-MW08A	EM36	12/2/2021	N	Alluvium	20.2 - 34.8	5.151	0.93	0.0 U	150.9	6.99	0.0 U	22.6	3.0
SWFTS-MW08C	BL01	3/28/2017	N	UMCf	49.9 - 69.5	8.322	0.08	--	-119.4	7.05	--	--	72.60
SWFTS-MW08C	EM07	12/14/2017	N	UMCf	49.9 - 69.5	8.915	-0.06 E	0.0 U	-120.8	7.31	0.0 U	--	45.30
SWFTS-MW08C	EM26	4/29/2020	N	UMCf	49.9 - 69.5	6.64	2.1	--	181.3	7.09	--	23.8	0.5
SWFTS-MW08C	EM40	12/14/2022	N	UMCf	49.9 - 69.5	7.829	1.09	0.0 U	80.0	7.11	0.0 U	21.6	26.2
SWFTS-MW09A	BL01	3/29/2017	N	Alluvium	19.3 - 28.9	7.233	0.33	--	-161.2	7.65	--	--	12.00
SWFTS-MW09A	EM01	9/21/2017	N	Alluvium	19.3 - 28.9	7.206	0.57	--	-202.7	7.03	--	--	10.51
SWFTS-MW09A	EM02	9/28/2017	N	Alluvium	19.3 - 28.9	7.384	0.26	--	-150.4	7.19	--	--	1.16
SWFTS-MW09A	EM03	10/4/2017	N	Alluvium	19.3 - 28.9	6.996	4.54	--	-125.1	7.42	--	--	26.30
SWFTS-MW09A	EM04	10/11/2017	N	Alluvium	19.3 - 28.9	7.039	0.12	0.0 U	-187.5	6.81	0.0 U	--	1.72
SWFTS-MW09A	EM05	10/25/2017	N	Alluvium	19.3 - 28.9	7.496	0.31	--	-99.3	7.38	--	--	1.49
SWFTS-MW09A	EM06	11/16/2017	N	Alluvium	19.3 - 28.9	6.104	1.88	0.0 U	11.8	7.03	0.0 U	--	1.50
SWFTS-MW09A	EM07	12/12/2017	N	Alluvium	19.3 - 28.9	7.030	0.29	0.0 U	-10.1	6.94	0.0 U	--	5.00
SWFTS-MW09A	EM08	2/20/2018	N	Alluvium	19.3 - 28.9	6.260	4.16	0.0 U	85.0	7.50	0.0 U	--	0.90
SWFTS-MW09A	EM09	3/27/2018	N	Alluvium	19.3 - 28.9	6.270	2.12	--	209	7.14	--	--	4.2
SWFTS-MW09A	EM10	5/1/2018	N	Alluvium	19.3 - 28.9	6.34	0.00	--	221	6.95	--	25.04	3.0
SWFTS-MW09A	EM11	7/12/2018	N	Alluvium	19.3 - 28.9	6.442	1.86	0.0 U	21.6	6.73	0.0 U	25.79	1.59
SWFTS-MW09A	EM12	7/27/2018	N	Alluvium	19.3 - 28.9	5.93	5.97	--	-80.10	6.96	--	26.77	4.27
SWFTS-MW09A	EM13	8/14/2018	N	Alluvium	19.3 - 28.9	18.2 E	2.83	--	131	6.99	--	21.51	3.7
SWFTS-MW09A	EM14	9/11/2018	N	Alluvium	19.3 - 28.9	4.520	1.72	--	2.6	7.54	--	24.53	2.62
SWFTS-MW09A	EM15	10/9/2018	N	Alluvium	19.3 - 28.9	5.558	1.3	0.0 U	-125.2	7.64	0.0 U	20.97	0.01
SWFTS-MW09A	EM16	12/27/2018	N	Alluvium	19.3 - 28.9	6.213	0.83	--	-18.4	6.99	--	22.58	0.83
SWFTS-MW09A	EM17	2/26/2019	N	Alluvium	19.3 - 28.9	4.885	0.43	0.0 U	-69.8	7.00	0.0 U	23.20	0.02
SWFTS-MW09A	EM18	4/10/2019	N	Alluvium	19.3 - 28.9	4.529	0.72	--	101.3	6.92	--	23.1	7.3
SWFTS-MW09A	EM19	5/22/2019	N	Alluvium	19.3 - 28.9	5.431	0.47	0.0 U	132.7	6.89	0.0 U	23.6	13.1
SWFTS-MW09A	EM20	7/2/2019	N	Alluvium	19.3 - 28.9	5.027	0.45	--	-13.8	6.87	--	25.4	9.5
SWFTS-MW09A	EM21	8/12/2019	N	Alluvium	19.3 - 28.9	5.195	0.44	0.0 U	88.3	6.98	0.0 U	25.4	7.8
SWFTS-MW09A	EM22	11/5/2019	N	Alluvium	19.3 - 28.9	4.888	0.70	0.0 U	203.5	6.99	0.0 U	23.6	4.1
SWFTS-MW09A	EM23	12/18/2019	N	Alluvium	19.3 - 28.9	4.716	0.76	--	51.9	7.03	--	22.9	9.50
SWFTS-MW09A	EM24	1/28/2020	N	Alluvium	19.3 - 28.9	5.015	0.84	0.0 U	117.3	7.06	0.0 U	22.9	9.95
SWFTS-MW09A	EM25	3/10/2020	N	Alluvium	19.3 - 28.9	4.74	2.34	--	199.9	6.96	--	23	1
SWFTS-MW09A	EM26	4/28/2020	N	Alluvium	19.3 - 28.9	5.809	0.36	0.0 U	151	7.01	0.0 U	26.6	25.7
SWFTS-MW09A	EM27	7/6/2020	N	Alluvium	19.3 - 28.9	5.953	0.7	--	219.3	6.89	--	27.0	35.3
SWFTS-MW09A	EM28	8/18/2020	N	Alluvium	19.3 - 28.9	5.226	0.84	0.0 U	84.4	6.81	0.0 U	24.9	5.1
SWFTS-MW09A	EM29	10/13/2020	N	Alluvium	19.3 - 28.9	4.2	0.28	0.0 U	118.9	7.35	0.01	24.6	7.61
SWFTS-MW09A	EM30	12/9/2020	N	Alluvium	19.3 - 28.9	4.099	1.96	--	102.8	7.01	--	22.2	0.2
SWFTS-MW09A	EM31	2/3/2021	N	Alluvium	19.3 - 28.9	5.072	0.65	0.0 U	257.3	7.36	0.0 U	21.9	7.2
SWFTS-MW09A	EM32	4/1/2021	N	Alluvium	19.3 - 28.9	5.072	0.65	--	257.3	7.36	--	21.9	7.2
SWFTS-MW09A	EM33	6/1/2021	N	Alluvium	19.3 - 28.9	4.804	1.05	0.0 U	103.8	6.91	0.0 U	26.7	5.1
SWFTS-MW09A	EM34	7/20/2021	N	Alluvium	19.3 - 28.9	4.050	0.39	0.0 U	194.6	6.97	0.0 U	25.2	9.0
SWFTS-MW09A	EM35	9/15/2021	N	Alluvium	19.3 - 28.9	5.793	0.29	0.0 U	164.8	6.81	0.0 U	25.6	9.4
SWFTS-MW09A	EM36	12/2/2021	N	Alluvium	19.3 - 28.9	6.468	1.54	0.0 U	119.4	6.81	0.0 U	24.0	21.3
SWFTS-MW09A	EM37	3/8/2022	N	Alluvium	19.3 - 28.9	6.469	0.51	--	117.8	6.75	--	24.1	4.4
SWFTS-MW09A	EM38	6/23/2022	N	Alluvium	19.3 - 28.9	7.075	0.84	0.0 U	108.9	6.74	0.0 U	25.2	2.5
SWFTS-MW09A	EM39	9/13/2022	N	Alluvium	19.3 - 28.9	5.806	0.57	--	133.2	6.78	--	25.7	4.0
SWFTS-MW09A	EM40	12/13/2022	N	Alluvium	19.3 - 28.9	5.332	1.23	0.0 U	71.7	6.84	0.0 U	23.2	5.5

Table D.3
Groundwater Field Test Results Summary
Seep Well Field Area Bioremediation Treatability Study

Well	Event	Sample Date	QC Type	Lithology	Screened Interval (ft bgs)	FIELD TESTS							
						Conductivity	Dissolved Oxygen	Ferrous Iron	Oxidation-Reduction Potential	pH	Sulfide	Temperature	Turbidity
						mS/cm	mg/L	mg/L	mV	SU	mg/L	C	NTU
SWFTS-MW09B	BL01	3/29/2017	N	Alluvium	34.4 - 39.0	7.167	0.31	--	77.4	7.18	--	--	23.00
SWFTS-MW09B	EM01	9/21/2017	N	Alluvium	34.4 - 39.0	7.053	1.81	--	-79.0	7.20	--	--	15.73
SWFTS-MW09B	EM02	9/28/2017	N	Alluvium	34.4 - 39.0	12.265 E	0.38	--	-229.0	6.85	--	--	26.40
SWFTS-MW09B	EM03	10/4/2017	N	Alluvium	34.4 - 39.0	6.907	3.71	--	-149.6	7.06	--	--	5.53
SWFTS-MW09B	EM04	10/11/2017	N	Alluvium	34.4 - 39.0	6.878	0.12	0.5	-193.0	6.64	0.0 U	--	2.79
SWFTS-MW09B	EM05	10/25/2017	N	Alluvium	34.4 - 39.0	7.369	0.38	--	-144.1	7.07	--	--	1.60
SWFTS-MW09B	EM06	11/16/2017	N	Alluvium	34.4 - 39.0	6.381	0.77	0.0 U	-75.4	6.74	0.0 U	--	4.98
SWFTS-MW09B	EM07	12/12/2017	N	Alluvium	34.4 - 39.0	6.989	0.07	0.0 U	-63.1	6.75	0.0 U	--	4.70
SWFTS-MW09B	EM08	2/20/2018	N	Alluvium	34.4 - 39.0	6.230	5.47	0.0 U	7.0	6.96	0.0 U	--	4.40
SWFTS-MW09B	EM09	3/27/2018	N	Alluvium	34.4 - 39.0	6.380	2.09	--	204	7.17	--	--	0.80
SWFTS-MW09B	EM10	4/30/2018	N	Alluvium	34.4 - 39.0	6.18	0.00	--	103	7.20	--	26.18	83.2
SWFTS-MW09B	EM11	7/12/2018	N	Alluvium	34.4 - 39.0	6.648	1.58	0.0 U	14.4	6.78	0.0 U	25.11	3.18
SWFTS-MW09B	EM12	7/26/2018	N	Alluvium	34.4 - 39.0	5.87	1.16	--	152.00	4.30	--	26.21	1.72
SWFTS-MW09B	EM13	8/14/2018	N	Alluvium	34.4 - 39.0	18.7 E	2.99	--	117	6.84	--	21.48	9.8
SWFTS-MW09B	EM14	9/11/2018	N	Alluvium	34.4 - 39.0	4.720	1.12	--	-23.9	7.64	--	26.62	2.21
SWFTS-MW09B	EM15	10/9/2018	N	Alluvium	34.4 - 39.0	5.963	0.58	0.0 U	-130.6	7.72	0.0 U	24.08	0
SWFTS-MW09B	EM16	12/28/2018	N	Alluvium	34.4 - 39.0	5.242	1.3	--	178.9	6.99	--	21.62	7.02
SWFTS-MW09B	EM17	2/28/2019	N	Alluvium	34.4 - 39.0	5.307	0.50	0.0 U	56.6	6.99	0.0 U	22.80	0.53
SWFTS-MW09B	EM18	4/10/2019	N	Alluvium	34.4 - 39.0	4.667	2.69	--	118.1	7.11	--	23.6	8.6
SWFTS-MW09B	EM19	5/22/2019	N	Alluvium	34.4 - 39.0	5.461	0.70	0.0 U	143.2	7.04	0.0 U	23.7	7.3
SWFTS-MW09B	EM20	7/2/2019	N	Alluvium	34.4 - 39.0	5.039	0.70	--	7.8	7.00	--	26.2	7.0
SWFTS-MW09B	EM21	8/12/2019	N	Alluvium	34.4 - 39.0	5.237	0.53	0.0 U	188.4	7.07	0.0 U	25.8	7.7
SWFTS-MW09B	EM22	11/5/2019	N	Alluvium	34.4 - 39.0	4.938	1.48	0.0 U	221.5	7.07	0.0 U	23.9	2.7
SWFTS-MW09B	EM23	12/18/2019	N	Alluvium	34.4 - 39.0	4.789	0.87	--	58.9	7.12	--	22.9	3.20
SWFTS-MW09B	EM24	1/28/2020	N	Alluvium	34.4 - 39.0	5.174	0.54	0.0 U	98.8	7.11	0.0 U	23.2	5.61
SWFTS-MW09B	EM25	3/10/2020	N	Alluvium	34.4 - 39.0	4.853	2.33	--	197.4	7.02	--	22.8	9.3
SWFTS-MW09B	EM26	4/28/2020	N	Alluvium	34.4 - 39.0	6.238	0.85	0.0 U	157.3	7.07	0.0 U	29	11.9
SWFTS-MW09B	EM27	7/7/2020	N	Alluvium	34.4 - 39.0	6.102	0.7	--	169.8	7.10	--	24.8	12.5
SWFTS-MW09B	EM28	8/18/2020	N	Alluvium	34.4 - 39.0	5.586	0.71	0.0 U	83.7	6.91	0.0 U	26.4	4.9
SWFTS-MW09B	EM29	10/13/2020	N	Alluvium	34.4 - 39.0	4.284	0.71	0.0 U	106.5	7.4	0.0 U	24.8	4.13
SWFTS-MW09B	EM30	12/8/2020	N	Alluvium	34.4 - 39.0	4.123	0.34	--	151.5	7.16	--	20.9	0.57
SWFTS-MW09B	EM31	2/1/2021	N	Alluvium	34.4 - 39.0	5.233	0.55	0.0 U	316.1	7.48	0.0 U	22.8	3
SWFTS-MW09B	EM32	4/1/2021	N	Alluvium	34.4 - 39.0	5.233	0.55	--	316.1	7.48	--	22.8	3.0
SWFTS-MW09B	EM33	6/2/2021	N	Alluvium	34.4 - 39.0	3.913	0.77	0.0 U	112.4	7.15	0.0 U	24.3	4.9
SWFTS-MW09B	EM34	7/20/2021	N	Alluvium	34.4 - 39.0	4.170	0.46	0.0 U	80.1	7.06	0.0 U	25.5	4.5
SWFTS-MW09B	EM35	9/15/2021	N	Alluvium	34.4 - 39.0	5.962	0.25	0.0 U	168.9	6.89	0.0 U	25.8	3.7
SWFTS-MW09B	EM36	12/2/2021	N	Alluvium	34.4 - 39.0	6.661	1.84	0.0 U	65.2	6.90	0.0 U	24.0	7.6
SWFTS-MW09B	EM37	3/8/2022	N	Alluvium	34.4 - 39.0	6.222	0.55	--	84.1	6.85	--	23.8	2.0
SWFTS-MW09B	EM38	6/23/2022	N	Alluvium	34.4 - 39.0	7.585	0.99	0.0 U	79.0	6.87	0.0 U	27.2	2.2
SWFTS-MW09B	EM39	9/13/2022	N	Alluvium	34.4 - 39.0	3.431	1.31	--	134.5	6.89	--	22.9	3.3
SWFTS-MW09B	EM40	12/13/2022	N	Alluvium	34.4 - 39.0	5.076	1.16	0.0 U	88.1	6.91	0.0 U	21.6	1.1
SWFTS-MW10A	BL01	3/31/2017	N	Alluvium	20.4 - 35.0	6.348	2.70	--	174.4	6.64	--	--	10.05
SWFTS-MW10A	EM01	9/21/2017	N	Alluvium	20.4 - 35.0	4.561	0.42	--	-264.1	6.98	--	--	11.31
SWFTS-MW10A	EM02	9/27/2017	N	Alluvium	20.4 - 35.0	4.504	5.10	--	-182.8	7.14	--	--	162
SWFTS-MW10A	EM03	10/4/2017	N	Alluvium	20.4 - 35.0	4.599	4.56	--	-208.2	7.03	--	--	28.1
SWFTS-MW10A	EM04	10/12/2017	N	Alluvium	20.4 - 35.0	4.869	0.15	0.0 U	-263.0	6.72	0.12	--	8.40
SWFTS-MW10A	EM05	10/24/2017	N	Alluvium	20.4 - 35.0	5.301	1.38	--	-268.8	7.20	--	--	4.00
SWFTS-MW10A	EM06	11/16/2017	N	Alluvium	20.4 - 35.0	4.790	0.60	0.0 U	-236.1	7.12	1.60	--	3.54
SWFTS-MW10A	EM07	12/12/2017	N	Alluvium	20.4 - 35.0	4.720	0.53	0.0 U	-258.0	8.35 E	0.16	--	1.45

Table D.3
Groundwater Field Test Results Summary
Seep Well Field Area Bioremediation Treatability Study

Well	Event	Sample Date	QC Type	Lithology	Screened Interval (ft bgs)	FIELD TESTS							
						Conductivity	Dissolved Oxygen	Ferrous Iron	Oxidation-Reduction Potential	pH	Sulfide	Temperature	Turbidity
						mS/cm	mg/L	mg/L	mV	SU	mg/L	C	NTU
SWFTS-MW10A	EM08	2/20/2018	N	Alluvium	20.4 - 35.0	6.569	0.44	0.50	-262.0	6.96	0.0 U	--	2.30
SWFTS-MW10A	EM09	3/26/2018	N	Alluvium	20.4 - 35.0	7.166	1.15	--	59.3	6.86	--	23.48	2.99
SWFTS-MW10A	EM10	5/1/2018	N	Alluvium	20.4 - 35.0	6.617	0.83	--	-154.9	7.10	--	21.39	1.73
SWFTS-MW10A	EM11	7/11/2018	N	Alluvium	20.4 - 35.0	6.94	2.42	0.0 U	75	7.09	0.0 U	25.95	0
SWFTS-MW10A	EM12	7/26/2018	N	Alluvium	20.4 - 35.0	5.97	0.55	--	7.20	6.81	--	25.22	0.60
SWFTS-MW10A	EM13	8/14/2018	N	Alluvium	20.4 - 35.0	19.1 E	2.59	--	-5	7.01	--	21.41	37.8
SWFTS-MW10A	EM14	9/10/2018	N	Alluvium	20.4 - 35.0	6.710	0.37	--	-177.5	7.08	--	28.43 E	1.33
SWFTS-MW10A	EM15	10/9/2018	N	Alluvium	20.4 - 35.0	6.333	0.86	0.0 U	-126.1	7.64	0.0 U	25.24	0
SWFTS-MW10A	EM16	12/20/2018	N	Alluvium	20.4 - 35.0	7.198	0.7	--	-86.4	6.95	--	23.16	2.53
SWFTS-MW10A	EM17	2/26/2019	N	Alluvium	20.4 - 35.0	5.705	0.37	0.0 U	31.1	6.89	0.0 U	23.58	1.62
SWFTS-MW10A	EM18	4/10/2019	N	Alluvium	20.4 - 35.0	5.825	0.61	--	68.5	6.85	--	23.09	3.97
SWFTS-MW10A	EM19	5/21/2019	N	Alluvium	20.4 - 35.0	5.558	0.46	0.0 U	-107.7	6.86	0.0 U	24.4	8.3
SWFTS-MW10A	EM20	7/1/2019	N	Alluvium	20.4 - 35.0	5.602	5.15	--	59.8	7.13	--	25.5	20.0
SWFTS-MW10A	EM21	8/12/2019	N	Alluvium	20.4 - 35.0	5.110	0.38	0.0 U	30.0	6.92	0.0 U	25.3	8.8
SWFTS-MW10A	EM22	11/6/2019	N	Alluvium	20.4 - 35.0	5.802	0.49	0.0 U	67.2	6.81	0.0 U	23.5	33.5
SWFTS-MW10A	EM23	12/17/2019	N	Alluvium	20.4 - 35.0	5.436	0.69	--	-38.8	6.84	--	23.6	174.62
SWFTS-MW10A	EM24	1/28/2020	N	Alluvium	20.4 - 35.0	5.997	0.55	0.0 U	82.1	6.93	0.0 U	24.1	4.57
SWFTS-MW10A	EM25	3/13/2020	N	Alluvium	20.4 - 35.0	6.665	1.55	--	129.9	6.9	--	23.4	3.4
SWFTS-MW10A	EM26	4/29/2020	N	Alluvium	20.4 - 35.0	5.357	2.04	0.0 U	146	6.88	0.0 U	25.1	5.9
SWFTS-MW10A	EM27	7/7/2020	N	Alluvium	20.4 - 35.0	6.745	0.7	--	174.7	6.94	--	26.1	151.6
SWFTS-MW10A	EM28	8/18/2020	N	Alluvium	20.4 - 35.0	6.234	0.56	0.0 U	79.4	6.8	0.0 U	26.8	3.8
SWFTS-MW10A	EM29	10/14/2020	N	Alluvium	20.4 - 35.0	6.412	0.36	0.0 U	172.4	7.42	0.0 U	24.7	7.48
SWFTS-MW10A	EM30	12/8/2020	N	Alluvium	20.4 - 35.0	4.973	0.36	--	184.5	7	--	23.1	0.64
SWFTS-MW10A	EM31	2/1/2021	N	Alluvium	20.4 - 35.0	6.521	0.57	0.0 U	332.1	7.4	0.0 U	23.8	6
SWFTS-MW10A	EM32	4/1/2021	N	Alluvium	20.4 - 35.0	6.521	0.57	--	332.1	7.40	--	23.8	6.0
SWFTS-MW10A	EM33	6/4/2021	N	Alluvium	20.4 - 35.0	4.587	0.73	0.0 U	121.4	6.94	0.0 U	26.7	9.5
SWFTS-MW10A	EM34	7/20/2021	N	Alluvium	20.4 - 35.0	4.743	0.16	0.0 U	82.2	6.94	0.0 U	26.3	7.0
SWFTS-MW10A	EM35	9/15/2021	N	Alluvium	20.4 - 35.0	6.239	0.18	0.0 U	167.3	6.89	0.0 U	26.7	9.6
SWFTS-MW10A	EM36	11/30/2021	N	Alluvium	20.4 - 35.0	5.838	1.10	0.0 U	99.6	6.89	0.0 U	23.6	4.4
SWFTS-MW10A	EM37	3/7/2022	N	Alluvium	20.4 - 35.0	5.828	0.62	--	62.7	6.97	--	24.0	6.0
SWFTS-MW10A	EM38	6/23/2022	N	Alluvium	20.4 - 35.0	7.698	0.79	0.0 U	96.6	6.88	0.0 U	26.5	3.1
SWFTS-MW10A	EM39	9/13/2022	N	Alluvium	20.4 - 35.0	4.363	0.88	--	171.2	6.90	--	24.1	93.3
SWFTS-MW10A	EM40	12/15/2022	N	Alluvium	20.4 - 35.0	6.478	0.97	0.0 U	123.0	6.84	0.0 U	22.9	4.7
SWFTS-MW10C	BL01	3/28/2017	N	UMCf	43.5 - 63.1	8.249	0.09	--	-140.6	7.08	--	--	56.60
SWFTS-MW10C	EM07	12/12/2017	N	UMCf	43.5 - 63.1	7.62	0.51	0.0 U	-61	7.82	0.0 U	--	163
SWFTS-MW10C	EM26	5/1/2020	N	UMCf	43.5 - 63.1	7.128	2.11	--	92.2	7.04	--	23.5	65.2
SWFTS-MW10C	EM40	12/15/2022	N	UMCf	43.5 - 63.1	8.015	0.89	0.0 U	32.8	7.03	0.0 U	22.6	459.8
SWFTS-MW11	BL02	7/12/2017	N	Alluvium	14.8 - 39.6	6.340	4.30	0.0 U	168	7.27	0.0 U	--	0.70
SWFTS-MW11	EM01	9/20/2017	N	Alluvium	14.8 - 39.6	7.346	1.86	--	39.6	6.92	--	--	4.05
SWFTS-MW11	EM02	9/26/2017	N	Alluvium	14.8 - 39.6	7.207	1.47	--	14.0	6.87	--	--	2.51
SWFTS-MW11	EM03	10/3/2017	N	Alluvium	14.8 - 39.6	7.063	0.93	--	-59.7	6.89	--	--	4.91
SWFTS-MW11	EM04	10/11/2017	N	Alluvium	14.8 - 39.6	7.494	1.15	0.0 U	67.4	6.86	0.0 U	--	1.71
SWFTS-MW11	EM05	10/24/2017	N	Alluvium	14.8 - 39.6	8.177	2.32	--	-170.6	7.34	--	--	2.95
SWFTS-MW11	EM06	11/16/2017	N	Alluvium	14.8 - 39.6	7.480	0.95	0.0 U	129.2	7.17	0.0 U	--	33.10
SWFTS-MW11	EM07	12/14/2017	N	Alluvium	14.8 - 39.6	6.770	1.78	0.0 U	31.0	7.62	0.0 U	--	5.60
SWFTS-MW11	EM08	2/21/2018	N	Alluvium	14.8 - 39.6	8.080	7.35	0.0 U	163.0	7.93	0.0 U	--	19.60
SWFTS-MW11	EM09	3/28/2018	N	Alluvium	14.8 - 39.6	6.950	4.05	--	282	7.34	--	--	5.5
SWFTS-MW11	EM10	5/1/2018	N	Alluvium	14.8 - 39.6	7.307	5.35	--	-75.5	7.56	--	24.41	4.05
SWFTS-MW11	EM11	7/12/2018	N	Alluvium	14.8 - 39.6	6.79	5.48	0.0 U	125	7.58	0.0 U	22.94	0

Table D.3
Groundwater Field Test Results Summary
Seep Well Field Area Bioremediation Treatability Study

Well	Event	Sample Date	QC Type	Lithology	Screened Interval (ft bgs)	FIELD TESTS							
						Conductivity	Dissolved Oxygen	Ferrous Iron	Oxidation-Reduction Potential	pH	Sulfide	Temperature	Turbidity
						mS/cm	mg/L	mg/L	mV	SU	mg/L	C	NTU
SWFTS-MW11	EM13	8/16/2018	N	Alluvium	14.8 - 39.6	6.85	2.83	--	168	7.65	--	20.79	4.9
SWFTS-MW11	EM14	9/12/2018	N	Alluvium	14.8 - 39.6	6.800	4.18	--	-24.3	7.69	--	27.70 E	18.33
SWFTS-MW11	EM15	10/11/2018	N	Alluvium	14.8 - 39.6	5.71	3.59	0.0 U	-40.4	8.3 E	0.0 U	25.14	2.27
SWFTS-MW11	EM16	1/2/2019	N	Alluvium	14.8 - 39.6	5.954	7.08	--	112.5	7.19	--	21.19	3.22
SWFTS-MW11	EM17	3/1/2019	N	Alluvium	14.8 - 39.6	5.998	5.23	0.0 U	143.3	7.24	0.0 U	23.87	1.17
SWFTS-MW11	EM18	4/12/2019	N	Alluvium	14.8 - 39.6	5.809	5.50	--	202.5	7.18	--	23.5	2.7
SWFTS-MW11	EM19	5/22/2019	N	Alluvium	14.8 - 39.6	5.598	5.09	0.0 U	79.0	7.22	0.0 U	24.5	2.3
SWFTS-MW11	EM20	7/3/2019	N	Alluvium	14.8 - 39.6	5.19	5.03	--	175.2	7.15	--	25.1	3.8
SWFTS-MW11	EM21	8/15/2019	N	Alluvium	14.8 - 39.6	5.471	4.95	0.0 U	157.4	7.35	0.0 U	25.3	4.7
SWFTS-MW11	EM22	11/7/2019	N	Alluvium	14.8 - 39.6	5.266	5.79	0.0 U	-23.4	7.29	0.0 U	24.7	5.1
SWFTS-MW11	EM23	12/17/2019	N	Alluvium	14.8 - 39.6	5.242	5.91	--	199.2	7.27	--	23.1	1.34
SWFTS-MW11	EM24	1/28/2020	N	Alluvium	14.8 - 39.6	5.527	6.54	0.0 U	142.9	7.29	0.0 U	24.1	3.47
SWFTS-MW11	EM25	3/13/2020	N	Alluvium	14.8 - 39.6	5.989	6.44	--	190.8	7.18	--	21.5	1.6
SWFTS-MW11	EM26	4/30/2020	N	Alluvium	14.8 - 39.6	5.836	5.03	0.0 U	90.9	7.24	0.0 U	24.7	4.4
SWFTS-MW11	EM27	7/7/2020	N	Alluvium	14.8 - 39.6	6.642	4.6	--	184.6	7.33	--	30.4	4.0
SWFTS-MW11	EM28	8/18/2020	N	Alluvium	14.8 - 39.6	6.129	4.38	0.0 U	116.3	7.17	0.0 U	27.3	1.8
SWFTS-MW11	EM29	10/16/2020	N	Alluvium	14.8 - 39.6	6.07	5.04	0.0 U	56.2	7.66	0.0 U	25	2.93
SWFTS-MW11	EM30	12/8/2020	N	Alluvium	14.8 - 39.6	4.537	5.1	--	163.9	7.39	--	23.2	0.21
SWFTS-MW11	EM31	2/1/2021	N	Alluvium	14.8 - 39.6	5.78	5.84	0.0 U	339	7.77	0.0 U	24.8	2.2
SWFTS-MW11	EM32	4/1/2021	N	Alluvium	14.8 - 39.6	5.780	5.84	--	339.0	7.77	--	24.8	2.2
SWFTS-MW11	EM33	6/4/2021	N	Alluvium	14.8 - 39.6	4.026	5.26	0.0 U	83.8	8.09	0.0 U	26.9	2.8
SWFTS-MW11	EM34	7/22/2021	N	Alluvium	14.8 - 39.6	5.557	5.55	0.0 U	89.3	7.17	0.0 U	26.3	1.4
SWFTS-MW11	EM35	9/16/2021	N	Alluvium	14.8 - 39.6	6.247	5.26	0.0 U	166.6	7.24	0.0 U	26.5	-1.5
SWFTS-MW11	EM36	12/3/2021	N	Alluvium	14.8 - 39.6	6.405	5.81	0.0 U	94.8	7.24	0.0 U	23.4	2.6
SWFTS-MW11	EM37	3/7/2022	N	Alluvium	14.8 - 39.6	7.786	7.16	--	67.0	7.25	--	21.4	1.5
SWFTS-MW11	EM39	9/13/2022	N	Alluvium	14.8 - 39.6	3.891	4.36	--	178.5	7.25	--	24.8	0.5
SWFTS-MW11	EM40	12/15/2022	N	Alluvium	14.8 - 39.6	4.986	5.25	0.0 U	59.2	7.23	0.0 U	23.2	4.4
SWFTS-MW12	BL02	7/13/2017	N	Alluvium	15.8 - 40.6	6.850	7.81	0.0 U	181	7.24	0.0 U	--	0.90
SWFTS-MW12	EM01	9/19/2017	N	Alluvium	15.8 - 40.6	6.890	4.36	--	81.0	7.22	--	--	21.00
SWFTS-MW12	EM02	9/26/2017	N	Alluvium	15.8 - 40.6	8.544	2.98	--	43.9	7.29	--	--	1.35
SWFTS-MW12	EM03	10/3/2017	N	Alluvium	15.8 - 40.6	7.361	2.77	--	45.8	7.04	--	--	0.00
SWFTS-MW12	EM04	10/11/2017	N	Alluvium	15.8 - 40.6	7.349	1.59	0.0 U	-32.1	6.80	0.0 U	--	1.58
SWFTS-MW12	EM05	10/24/2017	N	Alluvium	15.8 - 40.6	7.887	5.09	--	24.0	7.50	--	--	0.69
SWFTS-MW12	EM06	11/14/2017	N	Alluvium	15.8 - 40.6	7.330	2.52	0.0 U	93.9	7.19	0.0 U	--	5.22
SWFTS-MW12	EM07	12/14/2017	N	Alluvium	15.8 - 40.6	6.400	4.37	0.0 U	42.0	7.70	0.0 U	--	0.27
SWFTS-MW12	EM08	2/22/2018	N	Alluvium	15.8 - 40.6	6.450	5.95	0.0 U	233.0	8.14 E	0.0 U	--	6.10
SWFTS-MW12	EM09	3/28/2018	N	Alluvium	15.8 - 40.6	5.880	4.30	--	275	7.43	--	--	15.4
SWFTS-MW12	EM10	5/3/2018	N	Alluvium	15.8 - 40.6	7.274	2.24	--	83.7	7.21	--	23.84	1.07
SWFTS-MW12	EM11	7/12/2018	N	Alluvium	15.8 - 40.6	6.57	5.35	0.0 U	135	7.61	0.0 U	21.64	0
SWFTS-MW12	EM13	8/16/2018	N	Alluvium	15.8 - 40.6	6.8	2.75	--	156	7.90	--	20.38	0.2
SWFTS-MW12	EM14	9/12/2018	N	Alluvium	15.8 - 40.6	6.350	3.46	--	-29.5	7.73	--	26.06	3.46
SWFTS-MW12	EM15	10/11/2018	N	Alluvium	15.8 - 40.6	5.484	5.11	0.0 U	-42.6	8.49 E	0.0 U	24.44	91.2
SWFTS-MW12	EM16	1/2/2019	N	Alluvium	15.8 - 40.6	6.394	4.35	--	110	7.16	--	22.92	6.98
SWFTS-MW12	EM17	2/28/2019	N	Alluvium	15.8 - 40.6	6.127	3.64	0.0 U	23.3	7.18	0.0 U	23.71	20.3
SWFTS-MW12	EM18	4/12/2019	N	Alluvium	15.8 - 40.6	5.895	3.50	--	117.1	7.10	--	23.64	18.15
SWFTS-MW12	EM19	5/22/2019	N	Alluvium	15.8 - 40.6	6.361	3.81	0.0 U	153.0	7.08	0.0 U	23.3	10.6
SWFTS-MW12	EM20	7/5/2019	N	Alluvium	15.8 - 40.6	5.875	3.56	--	203.5	7.23	--	25.8	9.5
SWFTS-MW12	EM21	8/16/2019	N	Alluvium	15.8 - 40.6	6.712	3.35	0.0 U	207.2	7.31	0.0 U	24.3	7.9
SWFTS-MW12	EM22	11/7/2019	N	Alluvium	15.8 - 40.6	6.425	0.29	2.0	-293.6	6.29	1.4	23.6	20.5

Table D.3
Groundwater Field Test Results Summary
Seep Well Field Area Bioremediation Treatability Study

Well	Event	Sample Date	QC Type	Lithology	Screened Interval (ft bgs)	FIELD TESTS							
						Conductivity	Dissolved Oxygen	Ferrous Iron	Oxidation-Reduction Potential	pH	Sulfide	Temperature	Turbidity
						mS/cm	mg/L	mg/L	mV	SU	mg/L	C	NTU
SWFTS-MW12	EM23	12/20/2019	N	Alluvium	15.8 - 40.6	5.150	0.84	--	-227.1	6.83	--	22.9	61.23
SWFTS-MW12	EM24	1/29/2020	N	Alluvium	15.8 - 40.6	4.870	0.46	0.0 U	-225.6	6.83	0.44	22.6	42.46
SWFTS-MW12	EM25	3/12/2020	N	Alluvium	15.8 - 40.6	5.046	2.19	--	-85.9	6.36	--	22.8	34.9
SWFTS-MW12	EM26	4/30/2020	N	Alluvium	15.8 - 40.6	4.568	1.83	0.5	-253.4	6.52	0.02	25.2	9
SWFTS-MW12	EM27	7/7/2020	N	Alluvium	15.8 - 40.6	5.563	0.4	--	-333.7	6.66	--	26.8	90.0
SWFTS-MW12	EM28	8/18/2020	N	Alluvium	15.8 - 40.6	5.67	0.43	0.5 U	-330	6.5	0.56	28.6	8.6
SWFTS-MW12	EM29	10/16/2020	N	Alluvium	15.8 - 40.6	5.836	0.31	0.2	-125.9	6.88	0.56	23.6	56.17
SWFTS-MW12	EM30	12/8/2020	N	Alluvium	15.8 - 40.6	4.886	0.25	--	-216.9	6.58	--	23.6	8.32
SWFTS-MW12	EM31	2/2/2021	N	Alluvium	15.8 - 40.6	5.943	0.51	1	-79.1	7.16	0.0 U	24.2	30.6
SWFTS-MW12	EM32	4/1/2021	N	Alluvium	15.8 - 40.6	5.943	0.51	--	-79.1	7.16	--	24.2	30.6
SWFTS-MW12	EM33	6/4/2021	N	Alluvium	15.8 - 40.6	4.468	0.67	0.0 U	61.7	6.86	0.0 U	26.2	54.1
SWFTS-MW12	EM34	7/22/2021	N	Alluvium	15.8 - 40.6	5.379	0.35	0.0 U	77.9	6.57	0.0 U	26.3	6.6
SWFTS-MW12	EM35	9/15/2021	N	Alluvium	15.8 - 40.6	5.668	0.55	0.0 U	45.1	6.57	0.0 U	26.3	7.1
SWFTS-MW12	EM36	12/2/2021	N	Alluvium	15.8 - 40.6	5.122	1.44	0.0 U	-3.1	6.82	0.0 U	22.7	27.1
SWFTS-MW12	EM37	3/8/2022	N	Alluvium	15.8 - 40.6	6.771	0.57	--	-18.7	6.60	--	23.8	10.7
SWFTS-MW12	EM38	6/23/2022	N	Alluvium	15.8 - 40.6	5.922	0.86	0.0 U	23.9	6.64	0.0 U	25.9	2.9
SWFTS-MW12	EM39	9/13/2022	N	Alluvium	15.8 - 40.6	3.007	1.35	--	-11.3	6.63	--	24.7	27.1
SWFTS-MW12	EM40	12/15/2022	N	Alluvium	15.8 - 40.6	4.914	1.00	0.0 U	-9.9	6.77	0.0 U	23.4	20.2
SWFTS-MW13	BL02	7/12/2017	N	Alluvium	17.8 - 47.6	6.280	4.72	0.0 U	140	7.39	0.0 U	--	5.80
SWFTS-MW13	EM01	9/20/2017	N	Alluvium	17.8 - 47.6	7.337	5.20	--	65.5	7.11	--	--	18.62
SWFTS-MW13	EM02	9/26/2017	N	Alluvium	17.8 - 47.6	9.197	3.17	--	72.5	7.25	--	--	4.90
SWFTS-MW13	EM03	10/3/2017	N	Alluvium	17.8 - 47.6	7.749	5.57	--	93.9	7.11	--	--	4.55
SWFTS-MW13	EM04	10/10/2017	N	Alluvium	17.8 - 47.6	7.938	2.40	0.0 U	-42.6	7.12	0.0 U	--	0.86
SWFTS-MW13	EM05	10/24/2017	N	Alluvium	17.8 - 47.6	8.340	6.62	--	54.4	7.51	--	--	34.1
SWFTS-MW13	EM06	11/15/2017	N	Alluvium	17.8 - 47.6	7.790	3.22	0.0 U	100.4	7.32	0.0 U	--	31.5
SWFTS-MW13	EM07	12/14/2017	N	Alluvium	17.8 - 47.6	6.980	3.79	0.0 U	45.0	7.56	0.0 U	--	1.81
SWFTS-MW13	EM08	2/22/2018	N	Alluvium	17.8 - 47.6	7.280	4.95	0.0 U	192.0	8.18 E	0.0 U	--	24.80
SWFTS-MW13	EM09	3/26/2018	N	Alluvium	17.8 - 47.6	7.300	2.98	0.0 U	-20.1	7.08	0.0 U	22.89	9.51
SWFTS-MW13	EM10	5/3/2018	N	Alluvium	17.8 - 47.6	6.556	8.17 E	--	10.5	7.50	--	23.57	26.4
SWFTS-MW13	EM11	7/12/2018	N	Alluvium	17.8 - 47.6	7.03	6.45	0.0 U	153	7.55	0.0 U	20.92	0
SWFTS-MW13	EM13	8/16/2018	N	Alluvium	17.8 - 47.6	7.1	2.95	--	156	7.96	--	21.22	0.2
SWFTS-MW13	EM14	9/13/2018	N	Alluvium	17.8 - 47.6	5.390	3.44	--	-20	7.63	--	25.55	7.72
SWFTS-MW13	EM15	10/11/2018	N	Alluvium	17.8 - 47.6	5.998	3.49	0.0 U	-36.2	8.29 E	0.0 U	24.33	5.42
SWFTS-MW13	EM16	1/2/2019	N	Alluvium	17.8 - 47.6	6.945	6.89	--	111.2	7.19	--	20.92	4.87
SWFTS-MW13	EM17	2/28/2019	N	Alluvium	17.8 - 47.6	6.729	4.02	0.0 U	38.1	7.15	0.0 U	23.32	2.29
SWFTS-MW13	EM18	4/12/2019	N	Alluvium	17.8 - 47.6	5.703	5.30	--	117.1	7.18	--	21.70	4.61
SWFTS-MW13	EM19	5/22/2019	N	Alluvium	17.8 - 47.6	6.520	5.32	0.0 U	158.1	7.14	0.0 U	23.0	18.6
SWFTS-MW13	EM20	7/5/2019	N	Alluvium	17.8 - 47.6	6.104	5.15	--	199.3	7.25	--	26.6	9.3
SWFTS-MW13	EM21	8/16/2019	N	Alluvium	17.8 - 47.6	7.248	4.55	0.0 U	189.9	7.31	0.0 U	24.8	7.0
SWFTS-MW13	EM22	11/6/2019	N	Alluvium	17.8 - 47.6	7.562	3.81	0.0 U	36.3	7.13	0.0 U	25.1	5.4
SWFTS-MW13	EM23	12/20/2019	N	Alluvium	17.8 - 47.6	6.760	4.20	--	31.8	7.25	--	22.1	4.49
SWFTS-MW13	EM24	1/29/2020	N	Alluvium	17.8 - 47.6	7.069	3.83	0.0 U	-0.4	7.29	0.0 U	22.3	2.36
SWFTS-MW13	EM25	3/12/2020	N	Alluvium	17.8 - 47.6	7.149	5.14	--	182	7.16	--	23.1	2.4
SWFTS-MW13	EM26	4/30/2020	N	Alluvium	17.8 - 47.6	6.837	4.78	0.0 U	130.3	7.14	0.0 U	24.1	1.2
SWFTS-MW13	EM27	7/10/2020	N	Alluvium	17.8 - 47.6	7.964	4.2	--	120.3	7.23	--	27.4	6.0
SWFTS-MW13	EM28	8/18/2020	N	Alluvium	17.8 - 47.6	7.666	4.25	0.0 U	77	7.11	0.0 U	27.3	2.1
SWFTS-MW13	EM29	10/15/2020	N	Alluvium	17.8 - 47.6	7.841	4.43	0.0 U	111.1	7.51	0.0 U	25.9	3.97
SWFTS-MW13	EM30	12/8/2020	N	Alluvium	17.8 - 47.6	6.231	5.42	--	28.9	7.33	--	21.7	0.66
SWFTS-MW13	EM31	2/2/2021	N	Alluvium	17.8 - 47.6	6.226	5.53	0.0 U	51.3	7.2	0.0 U	23.6	1.6

Table D.3
Groundwater Field Test Results Summary
Seep Well Field Area Bioremediation Treatability Study

Well	Event	Sample Date	QC Type	Lithology	Screened Interval (ft bgs)	FIELD TESTS							
						Conductivity	Dissolved Oxygen	Ferrous Iron	Oxidation-Reduction Potential	pH	Sulfide	Temperature	Turbidity
						mS/cm	mg/L	mg/L	mV	SU	mg/L	C	NTU
SWFTS-MW13	EM32	3/31/2021	N	Alluvium	17.8 - 47.6	6.226	5.53	--	51.3	7.20	--	23.6	1.6
SWFTS-MW13	EM33	6/4/2021	N	Alluvium	17.8 - 47.6	5.595	5.04	0.0 U	92.8	7.30	0.0 U	25.4	6.0
SWFTS-MW13	EM34	7/22/2021	N	Alluvium	17.8 - 47.6	6.550	4.64	0.0 U	147.6	7.24	0.0 U	25.7	2.7
SWFTS-MW13	EM35	9/15/2021	N	Alluvium	17.8 - 47.6	7.644	5.27	0.0 U	92.1	7.15	0.0 U	25.9	4.3
SWFTS-MW13	EM36	12/2/2021	N	Alluvium	17.8 - 47.6	6.021	5.70	0.0 U	217.9	7.13	0.0 U	21.7	5.0
SWFTS-MW13	EM37	3/9/2022	N	Alluvium	17.8 - 47.6	6.096	2.11	--	97.6	7.19	--	22.0	0.6
SWFTS-MW13	EM38	6/22/2022	N	Alluvium	17.8 - 47.6	8.204	4.50	0.0 U	91.7	7.10	0.0 U	25.7	2.5
SWFTS-MW13	EM39	9/13/2022	N	Alluvium	17.8 - 47.6	3.914	5.47	--	126.3	7.24	--	24.2	76.9
SWFTS-MW13	EM40	12/15/2022	N	Alluvium	17.8 - 47.6	6.584	5.15	0.0 U	135.6	7.24	0.0 U	22.6	-2.4
SWFTS-MW14	BL02	7/12/2017	N	Alluvium	16.8 - 36.6	8.300	0.65	0.0 U	166	7.08	0.0 U	--	0.00
SWFTS-MW14	EM01	9/20/2017	N	Alluvium	16.8 - 36.6	8.357	0.39	--	-249.3	6.72	--	--	132
SWFTS-MW14	EM02	9/26/2017	N	Alluvium	16.8 - 36.6	9.387	0.17	--	-220.7	6.82	--	--	58.2
SWFTS-MW14	EM03	10/3/2017	N	Alluvium	16.8 - 36.6	7.104	0.19	--	-249.0	6.66	--	--	12.10
SWFTS-MW14	EM04	10/11/2017	N	Alluvium	16.8 - 36.6	7.500	0.39	0.0 U	-77.0	4.24 E	0.0 U	--	70.3
SWFTS-MW14	EM05	10/27/2017	N	Alluvium	16.8 - 36.6	7.623	0.60	--	-64.5	6.58	--	--	18.8
SWFTS-MW14	EM06	11/15/2017	N	Alluvium	16.8 - 36.6	7.510	0.83	1.0	-81.8	6.79	0.0 U	--	82.40
SWFTS-MW14	EM07	12/12/2017	N	Alluvium	16.8 - 36.6	6.800	6.49	0.5	-65.0	7.86	0.08	--	17.20
SWFTS-MW14	EM08	2/20/2018	N	Alluvium	16.8 - 36.6	7.980	3.12	1.0	-85.0	4.40 E	0.40	--	23.20
SWFTS-MW14	EM09	3/26/2018	N	Alluvium	16.8 - 36.6	6.61	4.03	--	-194	7.24	--	19.66	32.3
SWFTS-MW14	EM10	4/30/2018	N	Alluvium	16.8 - 36.6	7.256	0.45	--	-461.3	6.38	--	27.63 E	4.14
SWFTS-MW14	EM11	7/10/2018	N	Alluvium	16.8 - 36.6	7.72	0.90	0.0 U	-364.6	6.62	0.1	31.22 E	25
SWFTS-MW14	EM12	7/26/2018	N	Alluvium	16.8 - 36.6	6.78	2.26	--	-399.1	7.9	--	28.1 E	17.25
SWFTS-MW14	EM13	8/14/2018	N	Alluvium	16.8 - 36.6	20.6 E	0.47	--	-366	6.81	--	22.30	27.5
SWFTS-MW14	EM14	9/11/2018	N	Alluvium	16.8 - 36.6	5.300	0.25	--	-341	7.94	--	27.67 E	33.4
SWFTS-MW14	EM15	10/9/2018	N	Alluvium	16.8 - 36.6	6.767	0.81	0.0 U	-396.4	8.5 E	0.2	25.77	5.32
SWFTS-MW14	EM16	12/20/2018	N	Alluvium	16.8 - 36.6	7.142	0.46	--	-422.5	6.78	--	22.84	2.51
SWFTS-MW14	EM17	2/26/2019	N	Alluvium	16.8 - 36.6	5.728	0.67	0.08	-309.9	6.76	0.0 U	22.96	5.19
SWFTS-MW14	EM18	4/9/2019	N	Alluvium	16.8 - 36.6	6.016	0.65	--	-333.2	6.67	--	26.04	7.77
SWFTS-MW14	EM19	5/21/2019	N	Alluvium	16.8 - 36.6	5.735	0.35	0.0 U	-327.1	6.70	0.44	24.8	89.0
SWFTS-MW14	EM20	7/2/2019	N	Alluvium	16.8 - 36.6	5.448	0.35	--	-338.9	6.60	--	26.0	9.6
SWFTS-MW14	EM21	8/13/2019	N	Alluvium	16.8 - 36.6	5.919	0.22	0.0 U	-331.5	6.64	0.08	26.9	2.9
SWFTS-MW14	EM22	11/6/2019	N	Alluvium	16.8 - 36.6	5.932	0.21	0.0 U	-341.6	6.63	0.24	25.4	5.5
SWFTS-MW14	EM23	12/17/2019	N	Alluvium	16.8 - 36.6	5.220	0.47	--	-291.7	6.74	--	23.9	69.23
SWFTS-MW14	EM24	1/29/2020	N	Alluvium	16.8 - 36.6	5.300	0.55	0.0 U	-291.6	6.83	0.48	24.0	14.75
SWFTS-MW14	EM25	3/13/2020	N	Alluvium	16.8 - 36.6	5.919	1.25	--	-280.6	6.75	--	23.4	9.9
SWFTS-MW14	EM26	5/1/2020	N	Alluvium	16.8 - 36.6	5.211	1.94	0.0 U	-275.6	6.71	0.0 U	24.5	5
SWFTS-MW14	EM27	7/7/2020	N	Alluvium	16.8 - 36.6	6.128	0.3	--	-313.8	6.73	--	27.3	159.3
SWFTS-MW14	EM28	8/19/2020	N	Alluvium	16.8 - 36.6	5.613	0.58	0.5 U	-265.5	6.71	0.32	25.5	14
SWFTS-MW14	EM29	10/14/2020	N	Alluvium	16.8 - 36.6	6.062	0.23	0.25	-268.8	7.26	0.56	25.9	55.49
SWFTS-MW14	EM30	12/8/2020	N	Alluvium	16.8 - 36.6	4.623	0.39	--	-207	6.91	--	24	13.56
SWFTS-MW14	EM31	2/2/2021	N	Alluvium	16.8 - 36.6	4.725	0.62	0.0 U	-102.5	6.86	0.0 U	24.2	4.6
SWFTS-MW14	EM32	3/31/2021	N	Alluvium	16.8 - 36.6	4.725	0.62	--	-102.5	6.86	--	24.2	4.6
SWFTS-MW14	EM33	6/4/2021	N	Alluvium	16.8 - 36.6	3.984	0.65	0.0 U	16.0	7.11	0.0 U	25.1	42.2
SWFTS-MW14	EM34	7/21/2021	N	Alluvium	16.8 - 36.6	5.827	0.11	0.0 U	-78.6	6.90	0.0 U	26.7	6.0
SWFTS-MW14	EM35	9/16/2021	N	Alluvium	16.8 - 36.6	5.581	0.51	0.0 U	-15.3	6.83	0.0 U	26.3	8.8
SWFTS-MW14	EM36	12/3/2021	N	Alluvium	16.8 - 36.6	5.629	1.10	2.5	-83.7	6.90	0.2	22.5	92.0
SWFTS-MW14	EM37	3/8/2022	N	Alluvium	16.8 - 36.6	6.278	0.56	--	31.4	6.91	--	23.2	21.3
SWFTS-MW14	EM38	6/22/2022	N	Alluvium	16.8 - 36.6	7.646	0.74	0.0 U	59.3	6.69	0.0 U	26.1	7.0
SWFTS-MW14	EM39	9/13/2022	N	Alluvium	16.8 - 36.6	4.274	0.92	--	135.9	6.76	--	24.8	668.4

Table D.3
Groundwater Field Test Results Summary
Seep Well Field Area Bioremediation Treatability Study

Well	Event	Sample Date	QC Type	Lithology	Screened Interval (ft bgs)	FIELD TESTS							
						Conductivity	Dissolved Oxygen	Ferrous Iron	Oxidation-Reduction Potential	pH	Sulfide	Temperature	Turbidity
						mS/cm	mg/L	mg/L	mV	SU	mg/L	C	NTU
SWFTS-MW14	EM40	12/15/2022	N	Alluvium	16.8 - 36.6	6.731	0.76	0.0 U	111.3	6.80	0.0 U	23.4	8.3
SWFTS-MW15	BL02	7/13/2017	N	Alluvium	14.8 - 34.6	7.310	0.47	0.0 U	113.2	7.09	0.0 U	--	1000 >
SWFTS-MW15	EM01	9/20/2017	N	Alluvium	14.8 - 34.6	7.231	0.27	--	46.0	7.01	--	--	39.1
SWFTS-MW15	EM02	9/26/2017	N	Alluvium	14.8 - 34.6	8.523	0.30	--	14.8	7.14	--	--	119
SWFTS-MW15	EM03	10/4/2017	N	Alluvium	14.8 - 34.6	6.648	0.38	--	-181.6	6.91	--	--	145
SWFTS-MW15	EM04	10/10/2017	N	Alluvium	14.8 - 34.6	6.918	0.21	0.0 U	-33.1	7.06	0.0 U	--	103
SWFTS-MW15	EM05	10/27/2017	N	Alluvium	14.8 - 34.6	6.980	0.78	--	155.3	6.96	--	--	377
SWFTS-MW15	EM06	11/14/2017	N	Alluvium	14.8 - 34.6	6.870	1.08	0.0 U	61.6	7.06	0.20	--	1000 >
SWFTS-MW15	EM07	12/13/2017	N	Alluvium	14.8 - 34.6	6.460	3.83	0.0 U	35.0	7.72	0.0 U	--	30.2
SWFTS-MW15	EM08	2/19/2018	N	Alluvium	14.8 - 34.6	6.580	3.24	0.0 U	215	7.54	0.0 U	--	12.6
SWFTS-MW15	EM09	3/26/2018	N	Alluvium	14.8 - 34.6	6.68	5.95	--	428	7.32	--	17.97	3.1
SWFTS-MW15	EM10	5/2/2018	N	Alluvium	14.8 - 34.6	5.758	1.09	--	89.4	7.17	--	22.20	313
SWFTS-MW15	EM11	7/11/2018	N	Alluvium	14.8 - 34.6	6.81	6.10	0.0 U	-65	7.27	0.0 U	26.9	67
SWFTS-MW15	EM12	7/26/2018	N	Alluvium	14.8 - 34.6	6.59	2.73	--	-228.5	6.89	--	27.22 E	136
SWFTS-MW15	EM13	8/15/2018	N	Alluvium	14.8 - 34.6	6.897	0.97	--	-135.9	7.18	--	27.38 E	331
SWFTS-MW15	EM14	9/11/2018	N	Alluvium	14.8 - 34.6	5.539	0.73	--	62.8	7.11	--	26.03	41.5
SWFTS-MW15	EM15	10/9/2018	N	Alluvium	14.8 - 34.6	6.494	1.09	0.0 U	-230.3	7.54	0.0 U	26.98	67.8
SWFTS-MW15	EM16	12/20/2018	N	Alluvium	14.8 - 34.6	6.311	0.91	--	-50.4	6.99	--	24.07	57.3
SWFTS-MW15	EM17	2/25/2019	N	Alluvium	14.8 - 34.6	5.41	0.00	0.0 U	-208	7.93	0.5	23.01	53.9
SWFTS-MW15	EM18	4/9/2019	N	Alluvium	14.8 - 34.6	4.972	1.14	--	59.2	7.13	--	24.9	7.1
SWFTS-MW15	EM19	5/20/2019	N	Alluvium	14.8 - 34.6	5.346	0.65	0.0 U	131.5	6.80	0.0 U	24.1	186.2
SWFTS-MW15	EM20	7/2/2019	N	Alluvium	14.8 - 34.6	5.137	0.59	--	-47.5	7.06	--	25.6	17.9
SWFTS-MW15	EM21	8/13/2019	N	Alluvium	14.8 - 34.6	5.34	0.56	0.0 U	55.7	7.17	0.0 U	25.3	11.5
SWFTS-MW15	EM22	11/6/2019	N	Alluvium	14.8 - 34.6	5.356	1.99	0.0 U	-145.4	7.17	0.0 U	23.9	9.3
SWFTS-MW15	EM23	12/17/2019	N	Alluvium	14.8 - 34.6	4.982	0.80	--	186.2	6.78	--	23.6	47.53
SWFTS-MW15	EM24	1/29/2020	N	Alluvium	14.8 - 34.6	5.491	0.70	0.0 U	-70.5	6.86	0.0 U	22.6	17.93
SWFTS-MW15	EM25	3/13/2020	N	Alluvium	14.8 - 34.6	6.009	1.7	--	26.5	6.8	--	22.1	1.2
SWFTS-MW15	EM26	4/29/2020	N	Alluvium	14.8 - 34.6	4.657	5.51	0.0 U	210.3	6.8	0.0 U	23.6	0
SWFTS-MW15	EM27	7/7/2020	N	Alluvium	14.8 - 34.6	6.085	0.3	--	-339.0	6.93	--	26.8	65.4
SWFTS-MW15	EM28	8/19/2020	N	Alluvium	14.8 - 34.6	5.444	0.33	0.0 U	-312.1	6.86	2	25.6	74.8
SWFTS-MW15	EM29	10/15/2020	N	Alluvium	14.8 - 34.6	5.368	0.33	0.8	-178.6	7.23	0.3	25.1	23.45
SWFTS-MW15	EM30	12/8/2020	N	Alluvium	14.8 - 34.6	4.152	0.95	--	-80.4	7.14	--	24.7	97.82
SWFTS-MW15	EM31	2/2/2021	N	Alluvium	14.8 - 34.6	4.343	0.54	0.0 U	-169.7	7.01	0.0 U	23.2	29
SWFTS-MW15	EM32	3/31/2021	N	Alluvium	14.8 - 34.6	4.343	0.54	--	-169.7	7.01	--	23.2	29.0
SWFTS-MW15	EM33	6/3/2021	N	Alluvium	14.8 - 34.6	3.972	0.72	0.0 U	-31.1	7.72	0.0 U	26.5	16.1
SWFTS-MW15	EM34	7/21/2021	N	Alluvium	14.8 - 34.6	5.060	0.44	1.5	-76.7	6.84	0.0 U	26.7	6.3
SWFTS-MW15	EM35	9/16/2021	N	Alluvium	14.8 - 34.6	5.943	0.71	0.0 U	-36.4	6.85	0.0 U	24.9	6.9
SWFTS-MW15	EM36	11/30/2021	N	Alluvium	14.8 - 34.6	6.836	1.82	0.0 U	-25.1	6.82	0.0 U	24.5	10.6
SWFTS-MW15	EM37	3/8/2022	N	Alluvium	14.8 - 34.6	7.799	0.58	--	6.8	6.62	--	22.2	1.4
SWFTS-MW15	EM38	6/22/2022	N	Alluvium	14.8 - 34.6	5.218	0.80	0.0 U	27.3	6.77	0.0 U	25.6	6.2
SWFTS-MW15	EM39	9/14/2022	N	Alluvium	14.8 - 34.6	3.356	1.04	--	62.1	6.66	--	23.2	10.5
SWFTS-MW15	EM40	12/15/2022	N	Alluvium	14.8 - 34.6	4.760	4.36	0.0 U	122.8	6.49	0.0 U	23.3	3.2
SWFTS-MW16	BL02	7/13/2017	N	Alluvium	21.8 - 41.6	6.600	0.93	0.0 U	109.1	7.07	0.0 U	--	1000 >
SWFTS-MW16	EM01	9/22/2017	N	Alluvium	21.8 - 41.6	6.718	0.71	--	-224.6	6.28	--	--	96.0
SWFTS-MW16	EM02	9/26/2017	N	Alluvium	21.8 - 41.6	6.362	1.54	--	-138.6	6.63	--	--	188
SWFTS-MW16	EM03	10/3/2017	N	Alluvium	21.8 - 41.6	6.905	1.30	--	-198.9	6.49	--	--	49.1
SWFTS-MW16	EM04	10/12/2017	N	Alluvium	21.8 - 41.6	6.534	1.32	0.0 U	-198.2	6.31	2.00	--	10.04
SWFTS-MW16	EM05	10/24/2017	N	Alluvium	21.8 - 41.6	6.614	1.03	--	-407.8	6.81	--	--	77.9
SWFTS-MW16	EM06	11/16/2017	N	Alluvium	21.8 - 41.6	5.450	0.49	0.0 U	-248.1	6.99	2.00	--	1000 >

Table D.3
Groundwater Field Test Results Summary
Seep Well Field Area Bioremediation Treatability Study

Well	Event	Sample Date	QC Type	Lithology	Screened Interval (ft bgs)	FIELD TESTS							
						Conductivity	Dissolved Oxygen	Ferrous Iron	Oxidation-Reduction Potential	pH	Sulfide	Temperature	Turbidity
						mS/cm	mg/L	mg/L	mV	SU	mg/L	C	NTU
SWFTS-MW16	EM07	12/12/2017	N	Alluvium	21.8 - 41.6	5.759	0.56	0.0 U	-339.7	7.06	0.26	--	78.70
SWFTS-MW16	EM08	2/21/2018	N	Alluvium	21.8 - 41.6	6.213	0.49	1.8	-315.0	6.20	0.20	--	25.50
SWFTS-MW16	EM09	3/27/2018	N	Alluvium	21.8 - 41.6	6.290	0.49	--	-27.9	7.11	--	--	45.8
SWFTS-MW16	EM10	5/2/2018	N	Alluvium	21.8 - 41.6	5.281	0.15	--	-86.2	6.91	--	23.53	11.8
SWFTS-MW16	EM11	7/11/2018	N	Alluvium	21.8 - 41.6	5.62	5.38	0.8	-228	6.95	2	22.35	0
SWFTS-MW16	EM12	7/26/2018	N	Alluvium	21.8 - 41.6	5.60	1.99	--	-296.8	7.27	--	28.14 E	5.8
SWFTS-MW16	EM13	8/15/2018	N	Alluvium	21.8 - 41.6	5.865	0.98	--	-202.1	6.94	--	26.48	59.3
SWFTS-MW16	EM14	9/10/2018	N	Alluvium	21.8 - 41.6	6.110	0.78	--	-99.0	6.89	--	27.15 E	38.1
SWFTS-MW16	EM15	10/11/2018	N	Alluvium	21.8 - 41.6	5.78	3.73	2	-113	6.97	0.0 U	22.9	50.6
SWFTS-MW16	EM16	12/19/2018	N	Alluvium	21.8 - 41.6	6.375	0.4	--	-175.8	6.85	--	23.51	43.2
SWFTS-MW16	EM17	2/26/2019	N	Alluvium	21.8 - 41.6	5.58	0.00	4.5	-122	6.77	0.0 U	23.70	112
SWFTS-MW16	EM18	4/9/2019	N	Alluvium	21.8 - 41.6	4.495	0.47	--	-175.6	6.75	--	26.2	130.2
SWFTS-MW16	EM19	5/20/2019	N	Alluvium	21.8 - 41.6	4.959	0.53	2.5	-53.5	6.75	0.0 U	24.9	233.7
SWFTS-MW16	EM20	7/1/2019	N	Alluvium	21.8 - 41.6	4.442	0.20	--	-179.8	6.91	--	25.8	179.3
SWFTS-MW16	EM21	8/13/2019	N	Alluvium	21.8 - 41.6	5.278	0.35	1.5	-94.5	6.89	0.04	25.6	9.9
SWFTS-MW16	EM22	11/6/2019	N	Alluvium	21.8 - 41.6	4.731	0.21	3.0	-228.3	6.77	0.04	25.7	19.8
SWFTS-MW16	EM23	12/17/2019	N	Alluvium	21.8 - 41.6	4.566	2.00	--	-72.9	6.89	--	22.1	43.60
SWFTS-MW16	EM24	1/29/2020	N	Alluvium	21.8 - 41.6	4.909	0.53	3	-113.4	6.91	0.0 U	23.3	33.48
SWFTS-MW16	EM25	3/13/2020	N	Alluvium	21.8 - 41.6	5.366	2.24	--	-83.2	6.78	--	22.8	84.9
SWFTS-MW16	EM26	4/30/2020	N	Alluvium	21.8 - 41.6	4.421	2.25	2	-75.6	6.86	0.0 U	24.2	40.1
SWFTS-MW16	EM27	7/9/2020	N	Alluvium	21.8 - 41.6	5.064	1.2	--	-91.5	6.70	--	26.9	73.5
SWFTS-MW16	EM28	8/19/2020	N	Alluvium	21.8 - 41.6	5.005	0.46	3	-126	6.6	0.0 U	26.8	8
SWFTS-MW16	EM29	10/15/2020	N	Alluvium	21.8 - 41.6	4.666	0.38	4.5	-28.9	7.05	0.0 U	23.8	73.54
SWFTS-MW16	EM30	12/8/2020	N	Alluvium	21.8 - 41.6	3.825	0.27	--	-125.9	6.8	--	24.7	49.85
SWFTS-MW16	EM31	2/2/2021	N	Alluvium	21.8 - 41.6	4.048	0.63	0.0 U	-53	6.79	0.0 U	24	44
SWFTS-MW16	EM32	3/31/2021	N	Alluvium	21.8 - 41.6	4.048	0.63	--	-53.0	6.79	--	24.0	44.0
SWFTS-MW16	EM33	6/3/2021	N	Alluvium	21.8 - 41.6	3.667	0.65	1.0	-50.3	9.55	0.0 U	28.0	128.0
SWFTS-MW16	EM34	7/21/2021	N	Alluvium	21.8 - 41.6	4.537	0.37	0.5	11.2	6.86	0.0 U	26.1	51.3
SWFTS-MW16	EM35	9/16/2021	N	Alluvium	21.8 - 41.6	5.388	2.88	0.0 U	15.6	6.90	0.0 U	25.7	67.4
SWFTS-MW16	EM36	11/30/2021	N	Alluvium	21.8 - 41.6	5.958	1.42	0.5	-91.7	6.67	0.0 U	24.6	119.7
SWFTS-MW16	EM37	3/9/2022	N	Alluvium	21.8 - 41.6	5.432	0.92	--	-35.7	6.65	--	22.3	66.9
SWFTS-MW16	EM38	6/22/2022	N	Alluvium	21.8 - 41.6	6.400	0.78	2.0	-69.6	6.68	0.0 U	26.0	56.3
SWFTS-MW16	EM39	9/14/2022	N	Alluvium	21.8 - 41.6	3.541	0.94	--	-40.8	6.76	--	23.2	-20027.8
SWFTS-MW16	EM40	12/14/2022	N	Alluvium	21.8 - 41.6	5.112	3.88	0.0 U	-31.6	6.86	0.0 U	23.3	33.0
SWFTS-MW17	BL02	7/12/2017	N	Alluvium	22.8 - 52.6	6.000	4.30	0.0 U	166	7.35	0.0 U	--	3.60
SWFTS-MW17	EM01	9/19/2017	N	Alluvium	22.8 - 52.6	4.915	5.07	--	47.0	7.21	--	--	1.65
SWFTS-MW17	EM02	9/26/2017	N	Alluvium	22.8 - 52.6	6.502	4.04	--	100.2	7.25	--	--	3.56
SWFTS-MW17	EM03	10/3/2017	N	Alluvium	22.8 - 52.6	6.029	6.87	--	52.7	7.30	--	--	48.30
SWFTS-MW17	EM04	10/10/2017	N	Alluvium	22.8 - 52.6	5.590	3.90	0.0 U	228	5.02 E	0.0 U	--	0.40
SWFTS-MW17	EM05	10/24/2017	N	Alluvium	22.8 - 52.6	6.262	5.28	--	58.3	7.24	--	--	3.84
SWFTS-MW17	EM06	11/15/2017	N	Alluvium	22.8 - 52.6	5.490	4.91	0.0 U	116.7	7.34	0.0 U	--	9.21
SWFTS-MW17	EM07	12/13/2017	N	Alluvium	22.8 - 52.6	5.540	5.54	0.0 U	3.1	7.09	0.0 U	--	23.80
SWFTS-MW17	EM08	2/22/2018	N	Alluvium	22.8 - 52.6	5.374	3.65	0.0 U	5.1	6.75	0.06	--	17.85
SWFTS-MW17	EM09	3/28/2018	N	Alluvium	22.8 - 52.6	4.938	3.49	--	-73.2	7.25	--	--	7.00
SWFTS-MW17	EM10	5/3/2018	N	Alluvium	22.8 - 52.6	4.424	4.08	--	-37.6	7.33	--	24.10	8.50
SWFTS-MW17	EM11	7/11/2018	N	Alluvium	22.8 - 52.6	4.74	4.35	0.0 U	20	7.41	0.0 U	24.11	0
SWFTS-MW17	EM13	8/16/2018	N	Alluvium	22.8 - 52.6	5.379	4.56	--	-4.6	7.37	--	27.20 E	5.04
SWFTS-MW17	EM14	9/12/2018	N	Alluvium	22.8 - 52.6	4.799	3.49	--	112.8	7.32	--	26.21	5.51
SWFTS-MW17	EM15	10/11/2018	N	Alluvium	22.8 - 52.6	5.15	3.33	0.0 U	76	7.39	0.0 U	23.88	1.7

Table D.3
Groundwater Field Test Results Summary
Seep Well Field Area Bioremediation Treatability Study

Well	Event	Sample Date	QC Type	Lithology	Screened Interval (ft bgs)	FIELD TESTS							
						Conductivity	Dissolved Oxygen	Ferrous Iron	Oxidation-Reduction Potential	pH	Sulfide	Temperature	Turbidity
						mS/cm	mg/L	mg/L	mV	SU	mg/L	C	NTU
SWFTS-MW17	EM16	1/2/2019	N	Alluvium	22.8 - 52.6	4.548	6.18	--	108.7	7.23	--	20.05	3.29
SWFTS-MW17	EM17	2/28/2019	N	Alluvium	22.8 - 52.6	4.578	4.83	0.0 U	40.7	7.24	0.0 U	22.97	5.96
SWFTS-MW17	EM18	4/11/2019	N	Alluvium	22.8 - 52.6	4.295	4.74	--	168.2	7.19	--	24.0	2.2
SWFTS-MW17	EM19	5/22/2019	N	Alluvium	22.8 - 52.6	4.499	4.85	0.0 U	156.0	7.16	0.0 U	23.5	10.7
SWFTS-MW17	EM20	7/5/2019	N	Alluvium	22.8 - 52.6	4.155	4.91	--	210.5	7.31	--	26.2	7.7
SWFTS-MW17	EM21	8/16/2019	N	Alluvium	22.8 - 52.6	4.889	5.02	0.0 U	255.1	7.34	0.0 U	24.9	6.8
SWFTS-MW17	EM22	11/7/2019	N	Alluvium	22.8 - 52.6	5.046	5.25	0.0 U	115.1	7.23	0.0 U	23.3	11.1
SWFTS-MW17	EM23	12/20/2019	N	Alluvium	22.8 - 52.6	4.701	5.71	--	10.3	7.29	--	22.4	19.26
SWFTS-MW17	EM24	1/30/2020	N	Alluvium	22.8 - 52.6	4.920	4.77	0.0 U	92.2	7.37	0.0 U	23.2	3.60
SWFTS-MW17	EM25	3/13/2020	N	Alluvium	22.8 - 52.6	5.019	6.02	--	162.5	7.13	--	21.9	3.5
SWFTS-MW17	EM26	4/30/2020	N	Alluvium	22.8 - 52.6	4.904	5.11	0.0 U	92.4	7.22	0.0 U	26.5	0.8
SWFTS-MW17	EM27	7/9/2020	N	Alluvium	22.8 - 52.6	5.198	3.9	--	48.9	7.25	--	27.9	23.0
SWFTS-MW17	EM28	8/19/2020	N	Alluvium	22.8 - 52.6	5.254	4.39	0.0 U	58.6	7.13	0.0 U	28.4	5.1
SWFTS-MW17	EM29	10/15/2020	N	Alluvium	22.8 - 52.6	5.203	4.75	0.25	94.1	7.59	0.0 U	25.5	4.75
SWFTS-MW17	EM30	12/9/2020	N	Alluvium	22.8 - 52.6	4.554	4.66	--	115.3	7.19	--	22.1	0.2
SWFTS-MW17	EM31	2/2/2021	N	Alluvium	22.8 - 52.6	4.213	4.84	0.0 U	124.2	7.25	0.0 U	23.9	4
SWFTS-MW17	EM32	3/31/2021	N	Alluvium	22.8 - 52.6	4.213	4.84	--	124.2	7.25	--	23.9	4.0
SWFTS-MW17	EM33	6/3/2021	N	Alluvium	22.8 - 52.6	3.705	4.56	0.0 U	83.8	8.32	0.0 U	27.4	4.3
SWFTS-MW17	EM34	7/21/2021	N	Alluvium	22.8 - 52.6	4.488	4.89	0.0 U	98.5	7.29	0.0 U	26.3	2.9
SWFTS-MW17	EM35	9/16/2021	N	Alluvium	22.8 - 52.6	5.129	4.93	0.0 U	87.1	7.13	0.0 U	27.2	1.5
SWFTS-MW17	EM36	12/2/2021	N	Alluvium	22.8 - 52.6	4.380	5.23	0.0 U	150.0	7.42	0.0 U	23.5	24.3
SWFTS-MW17	EM37	3/9/2022	N	Alluvium	22.8 - 52.6	5.645	5.01	--	92.9	7.12	--	22.1	8.1
SWFTS-MW17	EM38	6/22/2022	N	Alluvium	22.8 - 52.6	5.727	4.93	0.0 U	89.8	7.15	0.0 U	26.9	9.4
SWFTS-MW17	EM39	9/14/2022	N	Alluvium	22.8 - 52.6	3.064	4.53	--	94.4	7.23	--	23.0	12.4
SWFTS-MW17	EM40	12/14/2022	N	Alluvium	22.8 - 52.6	4.729	4.41	0.0 U	137.9	7.18	0.0 U	23.0	6.8
SWFTS-MW18	BL02	7/11/2017	N	Alluvium	16.8 - 36.6	6.150	2.68	0.0 U	157	7.30	0.0 U	--	278
SWFTS-MW18	EM01	9/21/2017	N	Alluvium	16.8 - 36.6	6.469	0.59	--	69.1	6.92	--	--	46.9
SWFTS-MW18	EM02	9/27/2017	N	Alluvium	16.8 - 36.6	6.864	0.40	--	-80.9	6.87	--	--	122
SWFTS-MW18	EM03	10/3/2017	N	Alluvium	16.8 - 36.6	7.125	2.22	--	114.5	7.02	--	--	5.44
SWFTS-MW18	EM04	10/10/2017	N	Alluvium	16.8 - 36.6	6.873	0.31	0.0 U	-25.1	7.14	0.0 U	--	19.5
SWFTS-MW18	EM05	10/23/2017	N	Alluvium	16.8 - 36.6	7.761	0.98	--	58.6	7.14	--	--	28.10
SWFTS-MW18	EM06	11/15/2017	N	Alluvium	16.8 - 36.6	6.030	1.37	0.0 U	-202.9	7.13	0.0 U	--	98.40
SWFTS-MW18	EM07	12/13/2017	N	Alluvium	16.8 - 36.6	6.930	0.40	0.0 U	-73.0	7.49	0.0 U	--	139.00
SWFTS-MW18	EM08	2/22/2018	N	Alluvium	16.8 - 36.6	6.401	0.51	0.0 U	14.3	6.60	0.0 U	--	20.24
SWFTS-MW18	EM09	3/27/2018	N	Alluvium	16.8 - 36.6	5.873	0.25	--	-240.3	6.81	--	--	27.8
SWFTS-MW18	EM10	5/1/2018	N	Alluvium	16.8 - 36.6	6.321	0.43	--	144.2	7.10	--	23.91	14.47
SWFTS-MW18	EM11	7/11/2018	N	Alluvium	16.8 - 36.6	6.32	0.01	0.0 U	68	7.39	0.0 U	26.65	29.5
SWFTS-MW18	EM12	7/26/2018	N	Alluvium	16.8 - 36.6	5.98	2.81	--	-131.7	7	--	25.64	8
SWFTS-MW18	EM13	8/15/2018	N	Alluvium	16.8 - 36.6	6.553	0.58	--	-33.3	7.26	--	26.51	20.2
SWFTS-MW18	EM14	9/11/2018	N	Alluvium	16.8 - 36.6	5.207	0.79	--	114.5	7.17	--	24.44	7.77
SWFTS-MW18	EM15	10/11/2018	N	Alluvium	16.8 - 36.6	5.74	1.88	0.0 U	127	7.33	0.0 U	23.73	10
SWFTS-MW18	EM16	12/20/2018	N	Alluvium	16.8 - 36.6	6.341	0.67	--	-57.9	7.08	--	24.38	153
SWFTS-MW18	EM17	2/26/2019	N	Alluvium	16.8 - 36.6	6.08	0.00	0.0 U	45	6.78	0.0 U	24.06	19.6
SWFTS-MW18	EM18	4/9/2019	N	Alluvium	16.8 - 36.6	4.972	0.48	--	37.0	6.99	--	25.0	117.6
SWFTS-MW18	EM19	5/21/2019	N	Alluvium	16.8 - 36.6	4.871	0.65	0.0 U	149.3	8.25	0.0 U	24.4	73.4
SWFTS-MW18	EM20	7/1/2019	N	Alluvium	16.8 - 36.6	4.613	0.41	--	18.1	7.10	--	25.4	145.6
SWFTS-MW18	EM21	8/13/2019	N	Alluvium	16.8 - 36.6	5.194	0.39	0.0 U	129.8	7.09	0.0 U	24.5	12.4
SWFTS-MW18	EM22	11/6/2019	N	Alluvium	16.8 - 36.6	5.751	0.30	0.0 U	-2.2	6.72	0.0 U	25.8	13.5
SWFTS-MW18	EM23	12/17/2019	N	Alluvium	16.8 - 36.6	4.861	0.64	--	13.1	6.87	--	23.6	142.21

Table D.3
Groundwater Field Test Results Summary
Seep Well Field Area Bioremediation Treatability Study

Well	Event	Sample Date	QC Type	Lithology	Screened Interval (ft bgs)	FIELD TESTS							
						Conductivity	Dissolved Oxygen	Ferrous Iron	Oxidation-Reduction Potential	pH	Sulfide	Temperature	Turbidity
						mS/cm	mg/L	mg/L	mV	SU	mg/L	C	NTU
SWFTS-MW18	EM24	1/29/2020	N	Alluvium	16.8 - 36.6	5.233	0.53	0.0 U	5.6	6.94	0.0 U	24.8	90.10
SWFTS-MW18	EM25	3/11/2020	N	Alluvium	16.8 - 36.6	5.582	2.18	--	219.7	6.91	--	23.9	74
SWFTS-MW18	EM26	4/29/2020	N	Alluvium	16.8 - 36.6	4.497	2.07	--	210.8	6.8	--	24	13.8
SWFTS-MW18	EM27	7/9/2020	N	Alluvium	16.8 - 36.6	5.940	0.7	--	67.0	6.78	--	25.7	178.3
SWFTS-MW18	EM28	8/19/2020	N	Alluvium	16.8 - 36.6	5.564	0.64	0.0 U	57.2	6.72	0.0 U	26.9	39
SWFTS-MW18	EM29	10/15/2020	N	Alluvium	16.8 - 36.6	5.331	0.4	0.0 U	82.9	7.19	0.0 U	24.9	18.91
SWFTS-MW18	EM30	12/9/2020	N	Alluvium	16.8 - 36.6	4.745	0.33	--	107.4	6.73	--	24.2	32.41
SWFTS-MW18	EM31	2/3/2021	N	Alluvium	16.8 - 36.6	5.097	0.65	0.0 U	63.1	6.72	0.0 U	24.6	28
SWFTS-MW18	EM32	3/30/2021	N	Alluvium	16.8 - 36.6	5.097	0.65	--	63.1	6.72	--	24.6	28.0
SWFTS-MW18	EM33	6/3/2021	N	Alluvium	16.8 - 36.6	3.902	0.68	0.0 U	73.5	7.59	0.0 U	25.6	56.7
SWFTS-MW18	EM34	7/21/2021	N	Alluvium	16.8 - 36.6	4.842	0.34	0.0 U	75.3	6.93	0.0 U	25.4	10.6
SWFTS-MW18	EM35	9/16/2021	N	Alluvium	16.8 - 36.6	5.552	1.27	0.0 U	38.7	6.69	0.0 U	25.0	13.2
SWFTS-MW18	EM36	12/1/2021	N	Alluvium	16.8 - 36.6	6.320	1.19	0.2	-158.7	6.61	0.1	25.0	18.8
SWFTS-MW18	EM37	3/8/2022	N	Alluvium	16.8 - 36.6	5.370	0.93	--	33.9	6.63	--	23.0	40.4
SWFTS-MW18	EM38	6/22/2022	N	Alluvium	16.8 - 36.6	6.563	0.77	0.0 U	65.2	6.62	0.0 U	26.6	30.3
SWFTS-MW18	EM39	9/14/2022	N	Alluvium	16.8 - 36.6	3.838	1.03	--	99.4	6.65	--	24.0	-9599.3
SWFTS-MW18	EM40	12/14/2022	N	Alluvium	16.8 - 36.6	5.528	0.68	0.0 U	125.4	6.71	0.0 U	24.3	19.2
SWFTS-MW19	BL02	7/12/2017	N	Alluvium	11.3 - 31.1	3.130	0.77	0.0 U	88.0	7.27	0.0 U	--	12.80
SWFTS-MW19	EM01	9/21/2017	N	Alluvium	11.3 - 31.1	3.200	0.43	--	29.3	6.93	--	--	8.59
SWFTS-MW19	EM02	9/28/2017	N	Alluvium	11.3 - 31.1	5.293	6.39	--	11.9	7.19	--	--	818
SWFTS-MW19	EM03	10/5/2017	N	Alluvium	11.3 - 31.1	3.117	5.16	--	118.0	7.10	--	--	83.0
SWFTS-MW19	EM04	10/12/2017	N	Alluvium	11.3 - 31.1	3.297	0.28	0.0 U	-86.1	6.89	0.0 U	--	36.1
SWFTS-MW19	EM05	10/27/2017	N	Alluvium	11.3 - 31.1	3.491	0.38	--	40.8	7.05	--	--	26.8
SWFTS-MW19	EM06	11/16/2017	N	Alluvium	11.3 - 31.1	3.410	0.73	0.0 U	37.2	7.16	0.0 U	--	65.6
SWFTS-MW19	EM07	12/12/2017	N	Alluvium	11.3 - 31.1	3.140	0.92	0.0 U	5.0	7.61	0.80	--	9.20
SWFTS-MW19	EM08	2/20/2018	N	Alluvium	11.3 - 31.1	3.369	1.25	0.0 U	-13.5	7.23	0.0 U	--	124
SWFTS-MW19	EM09	3/27/2018	N	Alluvium	11.3 - 31.1	3.454	1.09	--	55.4	7.15	--	--	90.20
SWFTS-MW19	EM10	4/30/2018	N	Alluvium	11.3 - 31.1	3.478	0.56	--	39.6	7.10	--	22.36	54.6
SWFTS-MW19	EM11	7/10/2018	N	Alluvium	11.3 - 31.1	3.39	2.80	0.0 U	259	7.42	0.0 U	21.99	17.0
SWFTS-MW19	EM12	7/26/2018	N	Alluvium	11.3 - 31.1	3.40	1.11	--	-107.2	7.15	--	24.61	79.8
SWFTS-MW19	EM13	8/15/2018	N	Alluvium	11.3 - 31.1	3.76	0.95	--	-23.6	7.27	--	26.49	90.2
SWFTS-MW19	EM14	9/11/2018	N	Alluvium	11.3 - 31.1	3.179	1.06	--	98.3	7.15	--	26.76	6.95
SWFTS-MW19	EM15	10/9/2018	N	Alluvium	11.3 - 31.1	3.56	1.43	0.0 U	35	6.85	0.0 U	27.1 E	5.1
SWFTS-MW19	EM16	12/27/2018	N	Alluvium	11.3 - 31.1	4.116	1.43	--	-18.3	7.15	--	23.54	39.8
SWFTS-MW19	EM17	2/27/2019	N	Alluvium	11.3 - 31.1	3.223	0.14	0.0 U	97.9	7.11	0.0 U	21.91	6.49
SWFTS-MW19	EM18	4/10/2019	N	Alluvium	11.3 - 31.1	3.298	1.27	--	63.6	7.13	--	21.50	20.8
SWFTS-MW19	EM19	5/21/2019	N	Alluvium	11.3 - 31.1	3.115	1.22	0.0 U	225.0	7.15	0.0 U	22.0	6.5
SWFTS-MW19	EM20	7/2/2019	N	Alluvium	11.3 - 31.1	2.930	1.54	--	183.5	7.13	--	22.7	6.8
SWFTS-MW19	EM21	8/15/2019	N	Alluvium	11.3 - 31.1	3.144	1.6	0.0 U	139.2	7.3	0.0 U	24.4	6.3
SWFTS-MW19	EM22	11/5/2019	N	Alluvium	11.3 - 31.1	3.256	1.28	0.0 U	193.2	7.12	0.0 U	26.2	7.2
SWFTS-MW19	EM23	12/19/2019	N	Alluvium	11.3 - 31.1	3.117	2.03	--	127.1	7.18	--	23.1	24.23
SWFTS-MW19	EM24	1/29/2020	N	Alluvium	11.3 - 31.1	3.611	1.01	0.0 U	17.4	7.22	0.0 U	22.7	38.89
SWFTS-MW19	EM25	3/11/2020	N	Alluvium	11.3 - 31.1	4.286	1.69	--	158.9	7.03	--	22.2	7.2
SWFTS-MW19	EM26	4/28/2020	N	Alluvium	11.3 - 31.1	3.732	2.1	0.0 U	165	6.99	0.0 U	27.8	21.1
SWFTS-MW19	EM27	7/9/2020	N	Alluvium	11.3 - 31.1	4.269	0.8	--	75.2	6.99	--	25.4	57.3
SWFTS-MW19	EM28	8/19/2020	N	Alluvium	11.3 - 31.1	3.749	0.87	0.0 U	45.8	6.96	0.0 U	26.9	17.3
SWFTS-MW19	EM29	10/14/2020	N	Alluvium	11.3 - 31.1	3.87	0.72	0.0 U	100.1	7.52	0.0 U	25	5.98
SWFTS-MW19	EM30	12/9/2020	N	Alluvium	11.3 - 31.1	3.347	0.87	--	96.6	7	--	23.4	9.73
SWFTS-MW19	EM31	2/3/2021	N	Alluvium	11.3 - 31.1	3.51	1.23	0.0 U	159.4	7.06	0.0 U	21.7	4.5

Table D.3
Groundwater Field Test Results Summary
Seep Well Field Area Bioremediation Treatability Study

Well	Event	Sample Date	QC Type	Lithology	Screened Interval (ft bgs)	FIELD TESTS							
						Conductivity	Dissolved Oxygen	Ferrous Iron	Oxidation-Reduction Potential	pH	Sulfide	Temperature	Turbidity
						mS/cm	mg/L	mg/L	mV	SU	mg/L	C	NTU
SWFTS-MW19	EM32	3/30/2021	N	Alluvium	11.3 - 31.1	3.510	1.23	--	159.4	7.06	--	21.7	4.5
SWFTS-MW19	EM33	6/3/2021	N	Alluvium	11.3 - 31.1	2.632	1.47	0.0 U	51.1	7.72	0.0 U	22.7	8.9
SWFTS-MW19	EM34	7/20/2021	N	Alluvium	11.3 - 31.1	2.872	0.65	0.0 U	50.7	7.06	0.0 U	25.0	6.9
SWFTS-MW19	EM35	9/16/2021	N	Alluvium	11.3 - 31.1	3.690	0.52	0.0 U	69.7	7.05	0.0 U	26.0	18.4
SWFTS-MW19	EM36	12/1/2021	N	Alluvium	11.3 - 31.1	3.574	1.52	0.0 U	181.2	6.92	0.0 U	23.7	2.8
SWFTS-MW19	EM37	3/8/2022	N	Alluvium	11.3 - 31.1	6.053	0.90	--	53.7	6.63	--	21.0	8.8
SWFTS-MW19	EM38	6/22/2022	N	Alluvium	11.3 - 31.1	6.384	0.81	0.0 U	101.8	6.70	0.0 U	24.8	16.2
SWFTS-MW19	EM39	9/14/2022	N	Alluvium	11.3 - 31.1	3.447	1.05	--	121.1	6.92	--	24.0	35.4
SWFTS-MW19	EM40	12/14/2022	N	Alluvium	11.3 - 31.1	4.363	2.62	0.0 U	154.2	6.99	0.0 U	23.7	14.6
SWFTS-MW20	BL02	7/12/2017	N	Alluvium	12.8 - 37.6	9.110	6.05	0.0 U	147	7.16	0.0 U	--	176.00
SWFTS-MW20	EM01	9/21/2017	N	Alluvium	12.8 - 37.6	8.349	3.72	--	44.2	6.87	--	--	303
SWFTS-MW20	EM02	9/26/2017	N	Alluvium	12.8 - 37.6	8.334	0.49	--	15.9	6.85	--	--	9.76
SWFTS-MW20	EM03	10/4/2017	N	Alluvium	12.8 - 37.6	16.493 E	0.22	--	-3.2	6.87	--	--	59.2
SWFTS-MW20	EM04	10/12/2017	N	Alluvium	12.8 - 37.6	8.791	0.23	0.0 U	-41.3	6.76	0.0 U	--	70.2
SWFTS-MW20	EM05	10/25/2017	N	Alluvium	12.8 - 37.6	9.675	0.45	--	13.3	7.10	--	--	17.2
SWFTS-MW20	EM06	11/16/2017	N	Alluvium	12.8 - 37.6	8.400	0.74	0.50	-46.4	7.00	0.0 U	--	1000 >
SWFTS-MW20	EM07	12/12/2017	N	Alluvium	12.8 - 37.6	9.171	0.20	0.0 U	-84.9	6.88	0.0 U	--	54.2
SWFTS-MW20	EM08	2/19/2018	N	Alluvium	12.8 - 37.6	7.870	2.54	0.0 U	244	7.34	0.0 U	--	19.8
SWFTS-MW20	EM09	3/27/2018	N	Alluvium	12.8 - 37.6	8.230	3.64	--	247	6.97	--	--	41.4
SWFTS-MW20	EM10	4/30/2018	N	Alluvium	12.8 - 37.6	7.881	0.19	--	28.9	6.64	--	24.39	61.8
SWFTS-MW20	EM11	7/11/2018	N	Alluvium	12.8 - 37.6	9.01	1.72	0.0 U	-22.6	6.75	0.0 U	29.5 E	97
SWFTS-MW20	EM12	7/26/2018	N	Alluvium	12.8 - 37.6	8.50	1.88	--	-74.5	6.76	--	28.05 E	19.3
SWFTS-MW20	EM13	8/15/2018	N	Alluvium	12.8 - 37.6	8.111	0.81	--	-12.6	6.84	--	27.40 E	61.9
SWFTS-MW20	EM14	9/11/2018	N	Alluvium	12.8 - 37.6	7.126	0.51	--	97.1	6.71	--	26.60	32.1
SWFTS-MW20	EM15	10/9/2018	N	Alluvium	12.8 - 37.6	7.5	1.96	0.0 U	94	7.27	0.0 U	23.87	17.7
SWFTS-MW20	EM16	12/20/2018	N	Alluvium	12.8 - 37.6	8.673	0.97	--	-59.5	6.7	--	24.3	109
SWFTS-MW20	EM17	2/26/2019	N	Alluvium	12.8 - 37.6	6.669	0.36	0.0 U	52.0	6.71	0.0 U	24.31	36.9
SWFTS-MW20	EM18	4/9/2019	N	Alluvium	12.8 - 37.6	7.569	0.64	--	235.2	1.71	--	25.95	54.9
SWFTS-MW20	EM19	5/21/2019	N	Alluvium	12.8 - 37.6	7.230	0.41	0.5	-4.2	6.61	0.0 U	24.3	90.2
SWFTS-MW20	EM20	7/2/2019	N	Alluvium	12.8 - 37.6	6.615	0.43	--	141.9	6.57	--	24.7	31.5
SWFTS-MW20	EM21	8/13/2019	N	Alluvium	12.8 - 37.6	6.879	0.42	0.0 U	131.1	6.66	0.0 U	24.9	13.4
SWFTS-MW20	EM22	11/5/2019	N	Alluvium	12.8 - 37.6	7.247	0.49	0.0 U	103.6	6.58	0.0 U	25.9	10.1
SWFTS-MW20	EM23	12/17/2019	N	Alluvium	12.8 - 37.6	6.564	0.65	--	12.3	6.59	--	24.0	134.15
SWFTS-MW20	EM24	1/29/2020	N	Alluvium	12.8 - 37.6	6.894	0.52	0.0 U	11.1	6.61	0.0 U	25.1	85.65
SWFTS-MW20	EM25	3/12/2020	N	Alluvium	12.8 - 37.6	6.998	2.25	--	111.6	6.5	--	23.6	29.7
SWFTS-MW20	EM26	4/29/2020	N	Alluvium	12.8 - 37.6	6.095	2	0.0 U	74.9	6.5	0.0 U	26	9.8
SWFTS-MW20	EM27	7/9/2020	N	Alluvium	12.8 - 37.6	8.055	0.7	--	43.5	6.53	--	29.8	163.3
SWFTS-MW20	EM28	8/20/2020	N	Alluvium	12.8 - 37.6	6.84	0.5	0.0 U	-5.2	6.46	0.0 U	26	19.8
SWFTS-MW20	EM29	10/14/2020	N	Alluvium	12.8 - 37.6	8.617	0.44	0.5	29.8	6.82	0.0 U	27.5	23.44
SWFTS-MW20	EM30	12/9/2020	N	Alluvium	12.8 - 37.6	7.096	0.29	--	78	6.41	--	24.8	100.12
SWFTS-MW20	EM31	2/3/2021	N	Alluvium	12.8 - 37.6	6.894	0.74	0.0 U	123.8	6.54	0.0 U	24	39
SWFTS-MW20	EM32	3/30/2021	N	Alluvium	12.8 - 37.6	6.894	0.74	--	123.8	6.54	--	24.0	39.0
SWFTS-MW20	EM33	6/3/2021	N	Alluvium	12.8 - 37.6	4.776	0.61	0.0 U	25.6	7.31	0.0 U	25.4	31.9
SWFTS-MW20	EM34	7/20/2021	N	Alluvium	12.8 - 37.6	5.763	0.18	0.0 U	42.3	6.51	0.0 U	28.2	14.0
SWFTS-MW20	EM35	9/16/2021	N	Alluvium	12.8 - 37.6	8.115	0.25	0.0 U	19.1	6.38	0.0 U	29.0	62.1
SWFTS-MW20	EM36	11/29/2021	N	Alluvium	12.8 - 37.6	6.702	3.05	0.0 U	80.1	6.69	0.0 U	25.5	31.2
SWFTS-MW20	EM37	3/8/2022	N	Alluvium	12.8 - 37.6	7.239	0.91	--	42.5	6.34	--	23.1	76.5
SWFTS-MW20	EM38	6/21/2022	N	Alluvium	12.8 - 37.6	9.381	0.68	0.5	-11.7	6.46	0.0 U	27.0	20.8
SWFTS-MW20	EM39	9/14/2022	N	Alluvium	12.8 - 37.6	5.958	0.98	--	-0.6	6.39	--	25.2	-10349.4

Table D.3
Groundwater Field Test Results Summary
Seep Well Field Area Bioremediation Treatability Study

Well	Event	Sample Date	QC Type	Lithology	Screened Interval (ft bgs)	FIELD TESTS							
						Conductivity	Dissolved Oxygen	Ferrous Iron	Oxidation-Reduction Potential	pH	Sulfide	Temperature	Turbidity
						mS/cm	mg/L	mg/L	mV	SU	mg/L	C	NTU
SWFTS-MW20	EM40	12/13/2022	N	Alluvium	12.8 - 37.6	6.591	4.00	0.0 U	72.5	6.47	0.0 U	24.6	35.4
SWFTS-MW21	BL02	7/13/2017	N	Alluvium	14.8 - 39.6	7.090	6.15	--	179	7.30	--	--	99.00
SWFTS-MW21	EM01	9/21/2017	N	Alluvium	14.8 - 39.6	7.315	4.90	--	35.4	7.13	--	--	147
SWFTS-MW21	EM02	9/27/2017	N	Alluvium	14.8 - 39.6	7.626	0.28	--	-12.8	6.95	--	--	57.8
SWFTS-MW21	EM03	10/5/2017	N	Alluvium	14.8 - 39.6	7.355	4.40	--	47.2	6.96	--	--	107
SWFTS-MW21	EM04	10/11/2017	N	Alluvium	14.8 - 39.6	7.629	0.28	0.0 U	-30.2	6.66	0.0 U	--	120
SWFTS-MW21	EM05	10/27/2017	N	Alluvium	14.8 - 39.6	8.021	0.45	--	53.0	6.81	--	--	72.2
SWFTS-MW21	EM06	11/15/2017	N	Alluvium	14.8 - 39.6	7.220	3.07	0.0 U	-0.1	7.07	0.0 U	--	860.00
SWFTS-MW21	EM07	12/13/2017	N	Alluvium	14.8 - 39.6	6.840	0.68	0.0 U	32.0	7.52	0.80	--	21.60
SWFTS-MW21	EM08	2/20/2018	N	Alluvium	14.8 - 39.6	7.347	0.24	0.0 U	18.7	6.14	0.04	--	59.70
SWFTS-MW21	EM09	3/27/2018	N	Alluvium	14.8 - 39.6	6.878	0.37	--	-72.8	7.07	--	--	8.71
SWFTS-MW21	EM10	4/30/2018	N	Alluvium	14.8 - 39.6	6.85	0.00	--	186	7.12	--	24.42	54.7
SWFTS-MW21	EM11	7/12/2018	N	Alluvium	14.8 - 39.6	7.41	0.06	0.0 U	141	7.28	0.0 U	24.97	38.6
SWFTS-MW21	EM12	7/27/2018	N	Alluvium	14.8 - 39.6	6.54	8.98 E	--	-76.2	6.99	--	24.57	763
SWFTS-MW21	EM13	8/15/2018	N	Alluvium	14.8 - 39.6	7.72	0.68	--	16.1	7.02	--	26.88	208
SWFTS-MW21	EM14	9/12/2018	N	Alluvium	14.8 - 39.6	6.923	0.35	--	112	6.92	--	26.65	8.36
SWFTS-MW21	EM15	10/9/2018	N	Alluvium	14.8 - 39.6	7.15	0.59	0.0 U	52	6.63	0.0 U	26.1	4.8
SWFTS-MW21	EM16	12/20/2018	N	Alluvium	14.8 - 39.6	7.975	1.11	--	-53.7	6.97	--	24.45	370
SWFTS-MW21	EM17	2/26/2019	N	Alluvium	14.8 - 39.6	7.48	0.00	0.0 U	-33	6.60	0.0 U	24.48	47.9
SWFTS-MW21	EM18	4/10/2019	N	Alluvium	14.8 - 39.6	6.119	3.78	--	127.6	7.07	--	24.4	49.2
SWFTS-MW21	EM19	5/22/2019	N	Alluvium	14.8 - 39.6	6.536	0.57	0.0 U	170.9	7.04	0.0 U	24.2	58.9
SWFTS-MW21	EM20	7/1/2019	N	Alluvium	14.8 - 39.6	6.019	0.25	--	68.9	7.00	--	25.9	109.3
SWFTS-MW21	EM21	8/13/2019	N	Alluvium	14.8 - 39.6	6.973	0.38	0.0 U	126.0	7.01	0.0 U	24.3	13.9
SWFTS-MW21	EM22	11/4/2019	N	Alluvium	14.8 - 39.6	6.670	0.30	0.0 U	96.5	6.78	0.0 U	25.5	28.8
SWFTS-MW21	EM23	12/18/2019	N	Alluvium	14.8 - 39.6	6.114	0.82	--	41.9	6.87	--	24.0	49.33
SWFTS-MW21	EM24	1/30/2020	N	Alluvium	14.8 - 39.6	6.158	0.63	0.0 U	69.1	7.07	0.0 U	24.3	83.44
SWFTS-MW21	EM25	3/11/2020	N	Alluvium	14.8 - 39.6	6.335	2.27	--	198	7.14	--	23.6	72.5
SWFTS-MW21	EM26	4/29/2020	N	Alluvium	14.8 - 39.6	4.77	3.29	0.0 U	189.6	6.9	0.0 U	23.4	195.7
SWFTS-MW21	EM27	7/10/2020	N	Alluvium	14.8 - 39.6	6.665	1.0	--	96.0	7.03	--	24.9	200.7
SWFTS-MW21	EM28	8/20/2020	N	Alluvium	14.8 - 39.6	6.486	0.49	0.0 U	58.9	6.9	0.0 U	25.8	6.9
SWFTS-MW21	EM29	10/14/2020	N	Alluvium	14.8 - 39.6	7.117	0.43	0.0 U	63.8	7.37	0.0 U	25.7	24.12
SWFTS-MW21	EM30	12/9/2020	N	Alluvium	14.8 - 39.6	6.059	0.29	--	84.5	6.94	--	24.3	33.27
SWFTS-MW21	EM31	2/3/2021	N	Alluvium	14.8 - 39.6	6	0.77	0.0 U	180.6	6.99	0.0 U	23.8	16.6
SWFTS-MW21	EM32	3/30/2021	N	Alluvium	14.8 - 39.6	6.000	0.77	--	180.6	6.99	--	23.8	16.6
SWFTS-MW21	EM33	6/2/2021	N	Alluvium	14.8 - 39.6	4.928	0.63	0.0 U	106.1	7.24	0.0 U	25.1	50.0
SWFTS-MW21	EM34	7/20/2021	N	Alluvium	14.8 - 39.6	5.098	0.38	0.0 U	87.9	6.90	0.0 U	25.5	20.6
SWFTS-MW21	EM35	9/16/2021	N	Alluvium	14.8 - 39.6	5.587	0.41	0.0 U	83.4	6.99	0.0 U	26.2	52.5
SWFTS-MW21	EM36	12/1/2021	N	Alluvium	14.8 - 39.6	6.928	1.34	0.0 U	65.8	6.76	0.0 U	24.8	11.8
SWFTS-MW21	EM37	3/8/2022	N	Alluvium	14.8 - 39.6	5.194	0.92	--	20.7	6.97	--	22.9	19.1
SWFTS-MW21	EM38	6/21/2022	N	Alluvium	14.8 - 39.6	6.801	0.81	0.0 U	70.9	6.96	0.0 U	27.0	31.3
SWFTS-MW21	EM39	9/14/2022	N	Alluvium	14.8 - 39.6	4.549	1.03	--	91.7	6.86	--	24.4	66.8
SWFTS-MW21	EM40	12/15/2022	N	Alluvium	14.8 - 39.6	7.074	0.30	0.0 U	126.4	6.89	0.0 U	23.9	12.9
SWFTS-MW22	BL02	7/13/2017	N	Alluvium	11.8 - 31.6	4.370	2.09	0.0 U	126.0	7.55	0.0 U	--	1000 >
SWFTS-MW22	EM01	9/20/2017	N	Alluvium	11.8 - 31.6	4.272	0.32	--	-61.4	7.09	--	--	648
SWFTS-MW22	EM02	9/27/2017	N	Alluvium	11.8 - 31.6	4.273	0.12	--	-54.7	6.99	--	--	110
SWFTS-MW22	EM03	10/5/2017	N	Alluvium	11.8 - 31.6	4.085	0.41	--	119.7	6.96	--	--	43.8
SWFTS-MW22	EM04	10/12/2017	N	Alluvium	11.8 - 31.6	4.333	2.72	0.0 U	138.4	6.99	0.0 U	--	438
SWFTS-MW22	EM05	10/26/2017	N	Alluvium	11.8 - 31.6	4.508	0.29	--	93.6	7.13	--	--	196
SWFTS-MW22	EM06	11/16/2017	N	Alluvium	11.8 - 31.6	4.333	0.45	0.0 U	-53.1	7.14	0.0 U	--	320

Table D.3
Groundwater Field Test Results Summary
Seep Well Field Area Bioremediation Treatability Study

Well	Event	Sample Date	QC Type	Lithology	Screened Interval (ft bgs)	FIELD TESTS							
						Conductivity	Dissolved Oxygen	Ferrous Iron	Oxidation-Reduction Potential	pH	Sulfide	Temperature	Turbidity
						mS/cm	mg/L	mg/L	mV	SU	mg/L	C	NTU
SWFTS-MW22	EM07	12/14/2017	N	Alluvium	11.8 - 31.6	4.630	1.31	0.0 U	-101.4	7.28	0.0 U	--	27.2
SWFTS-MW22	EM08	2/21/2018	N	Alluvium	11.8 - 31.6	4.012	0.43	0.0 U	20.0	7.31	0.0 U	--	268
SWFTS-MW22	EM09	3/28/2018	N	Alluvium	11.8 - 31.6	3.895	0.65	--	194.4	7.19	--	--	183.00
SWFTS-MW22	EM10	4/30/2018	N	Alluvium	11.8 - 31.6	4.052	0.26	--	22.2	7.14	--	23.42	3.92
SWFTS-MW22	EM11	7/10/2018	N	Alluvium	11.8 - 31.6	4.45	2.80	0.0 U	220	7.42	0.0 U	20.8	100
SWFTS-MW22	EM12	7/27/2018	N	Alluvium	11.8 - 31.6	3.88	4.13	--	-76	7.21	--	23.95	345
SWFTS-MW22	EM13	8/16/2018	N	Alluvium	11.8 - 31.6	4.3	2.29	--	139	7.81	--	19.93	33.7
SWFTS-MW22	EM14	9/11/2018	N	Alluvium	11.8 - 31.6	3.804	0.47	--	94	7.22	--	25.14	47.3
SWFTS-MW22	EM15	10/9/2018	N	Alluvium	11.8 - 31.6	4.25	0.28	0.0 U	67	7.75	0.0 U	23.92	285
SWFTS-MW22	EM16	12/27/2018	N	Alluvium	11.8 - 31.6	4.809	0.6	--	-14.1	7.15	--	22.81	340
SWFTS-MW22	EM17	2/27/2019	N	Alluvium	11.8 - 31.6	3.919	0.07	0.0 U	96.6	7.11	0.0 U	23.00	180
SWFTS-MW22	EM18	4/11/2019	N	Alluvium	11.8 - 31.6	5.379	0.57	--	122.5	7.06	--	22.90	77.5
SWFTS-MW22	EM19	5/21/2019	N	Alluvium	11.8 - 31.6	4.150	0.49	0.0 U	-6.7	7.12	0.0 U	23.2	184.2
SWFTS-MW22	EM20	7/2/2019	N	Alluvium	11.8 - 31.6	3.819	0.43	--	146.4	7.10	--	24.3	24.4
SWFTS-MW22	EM21	8/12/2019	N	Alluvium	11.8 - 31.6	4.03	0.4	0.0 U	120.2	7.19	0.0 U	24.9	13.5
SWFTS-MW22	EM22	11/5/2019	N	Alluvium	11.8 - 31.6	3.807	0.39	0.0 U	192.9	7.10	0.0 U	24.7	66.8
SWFTS-MW22	EM23	12/19/2019	N	Alluvium	11.8 - 31.6	3.547	0.80	--	93.5	7.18	--	22.2	141.35
SWFTS-MW22	EM24	1/30/2020	N	Alluvium	11.8 - 31.6	3.633	0.62	0.0 U	62.5	7.25	0.0 U	23.5	202.27
SWFTS-MW22	EM25	3/11/2020	N	Alluvium	11.8 - 31.6	4.12	1.55	--	148.6	7.06	--	23.2	74.8
SWFTS-MW22	EM26	4/28/2020	N	Alluvium	11.8 - 31.6	3.597	1.99	0.0 U	172.9	7.07	0.0 U	24.6	135.3
SWFTS-MW22	EM27	7/10/2020	N	Alluvium	11.8 - 31.6	4.300	0.6	--	106.6	7.13	--	25.0	94.3
SWFTS-MW22	EM28	8/20/2020	N	Alluvium	11.8 - 31.6	4.59	0.45	0.0 U	57	6.94	0.0 U	25.9	38.8
SWFTS-MW22	EM29	10/14/2020	N	Alluvium	11.8 - 31.6	4.765	0.41	0.0 U	112	7.48	0.0 U	23.5	70.57
SWFTS-MW22	EM30	12/9/2020	N	Alluvium	11.8 - 31.6	4.018	0.27	--	87	7	--	24.1	125.1
SWFTS-MW22	EM31	2/3/2021	N	Alluvium	11.8 - 31.6	4.031	0.77	0.0 U	169.7	7.05	0.0 U	23.1	128.4
SWFTS-MW22	EM32	3/30/2021	N	Alluvium	11.8 - 31.6	4.031	0.77	--	169.7	7.05	--	23.1	128.4
SWFTS-MW22	EM33	6/2/2021	N	Alluvium	11.8 - 31.6	3.508	1.16	0.0 U	98.0	7.41	0.0 U	25.8	105.8
SWFTS-MW22	EM35	9/16/2021	N	Alluvium	11.8 - 31.6	3.972	0.81	0.0 U	93.4	7.08	0.0 U	25.2	88.9
SWFTS-MW22	EM36	12/2/2021	N	Alluvium	11.8 - 31.6	4.656	1.70	0.0 U	121.3	6.96	0.0 U	22.9	209.9
SWFTS-MW22	EM37	3/8/2022	N	Alluvium	11.8 - 31.6	4.125	0.87	--	42.5	6.90	--	22.4	44.6
SWFTS-MW22	EM38	6/21/2022	N	Alluvium	11.8 - 31.6	6.075	0.72	0.0 U	82.5	6.87	0.0 U	26.4	69.0
SWFTS-MW22	EM39	9/14/2022	N	Alluvium	11.8 - 31.6	4.247	1.03	--	122.3	6.88	--	24.4	-21267.0
SWFTS-MW22	EM40	12/14/2022	N	Alluvium	11.8 - 31.6	6.162	0.31	0.0 U	160.7	6.74	0.0 U	24.0	87.1
SWFTS-MW23	BL02	7/13/2017	N	Alluvium	13.8 - 33.6	3.060	0.36	0.0 U	91.3	7.24	0.0 U	--	19.40
SWFTS-MW23	EM01	9/22/2017	N	Alluvium	13.8 - 33.6	3.229	0.55	--	-19.6	6.96	--	--	10.00
SWFTS-MW23	EM02	9/28/2017	N	Alluvium	13.8 - 33.6	3.277	0.16	--	-14.1	6.99	--	--	10.9
SWFTS-MW23	EM03	10/5/2017	N	Alluvium	13.8 - 33.6	3.347	0.79	--	-2.6	6.93	--	--	1.95
SWFTS-MW23	EM04	10/11/2017	N	Alluvium	13.8 - 33.6	3.410	1.87	0.0 U	52.3	6.96	0.0 U	--	5.25
SWFTS-MW23	EM05	10/26/2017	N	Alluvium	13.8 - 33.6	3.809	0.38	--	92.0	7.11	--	--	2.1
SWFTS-MW23	EM06	11/15/2017	N	Alluvium	13.8 - 33.6	3.500	0.49	0.0 U	-28.9	7.09	0.0 U	--	6.80
SWFTS-MW23	EM07	12/12/2017	N	Alluvium	13.8 - 33.6	3.818	0.23	0.0 U	-98.2	7.15	0.0 U	--	3.74
SWFTS-MW23	EM08	2/21/2018	N	Alluvium	13.8 - 33.6	3.650	5.42	0.0 U	142.0	8.13 E	0.0 U	--	0.80
SWFTS-MW23	EM09	3/28/2018	N	Alluvium	13.8 - 33.6	3.460	2.59	--	285	7.25	--	--	3.1
SWFTS-MW23	EM10	5/2/2018	N	Alluvium	13.8 - 33.6	2.655	0.30	--	101.0	7.31	--	19.77	6.55
SWFTS-MW23	EM11	7/10/2018	N	Alluvium	13.8 - 33.6	3.299	0.44	0.0 U	-27.1	7.2	0.04	24.97	59.6
SWFTS-MW23	EM13	8/16/2018	N	Alluvium	13.8 - 33.6	3.1	2.48	--	137	7.80	--	20.07	3.9
SWFTS-MW23	EM14	9/12/2018	N	Alluvium	13.8 - 33.6	2.969	0.64	--	130.6	7.24	--	24.60	4.99
SWFTS-MW23	EM15	10/11/2018	N	Alluvium	13.8 - 33.6	3.26	1.68	0.0 U	100	7.25	0.0 U	23.45	5.5
SWFTS-MW23	EM16	12/28/2018	N	Alluvium	13.8 - 33.6	3.062	0.97	--	84.4	7.18	--	21.42	5.33

Table D.3
Groundwater Field Test Results Summary
Seep Well Field Area Bioremediation Treatability Study

Well	Event	Sample Date	QC Type	Lithology	Screened Interval (ft bgs)	FIELD TESTS							
						Conductivity	Dissolved Oxygen	Ferrous Iron	Oxidation-Reduction Potential	pH	Sulfide	Temperature	Turbidity
						mS/cm	mg/L	mg/L	mV	SU	mg/L	C	NTU
SWFTS-MW23	EM17	2/27/2019	N	Alluvium	13.8 - 33.6	2.834	0.05	0.0 U	95.8	7.15	0.0 U	22.04	3.30
SWFTS-MW23	EM18	4/11/2019	N	Alluvium	13.8 - 33.6	2.733	0.57	--	130.3	7.14	--	21.4	2.2
SWFTS-MW23	EM19	5/22/2019	N	Alluvium	13.8 - 33.6	2.913	0.08	0.0 U	211.2	7.13	0.0 U	21.0	24.8
SWFTS-MW23	EM20	7/3/2019	N	Alluvium	13.8 - 33.6	2.934	0.50	--	160.5	7.09	--	22.2	9.3
SWFTS-MW23	EM21	8/14/2019	N	Alluvium	13.8 - 33.6	3.311	0.42	0.0 U	108.2	7.26	0.0 U	24.0	7.5
SWFTS-MW23	EM22	11/5/2019	N	Alluvium	13.8 - 33.6	3.398	0.64	0.0 U	195.8	7.09	0.0 U	25.0	6.0
SWFTS-MW23	EM23	12/19/2019	N	Alluvium	13.8 - 33.6	3.126	1.41	--	92.6	7.20	--	21.9	7.61
SWFTS-MW23	EM24	1/30/2020	N	Alluvium	13.8 - 33.6	3.055	0.61	0.0 U	54.9	7.27	0.0 U	21.5	23.40
SWFTS-MW23	EM25	3/10/2020	N	Alluvium	13.8 - 33.6	2.471	2.44	--	176.6	7.2	--	20.2	19.7
SWFTS-MW23	EM26	4/28/2020	N	Alluvium	13.8 - 33.6	2.397	2.12	0.0 U	164.8	7.19	0.0 U	22.3	32.2
SWFTS-MW23	EM27	7/10/2020	N	Alluvium	13.8 - 33.6	4.199	0.71	--	181.3	7.56	--	23.8	6.91
SWFTS-MW23	EM28	8/20/2020	N	Alluvium	13.8 - 33.6	2.835	0.51	0.0 U	36.2	7.12	0.0 U	26.9	9.2
SWFTS-MW23	EM29	10/13/2020	N	Alluvium	13.8 - 33.6	2.392	0.49	0.0 U	114.6	7.49	0.0 U	23.9	5.18
SWFTS-MW23	EM30	12/9/2020	N	Alluvium	13.8 - 33.6	2.805	0.33	--	92.5	7.1	--	23.5	4.06
SWFTS-MW23	EM31	2/3/2021	N	Alluvium	13.8 - 33.6	2.679	0.83	0.0 U	162.6	7.19	0.0 U	20.6	3.9
SWFTS-MW23	EM32	3/30/2021	N	Alluvium	13.8 - 33.6	2.679	0.83	--	162.6	7.19	--	20.6	3.9
SWFTS-MW23	EM33	6/2/2021	N	Alluvium	13.8 - 33.6	2.283	0.74	0.0 U	84.9	7.42	0.0 U	23.1	3.8
SWFTS-MW23	EM34	7/21/2021	N	Alluvium	13.8 - 33.6	3.035	0.13	0.0 U	81.0	7.13	0.0 U	23.8	7.0
SWFTS-MW23	EM35	9/16/2021	N	Alluvium	13.8 - 33.6	2.739	0.38	0.0 U	107.7	7.29	0.0 U	25.4	16.1
SWFTS-MW23	EM36	12/2/2021	N	Alluvium	13.8 - 33.6	2.551	1.13	0.0 U	204.8	7.08	0.0 U	21.0	6.3
SWFTS-MW23	EM37	3/7/2022	N	Alluvium	13.8 - 33.6	2.673	1.03	--	119.4	7.23	--	20.0	14.6
SWFTS-MW23	EM38	6/21/2022	N	Alluvium	13.8 - 33.6	3.398	1.04	0.0 U	84.8	7.08	0.0 U	23.7	5.4
SWFTS-MW23	EM39	9/15/2022	N	Alluvium	13.8 - 33.6	1.942	1.08	--	181.3	7.13	--	23.4	9.4
SWFTS-MW23	EM40	12/13/2022	N	Alluvium	13.8 - 33.6	2.391	0.29	0.0 U	172.8	7.13	0.0 U	22.7	8.2
SWFTS-MW24	BL02	7/13/2017	N	Alluvium	12.8 - 37.6	7.450	3.04	0.0 U	160	7.31	0.0 U	--	70.9
SWFTS-MW24	EM01	9/22/2017	N	Alluvium	12.8 - 37.6	6.989	1.31	--	-19.2	6.85	--	--	1.01
SWFTS-MW24	EM02	9/28/2017	N	Alluvium	12.8 - 37.6	7.207	0.48	--	-8.2	6.92	--	--	0.45
SWFTS-MW24	EM03	10/5/2017	N	Alluvium	12.8 - 37.6	7.129	0.76	--	5.4	6.80	--	--	0.30
SWFTS-MW24	EM04	10/11/2017	N	Alluvium	12.8 - 37.6	7.050	3.88	0.0 U	112.3	6.97	0.0 U	--	120
SWFTS-MW24	EM05	10/26/2017	N	Alluvium	12.8 - 37.6	7.389	3.06	--	116.0	7.03	--	--	71.0
SWFTS-MW24	EM06	11/15/2017	N	Alluvium	12.8 - 37.6	6.230	1.39	0.0 U	36.6	7.09	0.0 U	--	5.02
SWFTS-MW24	EM07	12/12/2017	N	Alluvium	12.8 - 37.6	7.384	1.11	0.0 U	-10.1	7.06	0.0 U	--	7.20
SWFTS-MW24	EM08	2/21/2018	N	Alluvium	12.8 - 37.6	7.099	0.95	0.0 U	-47.3	6.38	0.0 U	--	5.49
SWFTS-MW24	EM09	3/28/2018	N	Alluvium	12.8 - 37.6	6.458	0.55	--	-37.1	6.95	--	--	3.85
SWFTS-MW24	EM10	5/2/2018	N	Alluvium	12.8 - 37.6	6.28	0.00	--	235	6.98	--	22.95	0.0
SWFTS-MW24	EM11	7/12/2018	N	Alluvium	12.8 - 37.6	6.42	0.10	0.0 U	194	7.19	0.0 U	26.68	1.5
SWFTS-MW24	EM12	7/27/2018	N	Alluvium	12.8 - 37.6	5.95	5.09	--	-71.1	6.96	--	24.82	7.54
SWFTS-MW24	EM13	8/15/2018	N	Alluvium	12.8 - 37.6	19.1 E	1.83	--	134	7.15	--	23.22	34.6
SWFTS-MW24	EM14	9/12/2018	N	Alluvium	12.8 - 37.6	6.241	0.75	--	114.3	7.08	--	26.70	1.49
SWFTS-MW24	EM15	10/10/2018	N	Alluvium	12.8 - 37.6	6.25	2.95	0.0 U	148	7.37	0.0 U	21.77	24.0
SWFTS-MW24	EM16	1/2/2019	N	Alluvium	12.8 - 37.6	5.709	1.55	--	127.2	6.97	--	21.45	20.9
SWFTS-MW24	EM17	2/27/2019	N	Alluvium	12.8 - 37.6	5.168	1.29	0.0 U	36.8	7.08	0.0 U	21.54	0.19
SWFTS-MW24	EM18	4/10/2019	N	Alluvium	12.8 - 37.6	4.976	1.24	--	115.2	6.99	--	22.8	8.5
SWFTS-MW24	EM19	5/22/2019	N	Alluvium	12.8 - 37.6	5.342	1.18	0.0 U	196.5	6.84	0.0 U	22.9	29.9
SWFTS-MW24	EM20	7/1/2019	N	Alluvium	12.8 - 37.6	4.992	0.65	--	105.4	6.99	--	26.4	43.7
SWFTS-MW24	EM21	8/14/2019	N	Alluvium	12.8 - 37.6	5.639	0.63	0.0 U	160.6	7.03	0.0 U	24.0	9.6
SWFTS-MW24	EM22	11/5/2019	N	Alluvium	12.8 - 37.6	5.485	1.34	0.0 U	249.1	6.98	0.0 U	24.2	3.2
SWFTS-MW24	EM23	12/19/2019	N	Alluvium	12.8 - 37.6	5.123	1.47	--	104.0	7.04	--	23.7	6.39
SWFTS-MW24	EM24	1/30/2020	N	Alluvium	12.8 - 37.6	5.170	1.16	0.0 U	83.0	7.05	0.0 U	23.6	8.35

Table D.3
Groundwater Field Test Results Summary
Seep Well Field Area Bioremediation Treatability Study

Well	Event	Sample Date	QC Type	Lithology	Screened Interval (ft bgs)	FIELD TESTS							
						Conductivity	Dissolved Oxygen	Ferrous Iron	Oxidation-Reduction Potential	pH	Sulfide	Temperature	Turbidity
						mS/cm	mg/L	mg/L	mV	SU	mg/L	C	NTU
SWFTS-MW24	EM25	3/10/2020	N	Alluvium	12.8 - 37.6	4.59	2.8	--	121.7	6.95	--	21.9	3
SWFTS-MW24	EM26	4/28/2020	N	Alluvium	12.8 - 37.6	4.74	2.6	0.0 U	170	6.91	0.0 U	22.9	4
SWFTS-MW24	EM27	7/10/2020	N	Alluvium	12.8 - 37.6	5.843	1.2	--	110.4	7.00	--	26.1	44.3
SWFTS-MW24	EM28	8/18/2020	N	Alluvium	12.8 - 37.6	5.462	0.77	0.0 U	260.8	6.99	0.0 U	26.6	7.7
SWFTS-MW24	EM29	10/12/2020	N	Alluvium	12.8 - 37.6	5.703	1.17	0.0 U	115.4	7.22	0.0 U	27	76.24
SWFTS-MW24	EM30	12/9/2020	N	Alluvium	12.8 - 37.6	4.922	0.49	--	104.1	6.83	--	24.7	7.65
SWFTS-MW24	EM31	2/3/2021	N	Alluvium	12.8 - 37.6	4.677	4.05	0.0 U	175.4	7.06	0.0 U	21.8	19.2
SWFTS-MW24	EM32	3/30/2021	N	Alluvium	12.8 - 37.6	4.677	4.05	--	175.4	7.06	--	21.8	19.2
SWFTS-MW24	EM33	6/2/2021	N	Alluvium	12.8 - 37.6	4.061	1.16	0.0 U	129.7	7.23	0.0 U	25.6	18.1
SWFTS-MW24	EM34	7/19/2021	N	Alluvium	12.8 - 37.6	5.264	0.97	0.0 U	95.3	6.90	0.0 U	25.4	5.9
SWFTS-MW24	EM35	9/16/2021	N	Alluvium	12.8 - 37.6	4.738	1.00	0.0 U	141.2	7.01	0.0 U	25.5	21.2
SWFTS-MW24	EM36	12/1/2021	N	Alluvium	12.8 - 37.6	5.179	1.48	0.0 U	174.7	6.87	0.0 U	24.2	16.2
SWFTS-MW24	EM37	3/8/2022	N	Alluvium	12.8 - 37.6	5.116	2.04	--	79.8	6.86	--	21.6	7.8
SWFTS-MW24	EM38	6/21/2022	N	Alluvium	12.8 - 37.6	6.638	1.41	0.0 U	95.4	6.86	0.0 U	25.2	11.7
SWFTS-MW24	EM39	9/15/2022	N	Alluvium	12.8 - 37.6	4.102	1.53	--	193.8	6.88	--	24.4	16.8
SWFTS-MW24	EM40	12/13/2022	N	Alluvium	12.8 - 37.6	4.556	0.55	0.0 U	194.9	6.81	0.0 U	22.5	10.7
SWFTS-MW25	BL02	7/13/2017	N	Alluvium	12.8 - 42.6	6.260	3.03	0.0 U	162	6.99	0.0 U	--	30.0
SWFTS-MW25	EM01	9/22/2017	N	Alluvium	12.8 - 42.6	7.168	0.50	--	31.1	6.99	--	--	6.11
SWFTS-MW25	EM02	9/28/2017	N	Alluvium	12.8 - 42.6	7.323	0.14	--	-28.6	7.03	--	--	364
SWFTS-MW25	EM03	10/5/2017	N	Alluvium	12.8 - 42.6	7.160	0.96	--	0.9	6.92	--	--	171
SWFTS-MW25	EM04	10/11/2017	N	Alluvium	12.8 - 42.6	7.247	0.26	0.0 U	-1.6	6.86	0.0 U	--	294
SWFTS-MW25	EM05	10/26/2017	N	Alluvium	12.8 - 42.6	7.443	0.98	--	76.1	6.94	--	--	92
SWFTS-MW25	EM06	11/15/2017	N	Alluvium	12.8 - 42.6	6.642	1.11	0.0 U	22.8	6.80	0.0 U	--	459.00
SWFTS-MW25	EM07	12/12/2017	N	Alluvium	12.8 - 42.6	7.206	0.63	0.0 U	-77.2	6.92	0.0 U	--	69.4
SWFTS-MW25	EM08	2/21/2018	N	Alluvium	12.8 - 42.6	7.389	0.32	0.0 U	-84.9	6.17	0.0 U	--	109
SWFTS-MW25	EM09	3/28/2018	N	Alluvium	12.8 - 42.6	6.926	0.20	--	-156.2	6.90	--	--	81.20
SWFTS-MW25	EM10	5/3/2018	N	Alluvium	12.8 - 42.6	6.68	0.00	--	132	6.94	--	24.11	23.6
SWFTS-MW25	EM11	7/10/2018	N	Alluvium	12.8 - 42.6	6.45	3.00	0.0 U	230	7.34	0.0 U	22.3	40.1
SWFTS-MW25	EM12	7/27/2018	N	Alluvium	12.8 - 42.6	6.19	2.49	--	-73.6	6.89	--	24.3	139
SWFTS-MW25	EM13	8/15/2018	N	Alluvium	12.8 - 42.6	19.8 E	1.91	--	135	7.04	--	21.27	272
SWFTS-MW25	EM14	9/12/2018	N	Alluvium	12.8 - 42.6	6.214	0.47	--	113.6	7.00	--	25.38	340
SWFTS-MW25	EM15	10/11/2018	N	Alluvium	12.8 - 42.6	6.34	1.25	0.0 U	92	7.12	0.0 U	24.77	55.8
SWFTS-MW25	EM16	1/2/2019	N	Alluvium	12.8 - 42.6	5.69	0.97	--	132	6.92	--	21.31	402
SWFTS-MW25	EM17	2/27/2019	N	Alluvium	12.8 - 42.6	5.467	0.05	0.0 U	104.8	6.41	0.0 U	23.66	418
SWFTS-MW25	EM18	4/11/2019	N	Alluvium	12.8 - 42.6	7.274	0.81	--	113.4	6.87	--	23.57	432
SWFTS-MW25	EM19	5/22/2019	N	Alluvium	12.8 - 42.6	5.395	0.12	0.0 U	226.6	6.88	0.0 U	22.7	86.7
SWFTS-MW25	EM20	7/3/2019	N	Alluvium	12.8 - 42.6	5.162	0.47	--	140.2	6.80	--	23.1	54.2
SWFTS-MW25	EM21	8/14/2019	N	Alluvium	12.8 - 42.6	5.470	0.39	0.0 U	115.3	7.08	0.0 U	24.3	46
SWFTS-MW25	EM22	11/5/2019	N	Alluvium	12.8 - 42.6	5.369	0.54	0.0 U	193.3	6.99	0.1	24.5	121.6
SWFTS-MW25	EM23	12/19/2019	N	Alluvium	12.8 - 42.6	5.015	0.74	--	91.8	7.01	--	22.5	180.03
SWFTS-MW25	EM24	1/30/2020	N	Alluvium	12.8 - 42.6	5.184	0.55	0.0 U	77.4	7.04	0.0 U	23.3	380.98
SWFTS-MW25	EM25	3/10/2020	N	Alluvium	12.8 - 42.6	4.78	2.45	--	161.9	6.97	--	22.3	81
SWFTS-MW25	EM26	4/28/2020	N	Alluvium	12.8 - 42.6	4.956	2	0.0 U	164.6	6.94	0.0 U	24.1	369.1
SWFTS-MW25	EM27	7/10/2020	N	Alluvium	12.8 - 42.6	5.646	0.67	--	179.9	7.09	--	25.4	131.7
SWFTS-MW25	EM28	8/19/2020	N	Alluvium	12.8 - 42.6	5.348	0.8	0.0 U	187.6	7	0.0 U	24.4	510.2
SWFTS-MW25	EM29	10/13/2020	N	Alluvium	12.8 - 42.6	4.269	0.35	0.0 U	159	7.33	0.0 U	23.6	230.6
SWFTS-MW25	EM30	12/9/2020	N	Alluvium	12.8 - 42.6	4.696	0.27	--	98.3	6.89	--	23.4	420.38
SWFTS-MW25	EM31	2/4/2021	N	Alluvium	12.8 - 42.6	4.552	0.77	0.0 U	171.6	6.99	0.0 U	22.3	796
SWFTS-MW25	EM32	3/30/2021	N	Alluvium	12.8 - 42.6	4.552	0.77	--	171.6	6.99	--	22.3	796.0

Table D.3
Groundwater Field Test Results Summary
Seep Well Field Area Bioremediation Treatability Study

Well	Event	Sample Date	QC Type	Lithology	Screened Interval (ft bgs)	FIELD TESTS							
						Conductivity	Dissolved Oxygen	Ferrous Iron	Oxidation-Reduction Potential	pH	Sulfide	Temperature	Turbidity
						mS/cm	mg/L	mg/L	mV	SU	mg/L	C	NTU
SWFTS-MW25	EM33	6/2/2021	N	Alluvium	12.8 - 42.6	3.961	0.65	0.0 U	94.9	7.16	0.0 U	25.5	149.3
SWFTS-MW25	EM34	7/21/2021	N	Alluvium	12.8 - 42.6	5.244	0.11	0.0 U	98.5	6.89	0.0 U	24.8	219.5
SWFTS-MW25	EM35	9/16/2021	N	Alluvium	12.8 - 42.6	4.550	1.13	0.0 U	138.2	7.00	0.0 U	23.9	299.4
SWFTS-MW25	EM36	12/1/2021	N	Alluvium	12.8 - 42.6	5.164	0.95	0.0 U	175.7	6.83	0.0 U	22.7	159.1
SWFTS-MW25	EM37	3/7/2022	N	Alluvium	12.8 - 42.6	5.396	0.82	--	110.4	6.91	--	22.6	223.6
SWFTS-MW25	EM38	6/21/2022	N	Alluvium	12.8 - 42.6	7.176	0.93	0.0 U	95.9	6.80	0.0 U	24.4	-7476.5 E
SWFTS-MW25	EM39	9/15/2022	N	Alluvium	12.8 - 42.6	4.508	0.98	--	190.5	6.86	--	24.7	-232077.0
SWFTS-MW25	EM40	12/13/2022	N	Alluvium	12.8 - 42.6	4.610	1.11	0.0 U	178.7	6.88	0.0 U	22.8	48.9

Notes:
1. Lithology of monitoring well COH-2B1 was inferred from state records of well construction and generalized stratigraphy.
FD - Field duplicate
J The result is an estimated quantity. The associated numerical value is the approximate concentration of the analyte.
J- The result is an estimated quantity, but the result may be biased low.
J+ The result is an estimated quantity, but the result may be biased high.
mg/L - milligrams per liter
µg/L - micrograms per liter
N - Normal field sample
UMCf- Upper Muddy Creek Formation
R The data are unusable. The sample results are rejected due to serious deficiencies in meeting QC criteria. The
< The analyte was analyzed for, but was not detected above the level of the reported sample quantitation limit.
--- Not tested.

Table D.4

Groundwater Bio-trap® Microbial Results Summary

Seep Well Field Area Bioremediation Treatability Study

Location	Sample Date	Sample Matrix	Lab SampleID	Microbial Census	Microbial Phospholipid Fatty Acid Analysis (PLFA)								
				Perchlorate Reductase pcrA	Total Biomass	Proteobacteria (Monos)	Firmicutes (Terbrsats)	Anaerobic metal reducers (BrMonos)	SRB/Actinomycetes (MidBrSats)	General (Nsats)	Eukaryotes (Polyenoics)	Slowed Growth	Decreased Permeability
				cells/bead	cells/bead	%	%	%	%	%	%	ratio cy/cis	ratio trans/cis
SWFTS-IW08	8/16/2017	Biotrap	065OH-1	< 250.00	6.64E+04	79.01	1.21	0.00	0.00	19.77	0.00	2.37	0.35
SWFTS-IW12	8/16/2017	Biotrap	065OH-3	63.20	1.42E+05	69.27	4.32	0.00	0.00	25.30	1.12	1.10	0.19
SWFTS-MW11	8/16/2017	Biotrap	065OH-5	< 250.00	1.83E+05	71.71	0.38	5.03	0.00	19.75	3.14	2.17	0.42
SWFTS-MW16	8/16/2017	Biotrap	065OH-2	192.00	6.10E+04	76.63	0.00	1.72	0.00	21.64	0.00	1.77	0.00
SWFTS-MW20	8/16/2017	Biotrap	065OH-4	< 250.00	1.06E+05	64.44	2.33	1.43	0.00	31.16	0.62	1.55	0.23
SWFTS-IW08	11/29/2017	Biotrap	120OK-1	< 250.00	3.03E+05	55.41	10.21	2.27	0.58	25.71	5.83	0.83	1.16
SWFTS-IW12	11/29/2017	Biotrap	120OK-3	< 250.00	2.25E+05	55.45	8.79	0.85	0.28	28.91	5.72	0.79	0.97
SWFTS-MW11	11/29/2017	Biotrap	120OK-5	< 250.00	3.43E+05	72.71	1.59	6.72	0.29	13.79	4.92	1.57	0.32
SWFTS-MW16	11/29/2017	Biotrap	120OK-2	1330.00	9.19E+05	58.97	18.72	2.76	2.18	16.57	0.80	0.05	0.12
SWFTS-MW20	11/29/2017	Biotrap	120OK-4	< 250.00	6.04E+04	69.40	1.00	7.76	0.00	18.73	3.12	3.38	0.00
PC-94	10/25/2018	Biotrap	108PJ-4	79.90	7.03E+04	58.41	7.52	0.00	0.00	34.06	0.00	2.89	0.00
SWFTS-MW07A	10/25/2018	Biotrap	108PJ-1	5.80	1.32E+05	45.26	8.96	1.28	0.00	39.92	4.57	1.46	0.10
SWFTS-MW14	10/25/2018	Biotrap	108PJ-2	< 80.60	1.34E+06	50.22	8.67	2.57	3.06	31.61	3.89	0.14	0.12
SWFTS-MW15	10/25/2018	Biotrap	108PJ-3	0.50	8.14E+04	66.94	5.07	0.00	0.00	27.37	0.62	3.72	0.34
SWFTS-IW06A	11/28/2018	Biotrap	095PK-1	< 250.00	2.48E+06	46.92	19.40	2.03	3.09	27.08	1.48	0.31	0.10
SWFTS-IW11	11/28/2018	Biotrap	095PK-2	< 250.00	2.48E+06	50.80	20.30	1.50	1.67	24.16	1.60	0.16	0.08
SWFTS-IW20	11/28/2018	Biotrap	095PK-3	< 250.00	3.00E+06	46.11	20.54	1.02	1.30	28.21	2.80	0.43	0.15
SWFTS-IW02A	1/8/2020	Biotrap	016RA-2	< 250.00	7.30E+05	65.37	4.47	0.94	0.73	19.53	8.98	0.49	1.84
SWFTS-MW07A	1/8/2020	Biotrap	016RA-3	< 250.00	7.36E+04	60.47	0.00	0.00	0.00	39.53	0.00	0.49	1.84
SWFTS-MW09B	1/8/2020	Biotrap	016RA-1	< 250.00	7.47E+04	37.79	0.00	0.00	0.00	62.22	0.00	0.47	0.00
SWFTS-MW14	1/8/2020	Biotrap	016RA-4	< 250.00	1.29E+05	39.49	0.09	5.79	6.79	33.03	14.83	1.03	1.07
SWFTS-IW02A	12/17/2020	Biotrap	122RL-2	< 250.00	3.95E+06	26.19	38.84	2.87	1.83	29.75	0.54	1.19	0.16
SWFTS-MW07A	12/17/2020	Biotrap	122RL-3	< 250.00	7.37E+04	61.00	4.19	0.00	15.21	19.59	0.00	0.81	0.13
SWFTS-MW09B	12/17/2020	Biotrap	122RL-1	< 250.00	9.42E+04	64.47	4.21	1.34	0.00	27.46	2.50	0.99	0.00
SWFTS-MW14	12/17/2020	Biotrap	122RL-4	4.74E+03	2.38E+05	60.13	4.10	0.00	11.92	23.85	0.00	0.30	0.04
SWFTS-IW02A	1/7/2022	Biotrap	011TA-1	6.98E+04	4.75E+06	53.42	12.02	2.21	1.69	28.05	2.60	0.30	0.40
SWFTS-MW07A	1/7/2022	Biotrap	011TA-2	2.39E+03	2.74E+04	78.67	0.00	0.00	0.00	21.34	0.00	0.70	0.00
SWFTS-MW09B	1/7/2022	Biotrap	011TA-4	< 250.00	< 1.66E+04	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
SWFTS-MW14	1/7/2022	Biotrap	011TA-3	2.91E+05	2.65E+04	100.00	0.00	0.00	0.00	0.00	0.00	0.85	0.00
SWFTS-IW02A	1/16/2023	Biotrap	045UA-1	< 250.00	8.98E+05	46.39	16.94	1.82	4.96	21.30	8.58	0.79	0.90
SWFTS-MW07A	1/16/2023	Biotrap	045UA-2	< 250.00	4.12E+04	58.51	0.00	0.00	0.00	41.49	0.00	0.00	0.00
SWFTS-MW09B	1/16/2023	Biotrap	045UA-3	< 250.00	< 1.66E+04	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
SWFTS-MW14	1/16/2023	Biotrap	045UA-4	< 250.00	1.06E+05	45.95	8.59	0.00	0.00	43.18	2.28	3.84	0.00

Notes

Monos	Monoenoic
TerBrSats	Terminally Branched Saturated
BrMonos	Branched Monoenoic
MidBrSats	Mid-Chain Branched Saturated
Nsats	Normal Saturated
<	Not detected
---	Not tested

Table D.5
Soil Analytical Results Summary
Seep Well Field Area Bioremediation Treatability Study

Location	Start Depth (ft bgs)	End Depth (ft bgs)	Sample Date	QCType	Lab SampleID	SW6010	SW9060A	Volatile Fatty Acids, Ion Chromatography					
						Calcium	Total Organic Carbon	Acetic Acid	Butyric Acid	Formic Acid	Lactic Acid	Propionic Acid	Pyruvic Acid
						mg/kg	g/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
SWFTS-BH11	15	15.2	8/10/2022	N	550-188805-1	27,000	1.7 J	<1.4	<1.5	<2.0	7.8 J	<1.5	<2.3
SWFTS-BH11	20	20.2	8/10/2022	N	550-188805-2	31,000	1.5 J	<1.5	<1.6	<2.2	<3.0	<1.7	<2.5
SWFTS-BH11	30	30.2	8/10/2022	N	550-188805-3	35,000	1.9 J	<1.6	<1.7	<2.3	<3.2	<1.8	<2.7
SWFTS-BH11	40	40.2	8/10/2022	N	550-188805-4	140,000	2.1 J	<1.6	<1.7	<2.4	<3.3	<1.8	<2.7
SWFTS-BH11	45	45.2	8/10/2022	N	550-188805-5	110,000	6.9 J+	<1.6	<1.7	<2.3	<3.1	<1.8	<2.6
SWFTS-BH12	11	11.2	8/12/2022	N	550-188805-28	9,300	<0.90	<1.4	<1.5	<2.1	<2.8	<1.6	<2.3
SWFTS-BH12	16	16.2	8/12/2022	N	550-188805-29	6,500	0.91 J	<1.5	<1.6	<2.2	8.8 J	<1.7	<2.5
SWFTS-BH12	21	21.2	8/12/2022	N	550-188805-30	4,300	0.90 J	<1.5	<1.6	<2.2	3.6 J	<1.7	<2.5
SWFTS-BH12	27	27.2	8/12/2022	N	550-188805-31	6,400	0.98 J	<1.6	<1.7	<2.4	<3.2	<1.8	<2.7
SWFTS-BH12	36	36.2	8/12/2022	N	550-188805-32	99,000	<0.90	<1.6	<1.7	<2.3	<3.1	<1.8	<2.6
SWFTS-BH13	11	11	8/11/2022	N	550-188805-6	6,600	1.4 J	<1.5	<1.6	<2.1	5.5 J	<1.7	<2.4
SWFTS-BH13	22	22.2	8/11/2022	N	550-188805-7	3,900	1.9 J	<1.5	<1.6	2.5 J	<3.0	<1.7	<2.5
SWFTS-BH13	32.6	32.8	8/11/2022	N	550-188805-8	70,000	5.2 J+	<1.4	<1.5	2.4 J	3.4 J	<1.6	<2.3
SWFTS-BH13	39	39.2	8/11/2022	N	550-188805-9	89,000	4.8 J+	6.4 J	<1.7	7.6 J	<3.2	<1.8	<2.6
SWFTS-BH13	41	41.2	8/11/2022	FD	550-188805-11	65,000	8.4 J	64	<1.7	2.5 J	4.6 J	24	<2.6
SWFTS-BH13	41	41.2	8/11/2022	N	550-188805-10	63,000	2.6 J	58	<1.6	2.6 J	4.4 J	23	<2.4
SWFTS-BH14	12.8	13	8/15/2022	N	550-189011-1	19,000	<0.90	<1.5	<1.6	<2.2	<3.0	<1.7	<2.5
SWFTS-BH14	15.5	15.7	8/15/2022	N	550-189011-2	5,700	<0.90	<1.5	<1.6	<2.2	<3.0	<1.7	<2.5
SWFTS-BH14	18	18.2	8/15/2022	N	550-189011-3	4,900	<0.90	<1.5	<1.6	<2.2	<3.0	<1.7	<2.5
SWFTS-BH14	25.3	25.5	8/15/2022	N	550-189011-4	4,500	<0.90	<1.5	<1.6	<2.2	<3.0	<1.7	<2.5
SWFTS-BH14	29	29.2	8/15/2022	N	550-189011-5	7,700	<0.90	<1.5	<1.6	<2.2	<3.0	<1.7	<2.5
SWFTS-BH15	18.5	18.7	8/11/2022	N	550-188805-12	41,000	<0.90	<1.6	<1.7	2.7 J	<3.2	<1.8	<2.7
SWFTS-BH15	21	21.2	8/11/2022	N	550-188805-13	5,600	<0.90	<1.5	<1.6	<2.2	<3.0	<1.7	<2.5
SWFTS-BH15	34.5	34.7	8/11/2022	N	550-188805-14	38,000	<0.90	<1.4	<1.5	<2.0	<2.8	<1.6	<2.3
SWFTS-BH15	37.5	37.7	8/11/2022	N	550-188805-15	56,000	1.1 J	<1.6	<1.7	<2.4	<3.2	<1.8	<2.7
SWFTS-BH15	41	41.2	8/11/2022	N	550-188805-16	71,000	2.8 J	<1.5	<1.6	<2.2	<3.0	<1.7	<2.5
SWFTS-BH16	17.3	17.5	8/11/2022	N	550-188805-17	6,100	0.91 J	<1.4	<1.5	2.3 J	<2.8	<1.6	<2.3
SWFTS-BH16	21.5	21.7	8/11/2022	FD	550-188805-19	9,400	<0.90	<1.6	<1.7	<2.3	3.9 J	3.9 J	<2.6
SWFTS-BH16	21.5	21.7	8/11/2022	N	550-188805-18	10,000	<0.90	<1.5	<1.6	<2.1	3.7 J	<1.6	<2.4
SWFTS-BH16	26.5	26.7	8/11/2022	N	550-188805-20	8,900	<0.90 UJ	<1.4	<1.5	<2.1	3.8 J	<1.6	<2.4
SWFTS-BH16	31	31.2	8/11/2022	N	550-188805-21	38,000	1.5 J	<1.4	<1.5	2.6 J	<2.8	3.7 J	<2.3
SWFTS-BH16	42.3	42.5	8/11/2022	N	550-188805-22	100,000	2.9 J	<1.6	<1.7	<2.4	<3.2	<1.8	<2.7
SWFTS-BH17	13	13.2	8/12/2022	N	550-189088-1	4,300	<0.90	<1.5	<1.6	<2.2	<3.0	<1.7	<2.5
SWFTS-BH17	17	17.2	8/12/2022	FD	550-189088-3	15,000	1.1 J	<1.5	<1.6	<2.2	<3.0	<1.7	<2.5
SWFTS-BH17	17	17.2	8/12/2022	N	550-189088-2	12,000	<0.90	<1.5	<1.6	<2.2	<3.0	<1.7	<2.5
SWFTS-BH17	23	23.2	8/12/2022	N	550-189088-4	9,400	1.0 J	<1.5	<1.6	<2.2	<3.0	<1.7	<2.5
SWFTS-BH17	26	26.2	8/12/2022	N	550-189088-5	5,300	1.0 J	<1.4	<1.5	<2.1	<2.8	<1.6	<2.3
SWFTS-BH17	40	40.2	8/12/2022	N	550-189088-6	53,000	<0.90	<1.5	<1.6	<2.2	<3.0	<1.7	<2.5
SWFTS-BH18	13	13.2	8/11/2022	N	550-188805-23	6,400	<0.90 UJ	<1.4	<1.5	<2.0	4.8 J	<1.6	<2.3
SWFTS-BH18	20	20.2	8/11/2022	N	550-188805-24	20,000	<0.90 UJ	<1.6	<1.7	<2.4	<3.3	<1.9	<2.7
SWFTS-BH18	23	23.2	8/11/2022	N	550-188805-25	4,600	<0.90 UJ	<1.4	<1.5	<2.0	<2.8	<1.6	<2.3
SWFTS-BH18	27.5	27.7	8/11/2022	N	550-188805-26	8,800	<0.90 UJ	<1.5	<1.6	<2.2	<3.0	<1.7	<2.5
SWFTS-BH18	34.5	34.7	8/11/2022	N	550-188805-27	51,000	<0.90 UJ	<1.5	<1.5	<2.1	3.1 J	<1.6	<2.4
SWFTS-BH19	11	11.2	8/15/2022	N	550-189011-6	12,000	<0.90	<1.5	<1.6	<2.2	7.8 J	3.5 J	<2.5
SWFTS-BH19	15.5	15.7	8/15/2022	N	550-189011-7	7,100	<0.90	<1.5	<1.6	<2.2	<3.0	<1.7	<2.5
SWFTS-BH19	20.5	20.7	8/15/2022	N	550-189011-8	13,000	<0.90	<1.5	<1.6	<2.2	<3.0	<1.7	<2.5
SWFTS-BH19	25	25.2	8/15/2022	N	550-189011-9	68,000	<0.90	<1.5	<1.6	<2.2	<3.0	<1.7	<2.5
SWFTS-BH19	28	29	8/15/2022	N	550-189011-10	98,000	<0.90	<1.5	<1.6	<2.2	<3.0	<1.7	<2.5
SWFTS-BH20	13.7	13.9	8/13/2022	FD	550-189013-2	4,900 J	1.3 J	<1.5	<1.6	<2.2	<3.0	<1.7	<2.5
SWFTS-BH20	13.7	13.9	8/13/2022	N	550-189013-1	8,600 J	1.3 J	<1.5	<1.6	<2.2	<3.0	<1.7	<2.5
SWFTS-BH20	24.2	24.4	8/13/2022	N	550-189013-3	16,000	1.2 J	<1.5	<1.6	<2.1	<2.9	<1.7	<2.4
SWFTS-BH20	26	26.2	8/13/2022	N	550-189013-4	7,800	0.98 J	<1.4	<1.5	<2.1	<2.9	<1.6	<2.4

Table D.5
Soil Analytical Results Summary
Seep Well Field Area Bioremediation Treatability Study

Location	Start Depth (ft bgs)	End Depth (ft bgs)	Sample Date	QCType	Lab SampleID	SW6010	SW9060A	Volatile Fatty Acids, Ion Chromatography					
						Calcium	Total Organic Carbon	Acetic Acid	Butyric Acid	Formic Acid	Lactic Acid	Propionic Acid	Pyruvic Acid
						mg/kg	g/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
SWFTS-BH20	31	31.2	8/13/2022	N	550-189013-5	61,000	<0.90	<1.5	<1.6	<2.2	<3.0	<1.7	<2.5
SWFTS-BH20	35.5	35.7	8/13/2022	N	550-189013-6	44,000	4.2 J+	<1.5	<1.6	<2.2	<3.0	<1.7	<2.5
SWFTS-BH21	16.5	16.7	8/13/2022	FD	550-189013-13	8,500	<0.90	<1.5	<1.6	<2.2	<3.0	<1.7	<2.5
SWFTS-BH21	16.5	16.7	8/13/2022	N	550-189013-12	9,400	<0.90	<1.5	<1.6	<2.2	<2.9	<1.7	<2.5
SWFTS-BH21	19.5	19.7	8/13/2022	N	550-189013-14	9,400	1.1 J	<1.5	<1.6	<2.2	<3.0	<1.7	<2.5
SWFTS-BH21	23.2	23.4	8/13/2022	N	550-189013-15	6,200	<0.90	<1.5	<1.6	<2.2	<3.0	<1.7	<2.5
SWFTS-BH21	28	28.2	8/13/2022	N	550-189013-16	5,100	0.95 J	<1.5	<1.6	<2.2	<2.9	<1.7	<2.4
SWFTS-BH21	32	32.2	8/13/2022	N	550-189013-17	11,000	0.98 J	<1.5	<1.6	<2.2	<3.0	<1.7	<2.5
SWFTS-BH22	12.4	12.6	8/13/2022	N	550-189013-7	7,100	1.2 J	<1.5	<1.6	<2.2	<3.0	<1.7	<2.5
SWFTS-BH22	20.5	20.7	8/13/2022	N	550-189013-8	5,200	1.0 J	<1.5	<1.6	<2.2	<3.0	<1.7	<2.5
SWFTS-BH22	28.5	28.7	8/13/2022	N	550-189013-9	4,300	<0.90	<1.5	<1.6	<2.2	<3.0	<1.7	<2.5
SWFTS-BH22	36	36.2	8/13/2022	N	550-189013-10	68,000	1.4 J	<1.4	<1.5	<2.1	<2.9	<1.6	<2.4
SWFTS-BH22	49	49.2	8/13/2022	N	550-189013-11	170,000	<0.90	<1.5	<1.6	<2.2	<3.0 UJ	<1.7	<2.5
SWFTS-BH23	20.2	20.4	8/15/2022	N	550-189011-17	13,000	<0.90	<1.5	<1.6	<2.2	<2.9	<1.7	<2.5
SWFTS-BH23	24	24.2	8/15/2022	N	550-189011-18	9,000	<0.90	<1.5	<1.6	<2.2	<3.0	<1.7	<2.5
SWFTS-BH23	27	27.2	8/15/2022	N	550-189011-19	24,000	1.3 J	<1.5	<1.6	<2.2	<3.0	<1.7	<2.5
SWFTS-BH23	31.3	31.5	8/15/2022	FD	550-189011-21	78,000	1.0 J	<1.5	<1.6	<2.2	<3.0	<1.7	<2.5
SWFTS-BH23	31.3	31.5	8/15/2022	N	550-189011-20	66,000	<0.90	<1.5	<1.6	<2.2	<3.0	<1.7	<2.5
SWFTS-BH23	36.7	36.9	8/15/2022	N	550-189011-22	56,000	1.1 J	<1.5	<1.6	<2.1	<2.9	<1.7	<2.4
SWFTS-BH24	19	19.2	8/15/2022	N	550-189011-11	31,000	1.1 J	<1.5	<1.6	<2.2	<3.0	<1.7	<2.5
SWFTS-BH24	24.5	24.7	8/15/2022	N	550-189011-12	7,300	3.1 J	<1.5	<1.6	3.4 J	<3.0	<1.7	<2.5
SWFTS-BH24	27	27.2	8/15/2022	N	550-189011-13	23,000	1.5 J	<1.5	<1.6	2.5 J	<3.0	<1.7	<2.5
SWFTS-BH24	29.3	29.5	8/15/2022	N	550-189011-14	43,000	1.6 J	<1.5	<1.6	<2.2	<3.0	<1.7	<2.5
SWFTS-BH24	44.5	44.7	8/15/2022	FD	550-189011-16	87,000	2.0 J	<1.5	<1.6	<2.2	<3.0	<1.7	<2.5
SWFTS-BH24	44.5	44.7	8/15/2022	N	550-189011-15	83,000	3.0 J	<1.5	<1.6	<2.2	<3.0	<1.7	<2.5
SWFTS-BH25	17	17.2	8/15/2022	N	550-189011-23	39,000	0.91 J	<1.5	<1.6	<2.2	<3.0	<1.7	<2.5
SWFTS-BH25	19.8	20	8/15/2022	N	550-189011-24	43,000	1.1 J	<1.5	<1.6	<2.2	<3.0	<1.7	<2.5
SWFTS-BH25	26.5	26.7	8/15/2022	N	550-189011-25	13,000	<0.90	<1.5	<1.6	<2.1	<2.9	<1.7	<2.4
SWFTS-BH25	29.2	29.4	8/15/2022	N	550-189011-26	25,000	<0.90	<1.5	<1.6	<2.2	<3.0	<1.7	<2.5
SWFTS-BH25	34.8	35	8/15/2022	N	550-189011-27	51,000	1.0 J	<1.5	<1.6	<2.2	<3.0	<1.7	<2.5
SWFTS-BH26	16.3	16.5	8/16/2022	N	550-189012-7	4,500	0.97 J	<1.5	<1.6	<2.2	<3.0	<1.7	<2.5
SWFTS-BH26	18.5	18.7	8/16/2022	N	550-189012-8	5,700	<0.90	<1.5	<1.6	<2.2	<3.0	<1.7	<2.5
SWFTS-BH26	22.3	22.5	8/16/2022	N	550-189012-9	5,000	<0.90	<1.5	<1.6	<2.2	<3.0	<1.7	<2.5
SWFTS-BH26	31	31.2	8/16/2022	N	550-189012-10	47,000	<0.90	<1.4	<1.5	<2.1	<2.9	<1.6	<2.4
SWFTS-BH26	48.5	48.7	8/16/2022	N	550-189012-11	4,300	<0.90	<1.5	<1.6	<2.2	<2.9	<1.7	<2.4
SWFTS-BH27	11.8	12	8/16/2022	N	550-189012-1	6,200	<0.90	<1.5	<1.6	<2.2	<3.0	<1.7	<2.5
SWFTS-BH27	16.5	16.7	8/16/2022	FD	550-189012-3	14,000	<0.90	<1.5	<1.6	<2.2	<3.0	<1.7	<2.5
SWFTS-BH27	16.5	16.7	8/16/2022	N	550-189012-2	11,000	<0.90	<1.5	<1.6	<2.2	<3.0	<1.7	<2.5
SWFTS-BH27	23	23.2	8/16/2022	N	550-189012-4	6,900	0.99 J	<1.5	<1.6	<2.2	<2.9	<1.7	<2.5
SWFTS-BH27	28	28.2	8/16/2022	N	550-189012-5	83,000	1.7 J	<1.5	<1.6	<2.2	<3.0	<1.7	<2.5
SWFTS-BH27	36.2	36.4	8/16/2022	N	550-189012-6	60,000	1.8 J	<1.5	<1.6	<2.2	<3.0	<1.7	<2.5
SWFTS-BH28	17.3	17.5	8/16/2022	FD	550-189012-23	44,000 J	<0.90	<1.5	<1.6	<2.2	<2.9	<1.7	<2.4
SWFTS-BH28	17.3	17.5	8/16/2022	N	550-189012-22	16,000 J	<0.90	<1.5	<1.6	<2.1	<2.9	<1.7	<2.4
SWFTS-BH28	21	21.2	8/16/2022	N	550-189012-24	18,000	<0.90	<1.5	<1.6 UJ	<2.2 UJ	<3.0 UJ	<1.7	<2.5
SWFTS-BH28	26	26.2	8/16/2022	N	550-189012-25	7,100	<0.90	<1.5	<1.6	<2.2	<3.0	<1.7	<2.5
SWFTS-BH28	32.5	32.7	8/16/2022	N	550-189012-26	22,000	<0.90	<1.4	<1.5	<2.1	<2.9	<1.6	<2.4
SWFTS-BH28	41	41.2	8/16/2022	N	550-189012-27	86,000	0.94 J	<1.5	<1.6	<2.2	<3.0	<1.7	<2.5
SWFTS-BH29	24.5	24.7	8/16/2022	N	550-189012-17	10,000	<0.90	<1.5 UJ	<1.6 UJ	<2.2 UJ	<3.0 UJ	<1.7	<2.5
SWFTS-BH29	28	28.2	8/16/2022	N	550-189012-18	13,000	<0.90	<1.5	<1.6	<2.2	<3.0	<1.7	<2.5
SWFTS-BH29	36.5	36.7	8/16/2022	N	550-189012-19	11,000	<0.90	<1.5	<1.6	<2.1	<2.9	<1.7	<2.4
SWFTS-BH29	40	40.2	8/16/2022	N	550-189012-20	20,000	<0.90	<1.5	<1.6	<2.2	<2.9	<1.7	<2.5
SWFTS-BH29	43.5	43.7	8/16/2022	N	550-189012-21	110,000	<0.90	<1.5	<1.6	<2.2	<3.0	<1.7	<2.5

Table D.5
Soil Analytical Results Summary
Seep Well Field Area Bioremediation Treatability Study

Location	Start Depth (ft bgs)	End Depth (ft bgs)	Sample Date	QCType	Lab SampleID	SW6010	SW9060A	Volatile Fatty Acids, Ion Chromatography					
						Calcium	Total Organic Carbon	Acetic Acid	Butyric Acid	Formic Acid	Lactic Acid	Propionic Acid	Pyruvic Acid
						mg/kg	g/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
SWFTS-BH30	18	18.2	8/16/2022	N	550-189012-12	6,100	<0.90	<1.5	<1.6	<2.2	<3.0	<1.7	<2.5
SWFTS-BH30	22.8	23	8/16/2022	N	550-189012-13	36,000	<0.90	<1.5	<1.6	<2.2	<3.0	<1.7	<2.5
SWFTS-BH30	24	24.2	8/16/2022	N	550-189012-14	17,000	<0.90	<1.5	<1.6	<2.2	<3.0	<1.7	<2.5
SWFTS-BH30	29	29.2	8/16/2022	N	550-189012-15	29,000	<0.90	<1.5	<1.6	<2.2	<3.0	<1.7	<2.5
SWFTS-BH30	37	37.2	8/16/2022	FD	550-189012-28	23,000	<0.90	<1.5	<1.6	<2.2	<3.0	<1.7	<2.5
SWFTS-BH30	37	37.2	8/16/2022	N	550-189012-16	24,000	<0.90	<1.4	<1.5	<2.0	<2.8	<1.6	<2.3

Notes:
FD - Field duplicate
J The result is an estimated quantity. The associated numerical value is the approximate concentration of the analyte in the sample.
J+ The result is an estimated quantity, but the result may be biased high.
mg/kg - milligrams per kilogram
g/kg - grams per kilogram
< The analyte was analyzed for, but was not detected above the level of the reported detection limit.

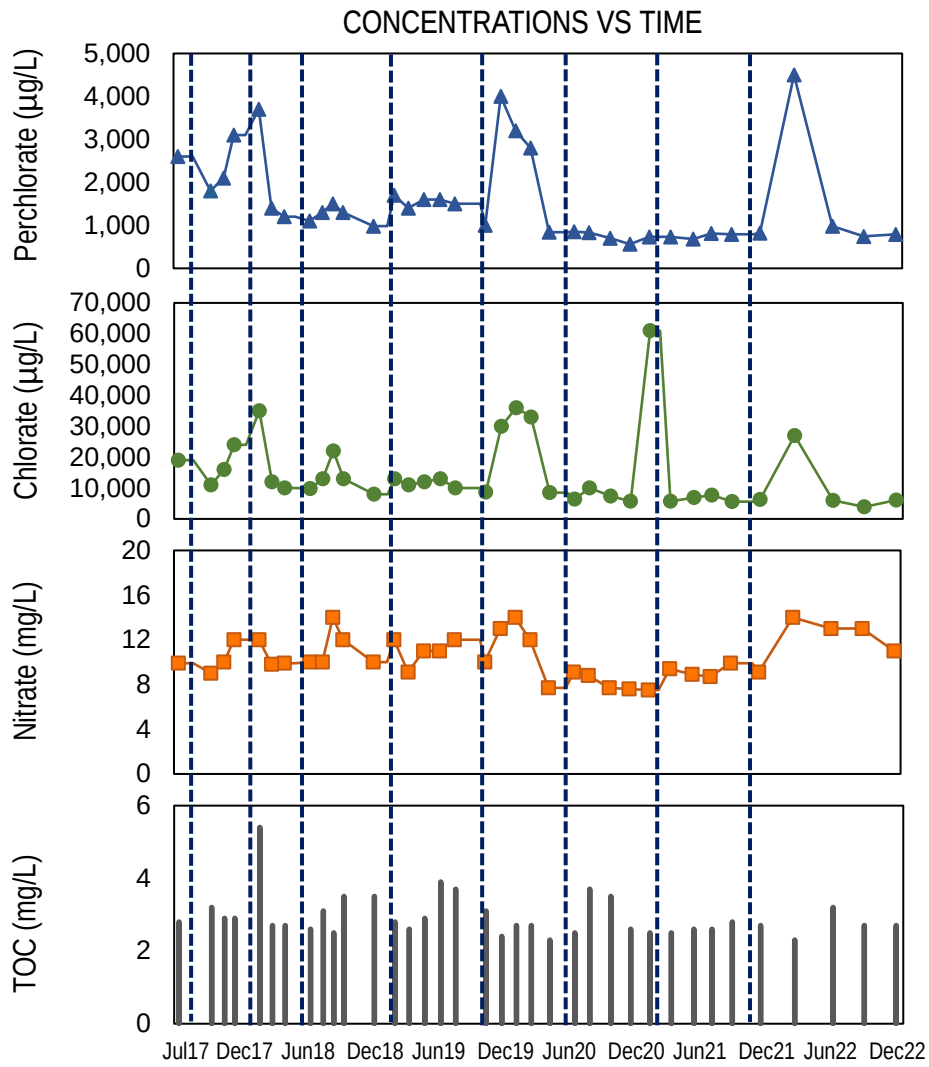
Table D.6
Soil Microbial Results Summary
Seep Well Field Area Bioremediation Treatability Study

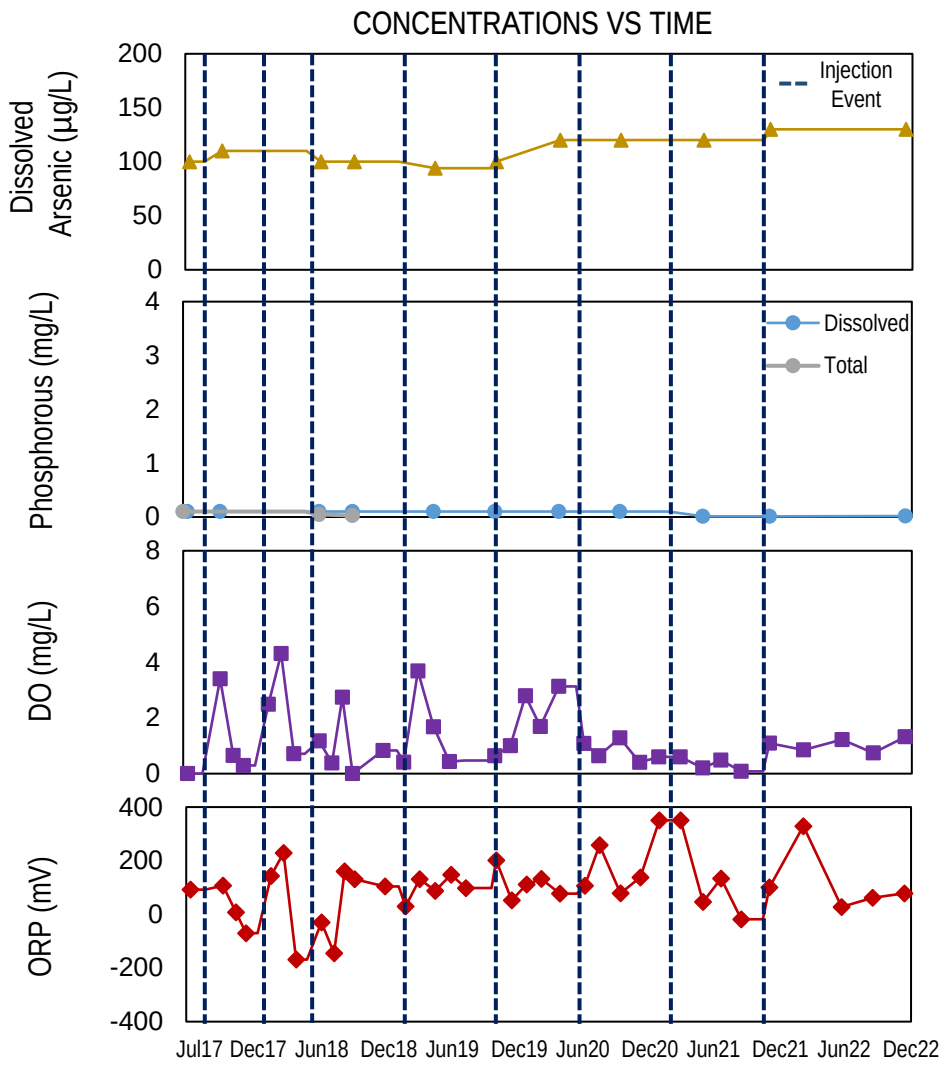
Location	Sample Date	Start Depth (ft bgs)	End Depth (ft bgs)	Lab SampleID	Microbial Census	Microbial Phospholipid Fatty Acid Analysis (PLFA)								
					Perchlorate reductase gene (pcrA)	Total Biomass	Firmicutes (TerBrSats)	Proteobacteria (Monos)	Anaerobic metal reducers (BrMonos)	SRB/Actinomycetes (MidBrSats)	General (Nsats)	Eukaryotes (polyenoics)	Slowed Growth	Decreased Permeability
					cells/g	cells/g	%	%	%	%	%	%	ratio cy/cis	ratio trans/cis
SWFTS-BH11	8/10/2022	20	20.2	052TH-1	< 2.00E+04	3.65E+05	11.71	56.96	0.00	0.00	31.34	0.00	2.20	0.00
SWFTS-BH12	8/12/2022	27	27.2	052TH-12	< 2.00E+04	< 2.94E+05	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
SWFTS-BH13	8/11/2022	11	11	052TH-2	< 2.00E+04	3.74E+06	16.26	41.94	2.68	3.70	33.00	2.41	0.57	0.00
SWFTS-BH13	8/11/2022	22	22.2	052TH-3	< 1.00E+04	4.58E+06	10.83	32.56	18.28	1.63	18.89	17.82	0.50	0.26
SWFTS-BH13	8/11/2022	32.6	32.8	052TH-4	< 2.00E+04	3.43E+07	9.20	42.72	25.15	3.78	12.06	7.09	0.13	0.55
SWFTS-BH13	8/11/2022	39	39.2	052TH-5	< 1.00E+04	1.75E+08	7.00	21.93	4.87	1.54	62.17	2.51	0.18	0.71
SWFTS-BH14	8/15/2022	18	18.2	052TH-20	< 2.00E+04	4.03E+06	1.40	71.60	0.00	2.19	6.19	18.61	0.02	0.00
SWFTS-BH15	8/11/2022	34.5	34.7	052TH-6	< 2.00E+04	6.69E+06	11.65	70.03	1.75	4.59	8.73	3.25	0.37	0.29
SWFTS-BH16	8/11/2022	26.5	26.7	052TH-7	< 1.00E+04	1.33E+06	14.66	44.41	0.00	7.97	15.42	17.54	0.90	0.00
SWFTS-BH17	8/12/2022	13	13.2	052TH-9	< 2.00E+04	3.96E+06	8.33	41.58	0.67	5.76	23.36	20.31	0.82	0.42
SWFTS-BH17	8/12/2022	17	17.2	052TH-10	< 2.00E+04	4.34E+06	18.77	59.01	0.84	4.89	13.63	2.84	1.08	0.22
SWFTS-BH17	8/12/2022	23	23.2	052TH-13	< 2.00E+04	3.66E+05	0.00	63.03	0.00	0.00	25.02	11.95	0.14	0.29
SWFTS-BH17	8/12/2022	26	26.2	052TH-11	< 2.00E+04	1.34E+06	17.07	53.95	0.00	8.34	13.10	7.55	0.71	0.00
SWFTS-BH18	8/11/2022	20	20.2	052TH-8	< 2.00E+04	< 2.82E+05	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
SWFTS-BH19	8/15/2022	15.5	15.7	052TH-21	< 1.00E+04	< 2.89E+05	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
SWFTS-BH20	8/13/2022	31	31.2	052TH-14	< 2.00E+04	2.65E+06	17.88	55.62	1.98	5.86	8.89	9.76	0.58	0.00
SWFTS-BH21	8/13/2022	19.5	19.7	052TH-19	< 2.00E+04	1.41E+06	3.95	68.36	0.00	1.26	10.73	15.69	0.06	0.00
SWFTS-BH22	8/13/2022	12.4	12.6	052TH-15	< 1.00E+04	< 2.83E+05	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
SWFTS-BH22	8/13/2022	20.5	20.7	052TH-16	< 2.00E+04	< 2.91E+05	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
SWFTS-BH22	8/13/2022	28.5	28.7	052TH-17	< 2.00E+04	< 2.82E+05	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
SWFTS-BH22	8/13/2022	36	36.2	052TH-18	< 1.00E+04	< 2.83E+05	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
SWFTS-BH23	8/15/2022	24	24.2	052TH-26	< 1.00E+04	2.19E+07	7.78	65.66	1.04	0.35	10.77	14.42	0.34	0.13
SWFTS-BH24	8/15/2022	19	19.2	052TH-22	< 2.00E+04	4.92E+05	5.92	65.00	0.00	0.00	29.09	0.00	0.32	0.00
SWFTS-BH24	8/15/2022	24.5	24.7	052TH-23	< 1.00E+04	3.49E+07	10.65	31.23	3.96	11.55	37.96	4.64	0.18	0.20
SWFTS-BH24	8/15/2022	27	27.2	052TH-24	< 1.00E+04	1.72E+07	8.34	58.02	2.81	0.55	22.89	7.39	0.07	0.10
SWFTS-BH24	8/15/2022	29.3	29.5	052TH-25	< 1.00E+04	9.04E+05	8.93	78.34	0.00	7.34	5.38	0.00	0.68	0.10
SWFTS-BH25	8/15/2022	17	17.2	052TH-27	< 2.00E+04	4.38E+06	0.90	63.61	0.00	0.51	14.42	20.55	0.03	0.14
SWFTS-BH26	8/16/2022	16.3	16.5	052TH-29	< 1.00E+04	1.26E+07	6.28	65.88	2.12	0.74	18.96	6.04	0.29	0.67
SWFTS-BH26	8/16/2022	18.5	18.7	052TH-30	< 2.00E+04	2.15E+06	6.95	72.76	1.74	2.83	12.00	3.72	0.57	0.07
SWFTS-BH26	8/16/2022	22.3	22.5	052TH-31	< 1.00E+04	9.62E+05	9.53	62.60	7.01	5.50	15.38	0.00	0.91	0.00
SWFTS-BH26	8/16/2022	31	31.2	052TH-32	< 2.00E+04	1.19E+06	4.34	70.68	0.00	0.00	15.93	9.05	0.25	0.10
SWFTS-BH27	8/16/2022	11.8	12	052TH-28	< 2.00E+04	1.27E+07	10.05	69.35	5.33	1.27	7.07	6.93	0.40	0.21
SWFTS-BH28	8/16/2022	17.3	17.5	052TH-35	< 1.00E+04	4.87E+06	2.35	90.60	0.00	0.52	4.62	1.92	5.52	1.01
SWFTS-BH28	8/16/2022	21	21.2	052TH-36	< 1.00E+04	< 2.95E+05	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
SWFTS-BH28	8/16/2022	26	26.2	052TH-37	< 1.00E+04	3.16E+07	4.62	78.74	0.40	6.17	7.08	3.00	0.42	0.07
SWFTS-BH28	8/16/2022	32.5	32.7	052TH-38	< 1.00E+04	2.25E+06	18.69	71.90	0.00	1.88	7.51	0.00	0.70	0.14
SWFTS-BH29	8/16/2022	40	40.2	052TH-34	< 1.00E+04	5.12E+07	10.88	45.15	2.88	9.87	26.88	4.33	0.11	0.62
SWFTS-BH30	8/16/2022	24	24.2	052TH-33	< 2.00E+04	1.11E+06	5.91	75.54	0.00	0.52	6.00	12.05	0.07	0.21

Notes

Monos	Monoenoic
TerBrSats	Terminally Branched Saturated
BrMonos	Branched Monoenoic
MidBrSats	Mid-Chain Branched Saturated
Nsats	Normal Saturated
<	Not detected

Appendix E
Concentration Trends for Effectiveness Monitoring Wells





Notes:

1. Concentrations projected at time of each injection event are based on data from the previous sampling event.
2. PC-58 is located approximately 1,000 feet upgradient of the injection well transects.
3. Monitoring well PC-58 is screened in the alluvium from 7.8 to 32.8 feet bgs.
4. No hydraulic conductivity estimates at monitoring well PC-58 were measured.
5. No mobile porosity estimates at monitoring well PC-58 were measured.

-- Injection Event

Abbreviations: µg/L – microgram per liter amsl – above mean sea level mg/L – milligram per liter TOC – Total Organic Carbon DO – Dissolved Oxygen ORP – Oxidation-Reduction Potential

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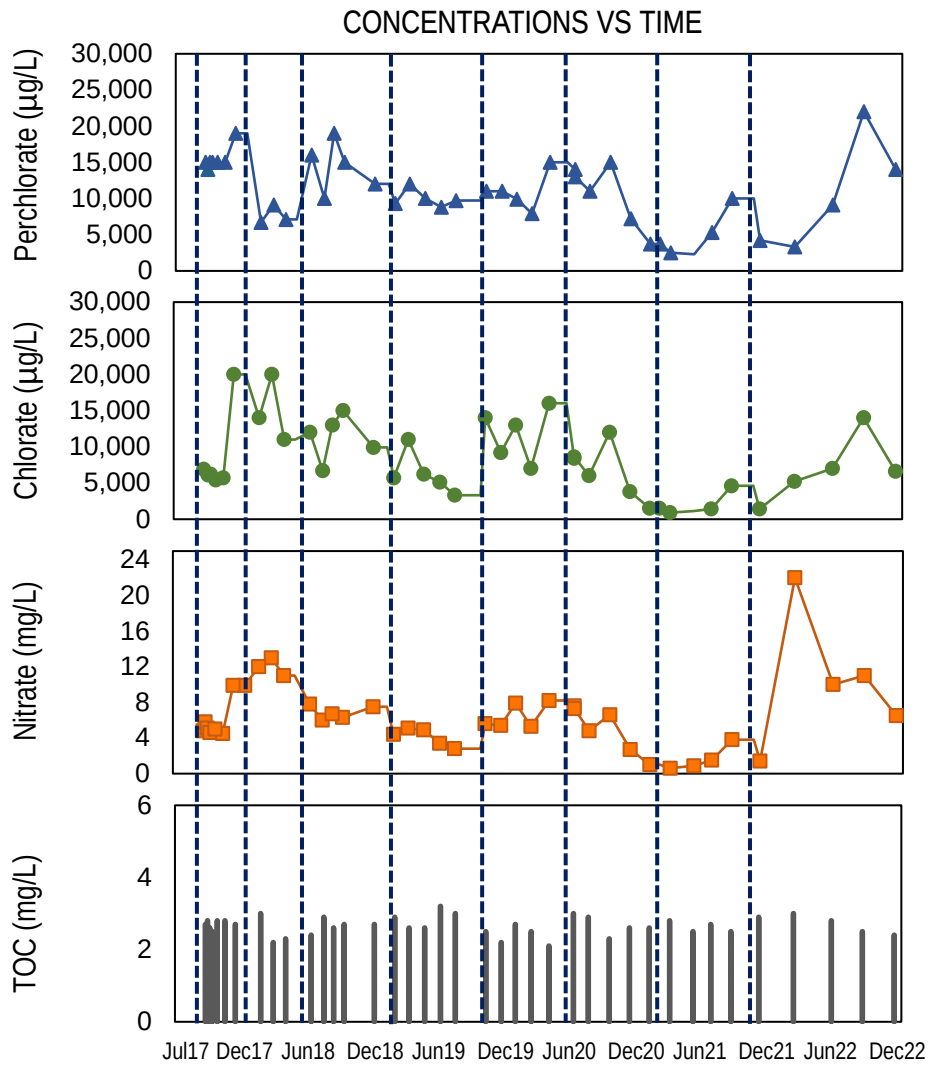
2022 ANNUAL PROGRESS REPORT
HENDERSON, NEVADA

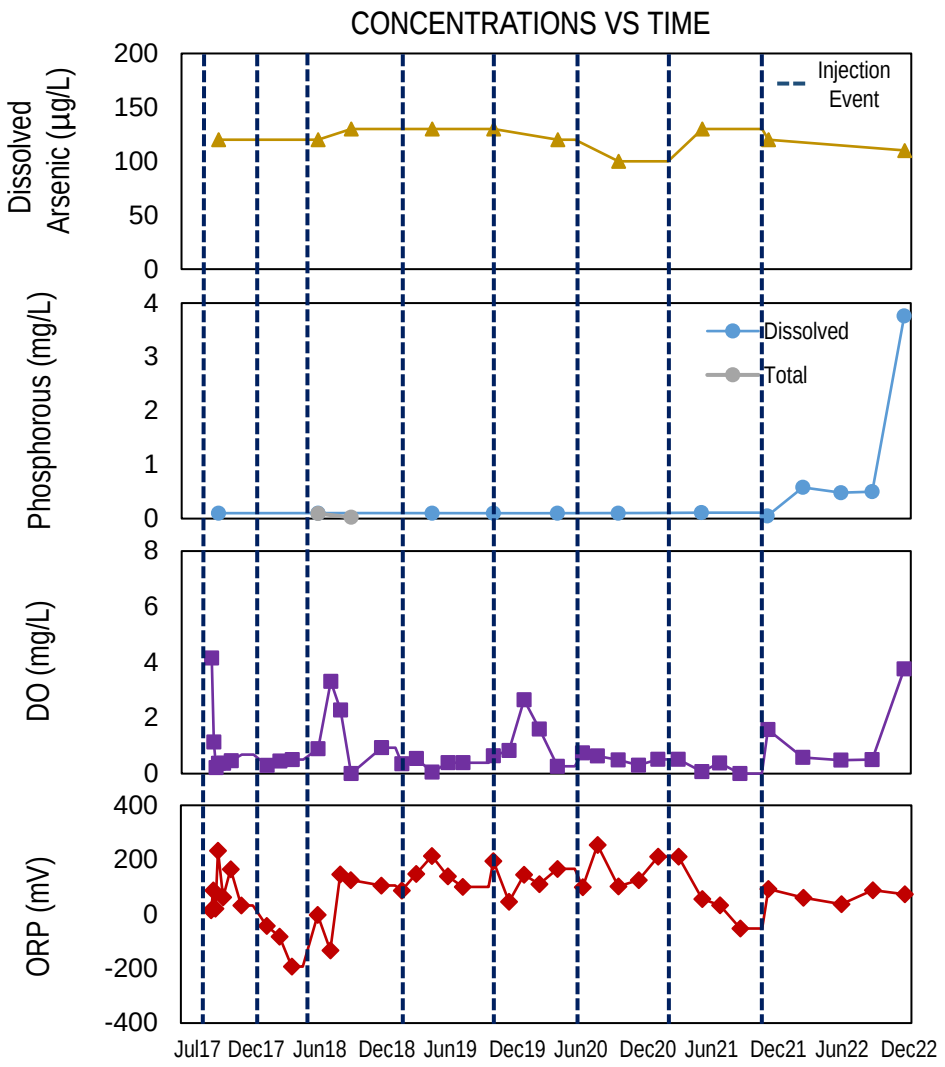
SUMMARY OF EFFECTIVENESS MONITORING RESULTS FOR PC-58

Project No.: 117-7502021-M11
Date: OCTOBER 30, 2023
Designed By: SS

Figure No.
E.1

\\tts100fs1\Shared TEN\Projects\Task M11 - Seep Well Field Bioremediation\Mod 6 Activities - Study Extension\2020 Annual Report\Appendix F\Appendix F - Concentration Trend Graphs.pptx





Notes:

1. Concentrations projected at time of each injection event are based on data from the previous sampling event
2. PC-88 was added to the effectiveness monitoring network after the first injection event.
3. PC-88 is located approximately 350 feet west of injection well transects. PC-88 is considered an upgradient well.
4. Monitoring well PC-88 is screened in the alluvium from 40 to 50 feet bgs.
5. No hydraulic conductivity estimates at monitoring well PC-88 were measured.
6. No mobile porosity estimates at monitoring well PC-88 were measured.

Abbreviations: µg/L – microgram per liter amsl – above mean sea level mg/L – milligram per liter TOC – Total Organic Carbon DO – Dissolved Oxygen ORP – Oxidation-Reduction Potential

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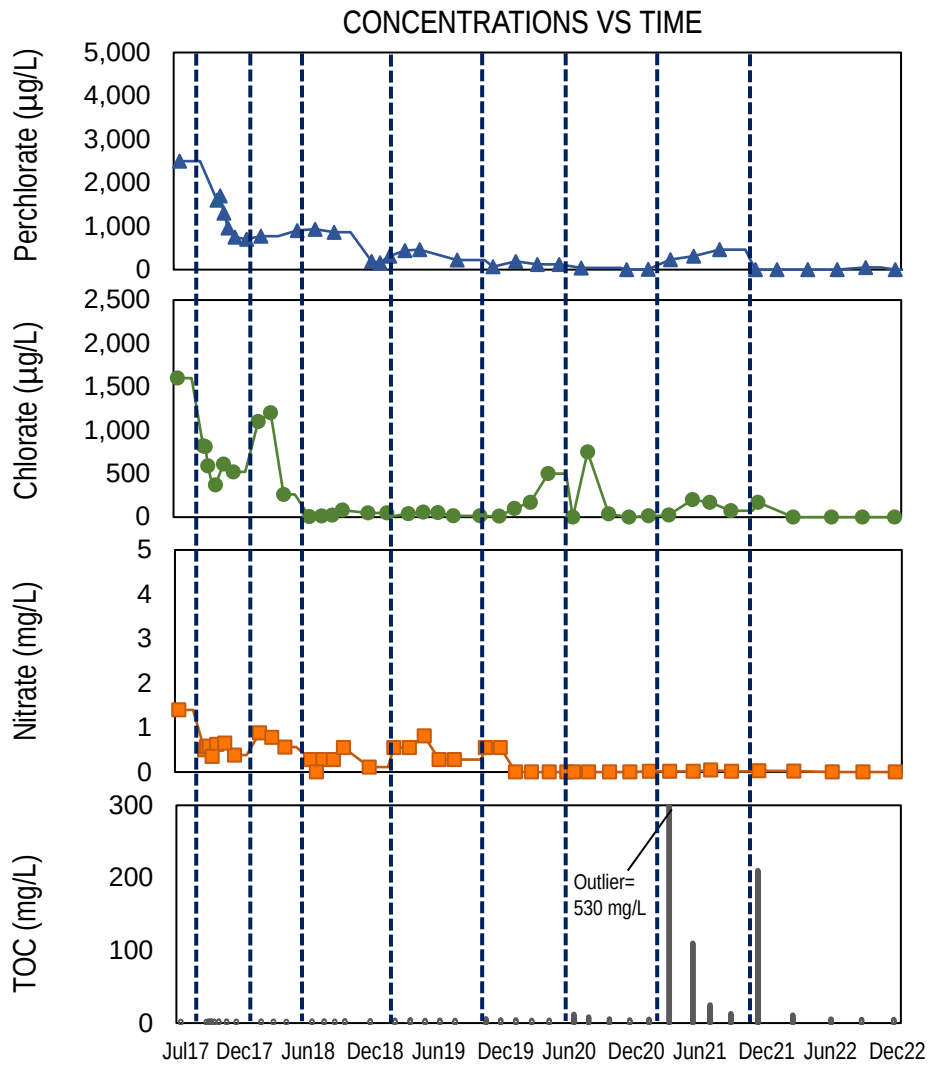
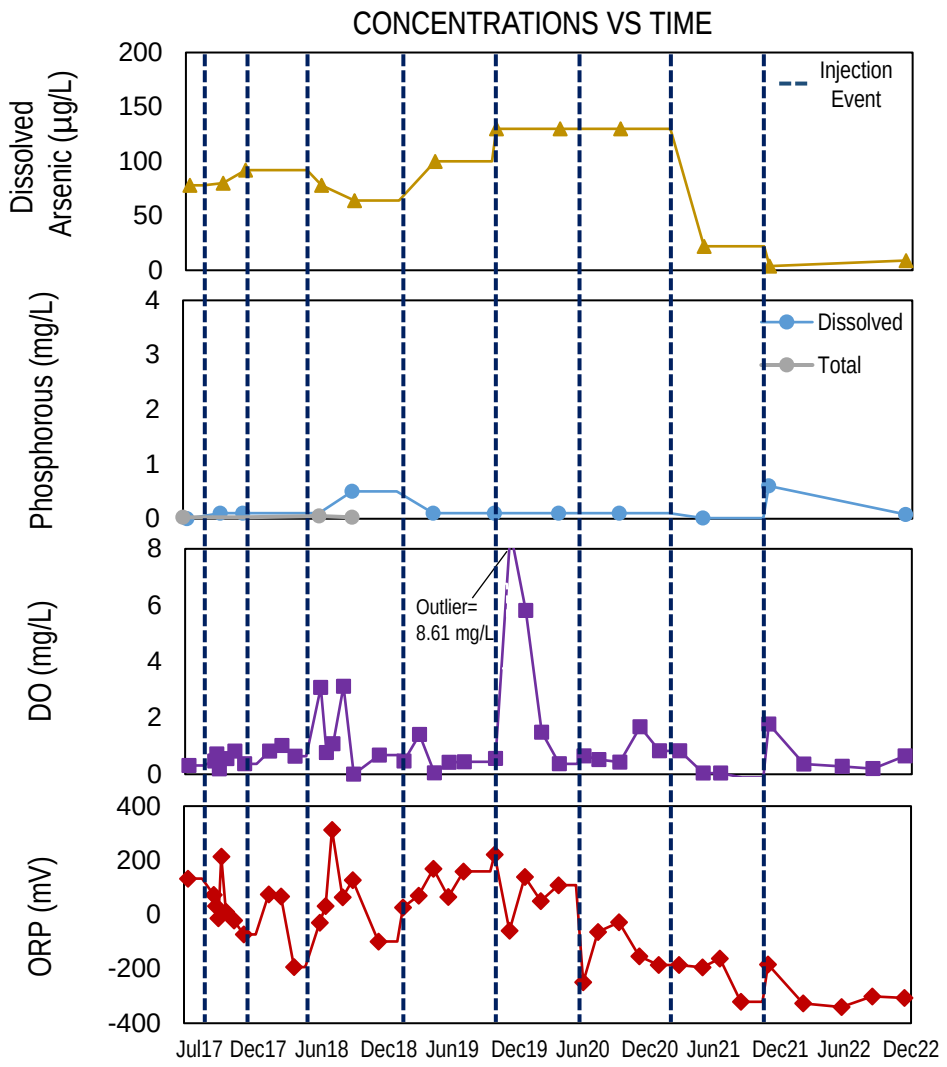
SUMMARY OF EFFECTIVENESS MONITORING RESULTS FOR PC-88

Project No.:	117-7502021-M11
Date:	OCTOBER 30, 2023
Designed By:	SS

Figure No.
E.2

\\tts10fs1\Shared TEN\Projects\Task M11 - Seep Well Field Bioremediation\Mod 6 Activities - Study Extension\2020 Annual Report\Appendix F\Appendix F - Concentration Trend Graphs.pptx





Notes:

1. Concentrations projected at time of each injection event are based on data from the previous sampling event.
2. PC-91 is located approximately 25 feet downgradient of the injection well transects.
3. Monitoring well PC-91 is screened in the alluvium from 11.5 to 21.5 feet bgs.
4. No hydraulic conductivity estimates at monitoring well PC-91 were measured.
5. No mobile porosity estimates at monitoring well PC-91 were measured.

Abbreviations: µg/L – microgram per liter amsl – above mean sea level mg/L – milligram per liter TOC – Total Organic Carbon DO – Dissolved Oxygen ORP – Oxidation-Reduction Potential

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SUMMARY OF EFFECTIVENESS MONITORING RESULTS FOR PC-91

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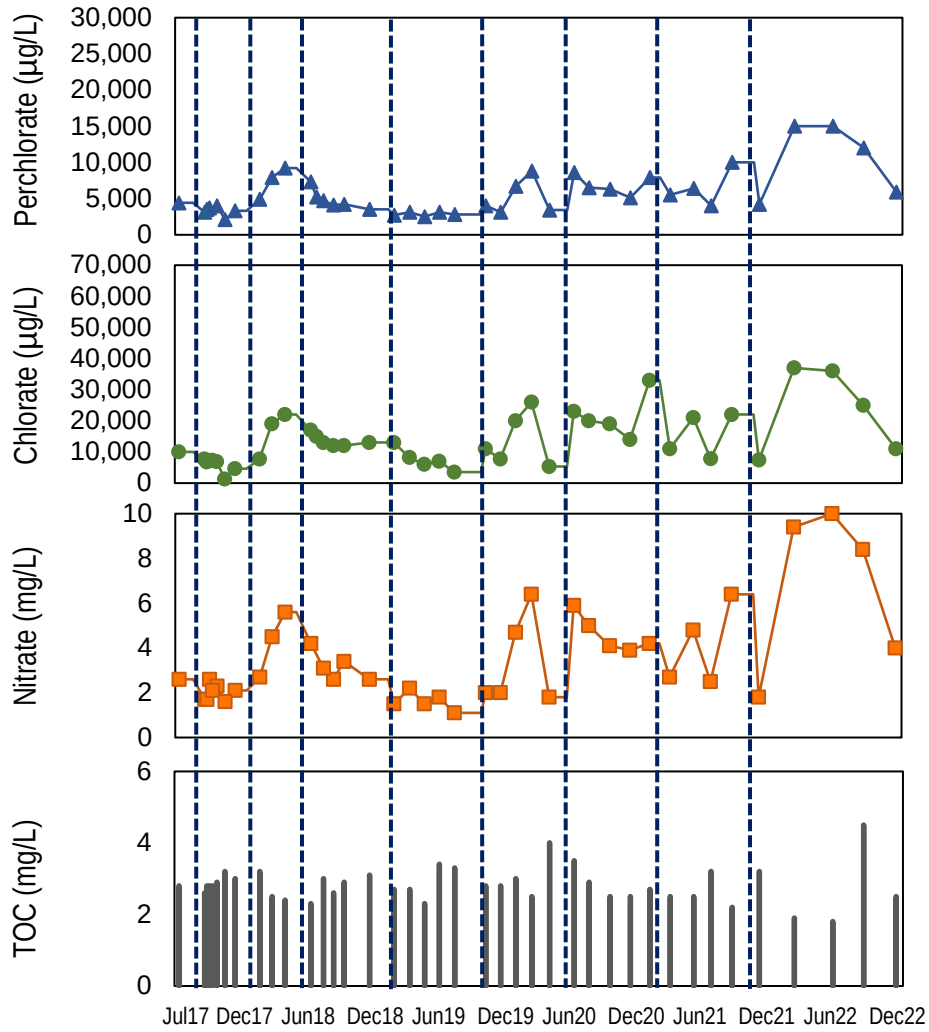
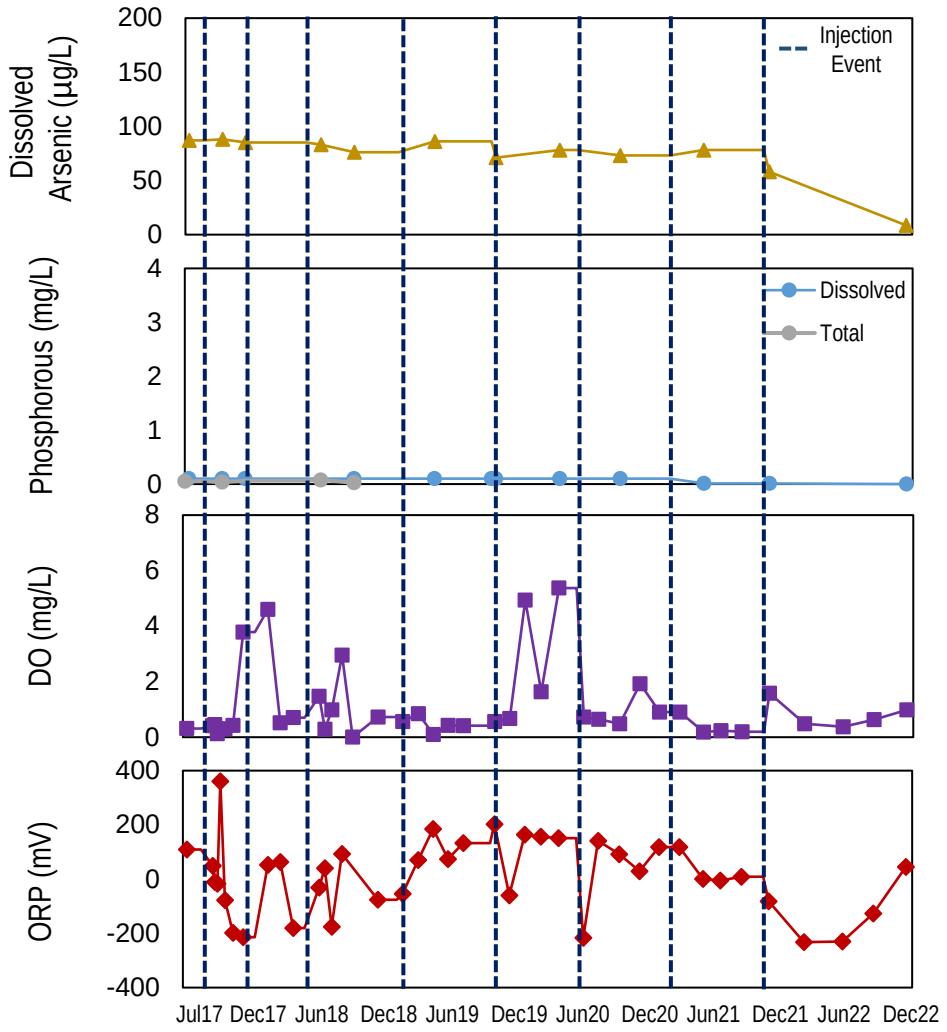
Figure No.
E.3

\\tts10fs1\Shared TEN\Projects\Task M11 - Seep Well Field Bioremediation\Mod 6 Activities - Study Extension\2020 Annual Report\Appendix F\Appendix F - Concentration Trend Graphs.pptx





Notes:

1. Concentrations projected at time of each injection event are based on data from the previous sampling event.
2. PC-92 is located approximately 30 feet downgradient of the injection well transects.
3. Monitoring well PC-92 is screened in the alluvium from 26.5 to 36.5 feet bgs.
4. No hydraulic conductivity estimates at monitoring well PC-92 were measured.
5. No mobile porosity estimates at monitoring well PC-92 were measured.

Abbreviations: µg/L – microgram per liter amsl – above mean sea level mg/L – milligram per liter TOC – Total Organic Carbon DO – Dissolved Oxygen ORP – Oxidation-Reduction Potential

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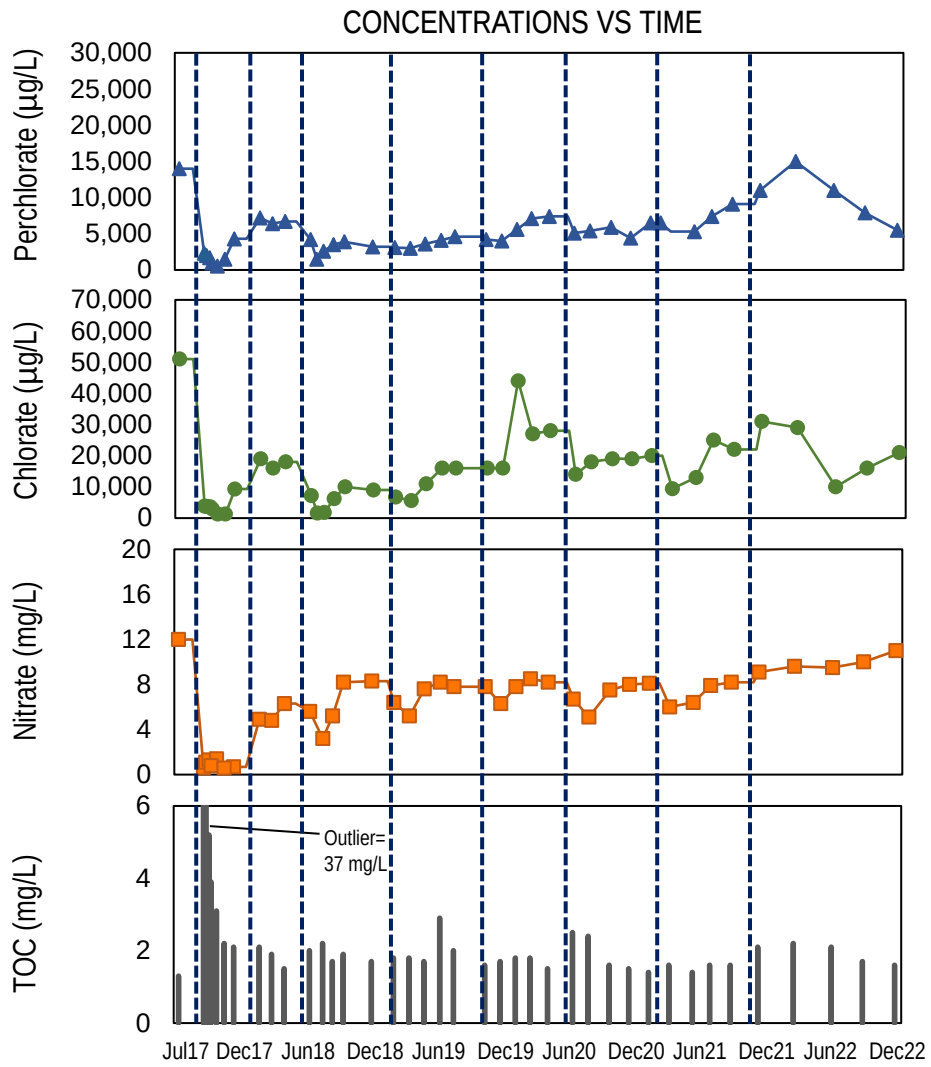
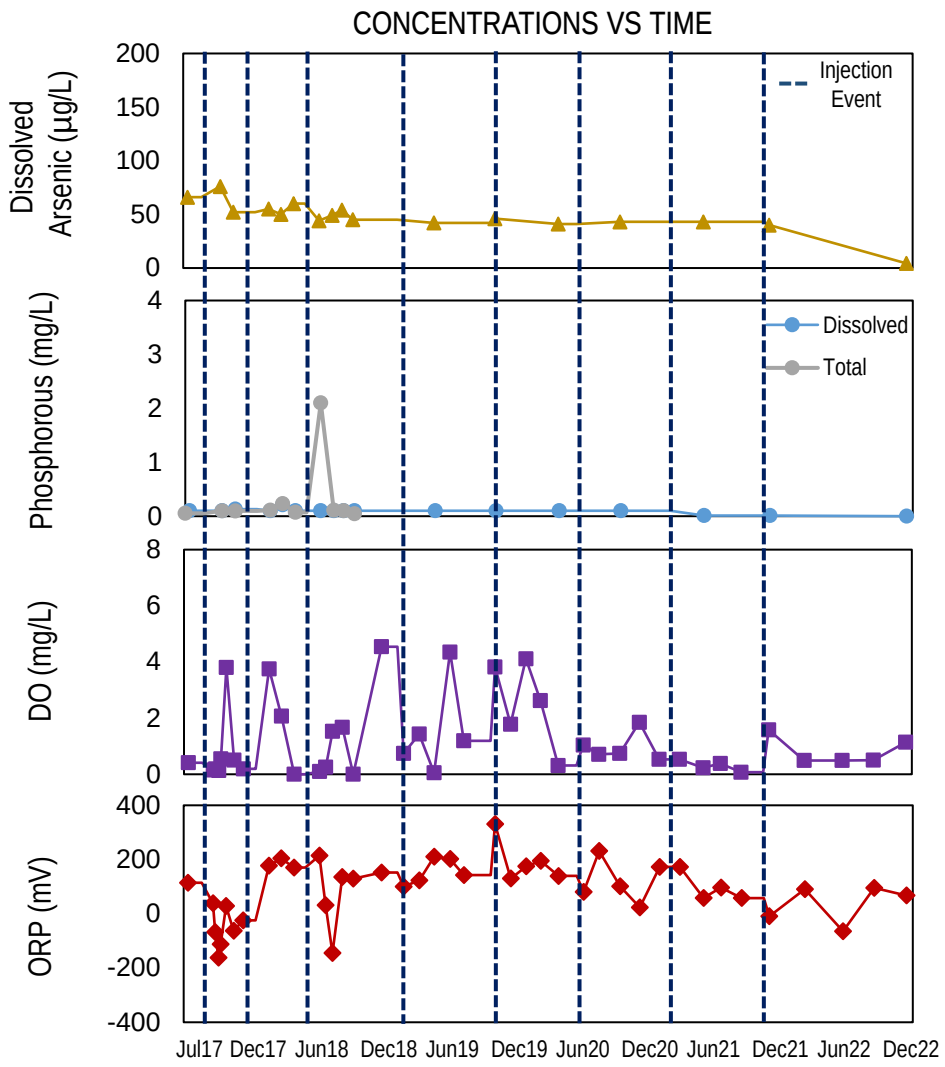
Figure No.
E.4

\\tts10fs1\Shared TEN\Projects\Task M11 - Seep Well Field Bioremediation\Mod 6 Activities - Study Extension\2020 Annual Report\Appendix F\Appendix F - Concentration Trend Graphs.pptx





Notes:

1. Concentrations projected at time of each injection event are based on data from the previous sampling event.
2. PC-94 is located approximately 400 feet downgradient of the injection well transects.
3. Monitoring well PC-94 is screened in the alluvium from 9.5 to 19.5 feet bgs.
4. Slug testing suggests hydraulic conductivity at PC-94 is approximately 2.5 to 3.0 feet/day.
5. Nuclear magnetic resonance logging at PC-94 indicates a mobile porosity estimate of 5%.

Abbreviations: µg/L – microgram per liter amsl – above mean sea level mg/L – milligram per liter TOC – Total Organic Carbon DO – Dissolved Oxygen ORP – Oxidation-Reduction Potential

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SUMMARY OF EFFECTIVENESS MONITORING RESULTS FOR PC-94

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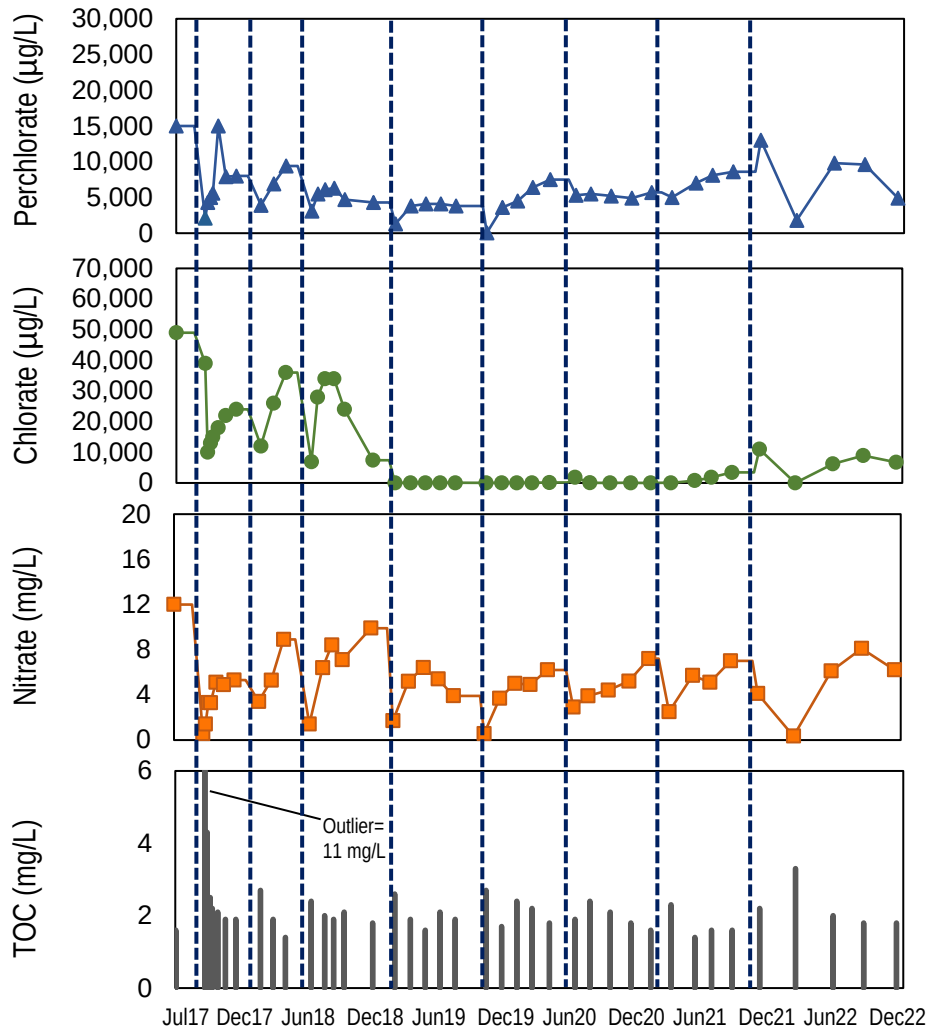
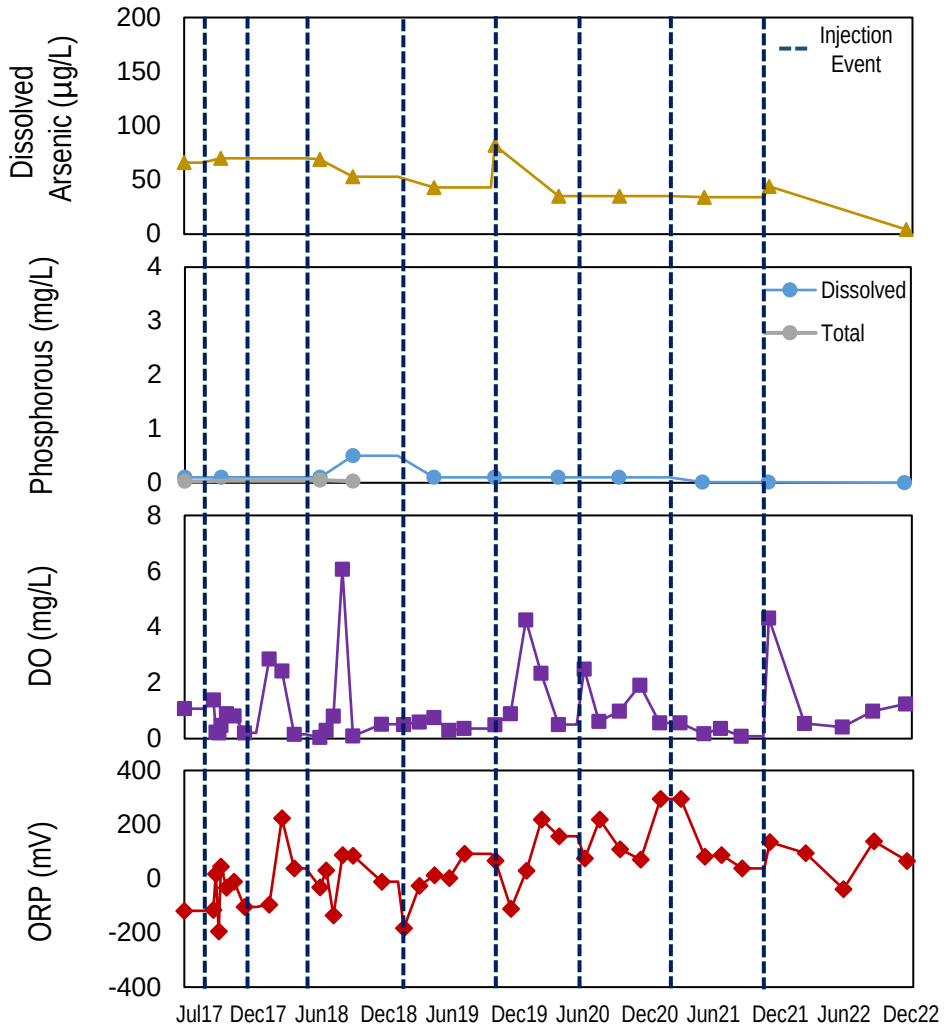
Figure No.
E.5

\\tts10fs1\Shared TEN\Projects\Task M11 - Seep Well Field Bioremediation\Mod 6 Activities - Study Extension\2020 Annual Report\Appendix F\Appendix F - Concentration Trend Graphs.pptx





Notes:

1. Concentrations projected at time of each injection event are based on data from the previous sampling event.
2. SWFTS-MW01 is located approximately 150 feet downgradient of the injection well transects.
3. Monitoring well SWFTS-MW01 is screened in the alluvium from 24.2 to 38.9 feet bgs.
4. Slug testing suggests hydraulic conductivity at SWFTS-MW01 is approximately 48.4 feet/day.
5. Nuclear magnetic resonance logging at SWFTS-MW01 indicates a mobile porosity estimate of 7%.
6. Baseline analytical results shown prior to the first injection event are from samples collected in March 2017.

Abbreviations: µg/L – microgram per liter amsl – above mean sea level mg/L – milligram per liter TOC – Total Organic Carbon DO – Dissolved Oxygen ORP – Oxidation-Reduction Potential

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SUMMARY OF EFFECTIVENESS MONITORING RESULTS FOR SWFTS-MW01

Project No.: 117-7502021-M11
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Figure No.
E.6

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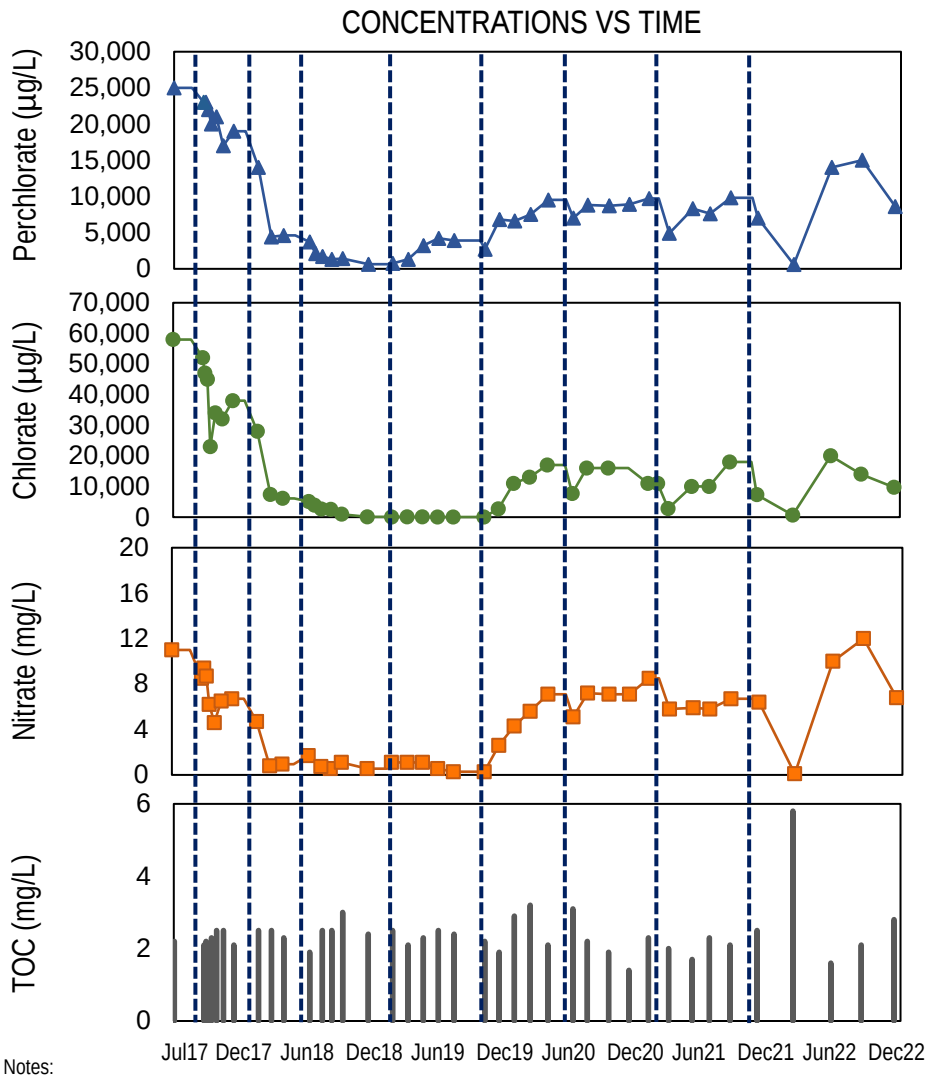

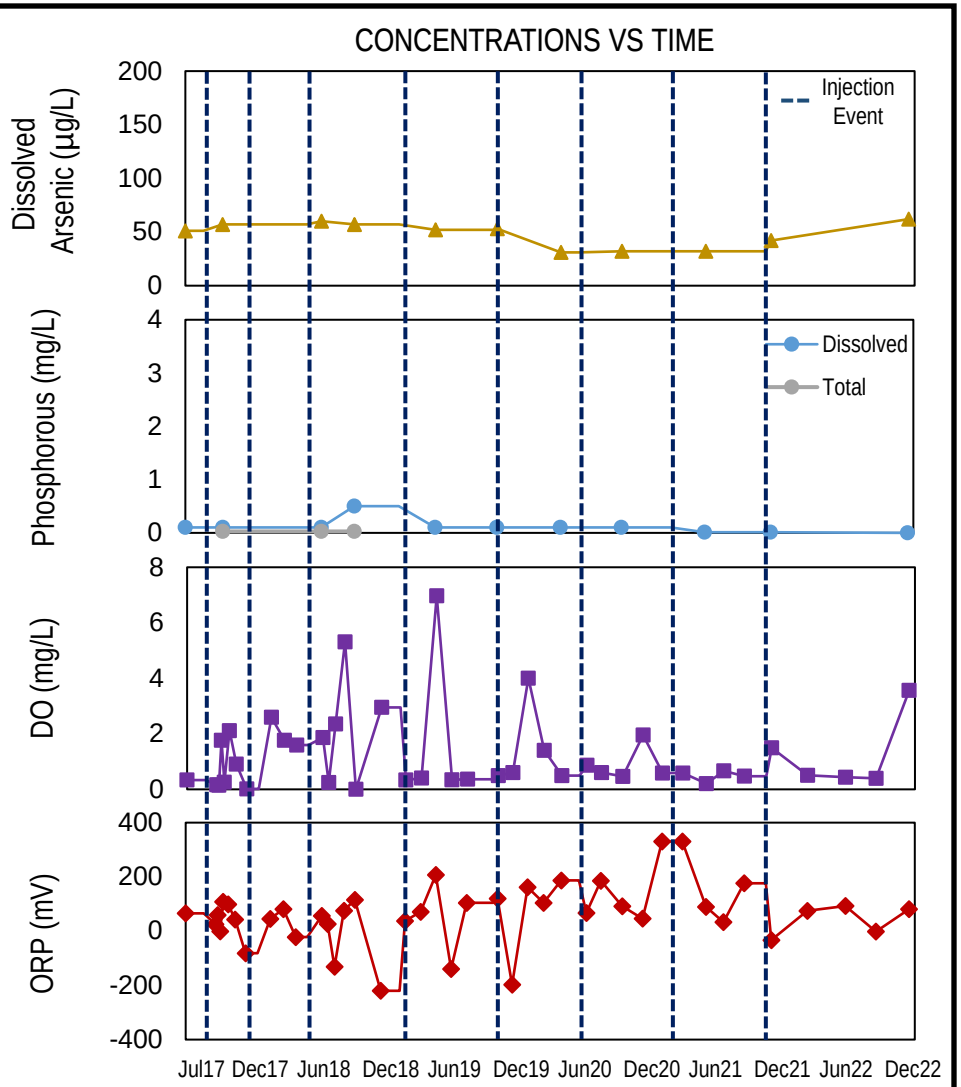

Notes:

1. Concentrations projected at time of each injection event are based on data from the previous sampling event.
2. SWFTS-MW02 is located between the injection well transects, approximately 50 feet downgradient of the southern injection well transect.
3. Monitoring well SWFTS-MW02 is screened in the alluvium from 18.4 to 33.1 feet bgs.
4. Slug testing suggests hydraulic conductivity at SWFTS-MW02 is approximately 8.4 feet/day.
5. Nuclear magnetic resonance logging at SWFTS-MW02 indicates a mobile porosity estimate of 9%.
6. Baseline analytical results shown prior to the first injection event are from samples collected in March 2017.

Abbreviations: µg/L – microgram per liter amsl – above mean sea level mg/L – milligram per liter TOC – Total Organic Carbon DO – Dissolved Oxygen ORP – Oxidation-Reduction Potential

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SUMMARY OF EFFECTIVENESS MONITORING RESULTS FOR SWFTS-MW02

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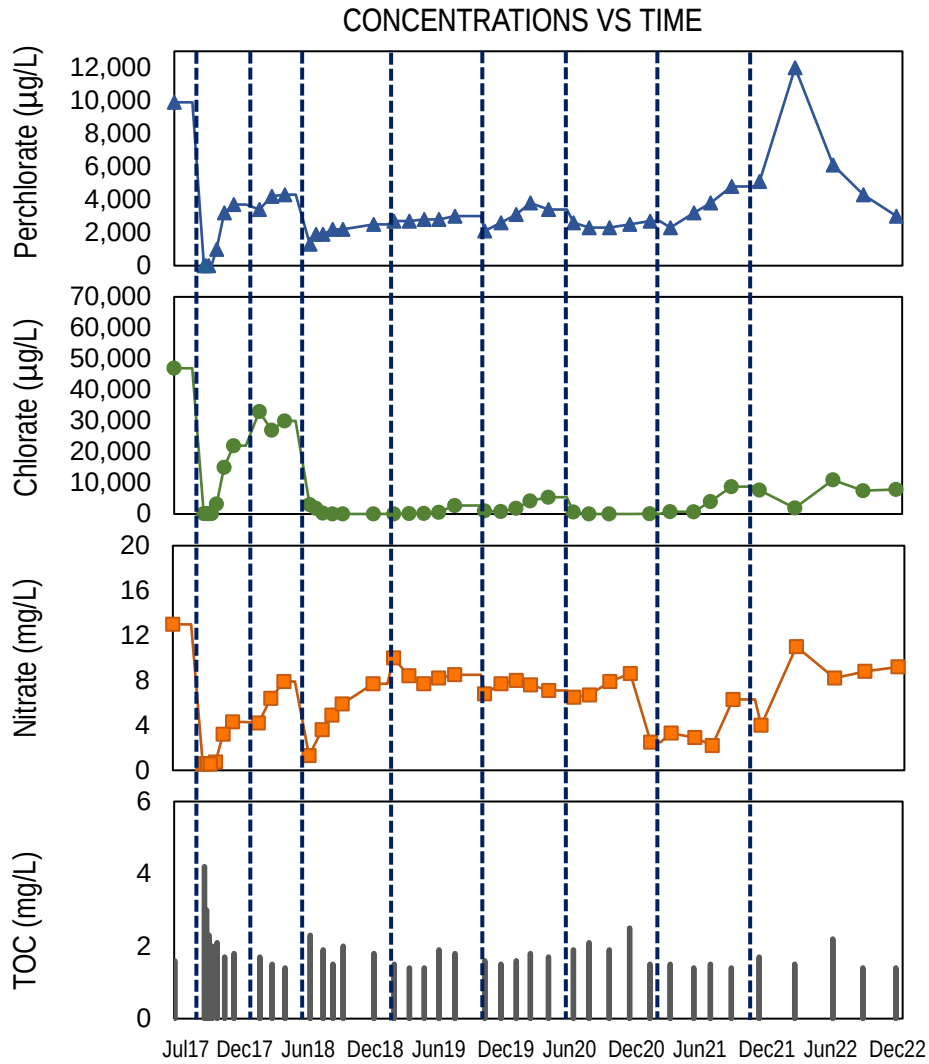
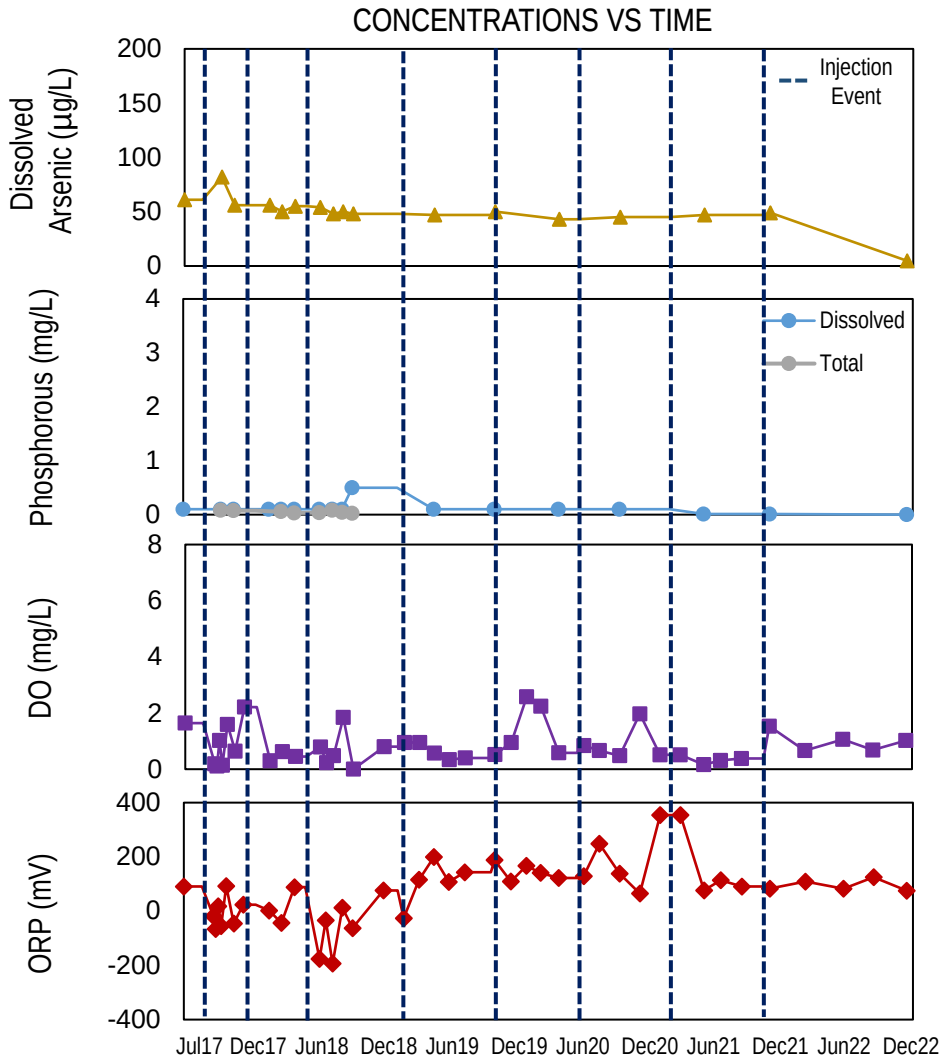
Figure No.
E.7

\\tts100fs1\Shared TEN\Projects\Task M11 - Seep Well Field Bioremediation\Mod 6 Activities - Study Extension\2020 Annual Report\Appendix F\Appendix F - Concentration Trend Graphs.pptx





Notes:

1. Concentrations projected at time of each injection event are based on data from the previous sampling event.
2. SWFTS-MW03 is located approximately 400 feet downgradient of the injection well transects.
3. Monitoring well SWFTS-MW03 is screened in the alluvium from 27.2 to 42.1 feet bgs.
4. Slug testing suggests hydraulic conductivity at SWFTS-MW03 is approximately 153.4 to 237.8 feet/day.
5. Nuclear magnetic resonance logging at SWFTS-MW03 indicates a mobile porosity estimate of 11%.
6. Baseline analytical results shown prior to the first injection event are from samples collected in March 2017.

Abbreviations: µg/L – microgram per liter amsl – above mean sea level mg/L – milligram per liter TOC – Total Organic Carbon DO – Dissolved Oxygen ORP – Oxidation-Reduction Potential

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SUMMARY OF EFFECTIVENESS MONITORING RESULTS FOR SWFTS-MW03

Project No.: 117-7502021-M11
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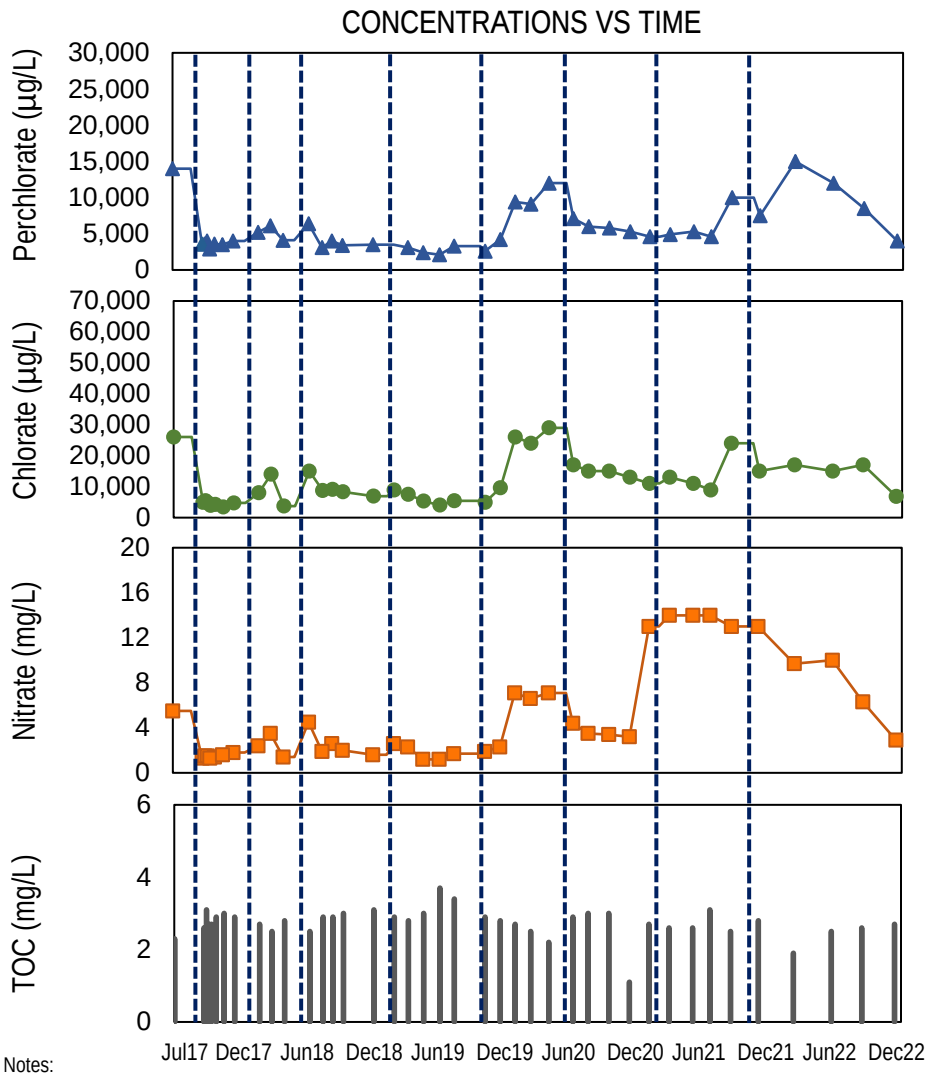
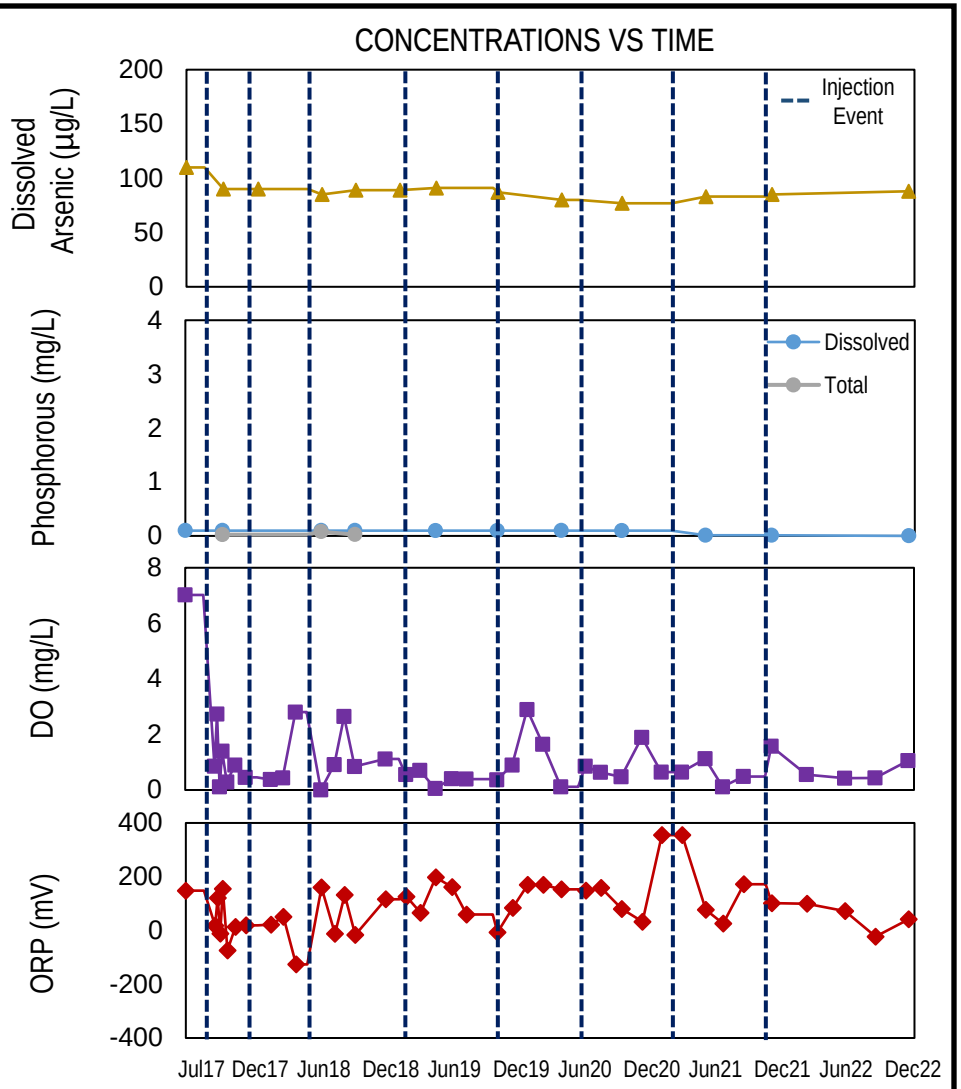
Figure No.
E.8

\\tts100fs1\Shared TEN\Projects\Task M11 - Seep Well Field Bioremediation\Mod 6 Activities - Study Extension\2020 Annual Report\Appendix F\Appendix F - Concentration Trend Graphs.pptx





Notes:

1. Concentrations projected at time of each injection event are based on data from the previous sampling event.
2. SWFTS-MW04 is located approximately 75 feet to the north of the injection well transects. SWFTS-MW04 is considered an upgradient/side-gradient monitoring well.
3. Monitoring well SWFTS-MW04 is screened in the alluvium from 25.8 to 40.4 feet bgs.
4. Slug testing suggests hydraulic conductivity at SWFTS-MW04 is approximately 18.1 feet/day.
5. Nuclear magnetic resonance logging at SWFTS-MW04 indicates a mobile porosity estimate of 12%.
6. Baseline analytical results shown prior to the first injection event are from samples collected in March 2017.

Abbreviations: µg/L – microgram per liter amsl – above mean sea level mg/L – milligram per liter TOC – Total Organic Carbon DO – Dissolved Oxygen ORP – Oxidation-Reduction Potential

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SUMMARY OF EFFECTIVENESS MONITORING RESULTS FOR SWFTS-MW04

Project No.: 117-7502021-M11
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Figure No.
E.9

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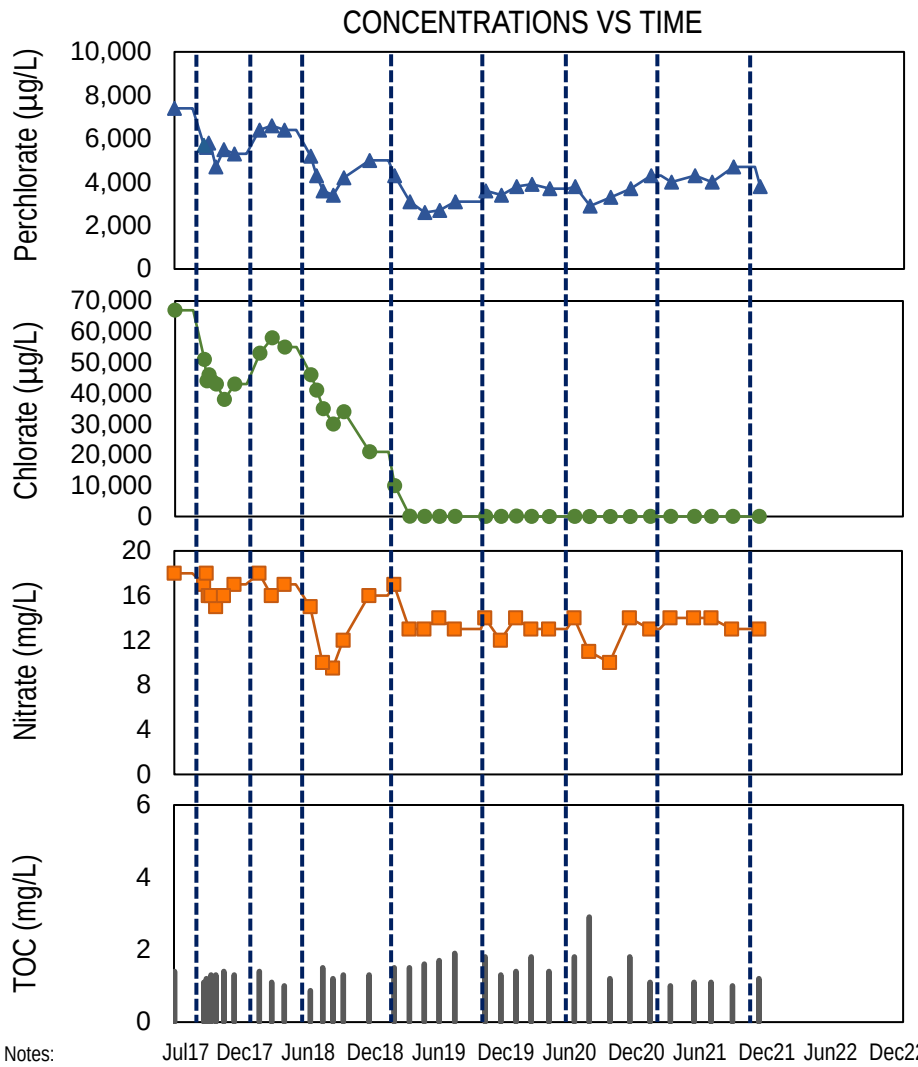

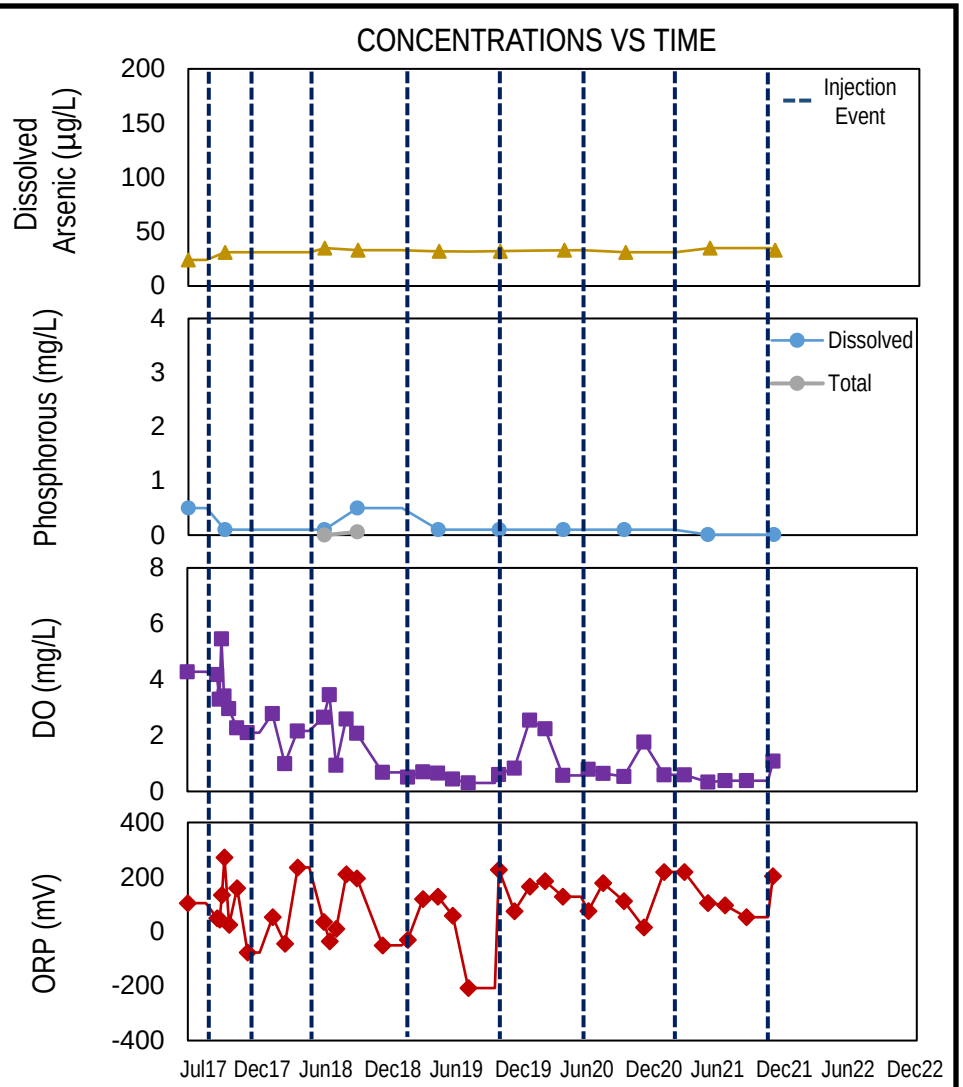

Notes:

1. Concentrations projected at time of each injection event are based on data from the previous sampling event.
2. SWFTS-MW05A is located approximately 90 feet downgradient of the injection well transects.
3. Monitoring well SWFTS-MW05A is screened in the alluvium from 19.3 to 29.3 feet bgs.
4. Slug testing suggest hydraulic conductivity at SWFTS-MW05A is approximately 6.8 feet/day.
6. Nuclear magnetic resonance logging at SWFTS-MW05A indicated a mobile porosity estimate of 7%.
7. Baseline analytical results shown prior to the first injection event are from samples collected in March 2017.
8. A groundwater sample could not be collected from SWFTS-MW05A during the 3/22, 6//22, 9/22, and 12/22 sampling event(s) due to access issues related to the ongoing construction activities associated with development by the landowner.

Abbreviations: µg/L – microgram per liter amsl – above mean sea level mg/L – milligram per liter TOC – Total Organic Carbon DO – Dissolved Oxygen ORP – Oxidation-Reduction Potential

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SUMMARY OF EFFECTIVENESS MONITORING RESULTS FOR SWFTS-MW05A

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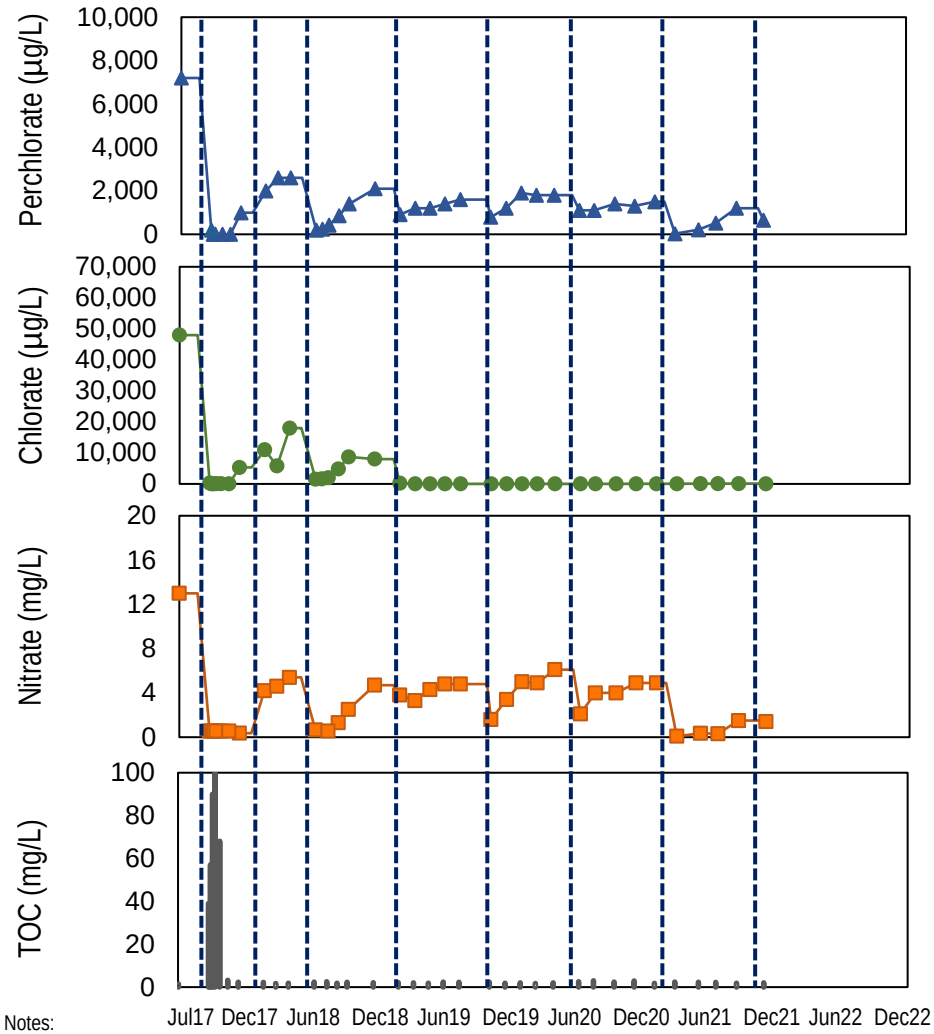
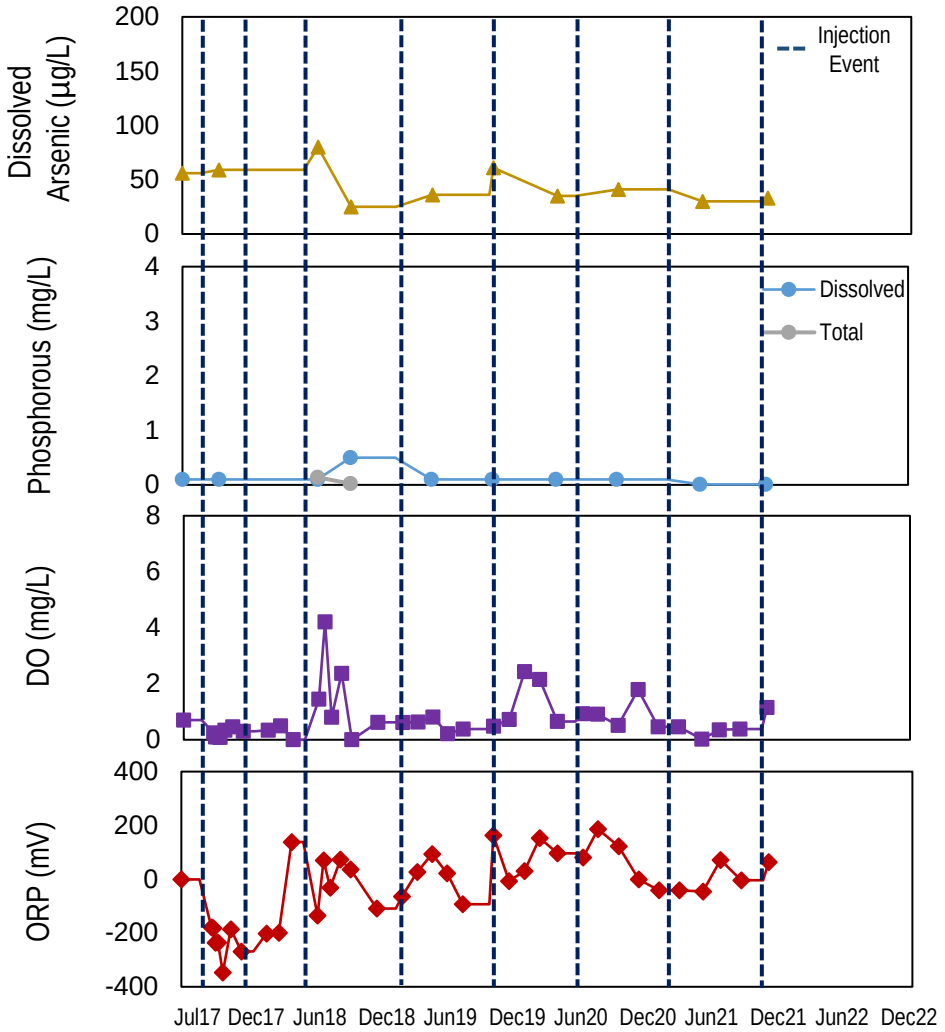
Figure No.
E.10

\\tts100fs1\Shared TEN\Projects\Task M11 - Seep Well Field Bioremediation\Mod 6 Activities - Study Extension\2020 Annual Report\Appendix F\Appendix F - Concentration Trend Graphs.pptx





Notes:

1. Concentrations projected at time of each injection event are based on data from the previous sampling event.
2. SWFTS-MW05B is located approximately 100 feet downgradient of the injection well transects.
3. Monitoring well SWFTS-MW05B is screened in the alluvium from 32.3 to 42 feet bgs.
4. Slug testing suggests hydraulic conductivity at SWFTS-MW05B is approximately 49.4 to 65.6 feet/day.
5. Nuclear magnetic resonance logging at SWFTS-MW05B indicates a mobile porosity estimate of 8%.
6. Baseline analytical results shown prior to the first injection event are from samples collected in March 2017.
7. A groundwater sample could not be collected from SWFTS-MW05B during the 3/22, 6//22, 9/22, and 12/22 sampling event(s) due to access issues related to the ongoing construction activities associated with development by the landowner.

Abbreviations: µg/L – microgram per liter amsl – above mean sea level mg/L – milligram per liter TOC – Total Organic Carbon DO – Dissolved Oxygen ORP – Oxidation-Reduction Potential

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SUMMARY OF EFFECTIVENESS MONITORING RESULTS FOR SWFTS-MW05B

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Figure No.
E.11

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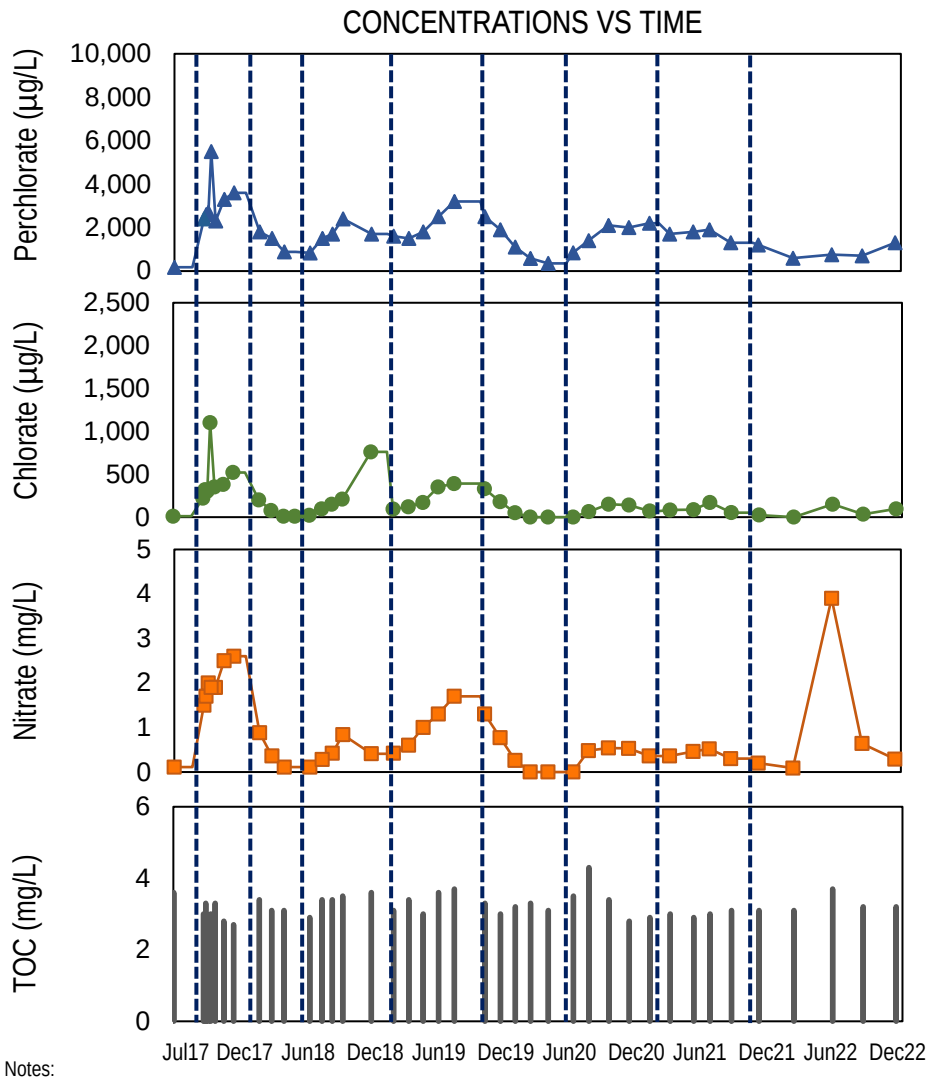

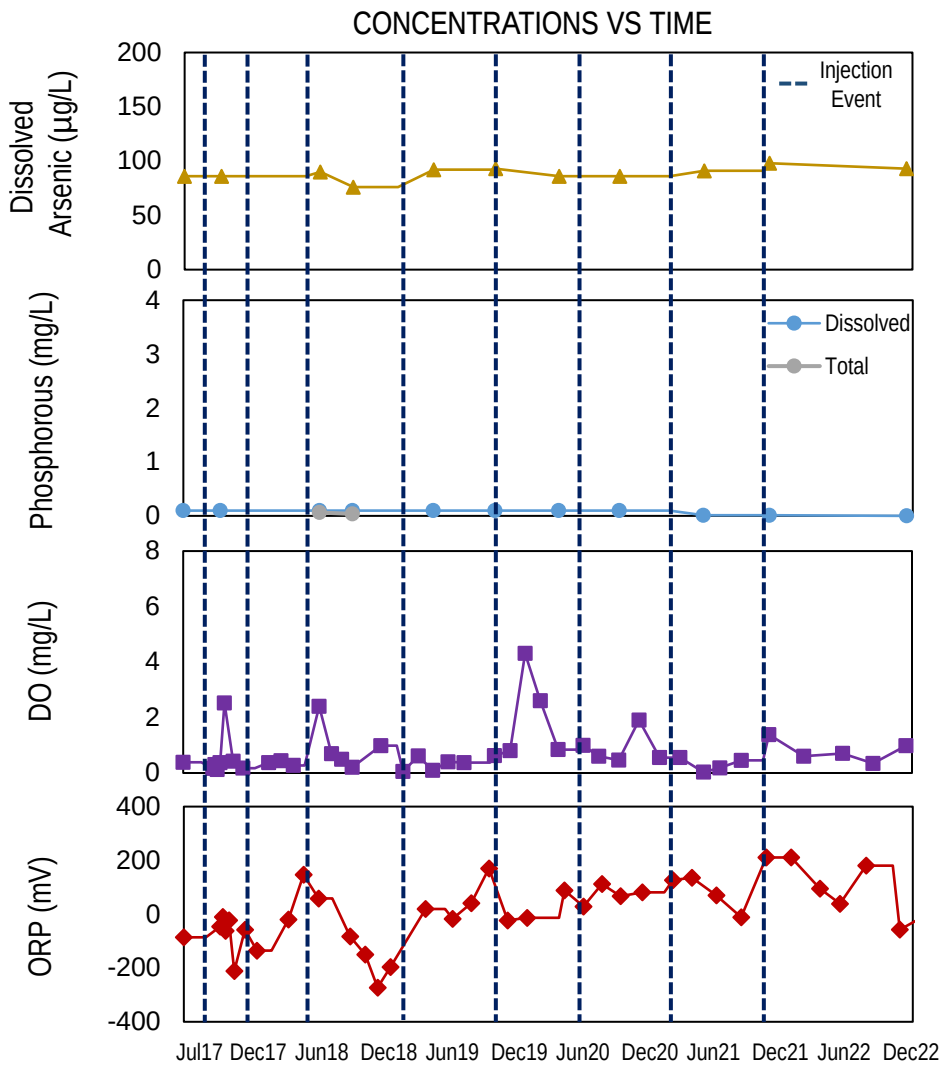

Notes:

1. Concentrations projected at time of each injection event are based on data from the previous sampling event.
2. SWFTS-MW06A is located approximately 250 feet north of the injection well transects. SWFTS-MW06A is considered a side-gradient monitoring well.
3. Monitoring well SWFTS-MW06A is screened in the alluvium from 11.8 to 21.4 feet bgs.
4. Slug testing suggests hydraulic conductivity at SWFTS-MW06A is approximately 5.8 feet/day.
5. Nuclear magnetic resonance logging at SWFTS-MW06A indicates a mobile porosity estimate of 9%.
6. Baseline analytical results shown prior to the first injection event are from samples collected in March 2017.

Abbreviations: µg/L – microgram per liter amsl – above mean sea level mg/L – milligram per liter TOC – Total Organic Carbon DO – Dissolved Oxygen ORP – Oxidation-Reduction Potential

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SUMMARY OF EFFECTIVENESS MONITORING RESULTS FOR SWFTS-MW06A

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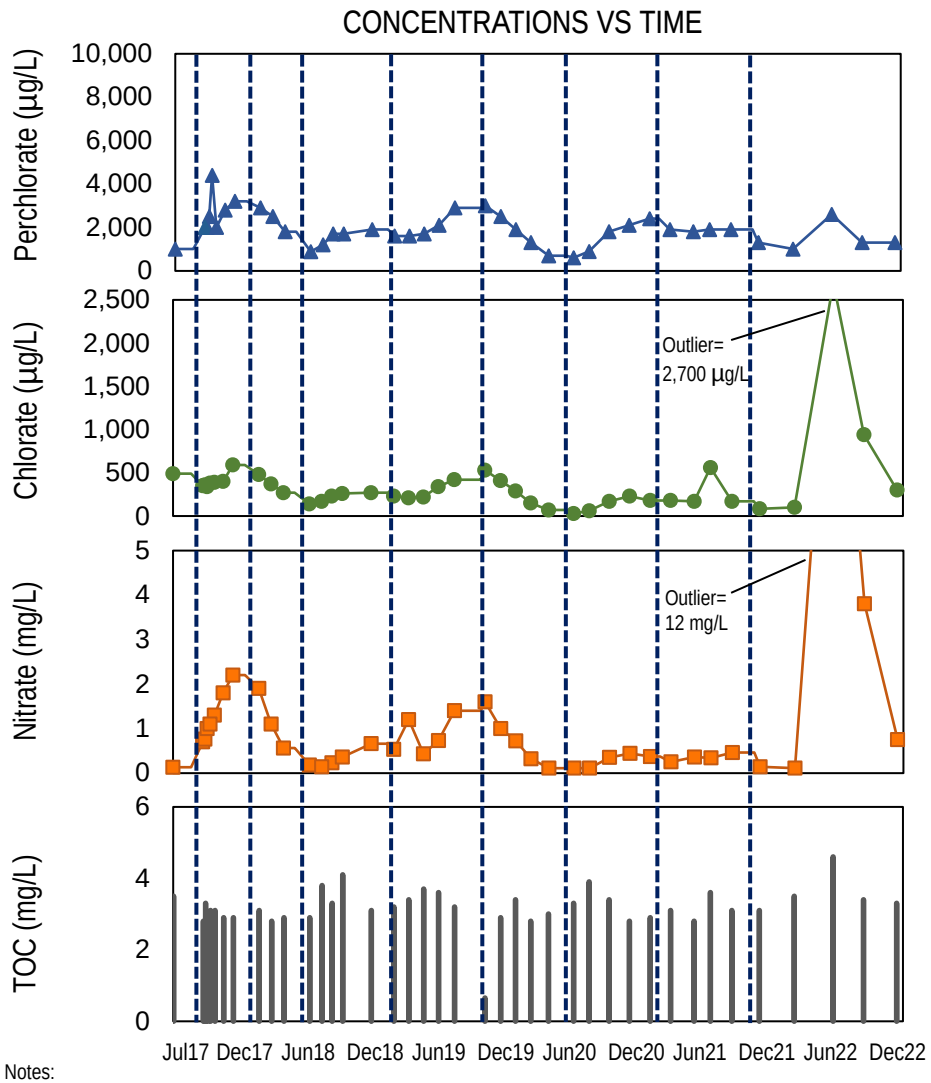
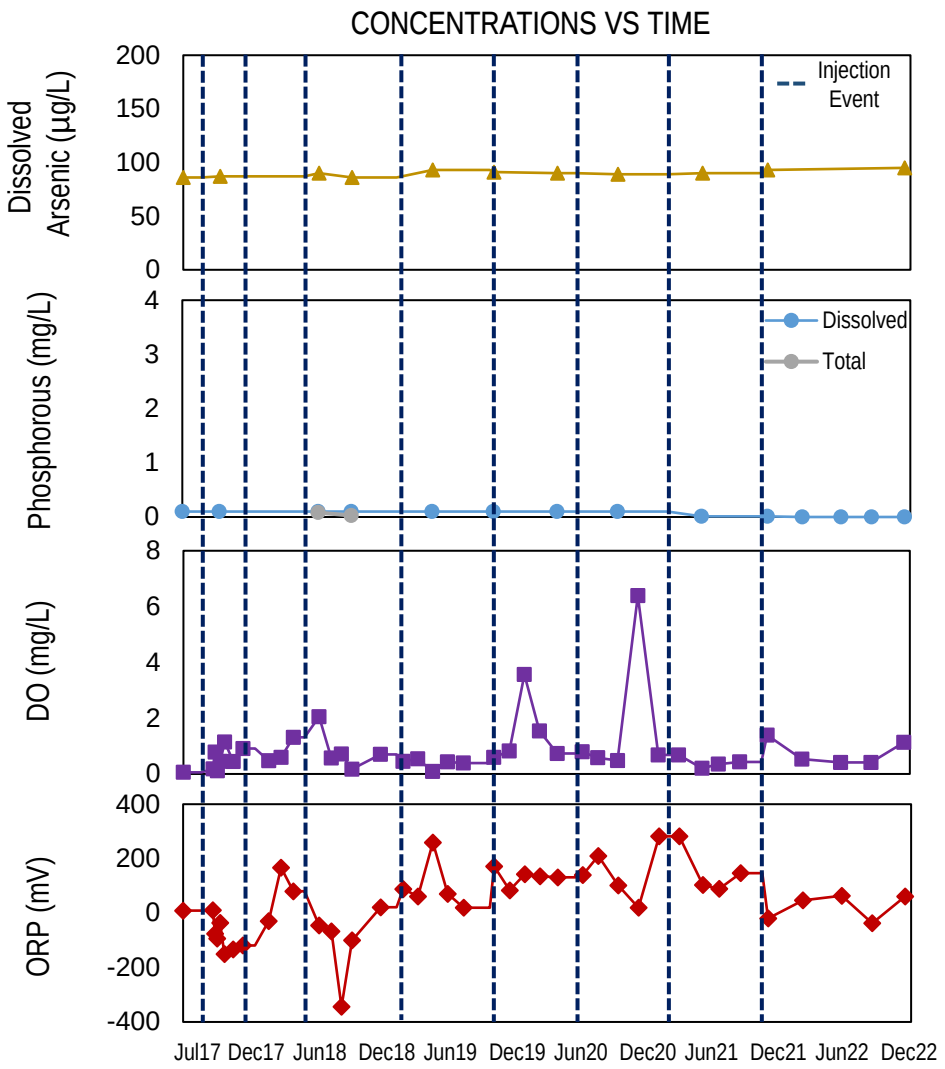
Figure No.
E.12

\\tts100fs1\Shared TEN\Projects\Task M11 - Seep Well Field Bioremediation\Mod 6 Activities - Study Extension\2020 Annual Report\Appendix F\Appendix F - Concentration Trend Graphs.pptx





Notes:

1. Concentrations projected at time of each injection event are based on data from the previous sampling event.
2. SWFTS-MW06B is located approximately 250 feet north of the injection well transects. SWFTS-MW06B is considered a side-gradient monitoring well.
3. Monitoring well SWFTS-MW06B is screened in the alluvium from 25.9 to 35.5 feet bgs.
4. Slug testing suggests hydraulic conductivity at SWFTS-MW06B is approximately 24.5 feet/day.
5. Nuclear magnetic resonance logging at SWFTS-MW06B indicates a mobile porosity estimate of 6%.
6. Baseline analytical results shown prior to the first injection event are from samples collected in March 2017.

Abbreviations: µg/L – microgram per liter amsl – above mean sea level mg/L – milligram per liter TOC – Total Organic Carbon DO – Dissolved Oxygen ORP – Oxidation-Reduction Potential

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Figure No.
E.13

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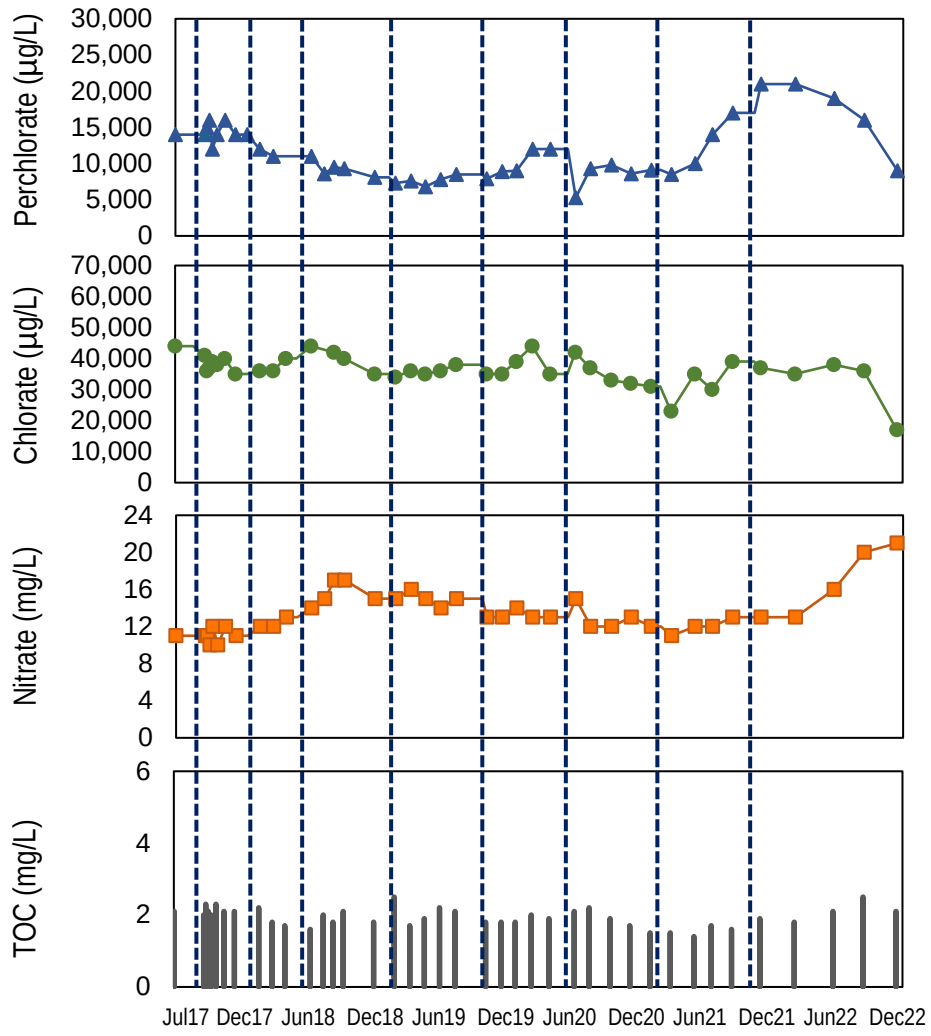

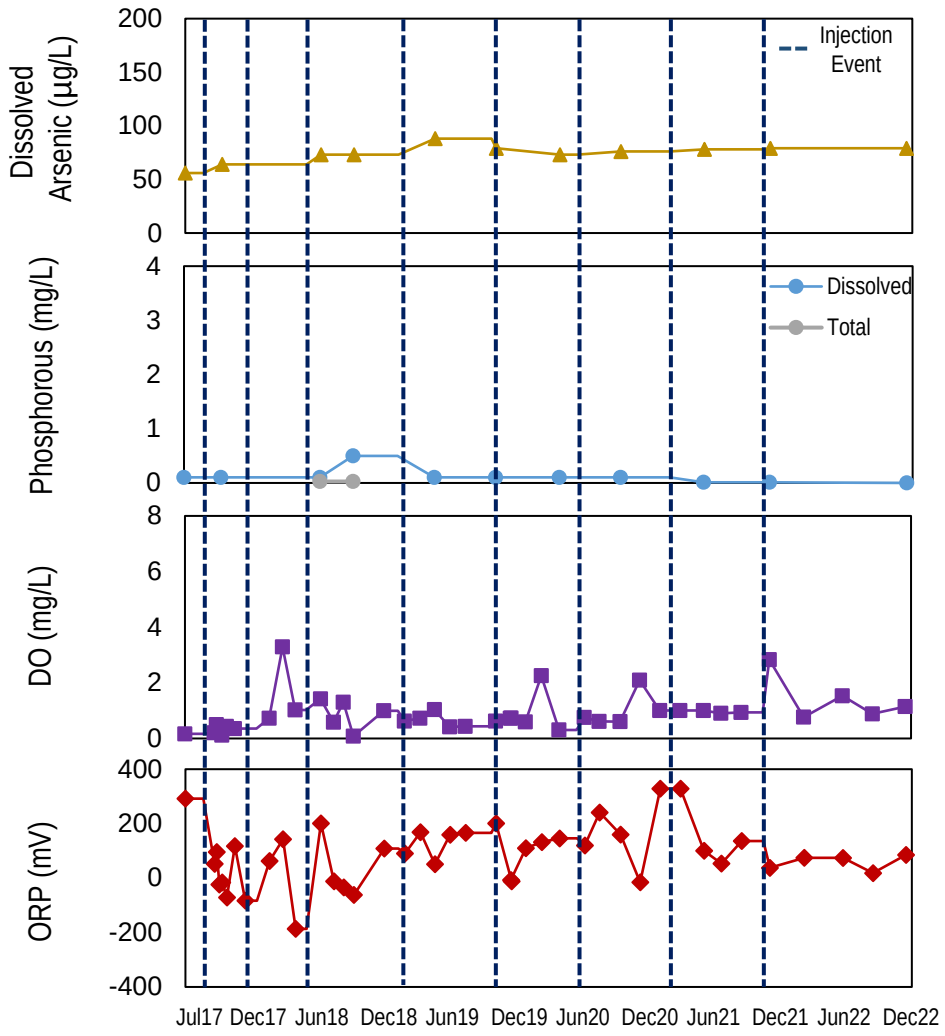

Notes:

1. Concentrations projected at time of each injection event are based on data from the previous sampling event.
2. SWFTS-MW07A is located approximately 175 feet upgradient of the injection well transects.
3. Monitoring well SWFTS-MW07A is screened in the alluvium from 15 to 29.5 feet bgs.
4. Slug testing suggests hydraulic conductivity at SWFTS-MW07A is approximately 2.8 feet/day.
5. Nuclear magnetic resonance logging at SWFTS-MW07A indicates a mobile porosity estimate of 3%.
6. Baseline analytical results shown prior to the first injection event are from samples collected in March 2017.

Abbreviations: µg/L – microgram per liter amsl – above mean sea level mg/L – milligram per liter TOC – Total Organic Carbon DO – Dissolved Oxygen ORP – Oxidation-Reduction Potential

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SUMMARY OF EFFECTIVENESS MONITORING RESULTS FOR SWFTS-MW07A

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Figure No.
E.14

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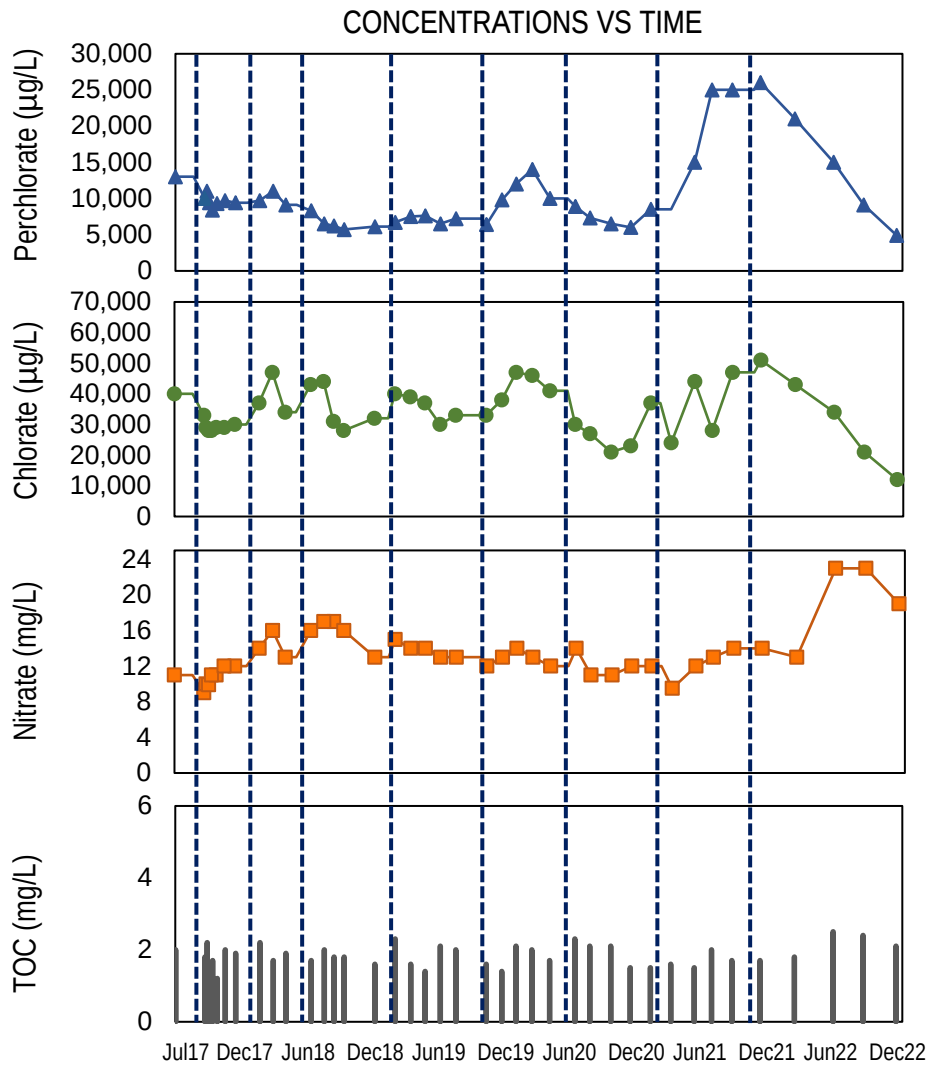

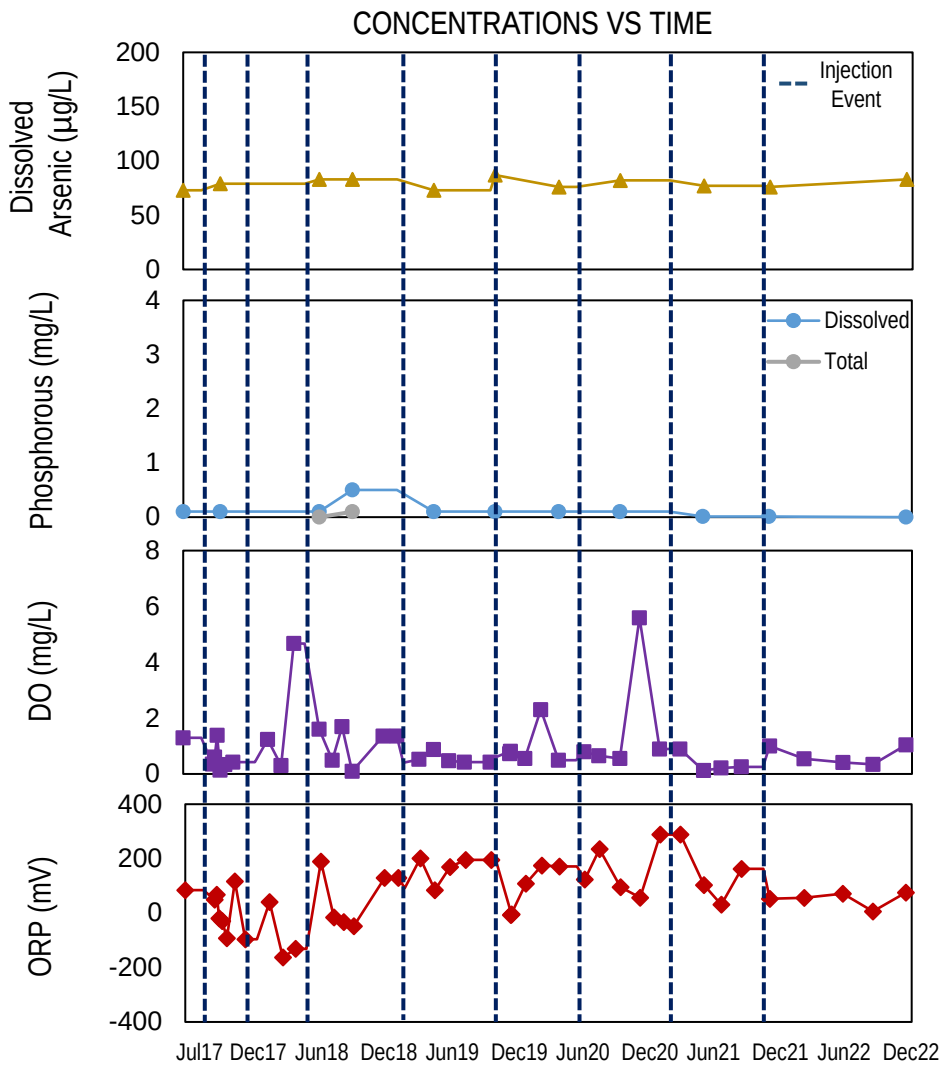

Notes:

1. Concentrations projected at time of each injection event are based on data from the previous sampling event.
2. SWFTS-MW07B is located approximately 175 feet upgradient of the injection well transects.
3. Monitoring well SWFTS-MW07B is screened in the alluvium from 33.8 to 38.3 feet bgs.
4. Slug testing suggests hydraulic conductivity at SWFTS-MW07B is approximately 28.1 feet/day.
5. Nuclear magnetic resonance logging at SWFTS-MW07B indicates a mobile porosity estimate of 25%.
6. Baseline analytical results shown prior to the first injection event are from samples collected in March 2017.

Abbreviations: µg/L – microgram per liter amsl – above mean sea level mg/L – milligram per liter TOC – Total Organic Carbon DO – Dissolved Oxygen ORP – Oxidation-Reduction Potential

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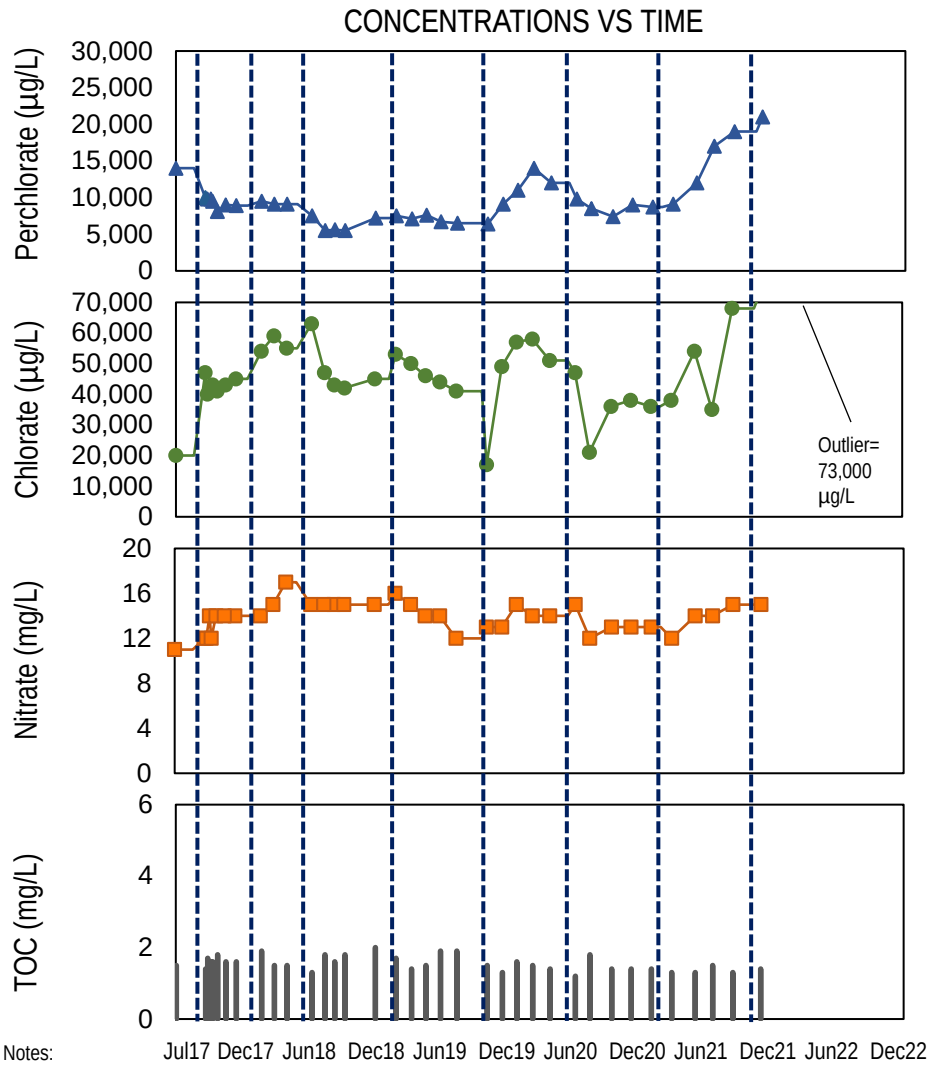

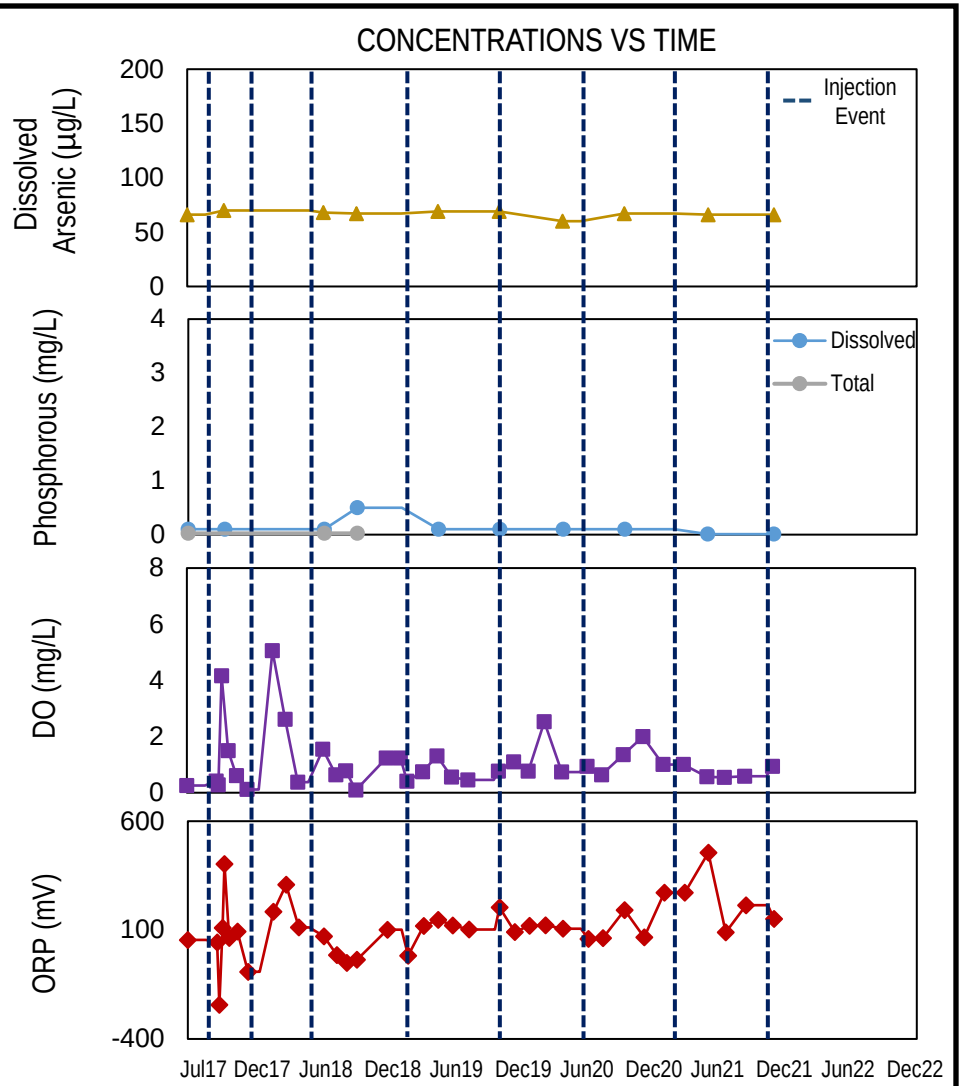

Notes:

1. Concentrations projected at time of each injection event are based on data from the previous sampling event.
2. SWFTS-MW08A is located approximately 50 feet upgradient of the injection well transects.
3. Monitoring well SWFTS-MW08A is screened in the alluvium from 20.2 to 34.8 feet bgs.
4. Slug testing suggests hydraulic conductivity at SWFTS-MW08A is approximately 1.3 feet/day.
5. Nuclear magnetic resonance logging at SWFTS-MW08A indicates a mobile porosity estimate of 6%.
6. Baseline analytical results shown prior to the first injection event are from samples collected in March 2017.
7. A groundwater sample could not be collected from SWFTS-MW08A during the 3/22, 6//22, 9/22, and 12/22 sampling event(s) due to access issues related to the ongoing construction activities associated with development by the landowner.

Abbreviations: µg/L – microgram per liter amsl – above mean sea level mg/L – milligram per liter TOC – Total Organic Carbon DO – Dissolved Oxygen ORP – Oxidation-Reduction Potential

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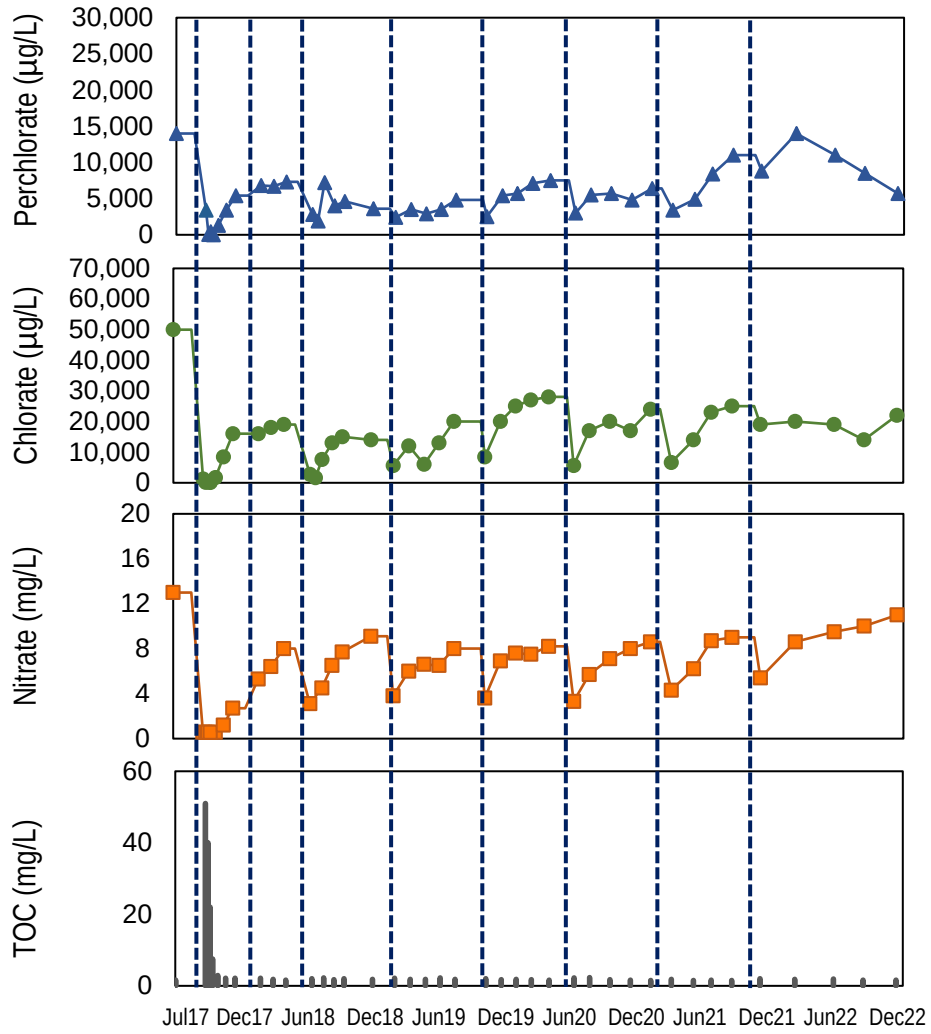

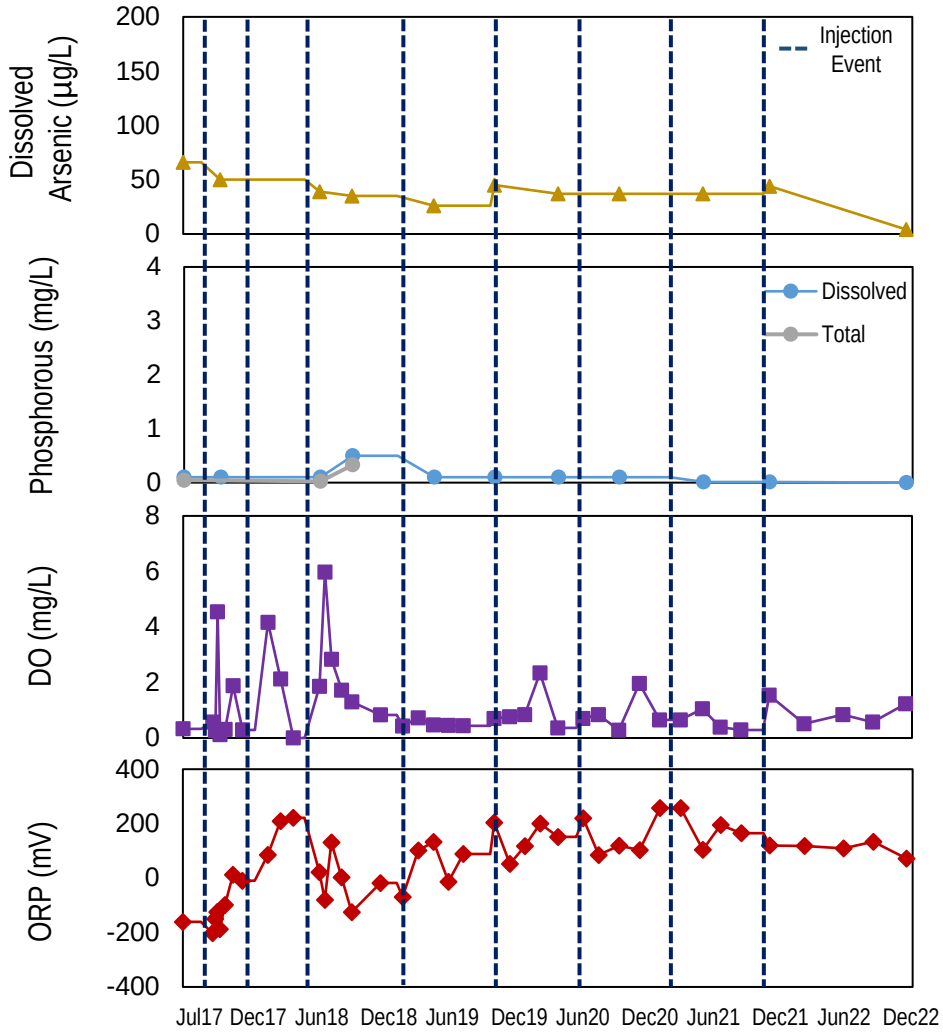

Notes:

1. Concentrations projected at time of each injection event are based on data from the previous sampling event.
2. SWFTS-MW09A is located approximately 240 feet downgradient of the injection well transects.
3. Monitoring well SWFTS-MW09A is screened in the alluvium from 19.3 to 28.9 feet bgs.
4. Slug testing suggests hydraulic conductivity at SWFTS-MW09A is approximately 36.5 to 42.1 feet/day.
5. Nuclear magnetic resonance logging at SWFTS-MW09A indicates a mobile porosity estimate of 8%.
6. Baseline analytical results shown prior to the first injection event are from samples collected in March 2017.

Abbreviations: µg/L – microgram per liter amsl – above mean sea level mg/L – milligram per liter TOC – Total Organic Carbon DO – Dissolved Oxygen ORP – Oxidation-Reduction Potential

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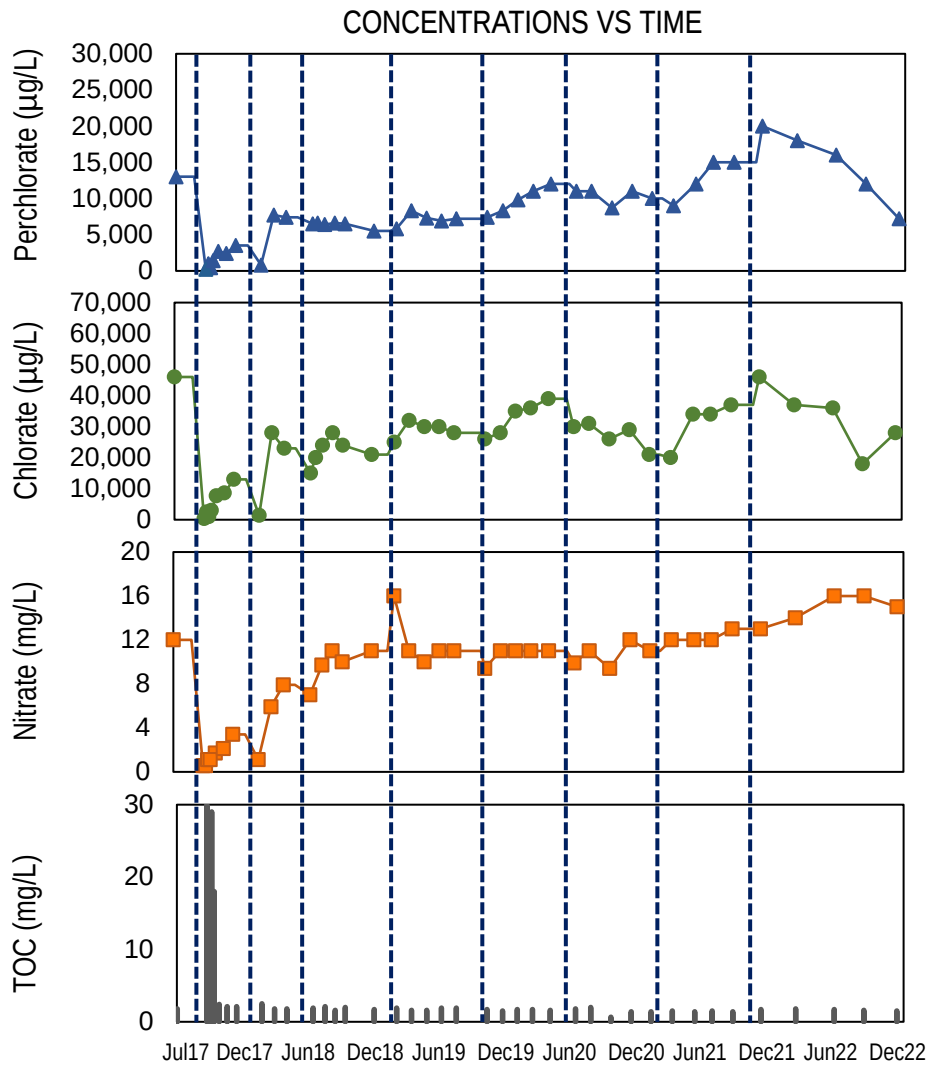
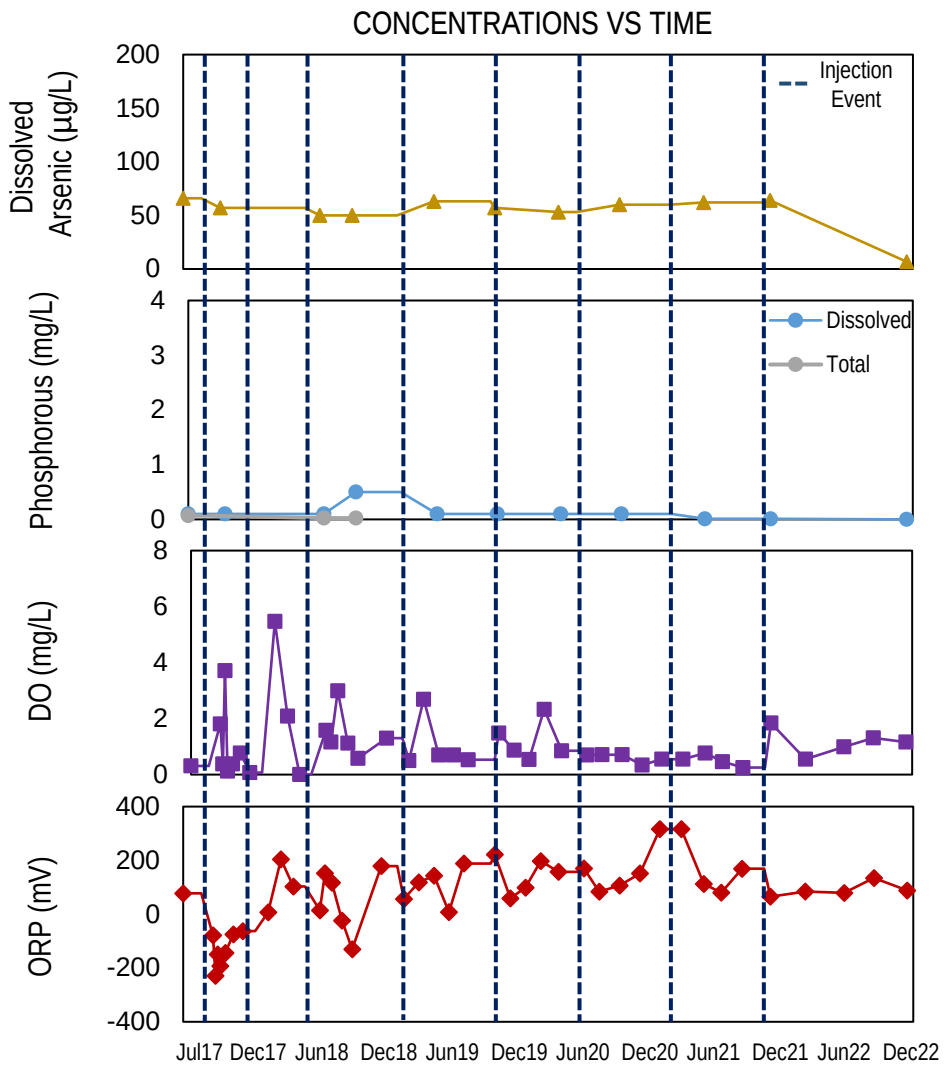
E.17

\\tts100fs1\Shared TEN\Projects\Task M11 - Seep Well Field Bioremediation\Mod 6 Activities - Study Extension\2020 Annual Report\Appendix F\Appendix F - Concentration Trend Graphs.pptx





Notes:

1. Concentrations projected at time of each injection event are based on data from the previous sampling event.
2. SWFTS-MW09B is located approximately 240 feet downgradient of the injection well transects.
3. Monitoring well SWFTS-MW09B is screened in the alluvium from 34.4 to 39 feet bgs.
4. Slug testing suggests hydraulic conductivity at SWFTS-MW09B is approximately 293.2 to 329.9 feet/day.
5. Nuclear magnetic resonance logging at SWFTS-MW09B indicates a mobile porosity estimate of 7%.
6. Baseline analytical results shown prior to the first injection event are from samples collected in March 2017.

Abbreviations: µg/L – microgram per liter amsl – above mean sea level mg/L – milligram per liter TOC – Total Organic Carbon DO – Dissolved Oxygen ORP – Oxidation-Reduction Potential

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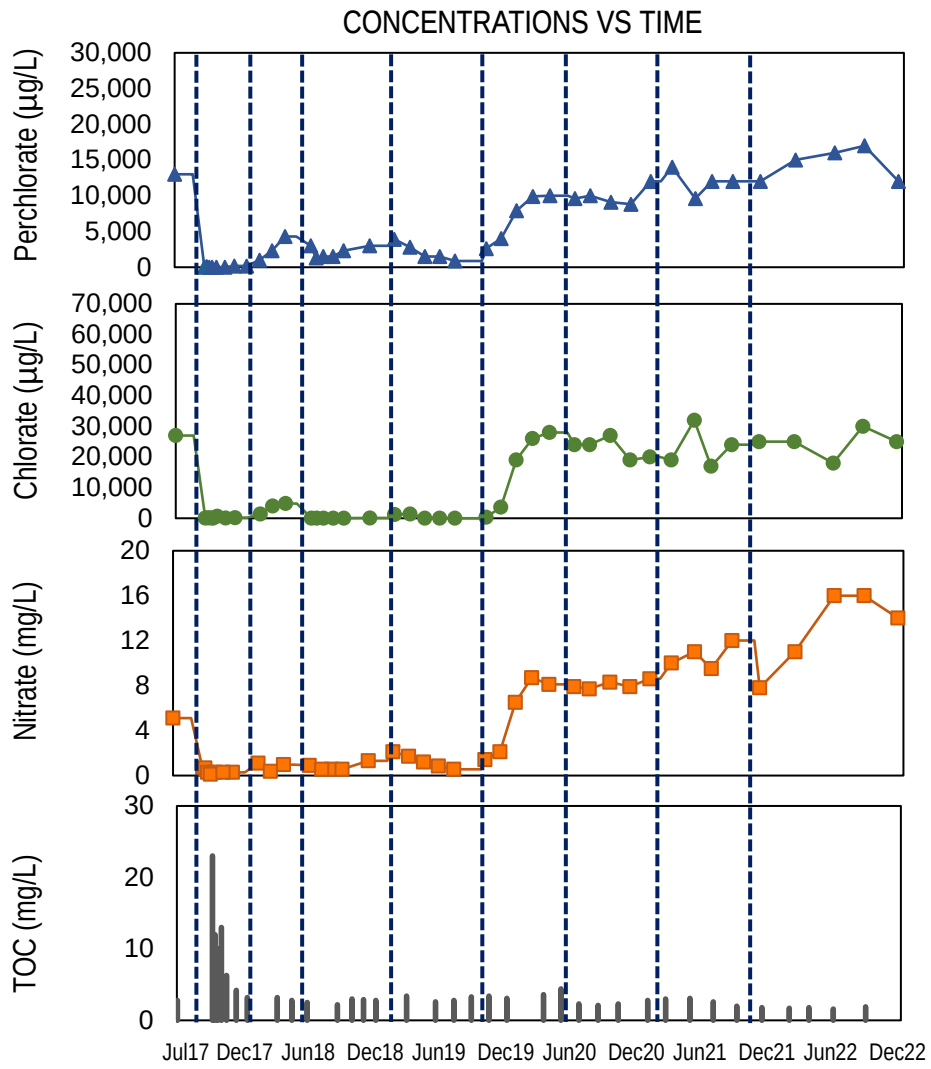

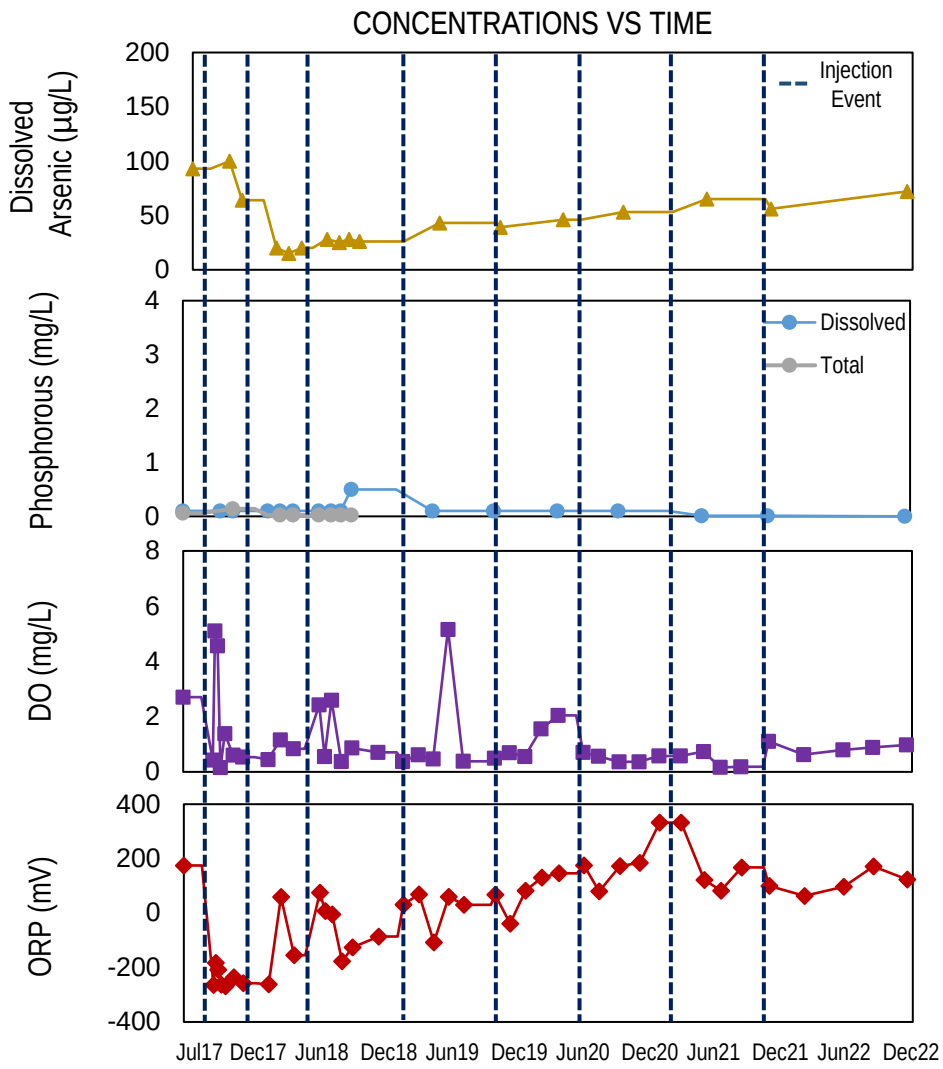

Notes:

1. Concentrations projected at time of each injection event are based on data from the previous sampling event.
2. SWFTS-MW10A is located approximately 50 feet downgradient of the injection well transects.
3. Monitoring well SWFTS-MW10A is screened in the alluvium from 20.4 to 35 feet bgs.
4. Slug testing suggests hydraulic conductivity at SWFTS-MW10A is approximately 17.0 to 21.0 feet/day.
5. Nuclear magnetic resonance logging at SWFTS-MW10A indicates a mobile porosity estimate of 5%.
6. Baseline analytical results shown prior to the first injection event are from samples collected in March 2017.

Abbreviations: µg/L – microgram per liter amsl – above mean sea level mg/L – milligram per liter TOC – Total Organic Carbon DO – Dissolved Oxygen ORP – Oxidation-Reduction Potential

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E.19

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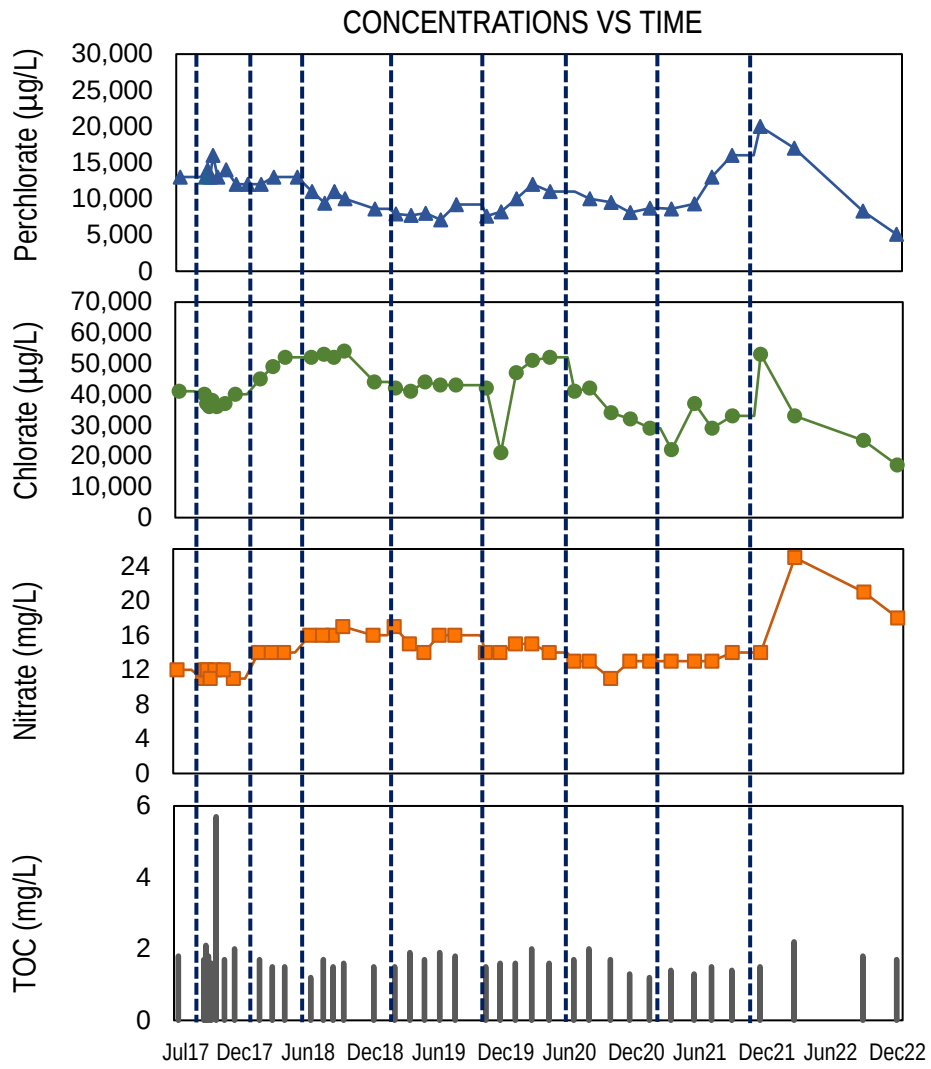

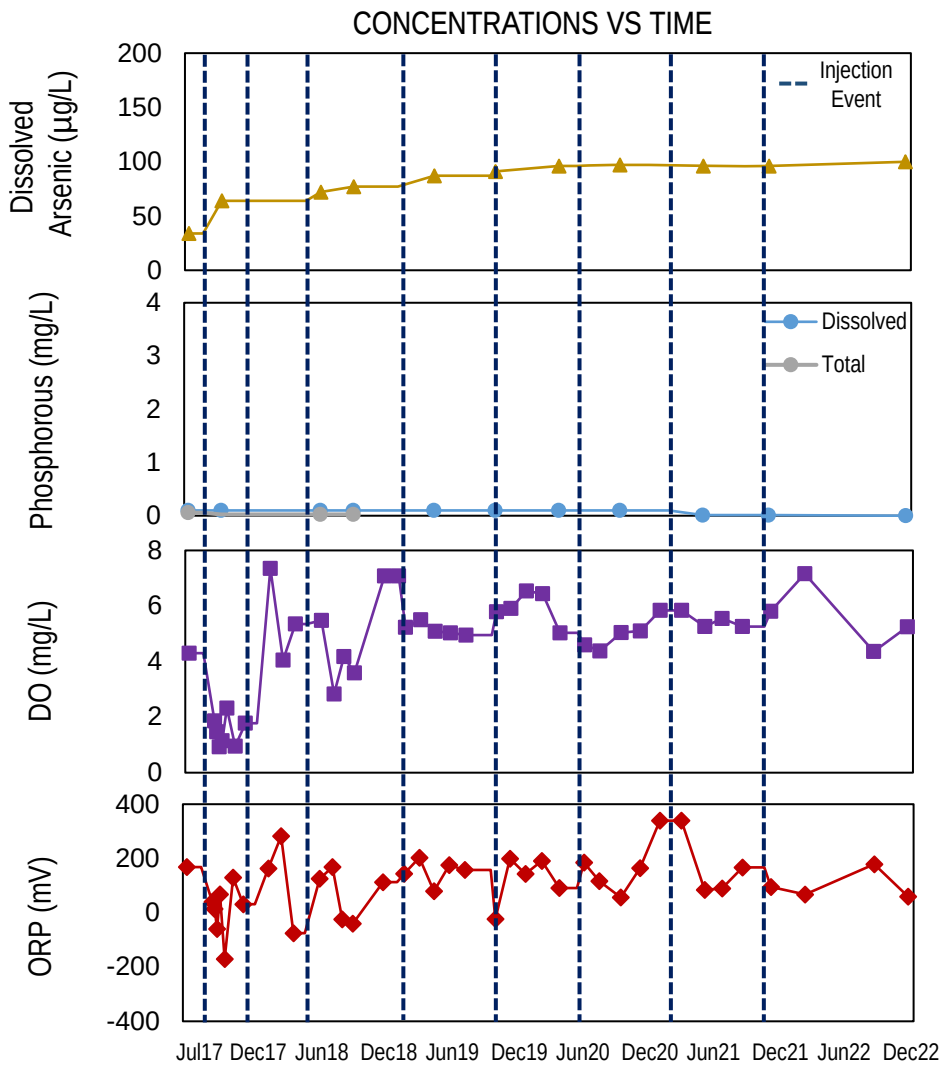

Notes:

1. Concentrations projected at time of each injection event are based on data from the previous sampling event.
2. SWFTS-MW11 is located approximately 100 feet upgradient of the injection well transects.
3. Monitoring well SWFTS-MW11 is screened in the alluvium from 14.8 to 39.6 feet bgs.
4. Slug testing suggests hydraulic conductivity at SWFTS-MW11 is approximately 0.7 feet/day.
5. No mobile porosity estimates at monitoring well SWFTS-MW11 were measured.

Abbreviations: µg/L – microgram per liter amsl – above mean sea level mg/L – milligram per liter TOC – Total Organic Carbon DO – Dissolved Oxygen ORP – Oxidation-Reduction Potential

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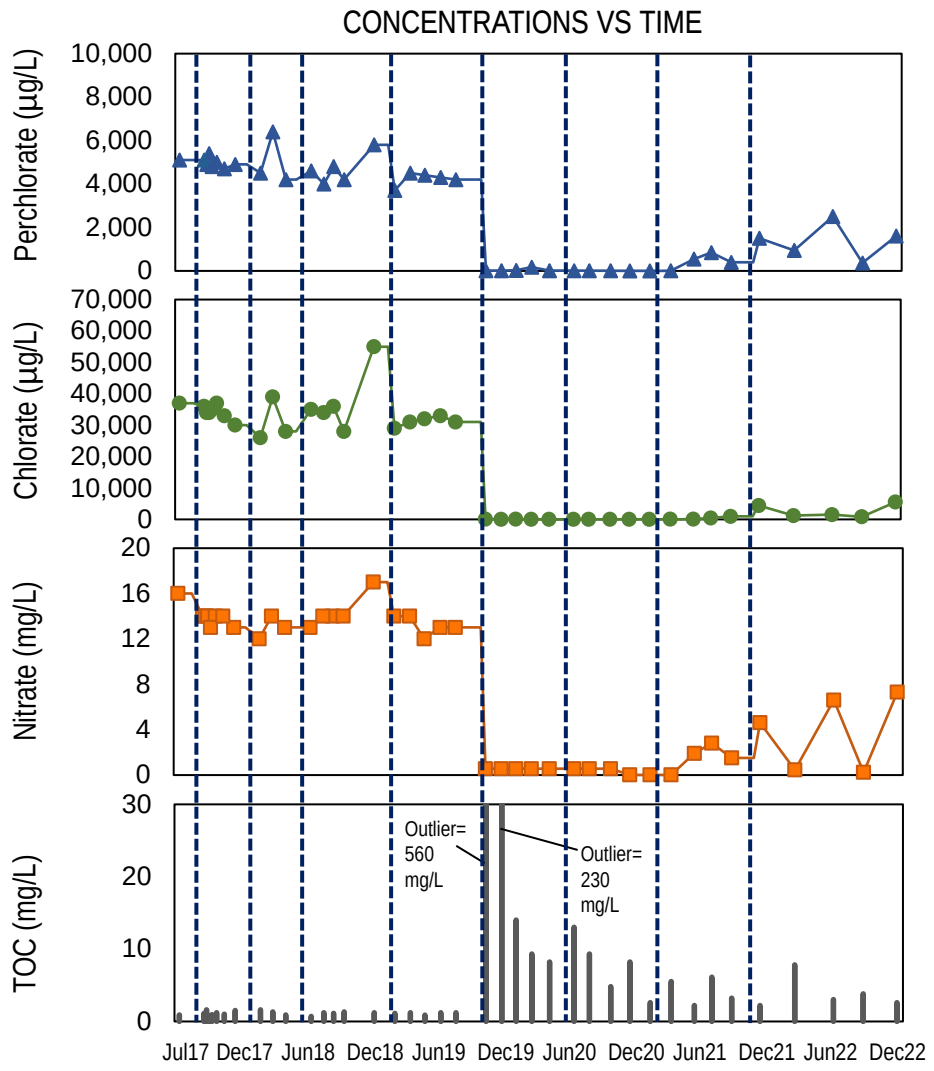

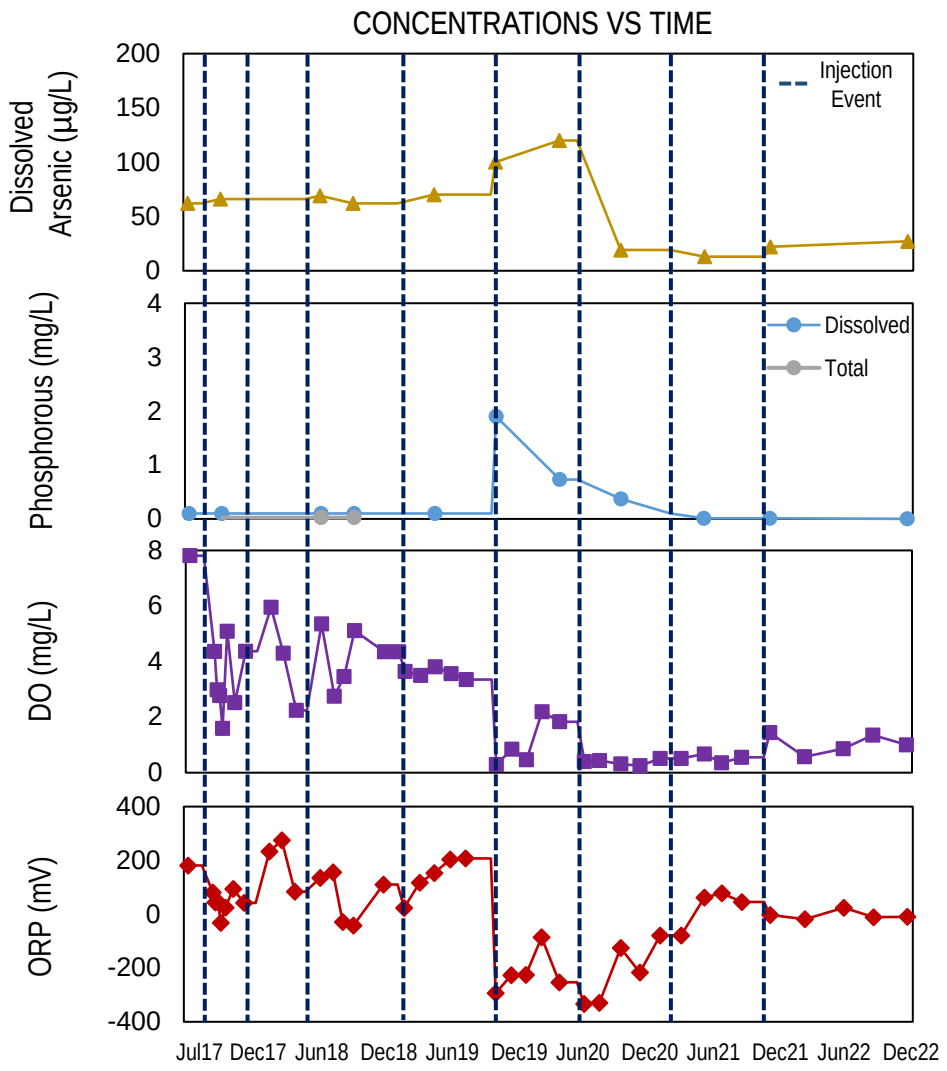

Notes:

1. Concentrations projected at time of each injection event are based on data from the previous sampling event.
2. SWFTS-MW12 is located approximately 125 feet upgradient of the injection well transects.
3. Monitoring well SWFTS-MW12 is screened in the alluvium from 15.8 to 40.6 feet bgs.
4. Slug testing suggests hydraulic conductivity at SWFTS-MW12 is approximately 7.3 feet/day.
5. No mobile porosity estimates at monitoring well SWFTS-MW12 were measured.

Abbreviations: µg/L – microgram per liter amsl – above mean sea level mg/L – milligram per liter TOC – Total Organic Carbon DO – Dissolved Oxygen ORP – Oxidation-Reduction Potential

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SUMMARY OF EFFECTIVENESS MONITORING RESULTS FOR SWFTS-MW12

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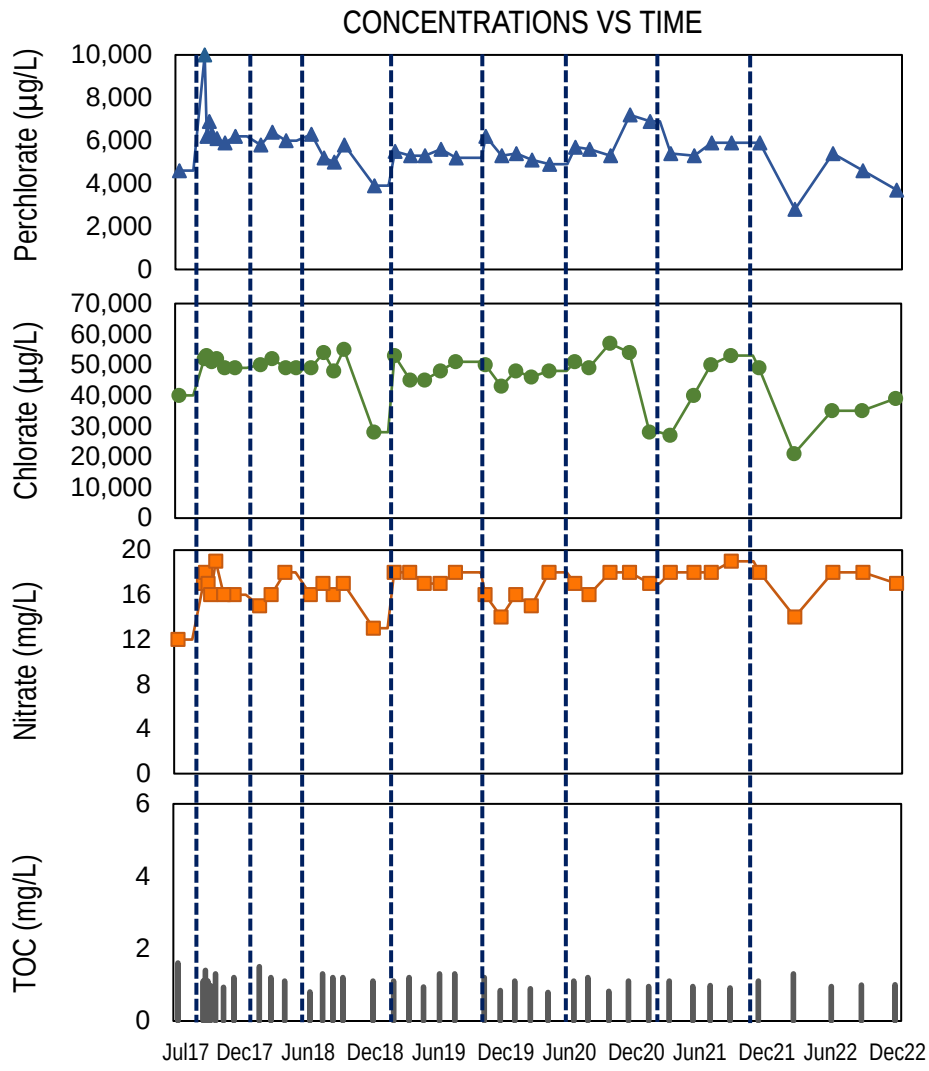
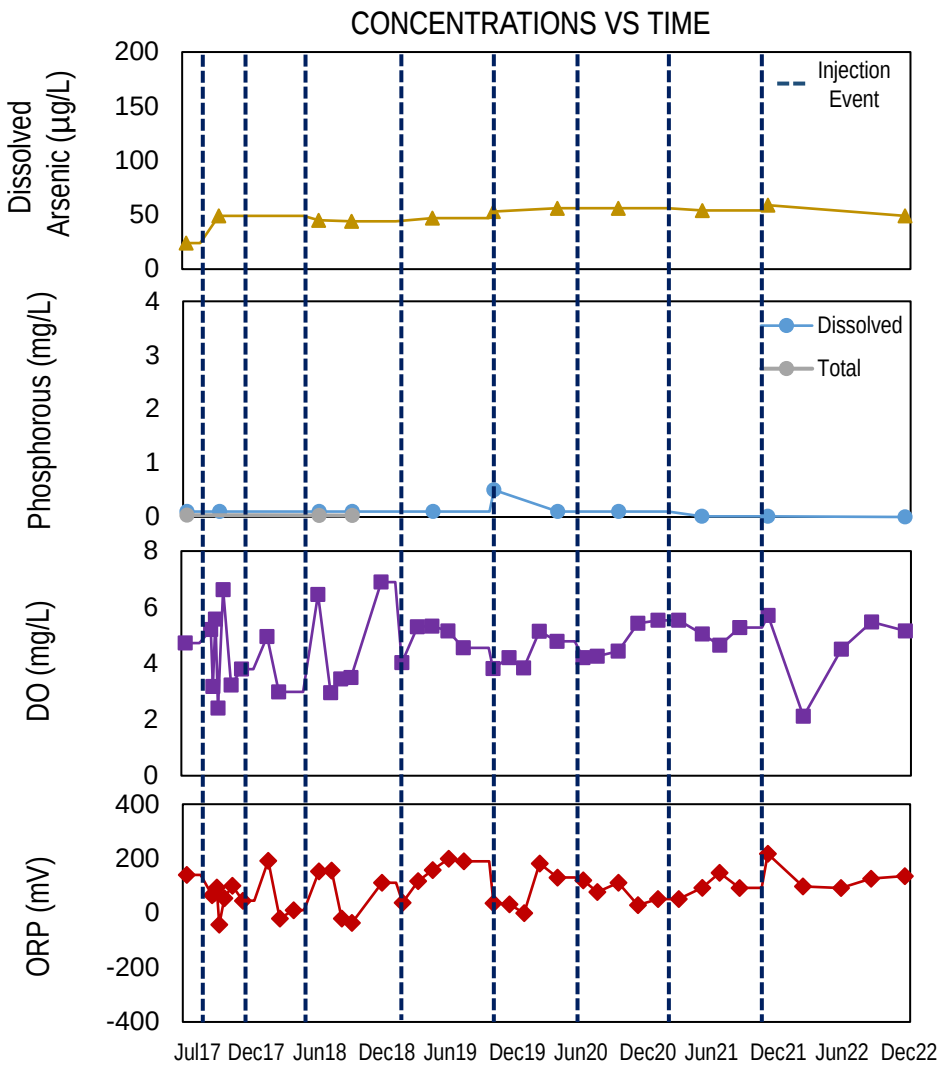
Figure No.
E.21

\\tts100fs1\Shared TEN\Projects\Task M11 - Seep Well Field Bioremediation\Mod 6 Activities - Study Extension\2020 Annual Report\Appendix F\Appendix F - Concentration Trend Graphs.pptx





Notes:

1. Concentrations projected at time of each injection event are based on data from the previous sampling event.
2. SWFTS-MW13 is located approximately 100 feet south of the injection well transects. SWFTS-MW13 is considered an upgradient monitoring well.
3. Monitoring well SWFTS-MW13 is screened in the alluvium from 17.8 to 47.6 feet bgs.
4. Slug testing suggests hydraulic conductivity at SWFTS-MW13 is approximately 0.8 feet/day.
5. No mobile porosity estimates at monitoring well SWFTS-MW13 were measured.

Abbreviations: µg/L – microgram per liter amsl – above mean sea level mg/L – milligram per liter TOC – Total Organic Carbon DO – Dissolved Oxygen ORP – Oxidation-Reduction Potential

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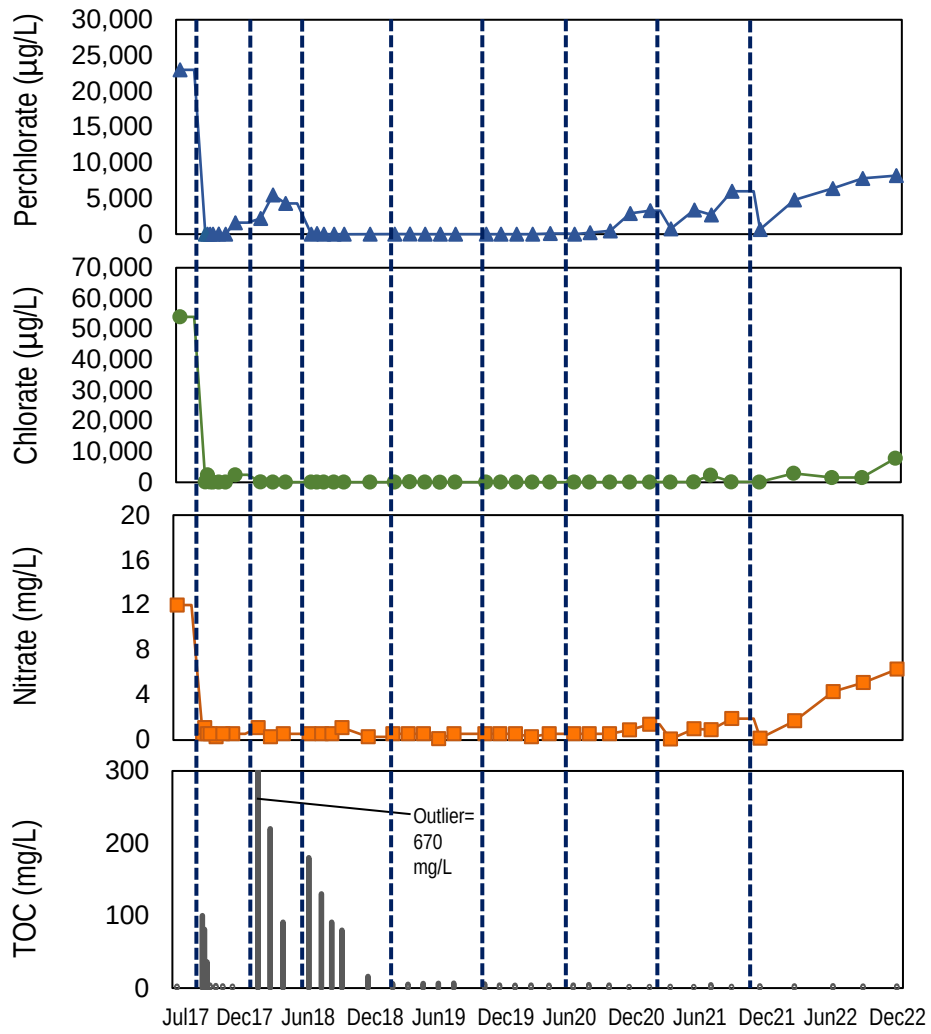
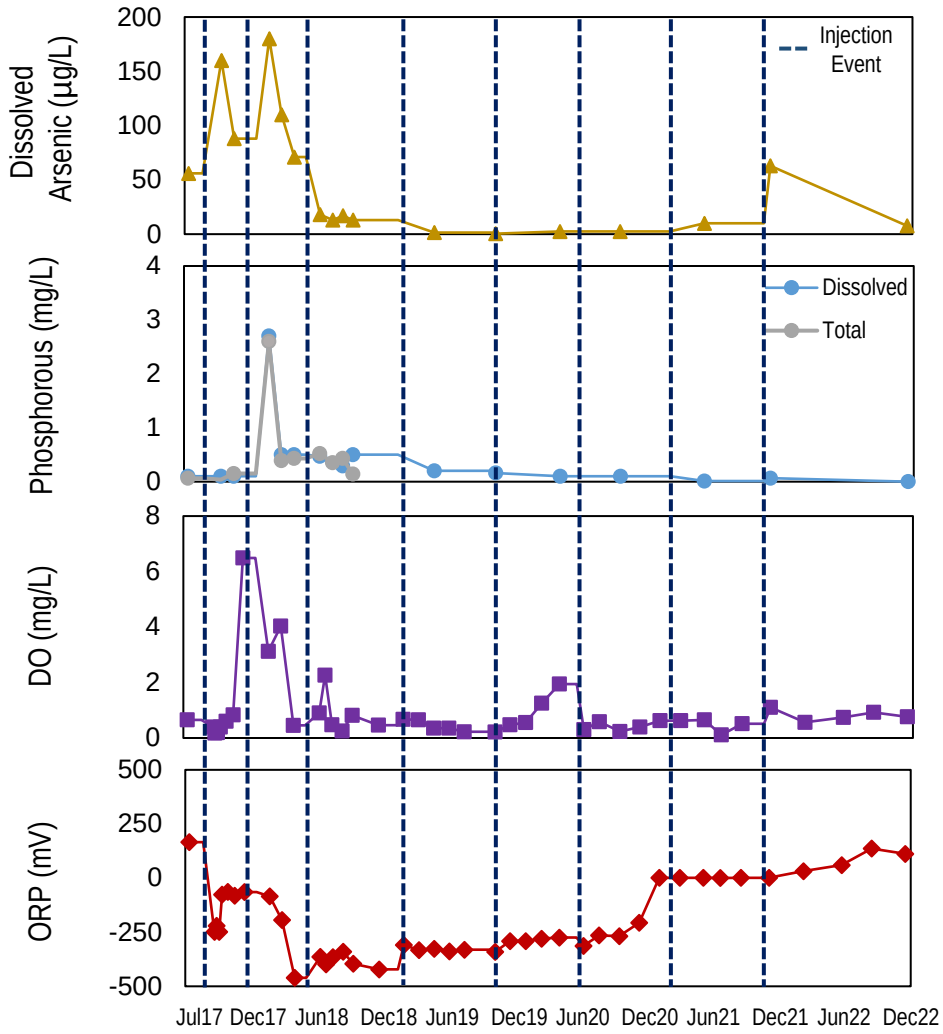
SUMMARY OF EFFECTIVENESS MONITORING RESULTS FOR SWFTS-MW13

Project No.: 117-7502021-M11
Date: OCTOBER 30, 2023
Designed By: SS

Figure No.
E.22

\\tts100fs1\Shared TEN\Projects\Task M11 - Seep Well Field Bioremediation\Mod 6 Activities - Study Extension\2020 Annual Report\Appendix F\Appendix F - Concentration Trend Graphs.pptx





Notes:

1. Concentrations projected at time of each injection event are based on data from the previous sampling event.
2. SWFTS-MW14 is located between the injection well transects, approximately 100 feet downgradient of the southern injection well transect.
3. Monitoring well SWFTS-MW14 is screened in the alluvium from 16.8 to 36.6 feet bgs.
4. Slug testing suggests hydraulic conductivity at SWFTS-MW14 is approximately 13.1 to 96.6 feet/day.
5. No mobile porosity estimates at monitoring well SWFTS-MW14 were measured.

Abbreviations: µg/L – microgram per liter amsl – above mean sea level mg/L – milligram per liter TOC – Total Organic Carbon DO – Dissolved Oxygen ORP – Oxidation-Reduction Potential

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HENDERSON, NEVADA

SUMMARY OF EFFECTIVENESS MONITORING RESULTS FOR SWFTS-MW14

Project No.: 117-7502021-M11
Date: OCTOBER 30, 2023
Designed By: SS

Figure No.
E.23

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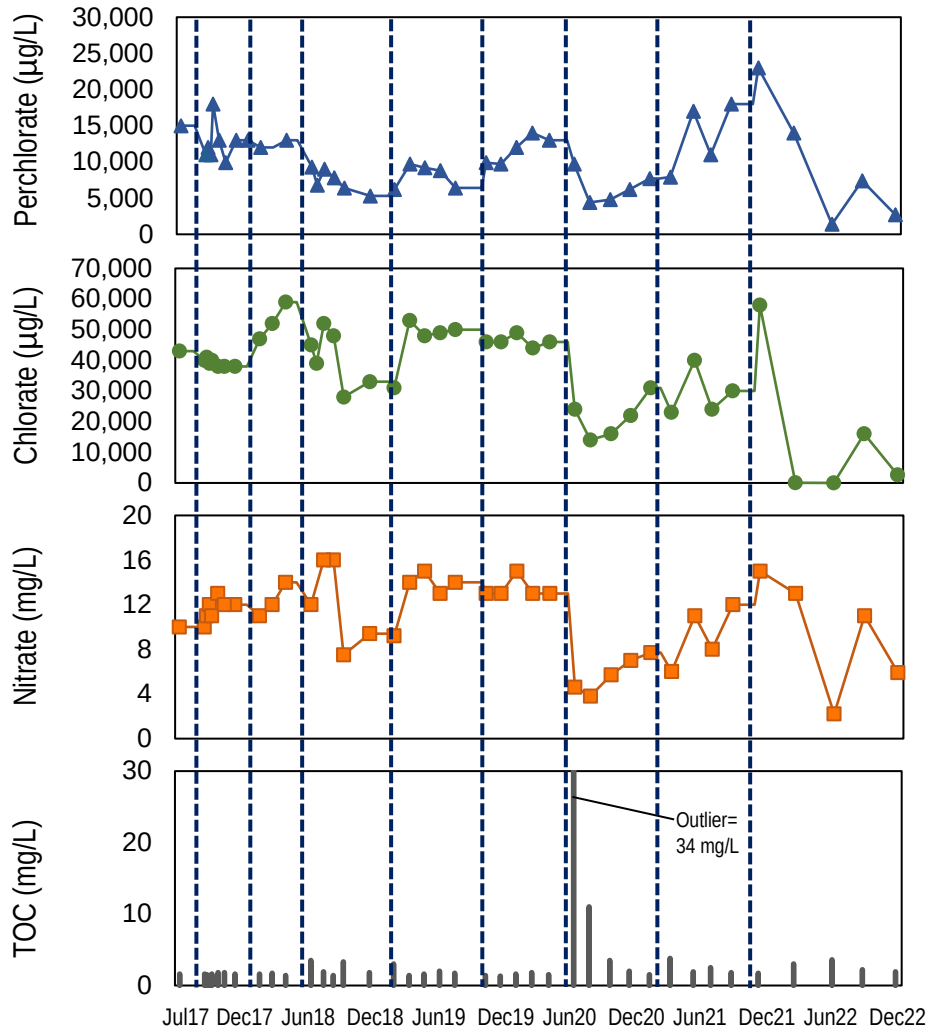

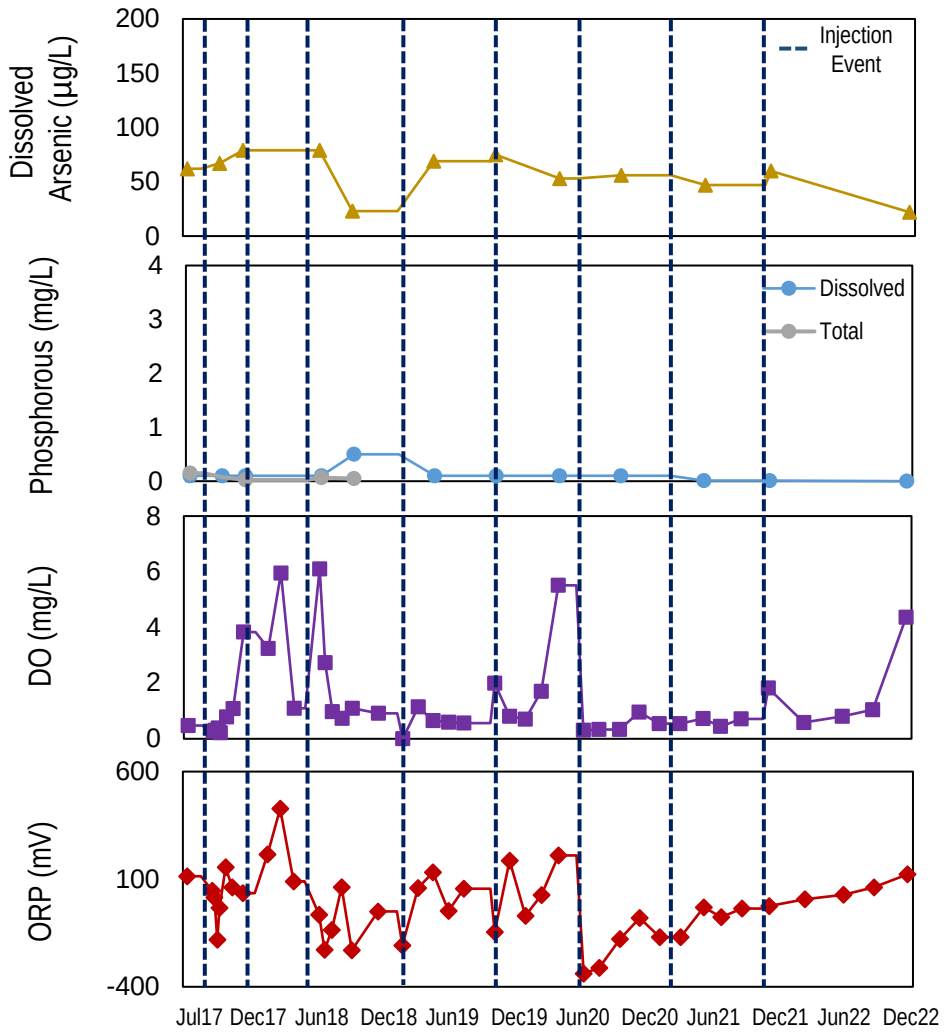

Notes:

1. Concentrations projected at time of each injection event are based on data from the previous sampling event.
2. SWFTS-MW15 is located between the injection well transects, approximately 50 feet downgradient of the southern injection well transect.
3. Monitoring well SWFTS-MW15 is screened in the alluvium from 14.8 to 34.6 feet bgs.
4. Slug testing suggests hydraulic conductivity at SWFTS-MW15 is approximately 42.9 feet/day.
5. No mobile porosity estimates at monitoring well SWFTS-MW15 were measured.

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SUMMARY OF EFFECTIVENESS MONITORING RESULTS FOR SWFTS-MW15

Project No.: 117-7502021-M11
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Figure No.
E.24

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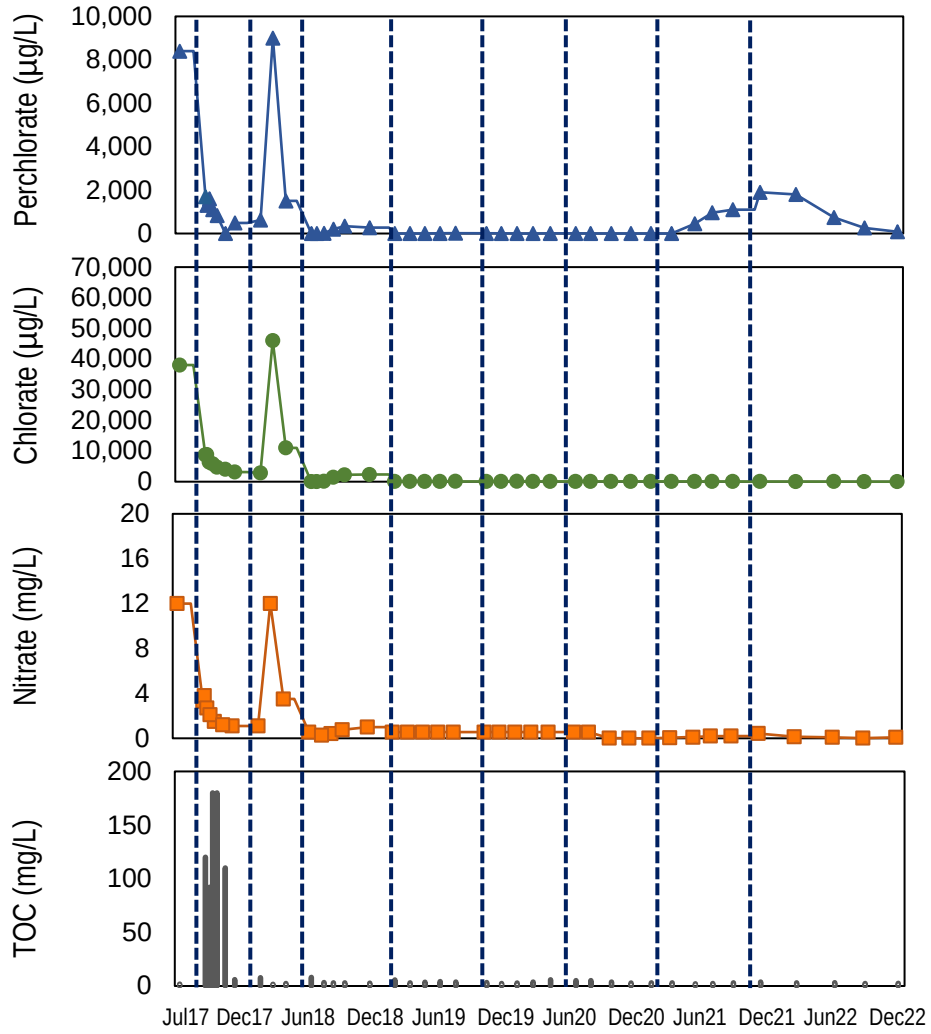

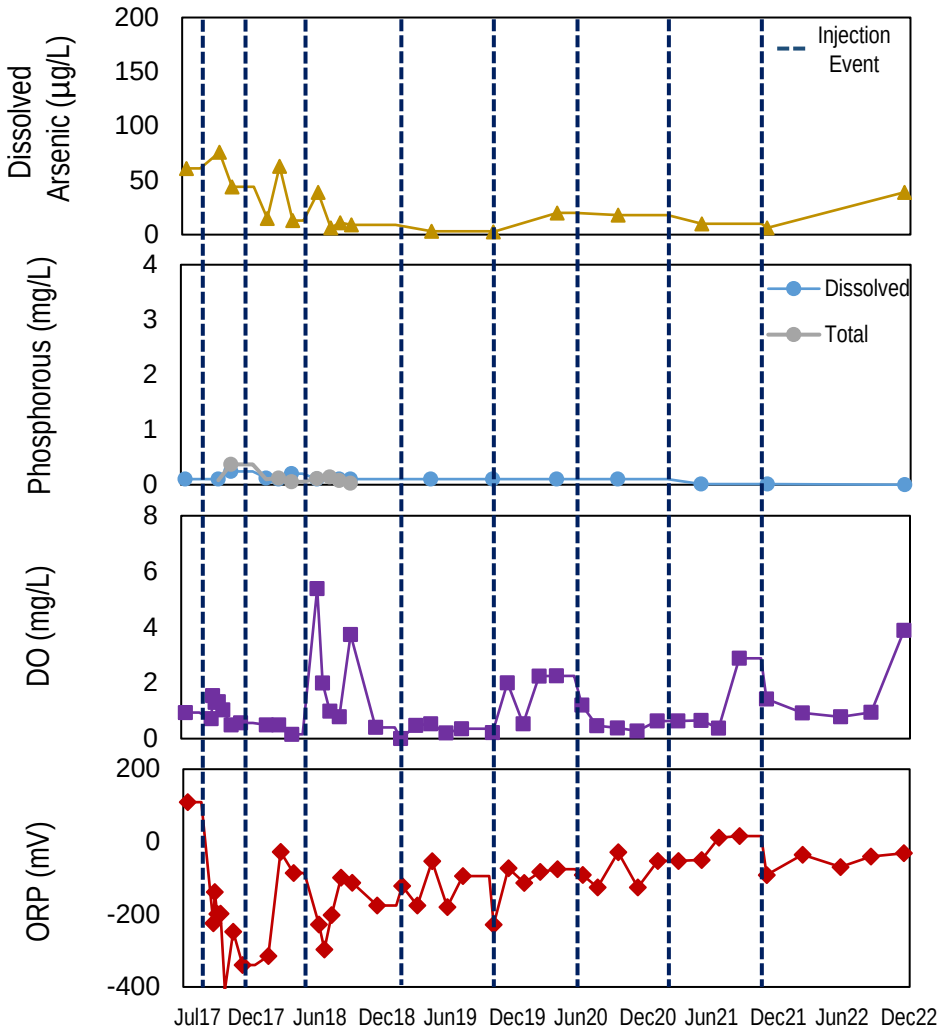

Notes:

1. Concentrations projected at time of each injection event are based on data from the previous sampling event.
2. SWFTS-MW16 is located between the injection well transects, approximately 50 feet downgradient of the southern injection well transect.
3. Monitoring well SWFTS-MW16 is screened in the alluvium from 21.8 to 41.6 feet bgs.
4. Slug testing suggests hydraulic conductivity at SWFTS-MW16 is approximately 12.5 to 51.1 feet/day.
5. No mobile porosity estimates at monitoring well SWFTS-MW16 were measured.

Abbreviations: µg/L – microgram per liter amsl – above mean sea level mg/L – milligram per liter TOC – Total Organic Carbon DO – Dissolved Oxygen ORP – Oxidation-Reduction Potential

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SUMMARY OF EFFECTIVENESS MONITORING RESULTS FOR SWFTS-MW16

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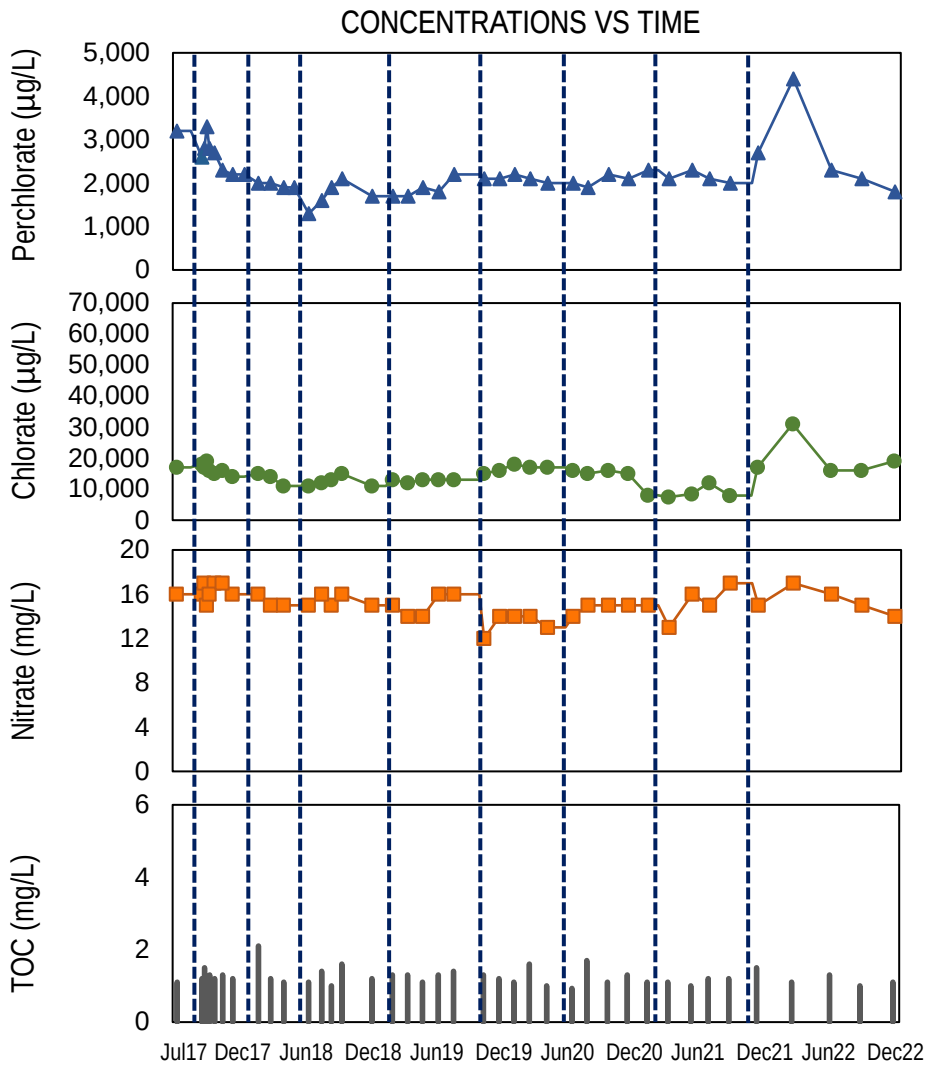

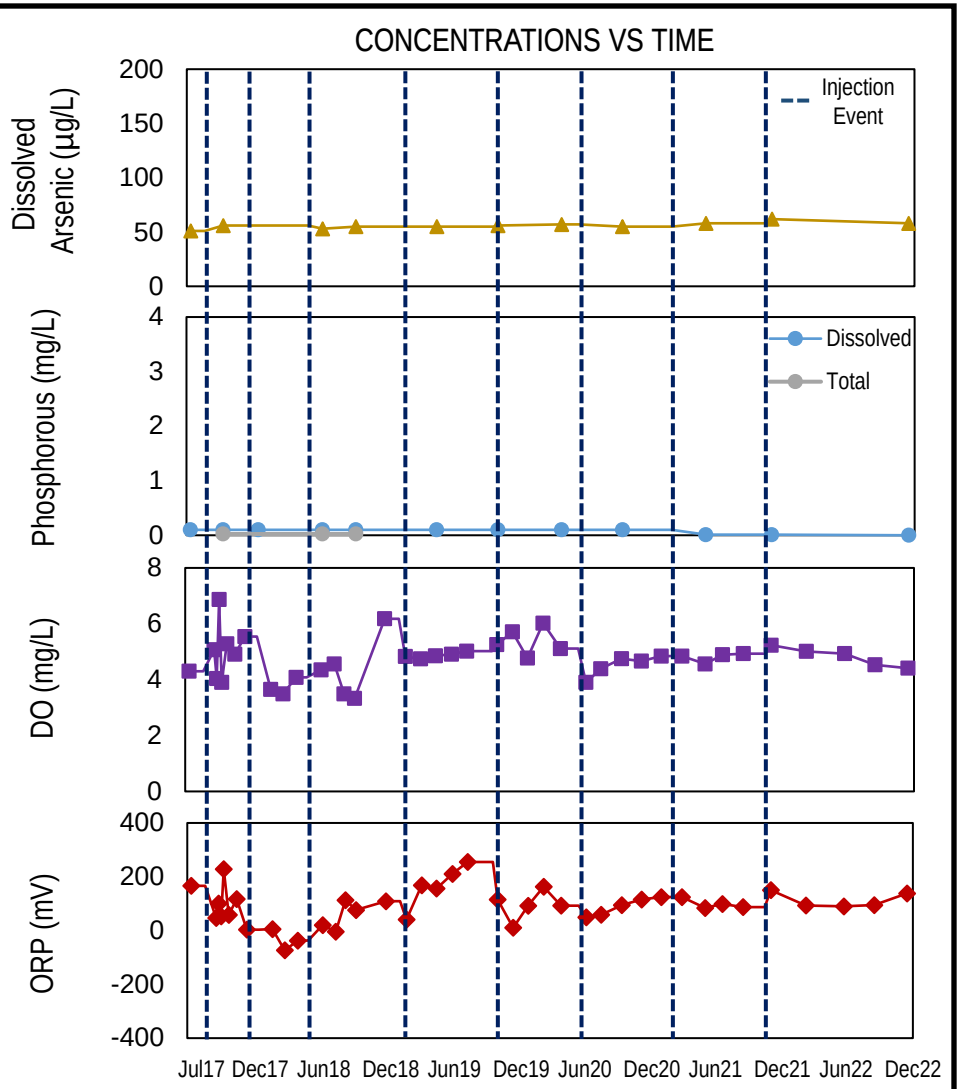

Notes:

1. Concentrations projected at time of each injection event are based on data from the previous sampling event.
2. SWFTS-MW17 is located approximately 100 feet southeast of the injection well transects. SWFTS-MW17 is considered an upgradient monitoring well.
3. Monitoring well SWFTS-MW17 is screened in the alluvium from 22.8 to 52.6 feet bgs.
4. Slug testing suggests hydraulic conductivity at SWFTS-MW17 is approximately 4.2 feet/day.
5. No mobile porosity estimates at monitoring well SWFTS-MW17 were measured.

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SUMMARY OF EFFECTIVENESS MONITORING RESULTS FOR SWFTS-MW17

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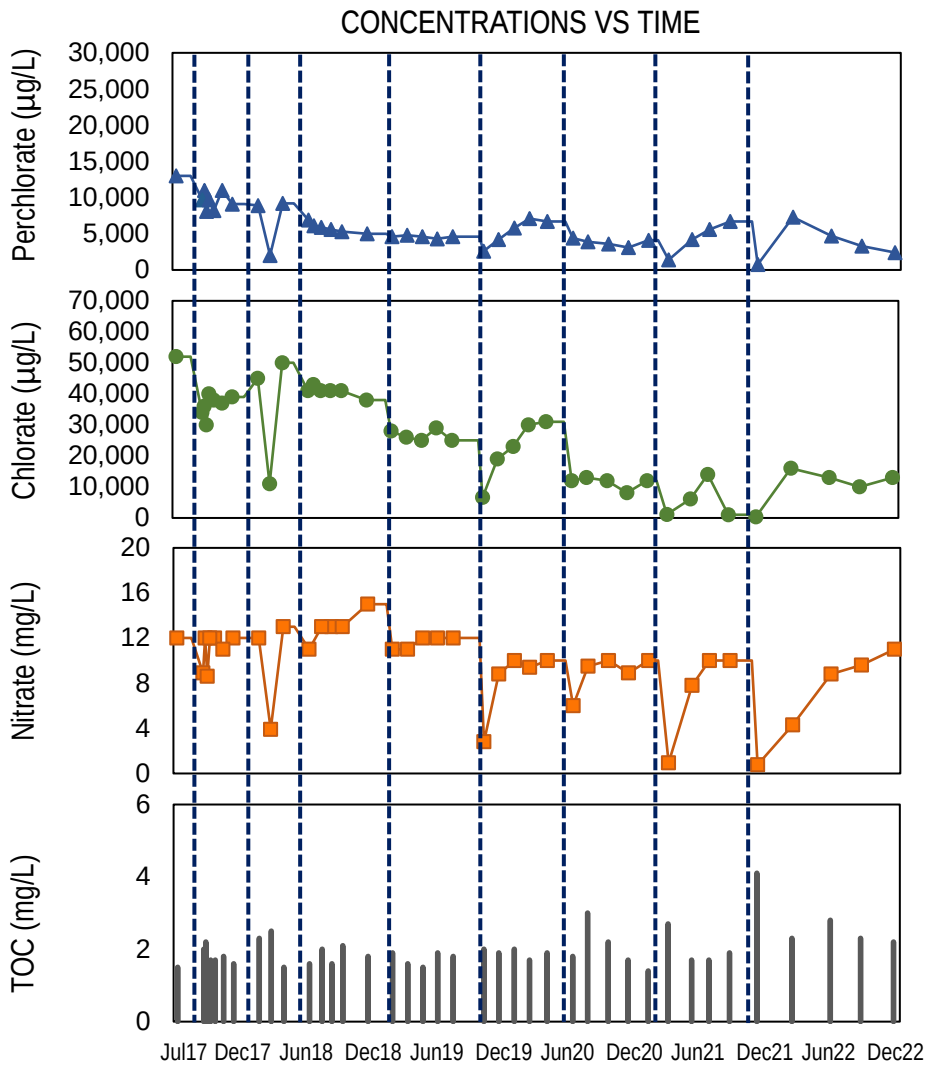

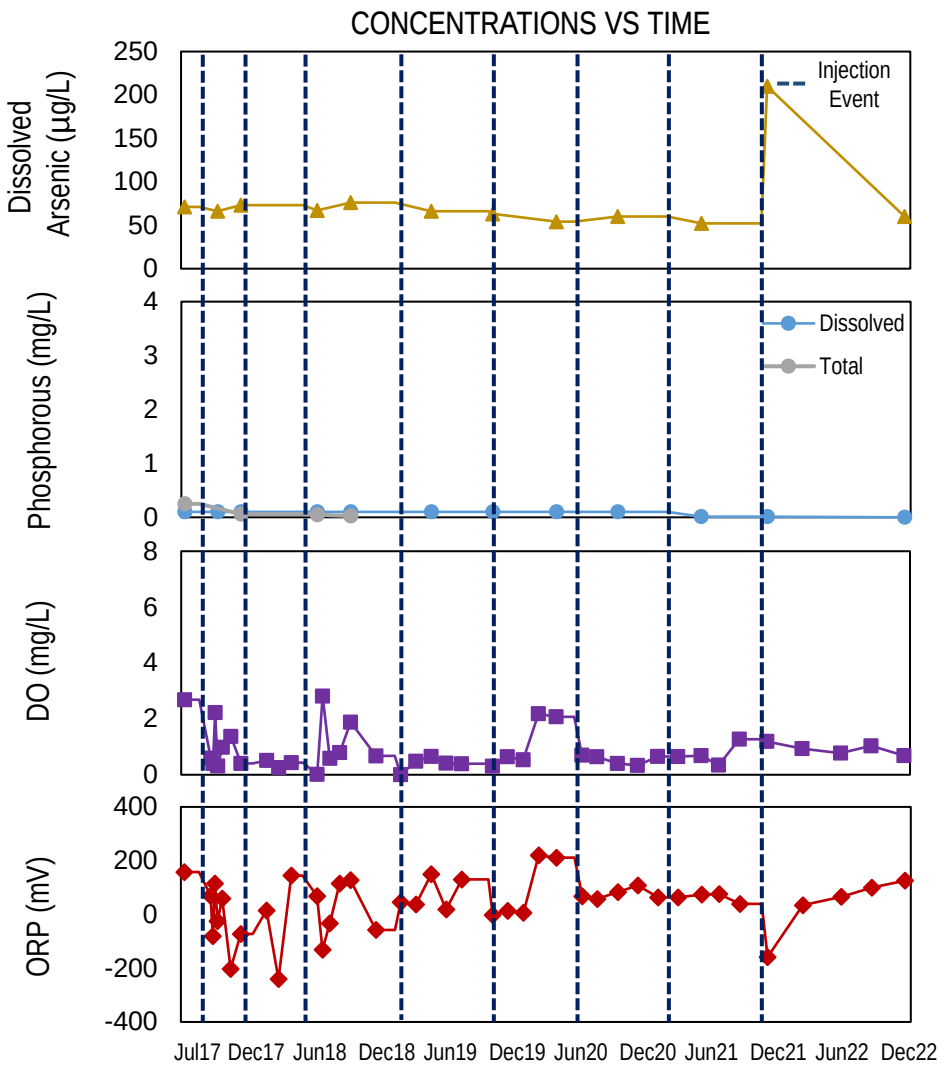

Notes:

1. Concentrations projected at time of each injection event are based on data from the previous sampling event.
2. SWFTS-MW18 is located approximately 25 feet downgradient of the injection well transects.
3. Monitoring well SWFTS-MW18 is screened in the alluvium from 16.8 to 36.6 feet bgs.
4. Slug testing suggests hydraulic conductivity at SWFTS-MW18 is approximately 25.0 feet/day.
5. No mobile porosity estimates at monitoring well SWFTS-MW18 were measured.

Abbreviations: µg/L – microgram per liter amsl – above mean sea level mg/L – milligram per liter TOC – Total Organic Carbon DO – Dissolved Oxygen ORP – Oxidation-Reduction Potential

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SUMMARY OF EFFECTIVENESS MONITORING RESULTS FOR SWFTS-MW18

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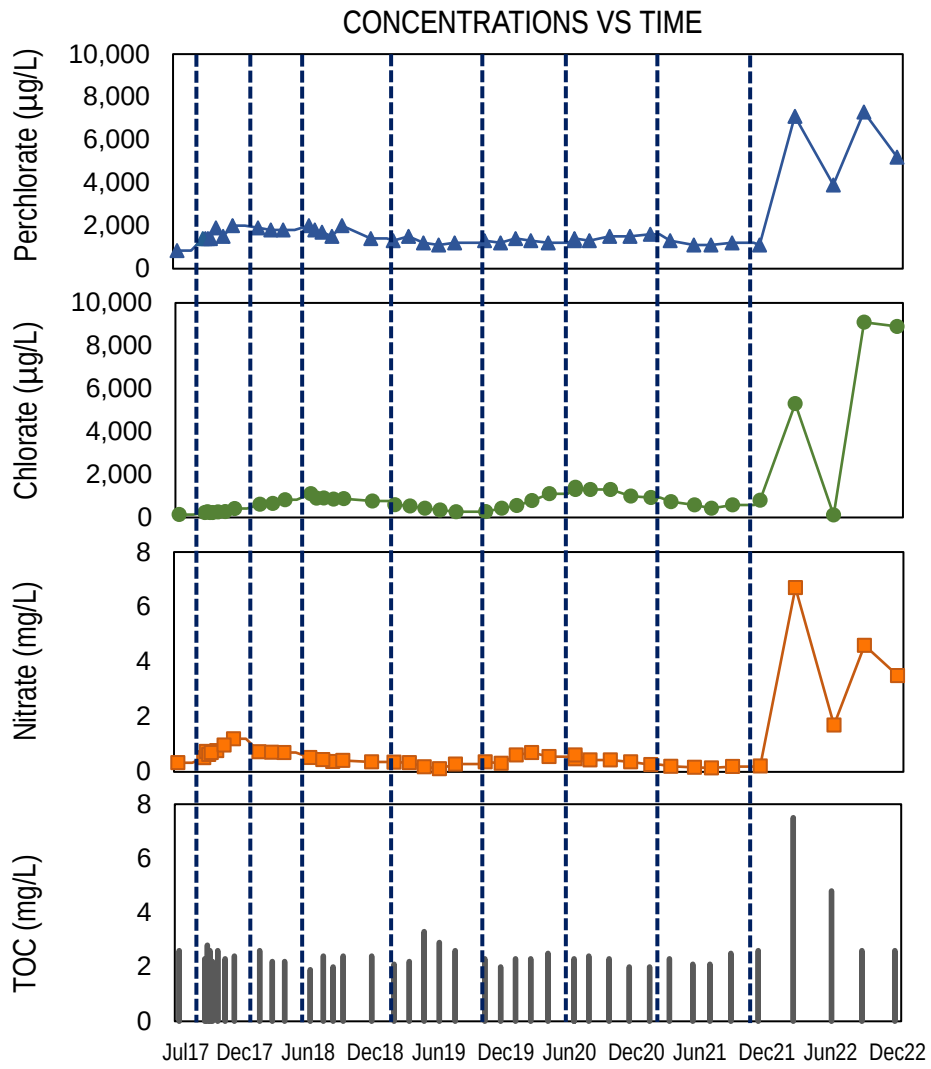

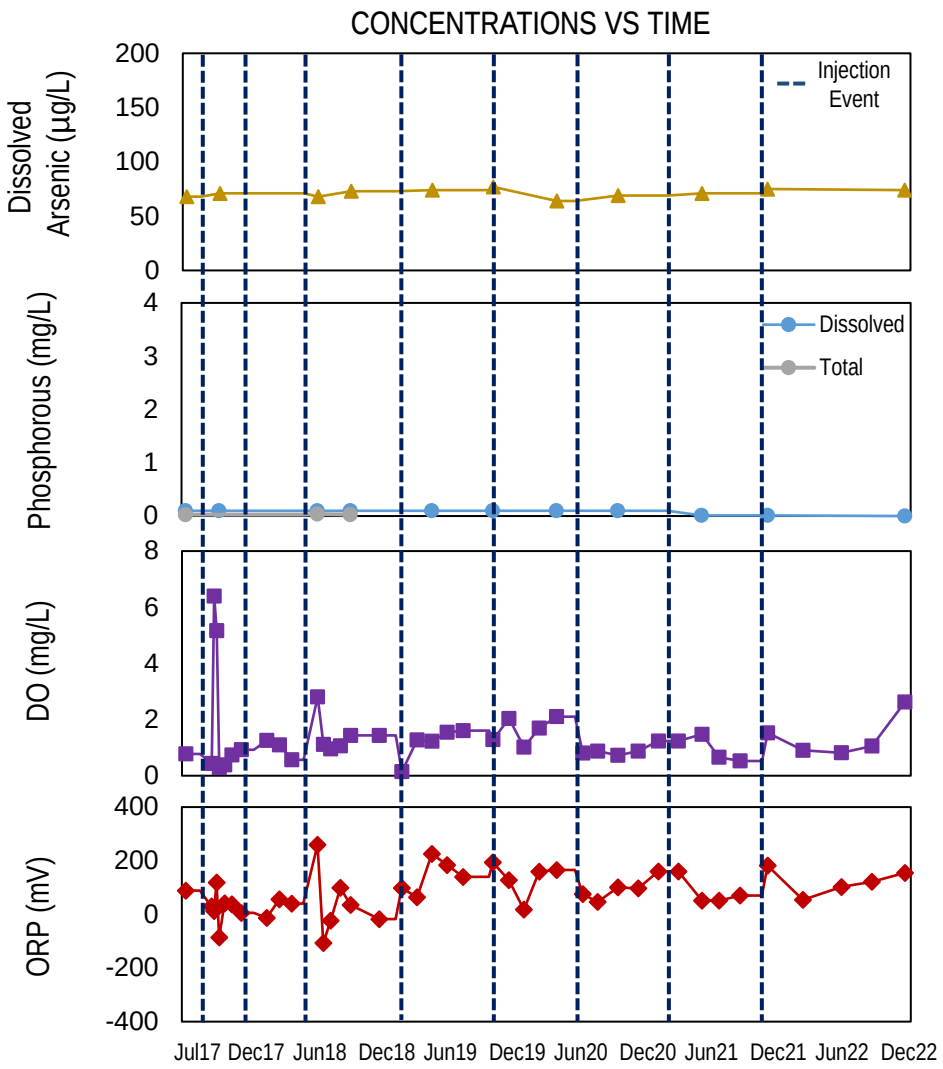

Notes:

1. Concentrations projected at time of each injection event are based on data from the previous sampling event.
2. SWFTS-MW19 is located approximately 150 feet north of the injection well transects. SWFTS-MW19 is considered a side-gradient monitoring well.
3. Monitoring well SWFTS-MW19 is screened in the alluvium from 11.3 to 31.1 feet bgs.
4. Slug testing suggests hydraulic conductivity at SWFTS-MW19 is approximately 1.4 feet/day.
5. No mobile porosity estimates at monitoring well SWFTS-MW19 were measured.

Abbreviations: µg/L – microgram per liter amsl – above mean sea level mg/L – milligram per liter TOC – Total Organic Carbon DO – Dissolved Oxygen ORP – Oxidation-Reduction Potential

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SUMMARY OF EFFECTIVENESS MONITORING RESULTS FOR SWFTS-MW19

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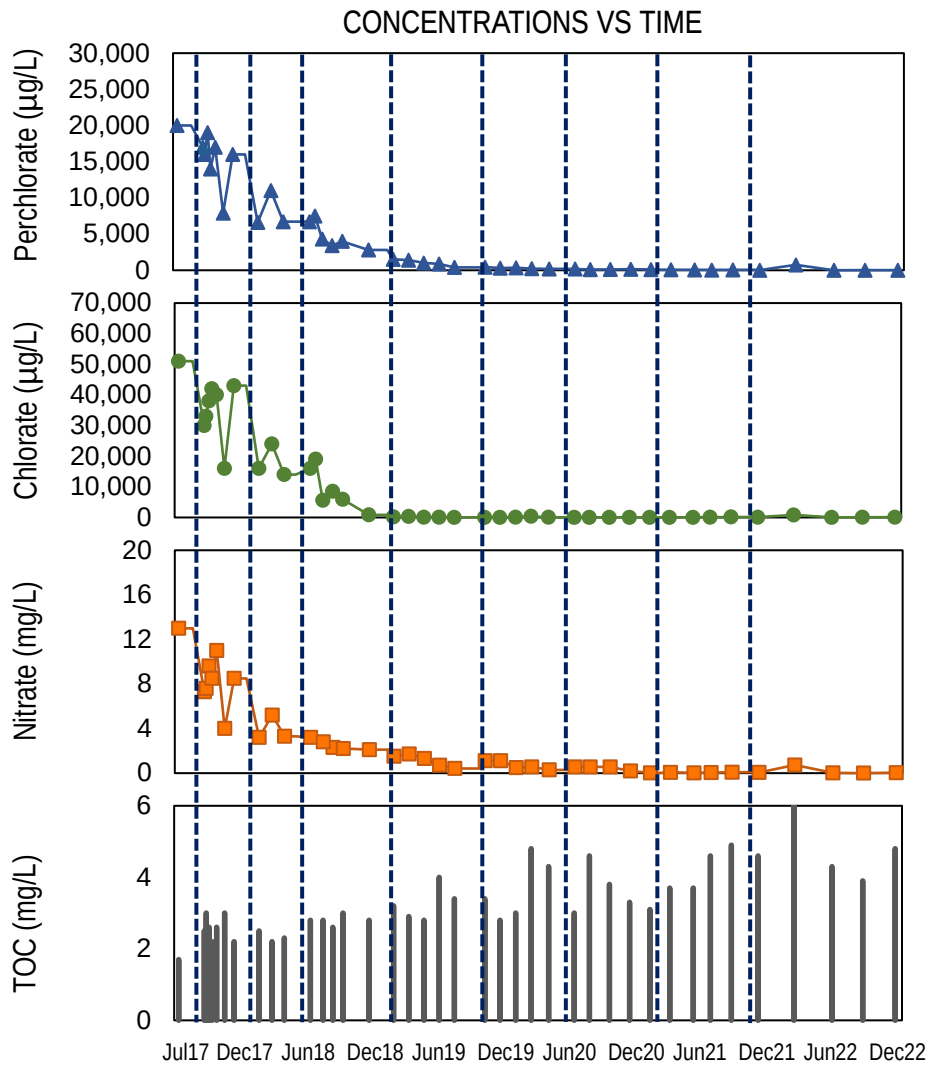

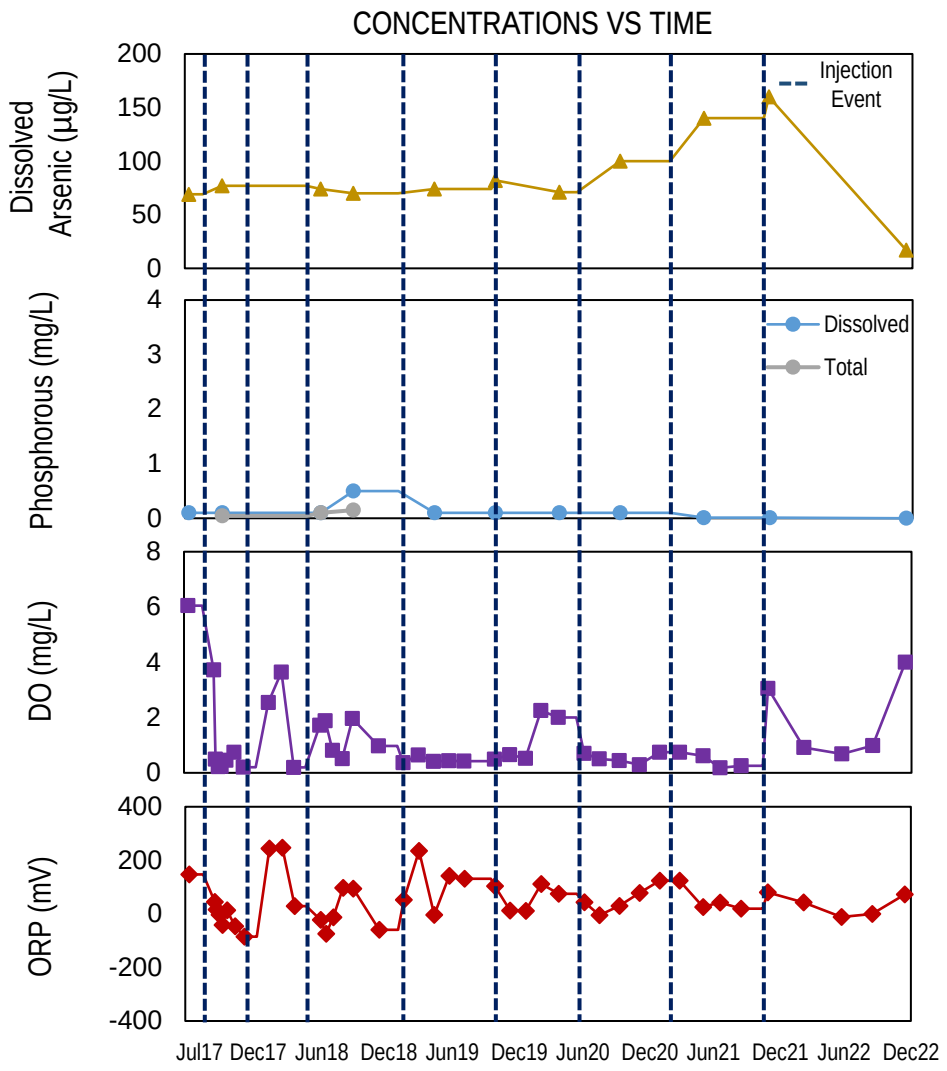

Notes:

1. Concentrations projected at time of each injection event are based on data from the previous sampling event.
2. SWFTS-MW20 is located approximately 100 feet downgradient of the injection well transects.
3. Monitoring well SWFTS-MW20 is screened in the alluvium from 12.8 to 37.6 feet bgs.
4. Slug testing suggests hydraulic conductivity at SWFTS-MW20 is approximately 58.1 feet/day.
5. No mobile porosity estimates at monitoring well SWFTS-MW20 were measured.

Abbreviations: µg/L – microgram per liter amsl – above mean sea level mg/L – milligram per liter TOC – Total Organic Carbon DO – Dissolved Oxygen ORP – Oxidation-Reduction Potential

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SUMMARY OF EFFECTIVENESS MONITORING RESULTS FOR SWFTS-MW20

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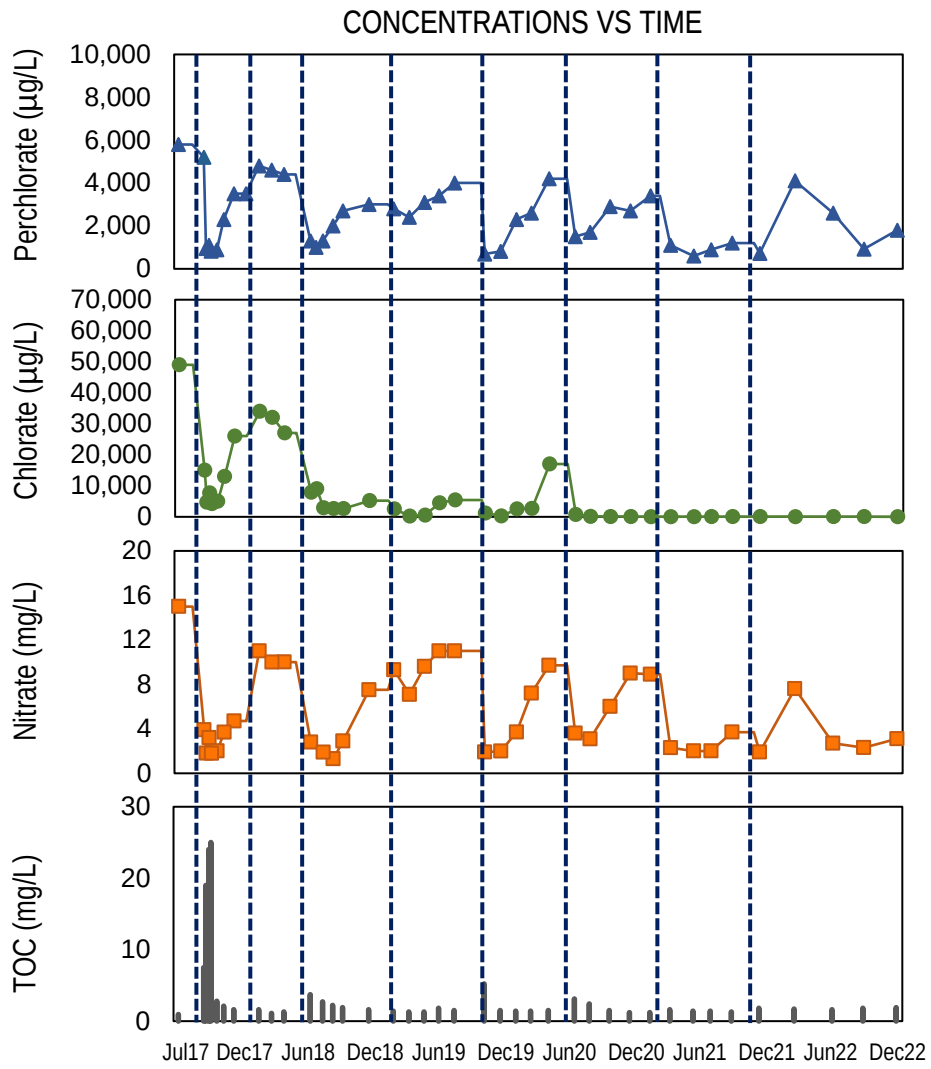

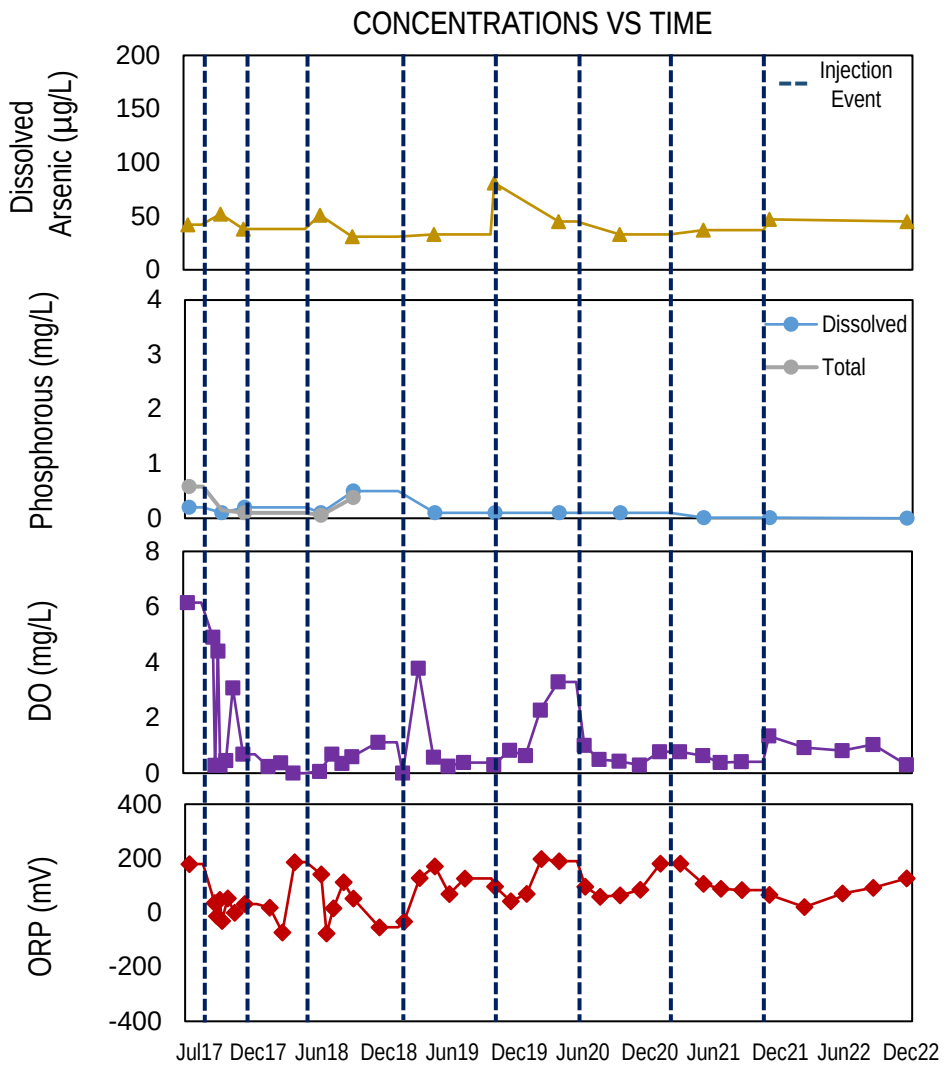

Notes:

1. Concentrations projected at time of each injection event are based on data from the previous sampling event.
2. SWFTS-MW21 is located approximately 150 feet downgradient of the injection well transects.
3. Monitoring well SWFTS-MW21 is screened in the alluvium from 14.8 to 39.6 feet bgs.
4. Slug testing suggests hydraulic conductivity at SWFTS-MW21 is approximately 3.8 to 29.5 feet/day.
5. No mobile porosity estimates at monitoring well SWFTS-MW21 were measured.

Abbreviations: µg/L – microgram per liter amsl – above mean sea level mg/L – milligram per liter TOC – Total Organic Carbon DO – Dissolved Oxygen ORP – Oxidation-Reduction Potential

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SUMMARY OF EFFECTIVENESS MONITORING RESULTS FOR SWFTS-MW21

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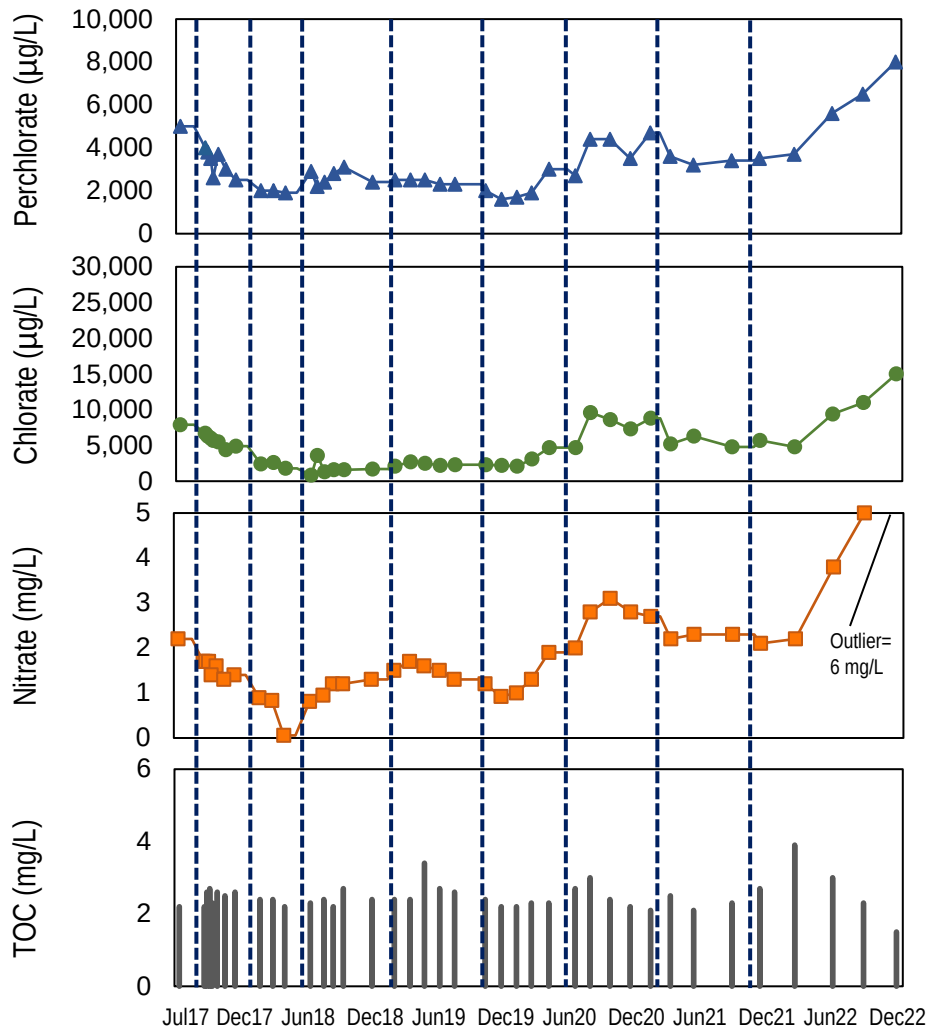

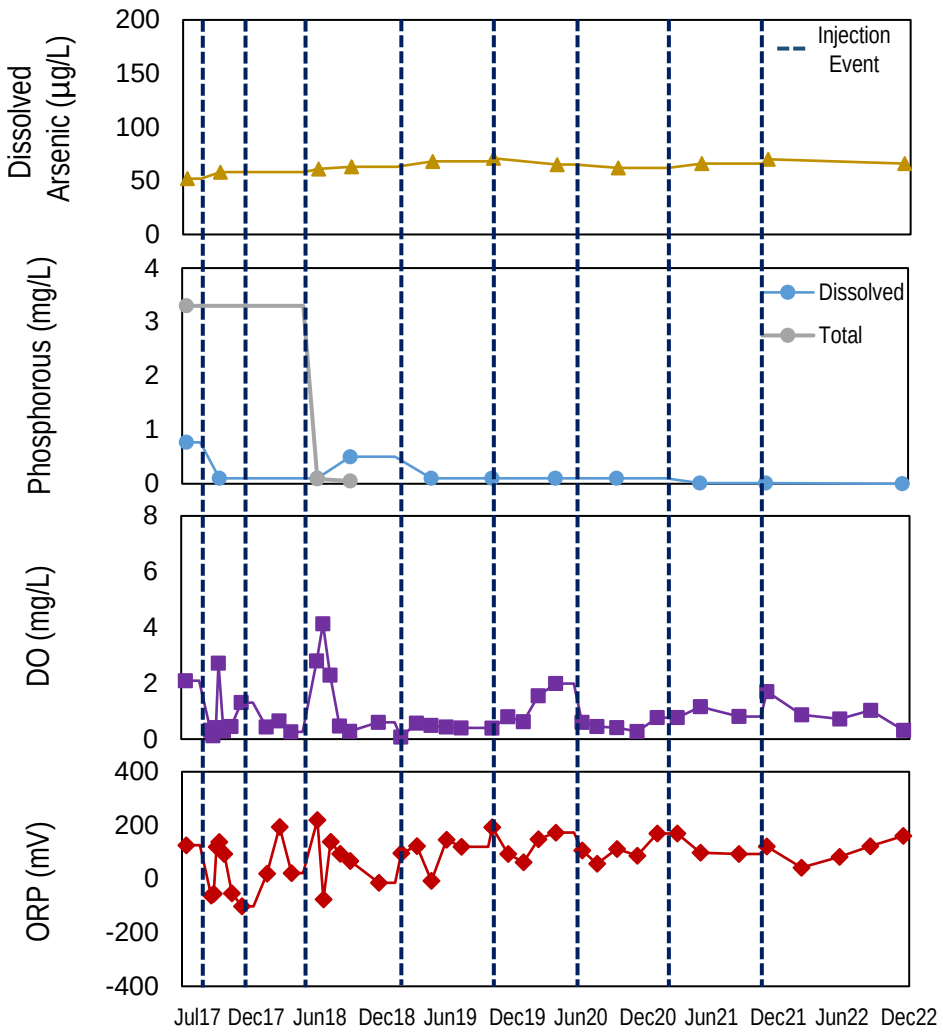

Notes:

1. Concentrations projected at time of each injection event are based on data from the previous sampling event.
2. SWFTS-MW22 is located approximately 275 feet downgradient of the injection well transects.
3. Monitoring well SWFTS-MW22 is screened in the alluvium from 11.8 to 31.6 feet bgs.
4. Slug testing suggests hydraulic conductivity at SWFTS-MW22 is approximately 85.1 feet/day.
5. No mobile porosity estimates at monitoring well SWFTS-MW22 were measured.

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SUMMARY OF EFFECTIVENESS MONITORING RESULTS FOR SWFTS-MW22

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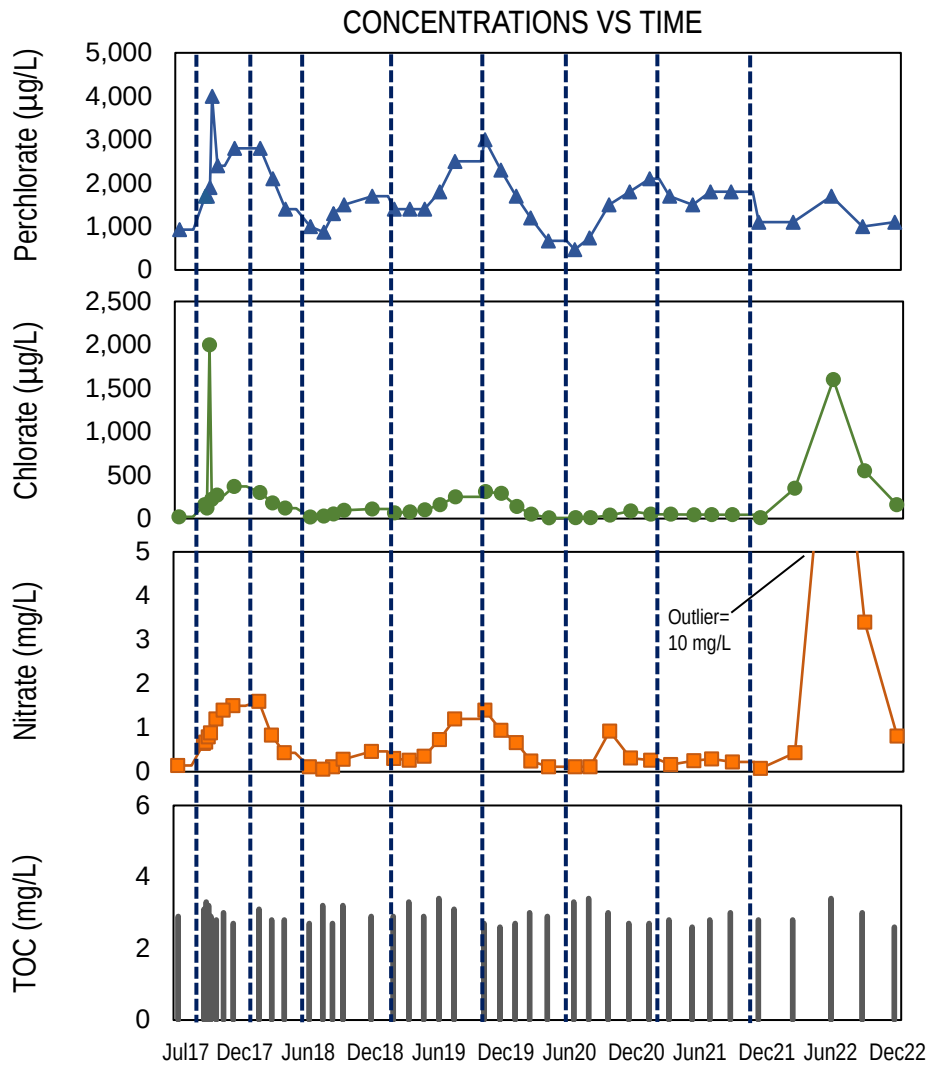

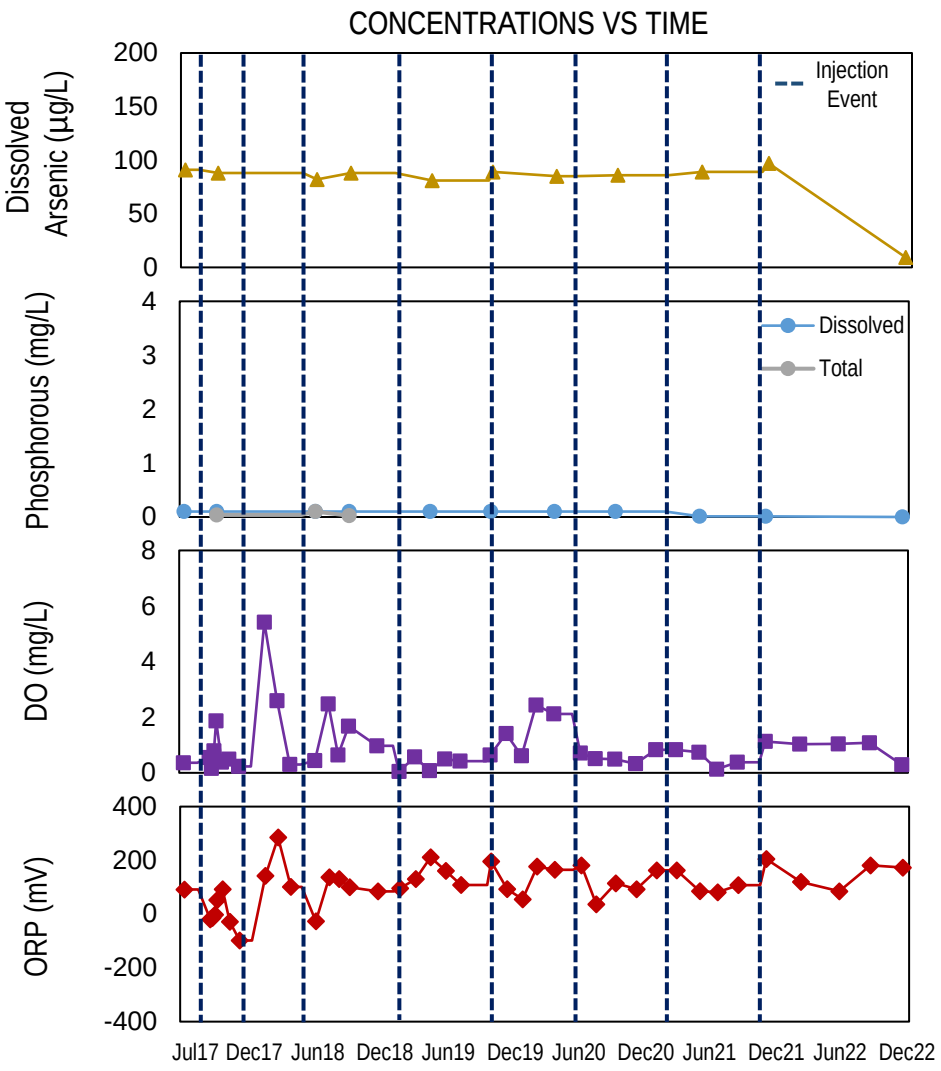

Notes:

1. Concentrations projected at time of each injection event are based on data from the previous sampling event.
2. SWFTS-MW23 is located approximately 500 feet north of the injection well transects. SWFTS-MW23 is considered a side-gradient monitoring well.
3. Monitoring well SWFTS-MW23 is screened in the alluvium from 13.8 to 33.6 feet bgs.
4. Slug testing suggests hydraulic conductivity at SWFTS-MW23 is approximately 34.2 feet/day.
5. No mobile porosity estimates at monitoring well SWFTS-MW23 were measured.

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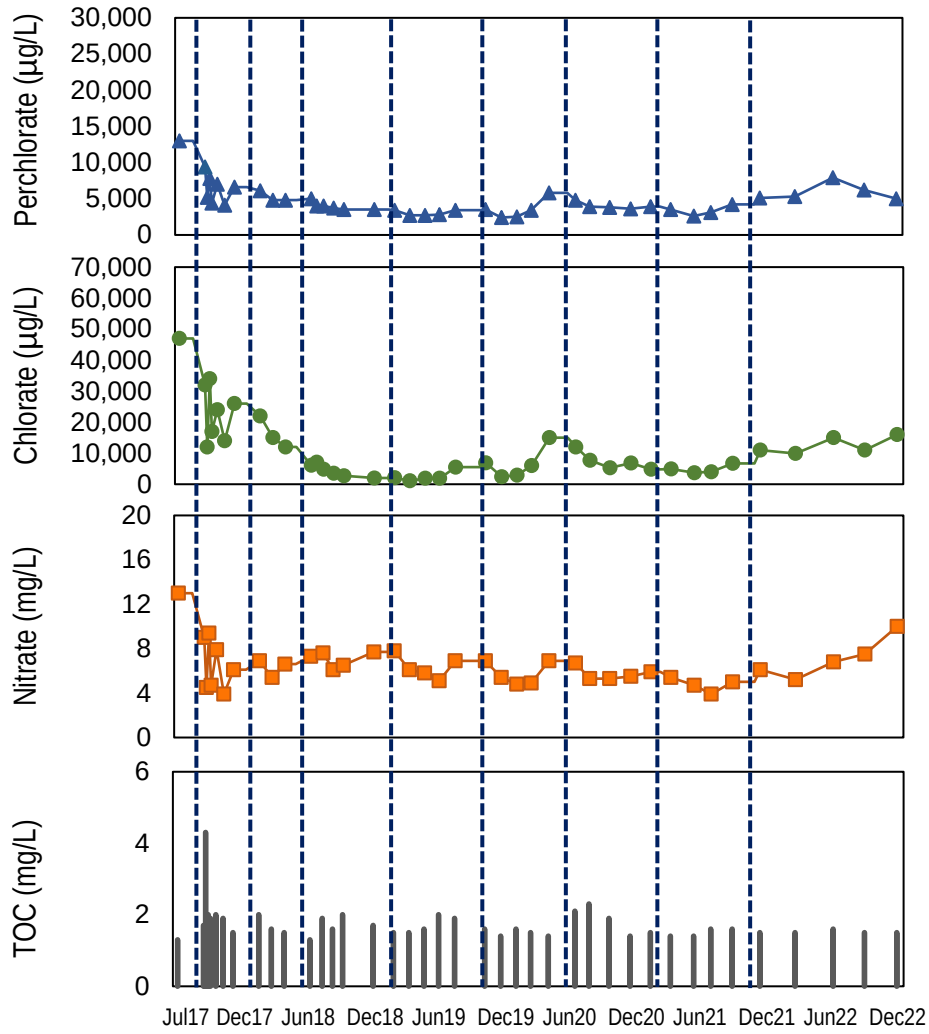

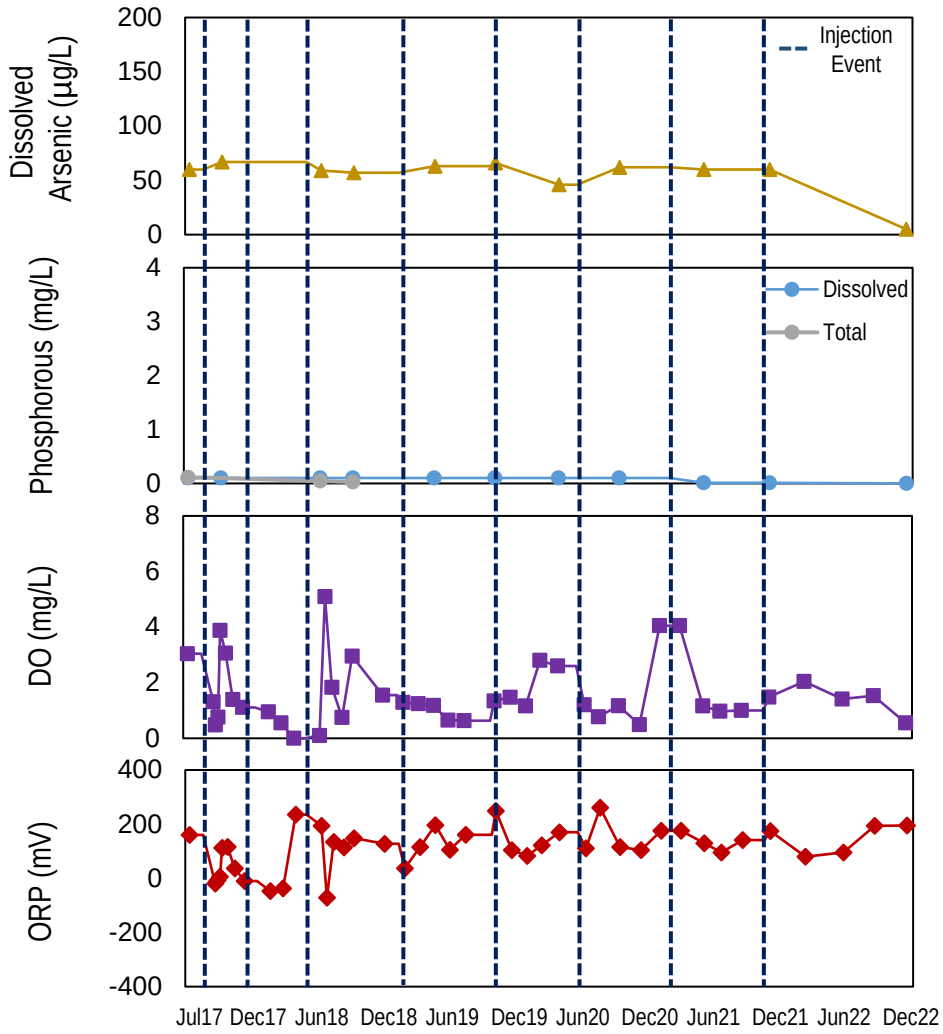

Notes:

1. Concentrations projected at time of each injection event are based on data from the previous sampling event.
2. SWFTS-MW24 is located approximately 450 feet downgradient of the injection well transects.
3. Monitoring well SWFTS-MW24 is screened in the alluvium from 12.8 to 37.6 feet bgs.
4. Slug testing suggests hydraulic conductivity at SWFTS-MW24 is approximately 121.0 feet/day.
5. No mobile porosity estimates at monitoring well SWFTS-MW24 were measured.

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SUMMARY OF EFFECTIVENESS MONITORING RESULTS FOR SWFTS-MW24

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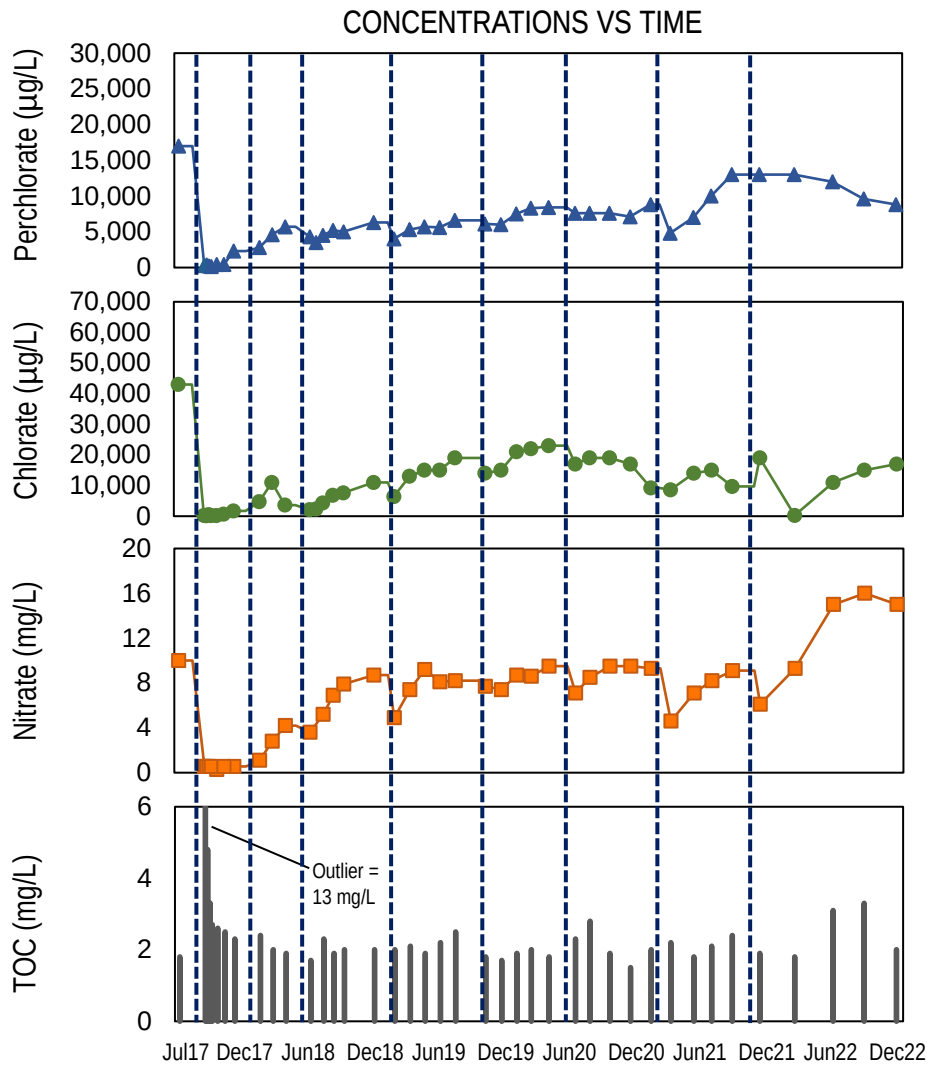

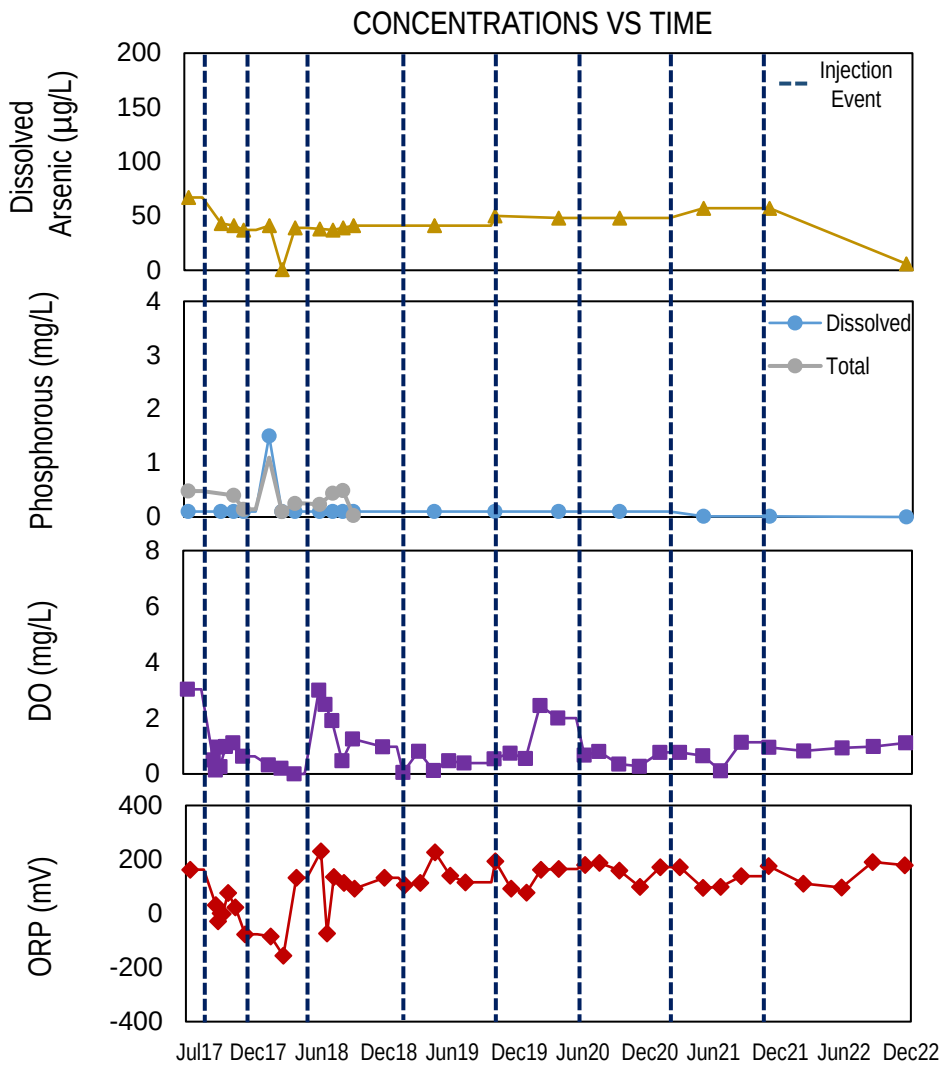

Notes:

1. Concentrations projected at time of each injection event are based on data from the previous sampling event.
2. SWFTS-MW25 is located approximately 600 feet downgradient of the injection well transects.
3. Monitoring well SWFTS-MW25 is screened in the alluvium from 12.8 to 42.6 feet bgs.
4. Slug testing suggests hydraulic conductivity at SWFTS-MW25 is approximately 59.1 to 86.2 feet/day.
5. No mobile porosity estimates at monitoring well SWFTS-MW25 were measured.

Abbreviations: µg/L – microgram per liter amsl – above mean sea level mg/L – milligram per liter TOC – Total Organic Carbon DO – Dissolved Oxygen ORP – Oxidation-Reduction Potential

TETRA TECH
www.tetratech.com
150 S. 4th Street, Unit A
Henderson, Nevada 89015
Phone: (702) 854-2293

NEVADA ENVIRONMENTAL RESPONSE TRUST SITE

SEEP WELL FIELD AREA BIOREMEDIATION TREATABILITY STUDY
2022 ANNUAL PROGRESS REPORT
HENDERSON, NEVADA

SUMMARY OF EFFECTIVENESS MONITORING RESULTS FOR SWFTS-MW25

Project No.: 117-7502021-M11
Date: OCTOBER 30, 2023
Designed By: SS

Figure No.
E.34

\\tts100fs1\Shared TEN\Projects\Task M11 - Seep Well Field Bioremediation\Mod 6 Activities - Study Extension\2020 Annual Report\Appendix F\Appendix F - Concentration Trend Graphs.pptx

Appendix F
Microbial Analytical Reports

10515 Research Drive
Knoxville, TN 37932
Phone: (865) 573-8188
Fax: (865) 573-8133

Client: Jenny Dabbs
Tetra Tech, Inc.
1093 Commerce Park Drive
Suite 100
Oak Ridge, TN 37830

Phone:

Fax:

Identifier: 052TH **Date Rec:** 08/12/2022 **Report Date:** 08/23/2022

Client Project #: M11 **Client Project Name:** SWFTS Borings

Purchase Order #:

Test results provided for: CENSUS

Reviewed By:

Charles Slater

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CENSUS

Client: **Tetra Tech, Inc.**
Project: SWFTS Borings

MI Project Number: **052TH**
Date Received: 08/12/2022

Sample Information

Client Sample ID:		**BH11-20**	**BH13-11**	**BH13-22**	**BH13-32.6**	**BH13-39**
Sample Date:		08/10/2022	08/11/2022	08/11/2022	08/11/2022	08/11/2022
Units:		cells/g	cells/g	cells/g	cells/g	cells/g
Analyst/Reviewer:		BB/CS	BB/CS	BB/CS	BB/CS	BB/CS
Functional Genes						
Perchlorate Reductase	pcrA	<2.00E+04	<2.00E+04	<1.00E+04	<2.00E+04	<1.00E+04

Legend:
NA = Not Analyzed NS = Not Sampled J = Estimated gene copies below PQL but above LQL I = Inhibited
< = Result not detected

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CENSUS

Client: **Tetra Tech, Inc.**
Project: SWFTS Borings

MI Project Number: **052TH**
Date Received: 08/12/2022

Sample Information

Client Sample ID:		**BH15-34.5**	**BH16-26.5**	**BH18-20**	**BH-17-13**	**BH17-17**
Sample Date:		08/11/2022	08/11/2022	08/11/2022	08/12/2022	08/12/2022
Units:		cells/g	cells/g	cells/g	cells/g	cells/g
Analyst/Reviewer:		BB/CS	BB/CS	BB/CS	BB/CS	BB/CS
Functional Genes						
Perchlorate Reductase	pcrA	<2.00E+04	<1.00E+04	<2.00E+04	<2.00E+04	<2.00E+04

Legend:
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CENSUS

Client: **Tetra Tech, Inc.**
Project: SWFTS Borings

MI Project Number: **052TH**
Date Received: 08/12/2022

Sample Information

Client Sample ID:		**BH17-26**	**BH12-27**	**BH17-23**	**BH20-31**	**BH22-12.4**
Sample Date:		08/12/2022	08/12/2022	08/12/2022	08/13/2022	08/13/2022
Units:		cells/g	cells/g	cells/g	cells/g	cells/g
Analyst/Reviewer:		BB/CS	BB/CS	BB/CS	BB/CS	BB/CS
Functional Genes						
Perchlorate Reductase	pcrA	<2.00E+04	<2.00E+04	<2.00E+04	<2.00E+04	<1.00E+04

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CENSUS

Client: **Tetra Tech, Inc.**
Project: SWFTS Borings

MI Project Number: **052TH**
Date Received: 08/12/2022

Sample Information

Client Sample ID:		**BH22-20.5**	**BH22-28.5**	**BH22-36**	**BH21-19.5**	**BH14-18**
Sample Date:		08/13/2022	08/13/2022	08/13/2022	08/13/2022	08/15/2022
Units:		cells/g	cells/g	cells/g	cells/g	cells/g
Analyst/Reviewer:		BB/CS	BB/CS	BB/CS	BB/CS	BB/CS
Functional Genes						
Perchlorate Reductase	pcrA	<2.00E+04	<2.00E+04	<1.00E+04	<2.00E+04	<2.00E+04

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CENSUS

Client: **Tetra Tech, Inc.**
Project: SWFTS Borings

MI Project Number: **052TH**
Date Received: 08/12/2022

Sample Information

Client Sample ID:		**BH19-15.5**	**BH24-19**	**BH24-24.5**	**BH24-27**	**BH24-29.3**
Sample Date:		08/15/2022	08/15/2022	08/15/2022	08/15/2022	08/15/2022
Units:		cells/g	cells/g	cells/g	cells/g	cells/g
Analyst/Reviewer:		BB/CS	BB/CS	BB/CS	BB/CS	BB/CS
Functional Genes						
Perchlorate Reductase	pcrA	<1.00E+04	<2.00E+04	<1.00E+04	<1.00E+04	<1.00E+04

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CENSUS

Client: **Tetra Tech, Inc.**
Project: SWFTS Borings

MI Project Number: **052TH**
Date Received: 08/12/2022

Sample Information

Client Sample ID:		**BH23-24**	**BH25-17**	**BH27-11.8**	**BH26-16.3**	**BH26-18.5**
Sample Date:		08/15/2022	08/15/2022	08/16/2022	08/16/2022	08/16/2022
Units:		cells/g	cells/g	cells/g	cells/g	cells/g
Analyst/Reviewer:		BB/CS	BB/CS	BB/CS	BB/CS	BB/CS
Functional Genes						
Perchlorate Reductase	pcrA	<1.00E+04	<2.00E+04	<2.00E+04	<1.00E+04	<2.00E+04

Legend:
NA = Not Analyzed NS = Not Sampled J = Estimated gene copies below PQL but above LQL I = Inhibited
< = Result not detected

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CENSUS

Client: **Tetra Tech, Inc.**
Project: SWFTS Borings

MI Project Number: **052TH**
Date Received: 08/12/2022

Sample Information

Client Sample ID:		**BH26-22.3**	**BH26-31**	**BH30-24**	**BH29-40**	**BH28-17.3**
Sample Date:		08/16/2022	08/16/2022	08/16/2022	08/16/2022	08/16/2022
Units:		cells/g	cells/g	cells/g	cells/g	cells/g
Analyst/Reviewer:		BB/CS	BB/CS	BB/CS	BB/CS	BB/CS
Functional Genes						
Perchlorate Reductase	pcrA	<1.00E+04	<2.00E+04	<2.00E+04	<1.00E+04	<1.00E+04

Legend:
NA = Not Analyzed NS = Not Sampled J = Estimated gene copies below PQL but above LQL I = Inhibited
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MICROBIAL INSIGHTS, INC.

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CENSUS

Client: **Tetra Tech, Inc.**
Project: SWFTS Borings

MI Project Number: **052TH**
Date Received: 08/12/2022

Sample Information

Client Sample ID:		**BH28-21**	**BH28-26**	**BH28-32.5**
Sample Date:		08/16/2022	08/16/2022	08/16/2022
Units:		cells/g	cells/g	cells/g
Analyst/Reviewer:		BB/CS	BB/CS	BB/CS
Functional Genes				
Perchlorate Reductase	pcrA	<1.00E+04	<1.00E+04	<1.00E+04

Legend:
NA = Not Analyzed NS = Not Sampled J = Estimated gene copies below PQL but above LQL I = Inhibited
< = Result not detected

Quality Assurance/Quality Control Data

Samples Received **8/12/2022**

Component	Date Prepared	Date Analyzed	Arrival Temperature	Positive Control	Extraction Blank	Negative Control
pcrA	08/12/2022	08/23/2022	2 °C	91%	non-detect	non-detect

Samples Received **8/13/2022**

Component	Date Prepared	Date Analyzed	Arrival Temperature	Positive Control	Extraction Blank	Negative Control
pcrA	08/13/2022	08/23/2022	4 °C	91%	non-detect	non-detect

Samples Received **8/16/2022**

Component	Date Prepared	Date Analyzed	Arrival Temperature	Positive Control	Extraction Blank	Negative Control
pcrA	08/16/2022	08/23/2022	1 °C	91%	non-detect	non-detect

Samples Received **8/17/2022**

Component	Date Prepared	Date Analyzed	Arrival Temperature	Positive Control	Extraction Blank	Negative Control
pcrA	08/17/2022	08/23/2022	0 °C	91%	non-detect	non-detect

10515 Research Drive
Knoxville, TN 37932
Phone: (865) 573-8188
Fax: (865) 573-8133

Client: Jenny Dabbs
Tetra Tech, Inc.
1093 Commerce Park Drive
Suite 100
Oak Ridge, TN 37830

Phone:

Fax:

Identifier: 052TH **Date Rec:** 08/12/2022 **Report Date:** 09/02/2022

Client Project #: M11 **Client Project Name:** SWFTS Borings

Purchase Order #:

Test results provided for: PLFA

Reviewed By:

Kate Clark

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PLFA

Client: **Tetra Tech, Inc.**
Project: SWFTS Borings

MI Project Number: **052TH**
Date Received: 08/12/2022

Sample Information

Sample Name:	**BH11-20**	**BH13-11**	**BH13-22**	**BH13-32.6**	**BH13-39**
Sample Date:	08/10/2022	08/11/2022	08/11/2022	08/11/2022	08/11/2022
Sample Matrix:	Soil	Soil	Soil	Soil	Soil
Analyst/Reviewer:	AT/KC	AT/KC	AT/KC	AT/KC	AT/KC
Biomass					
Total Biomass (cells/g)	**3.65E+05**	**3.74E+06**	**4.58E+06**	**3.43E+07**	**1.75E+08**
Community Structure (% total PLFA)					
Firmicutes (TerBrSats)	**11.71**	**16.26**	**10.83**	**9.20**	**7.00**
Proteobacteria (Monos)	**56.96**	**41.94**	**32.56**	**42.72**	**21.93**
Anaerobic metal reducers (BrMonos)	**0.00**	**2.68**	**18.28**	**25.15**	**4.87**
SRB/Actinomycetes (MidBrSats)	**0.00**	**3.70**	**1.63**	**3.78**	**1.54**
General (Nsats)	**31.34**	**33.00**	**18.89**	**12.06**	**62.17**
Eukaryotes (polyenoics)	**0.00**	**2.41**	**17.82**	**7.09**	**2.51**
Physiological Status (Proteobacteria only)					
Slowed Growth	**2.20**	**0.57**	**0.50**	**0.13**	**0.18**
Decreased Permeability	**0.00**	**0.00**	**0.26**	**0.55**	**0.71**

Legend:
NA = Not Analyzed NS = Not Sampled

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PLFA

Client: **Tetra Tech, Inc.**
Project: SWFTS Borings

MI Project Number: **052TH**
Date Received: 08/12/2022

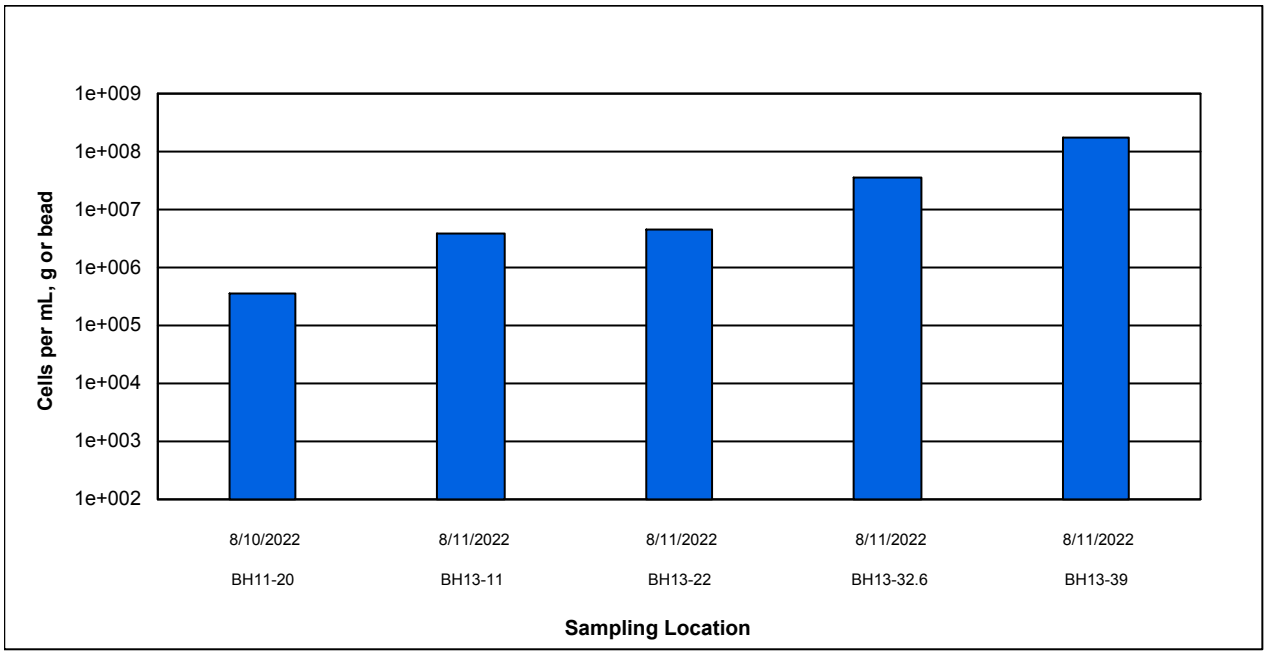

Figure 1. Biomass content is presented as a cell equivalent based on the total amount of phospholipid fatty acids (PLFA) extracted from a given sample. Total biomass is calculated based upon PLFA attributed to bacterial and eukaryotic biomass

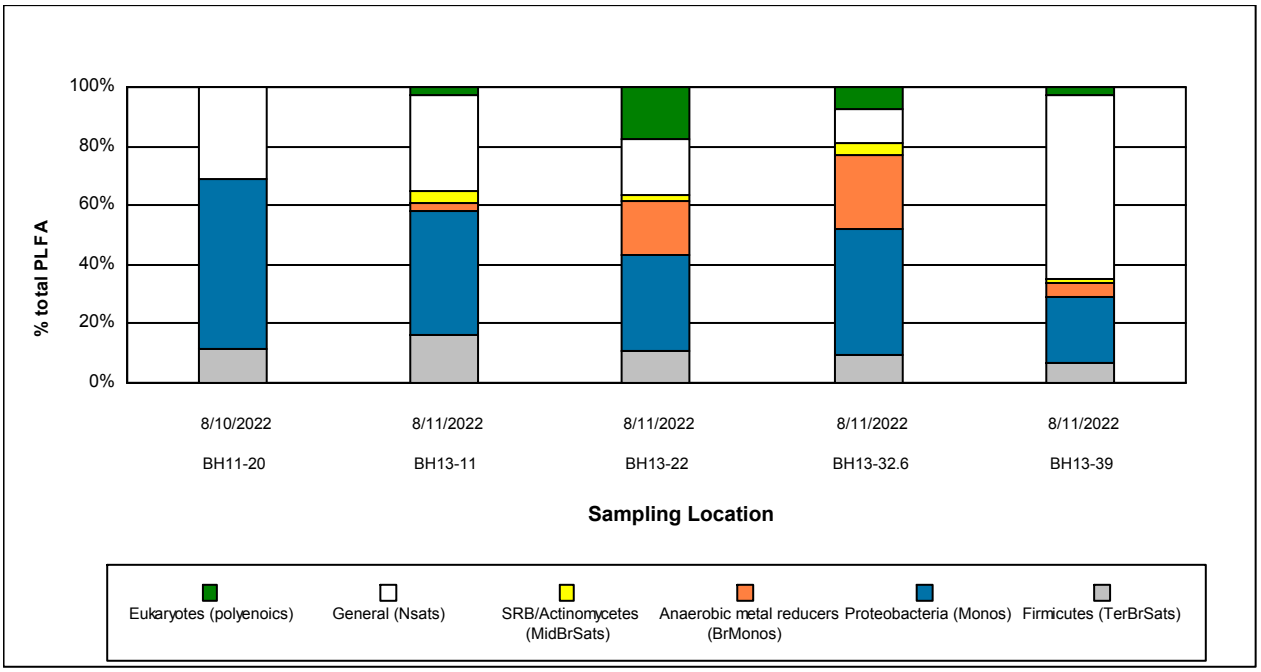

Figure 2. Relative percentages of total PLFA structural groups in the samples analyzed. Structural groups are assigned according to PLFA chemical structure, which is related to fatty acid biosynthesis.

MICROBIAL INSIGHTS, INC.

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PLFA

Client: **Tetra Tech, Inc.**
Project: SWFTS Borings

MI Project Number: **052TH**
Date Received: 08/12/2022

Sample Information

Sample Name:	**BH15-34.5**	**BH16-26.5**	**BH18-20**	**BH-17-13**	**BH17-17**
Sample Date:	08/11/2022	08/11/2022	08/11/2022	08/12/2022	08/12/2022
Sample Matrix:	Soil	Soil	Soil	Soil	Soil
Analyst/Reviewer:	AT/KC	AT/KC	AT/KC	AT/KC	AT/KC

Biomass

Total Biomass (cells/g)	**6.69E+06**	**1.33E+06**	**<2.82E+05**	**3.96E+06**	**4.34E+06**

Community Structure (% total PLFA)

Firmicutes (TerBrSats)	**11.65**	**14.66**	**0.00**	**8.33**	**18.77**
Proteobacteria (Monos)	**70.03**	**44.41**	**0.00**	**41.58**	**59.01**
Anaerobic metal reducers (BrMonos)	**1.75**	**0.00**	**0.00**	**0.67**	**0.84**
SRB/Actinomycetes (MidBrSats)	**4.59**	**7.97**	**0.00**	**5.76**	**4.89**
General (Nsats)	**8.73**	**15.42**	**0.00**	**23.36**	**13.63**
Eukaryotes (polyenoics)	**3.25**	**17.54**	**0.00**	**20.31**	**2.84**

Physiological Status (Proteobacteria only)

Slowed Growth	**0.37**	**0.90**	**0.00**	**0.82**	**1.08**
Decreased Permeability	**0.29**	**0.00**	**0.00**	**0.42**	**0.22**

Legend:
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Project: SWFTS Borings

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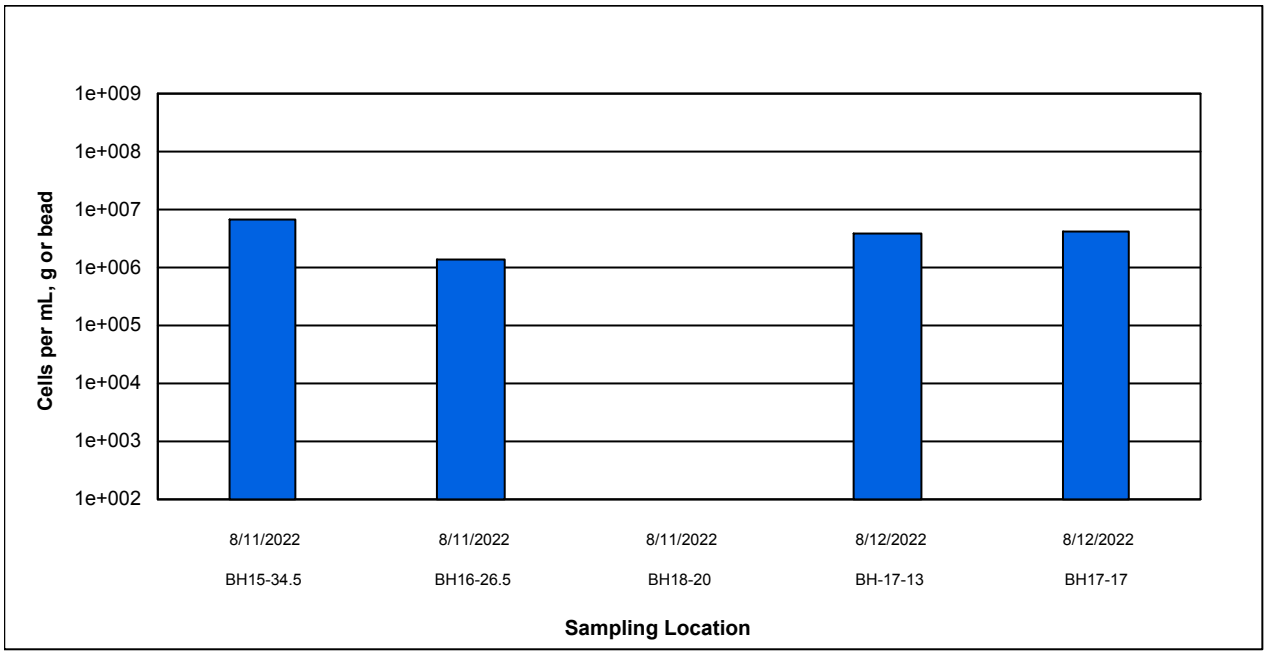

Figure 1. Biomass content is presented as a cell equivalent based on the total amount of phospholipid fatty acids (PLFA) extracted from a given sample. Total biomass is calculated based upon PLFA attributed to bacterial and eukaryotic biomass

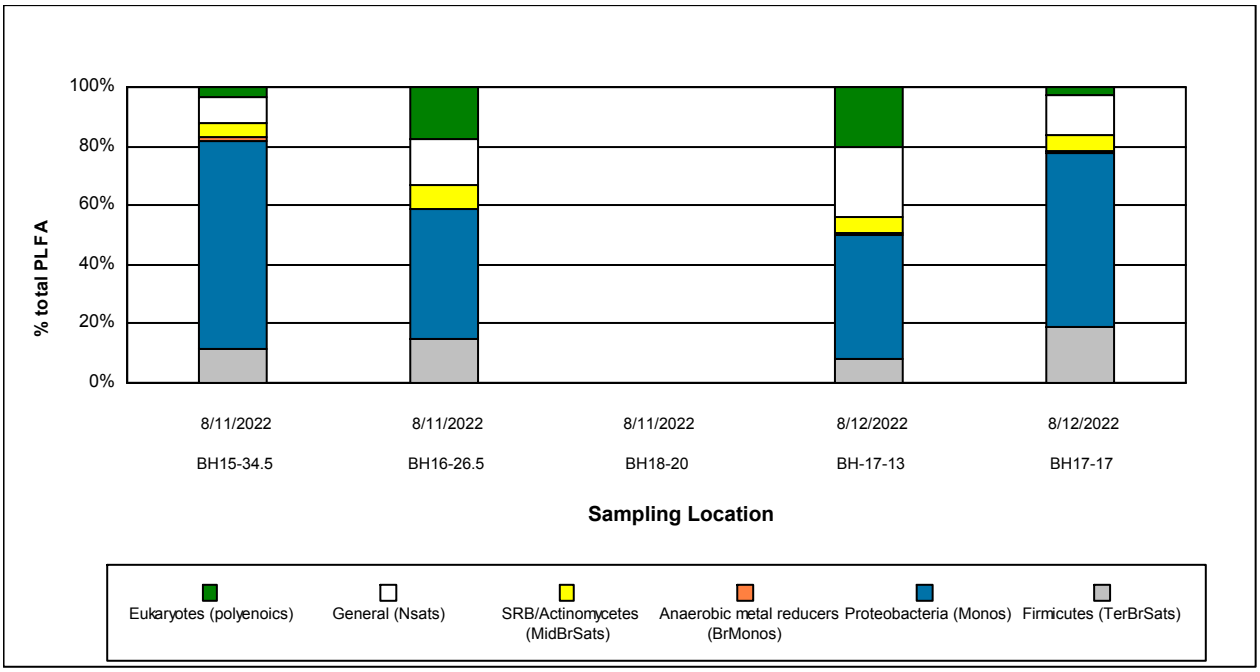

Figure 2. Relative percentages of total PLFA structural groups in the samples analyzed. Structural groups are assigned according to PLFA chemical structure, which is related to fatty acid biosynthesis.

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PLFA

Client: **Tetra Tech, Inc.**
Project: SWFTS Borings

MI Project Number: **052TH**
Date Received: 08/12/2022

Sample Information

Sample Name:	**BH17-26**	**BH12-27**	**BH17-23**	**BH20-31**	**BH22-12.4**
Sample Date:	08/12/2022	08/12/2022	08/12/2022	08/13/2022	08/13/2022
Sample Matrix:	Soil	Soil	Soil	Soil	Soil
Analyst/Reviewer:	AT/KC	AT/KC	AT/KC	AT/KC	AT/KC
Biomass					
Total Biomass (cells/g)	**1.34E+06**	**<2.94E+05**	**3.66E+05**	**2.65E+06**	**<2.83E+05**
Community Structure (% total PLFA)					
Firmicutes (TerBrSats)	**17.07**	**0.00**	**0.00**	**17.88**	**0.00**
Proteobacteria (Monos)	**53.95**	**0.00**	**63.03**	**55.62**	**0.00**
Anaerobic metal reducers (BrMonos)	**0.00**	**0.00**	**0.00**	**1.98**	**0.00**
SRB/Actinomycetes (MidBrSats)	**8.34**	**0.00**	**0.00**	**5.86**	**0.00**
General (Nsats)	**13.10**	**0.00**	**25.02**	**8.89**	**0.00**
Eukaryotes (polyenoics)	**7.55**	**0.00**	**11.95**	**9.76**	**0.00**
Physiological Status (Proteobacteria only)					
Slowed Growth	**0.71**	**0.00**	**0.14**	**0.58**	**0.00**
Decreased Permeability	**0.00**	**0.00**	**0.29**	**0.00**	**0.00**

Legend:
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PLFA

Client: **Tetra Tech, Inc.**
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MI Project Number: **052TH**
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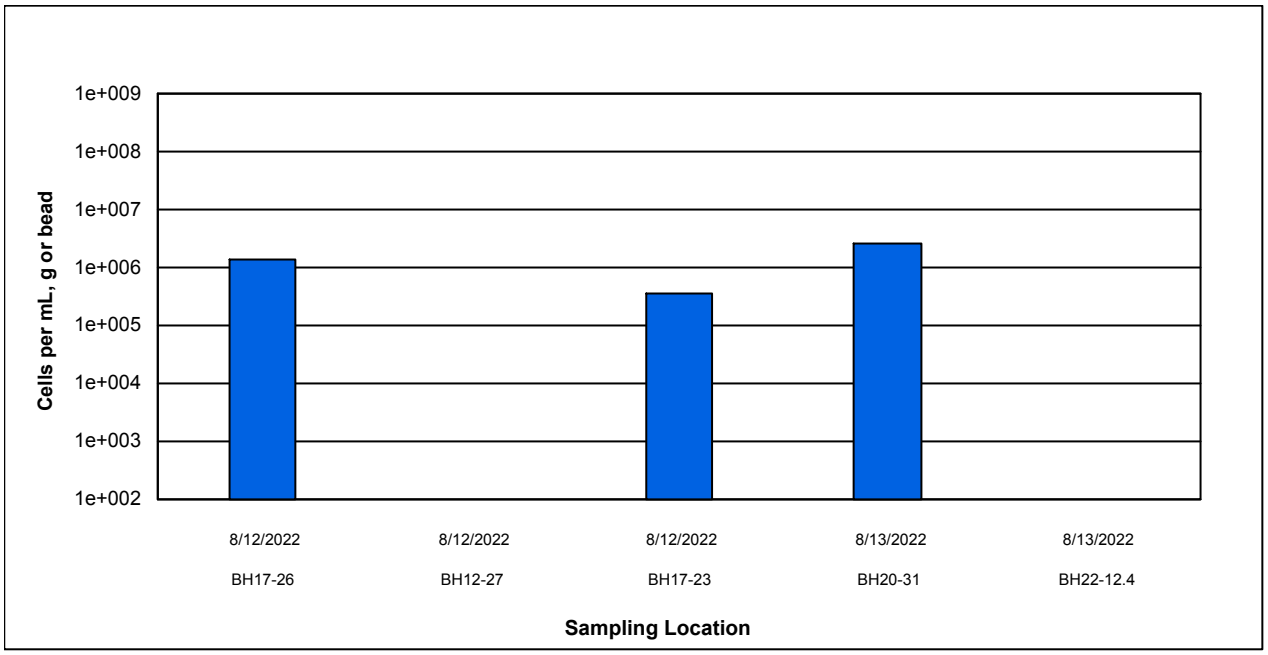

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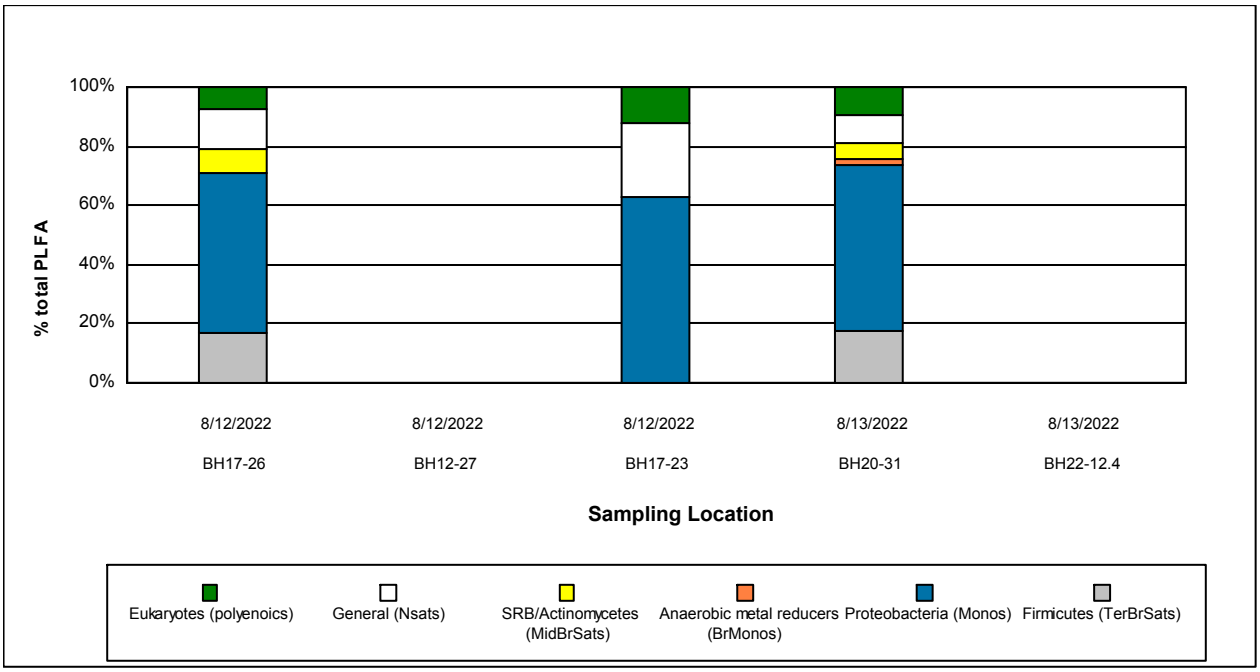

Figure 2. Relative percentages of total PLFA structural groups in the samples analyzed. Structural groups are assigned according to PLFA chemical structure, which is related to fatty acid biosynthesis.

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PLFA

Client: **Tetra Tech, Inc.**
Project: SWFTS Borings

MI Project Number: **052TH**
Date Received: 08/12/2022

Sample Information

Sample Name:	**BH22-20.5**	**BH22-28.5**	**BH22-36**	**BH21-19.5**	**BH14-18**
Sample Date:	08/13/2022	08/13/2022	08/13/2022	08/13/2022	08/15/2022
Sample Matrix:	Soil	Soil	Soil	Soil	Soil
Analyst/Reviewer:	AT/KC	AT/KC	AT/KC	AT/KC	AT/KC

Biomass

Total Biomass (cells/g)	**<2.91E+05**	**<2.82E+05**	**<2.83E+05**	**1.41E+06**	**4.03E+06**

Community Structure (% total PLFA)

Firmicutes (TerBrSats)	**0.00**	**0.00**	**0.00**	**3.95**	**1.40**
Proteobacteria (Monos)	**0.00**	**0.00**	**0.00**	**68.36**	**71.60**
Anaerobic metal reducers (BrMonos)	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**
SRB/Actinomycetes (MidBrSats)	**0.00**	**0.00**	**0.00**	**1.26**	**2.19**
General (Nsats)	**0.00**	**0.00**	**0.00**	**10.73**	**6.19**
Eukaryotes (polyenoics)	**0.00**	**0.00**	**0.00**	**15.69**	**18.61**

Physiological Status (Proteobacteria only)

Slowed Growth	**0.00**	**0.00**	**0.00**	**0.06**	**0.02**
Decreased Permeability	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

Legend:
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PLFA

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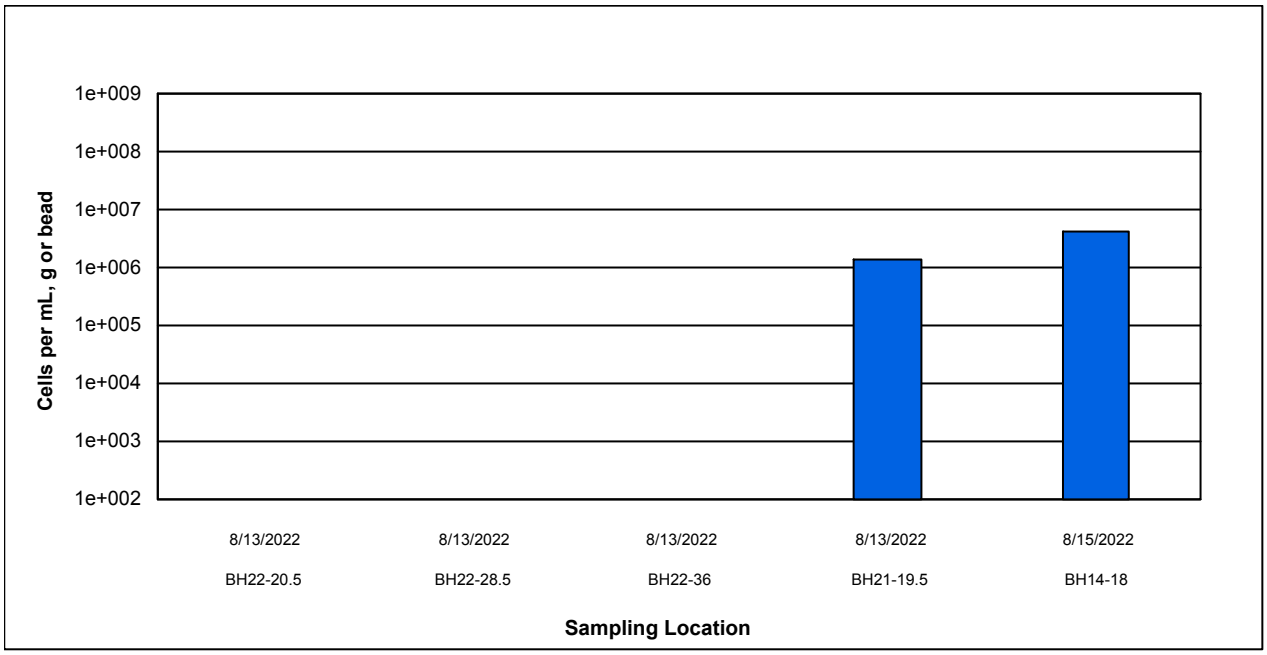

Figure 1. Biomass content is presented as a cell equivalent based on the total amount of phospholipid fatty acids (PLFA) extracted from a given sample. Total biomass is calculated based upon PLFA attributed to bacterial and eukaryotic biomass

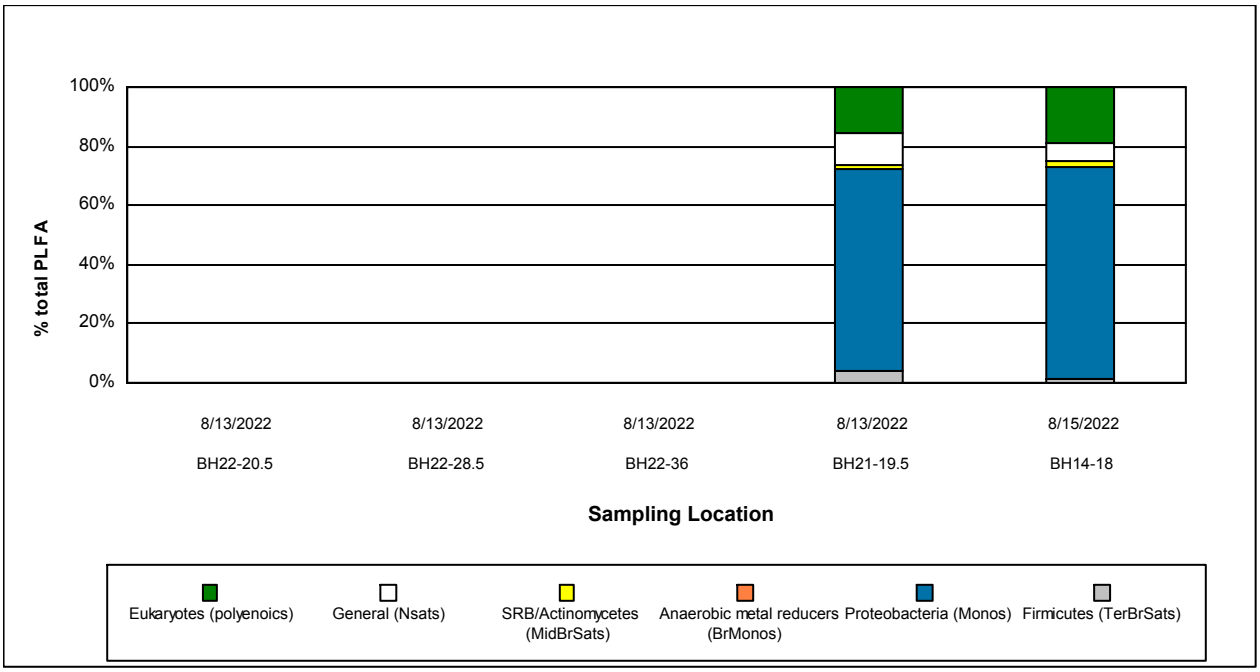

Figure 2. Relative percentages of total PLFA structural groups in the samples analyzed. Structural groups are assigned according to PLFA chemical structure, which is related to fatty acid biosynthesis.

MICROBIAL INSIGHTS, INC.

10515 Research Dr., Knoxville, TN 37932
Tel. (865) 573-8188 Fax. (865) 573-8133

PLFA

Client: **Tetra Tech, Inc.**
Project: SWFTS Borings

MI Project Number: **052TH**
Date Received: 08/12/2022

Sample Information

Sample Name:	**BH19-15.5**	**BH24-19**	**BH24-24.5**	**BH24-27**	**BH24-29.3**
Sample Date:	08/15/2022	08/15/2022	08/15/2022	08/15/2022	08/15/2022
Sample Matrix:	Soil	Soil	Soil	Soil	Soil
Analyst/Reviewer:	AT/KC	AT/KC	AT/KC	AT/KC	AT/KC
Biomass					
Total Biomass (cells/g)	**<2.89E+05**	**4.92E+05**	**3.49E+07**	**1.72E+07**	**9.04E+05**
Community Structure (% total PLFA)					
Firmicutes (TerBrSats)	**0.00**	**5.92**	**10.65**	**8.34**	**8.93**
Proteobacteria (Monos)	**0.00**	**65.00**	**31.23**	**58.02**	**78.34**
Anaerobic metal reducers (BrMonos)	**0.00**	**0.00**	**3.96**	**2.81**	**0.00**
SRB/Actinomycetes (MidBrSats)	**0.00**	**0.00**	**11.55**	**0.55**	**7.34**
General (Nsats)	**0.00**	**29.09**	**37.96**	**22.89**	**5.38**
Eukaryotes (polyenoics)	**0.00**	**0.00**	**4.64**	**7.39**	**0.00**
Physiological Status (Proteobacteria only)					
Slowed Growth	**0.00**	**0.32**	**0.18**	**0.07**	**0.68**
Decreased Permeability	**0.00**	**0.00**	**0.20**	**0.10**	**0.10**

Legend:
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PLFA

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MI Project Number: **052TH**
Date Received: 08/12/2022

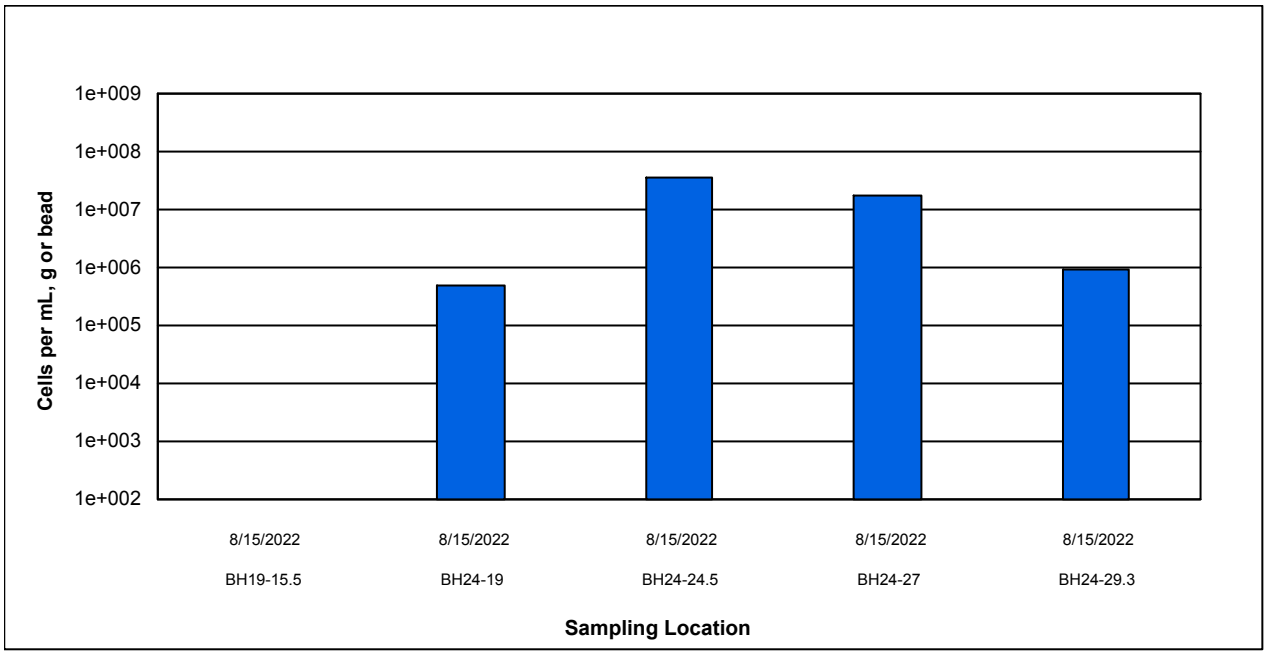

Figure 1. Biomass content is presented as a cell equivalent based on the total amount of phospholipid fatty acids (PLFA) extracted from a given sample. Total biomass is calculated based upon PLFA attributed to bacterial and eukaryotic biomass

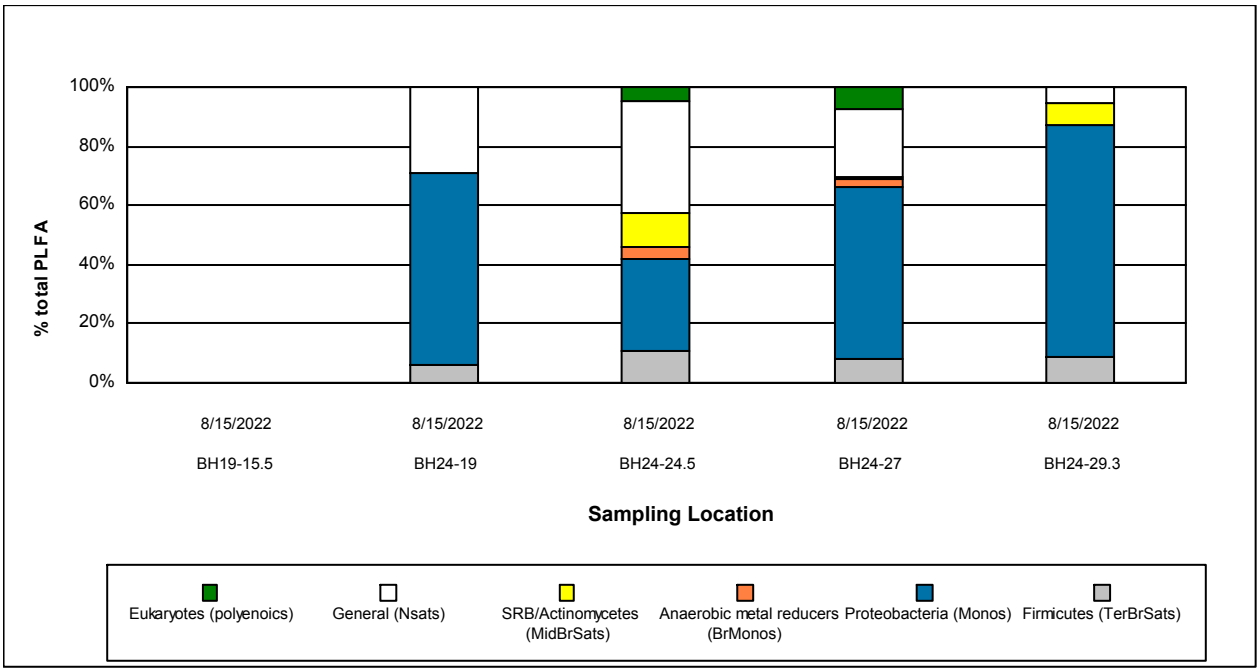

Figure 2. Relative percentages of total PLFA structural groups in the samples analyzed. Structural groups are assigned according to PLFA chemical structure, which is related to fatty acid biosynthesis.

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PLFA

Client: **Tetra Tech, Inc.**
Project: SWFTS Borings

MI Project Number: **052TH**
Date Received: 08/12/2022

Sample Information

Sample Name:	**BH23-24**	**BH25-17**	**BH27-11.8**	**BH26-16.3**	**BH26-18.5**
Sample Date:	08/15/2022	08/15/2022	08/16/2022	08/16/2022	08/16/2022
Sample Matrix:	Soil	Soil	Soil	Soil	Soil
Analyst/Reviewer:	AT/KC	AT/KC	AT/KC	AT/KC	AT/KC

Biomass

Total Biomass (cells/g)	**2.19E+07**	**4.38E+06**	**1.27E+07**	**1.26E+07**	**2.15E+06**

Community Structure (% total PLFA)

Firmicutes (TerBrSats)	**7.78**	**0.90**	**10.05**	**6.28**	**6.95**
Proteobacteria (Monos)	**65.66**	**63.61**	**69.35**	**65.88**	**72.76**
Anaerobic metal reducers (BrMonos)	**1.04**	**0.00**	**5.33**	**2.12**	**1.74**
SRB/Actinomycetes (MidBrSats)	**0.35**	**0.51**	**1.27**	**0.74**	**2.83**
General (Nsats)	**10.77**	**14.42**	**7.07**	**18.96**	**12.00**
Eukaryotes (polyenoics)	**14.42**	**20.55**	**6.93**	**6.04**	**3.72**

Physiological Status (Proteobacteria only)

Slowed Growth	**0.34**	**0.03**	**0.40**	**0.29**	**0.57**
Decreased Permeability	**0.13**	**0.14**	**0.21**	**0.67**	**0.07**

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Client: **Tetra Tech, Inc.**
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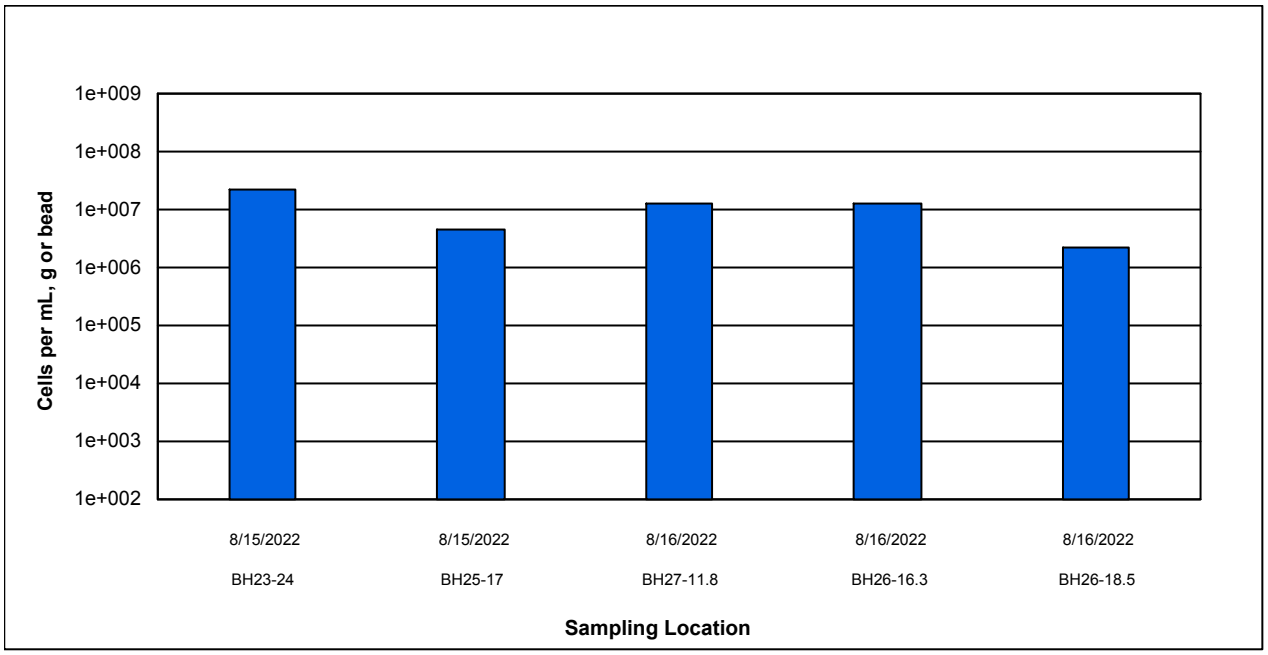

Figure 1. Biomass content is presented as a cell equivalent based on the total amount of phospholipid fatty acids (PLFA) extracted from a given sample. Total biomass is calculated based upon PLFA attributed to bacterial and eukaryotic biomass

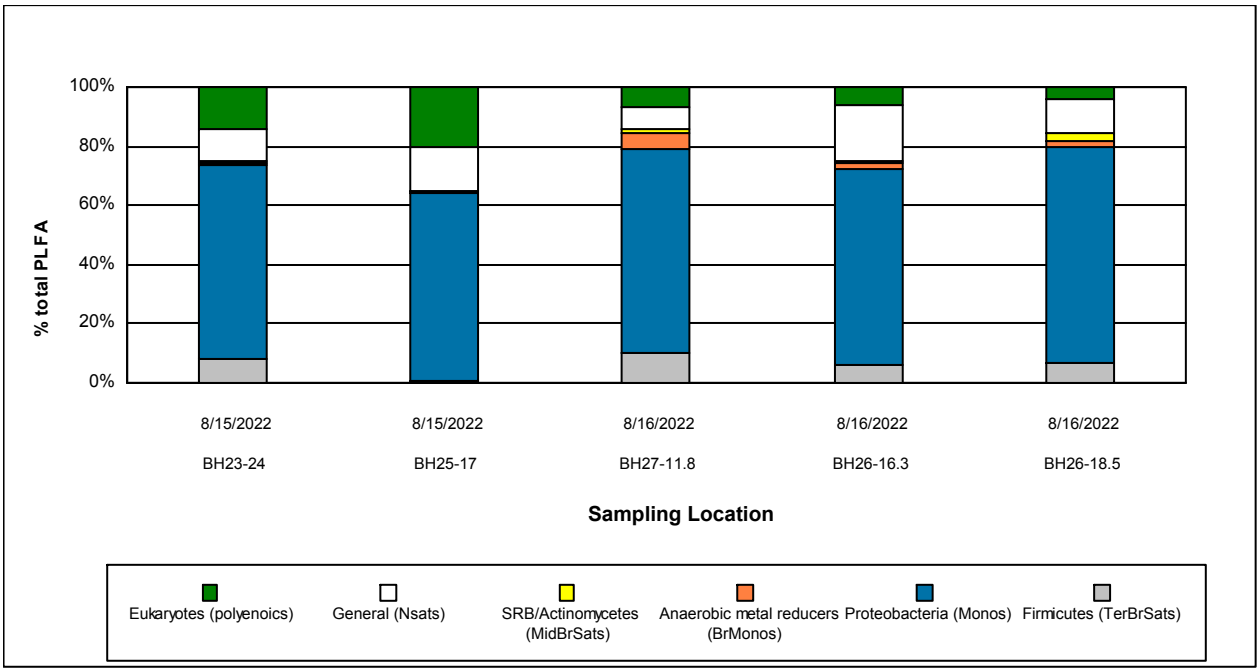

Figure 2. Relative percentages of total PLFA structural groups in the samples analyzed. Structural groups are assigned according to PLFA chemical structure, which is related to fatty acid biosynthesis.

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PLFA

Client: **Tetra Tech, Inc.**
Project: SWFTS Borings

MI Project Number: **052TH**
Date Received: 08/12/2022

Sample Information

Sample Name:	**BH26-22.3**	**BH26-31**	**BH30-24**	**BH29-40**	**BH28-17.3**
Sample Date:	08/16/2022	08/16/2022	08/16/2022	08/16/2022	08/16/2022
Sample Matrix:	Soil	Soil	Soil	Soil	Soil
Analyst/Reviewer:	AT/KC	AT/KC	AT/KC	AT/KC	AT/KC
Biomass					
Total Biomass (cells/g)	**9.62E+05**	**1.19E+06**	**1.11E+06**	**5.12E+07**	**4.87E+06**
Community Structure (% total PLFA)					
Firmicutes (TerBrSats)	**9.53**	**4.34**	**5.91**	**10.88**	**2.35**
Proteobacteria (Monos)	**62.60**	**70.68**	**75.54**	**45.15**	**90.60**
Anaerobic metal reducers (BrMonos)	**7.01**	**0.00**	**0.00**	**2.88**	**0.00**
SRB/Actinomycetes (MidBrSats)	**5.50**	**0.00**	**0.52**	**9.87**	**0.52**
General (Nsats)	**15.38**	**15.93**	**6.00**	**26.88**	**4.62**
Eukaryotes (polyenoics)	**0.00**	**9.05**	**12.05**	**4.33**	**1.92**
Physiological Status (Proteobacteria only)					
Slowed Growth	**0.91**	**0.25**	**0.07**	**0.11**	**5.52**
Decreased Permeability	**0.00**	**0.10**	**0.21**	**0.62**	**1.01**

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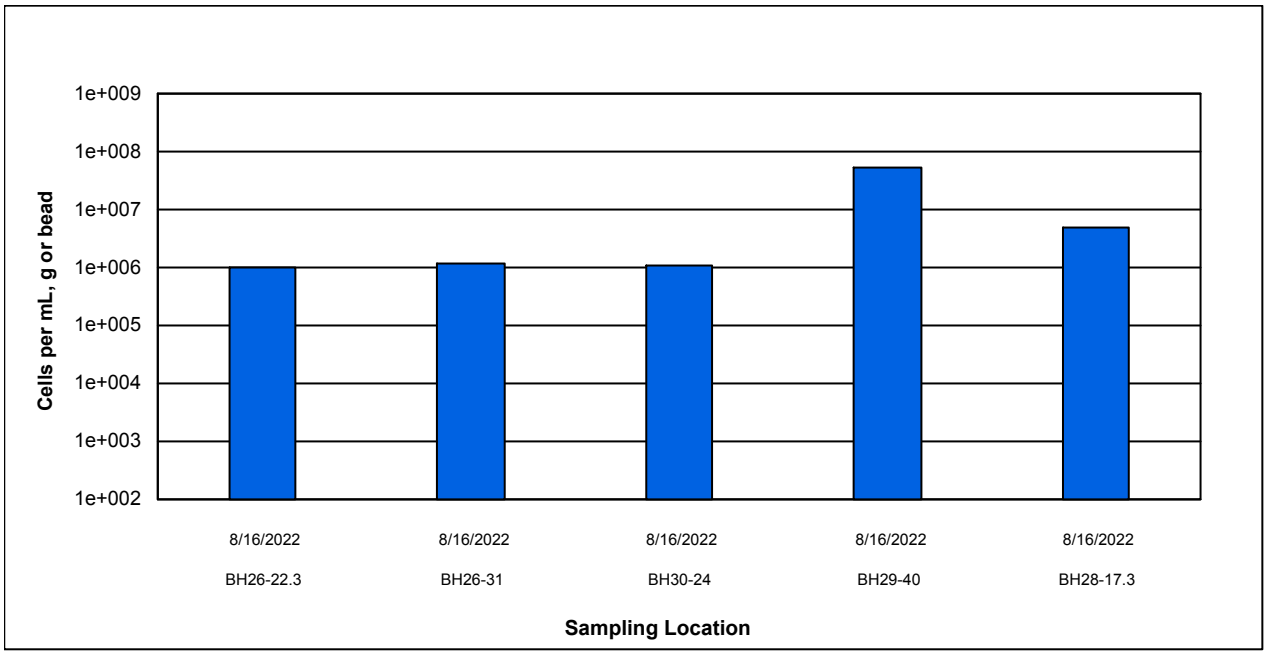

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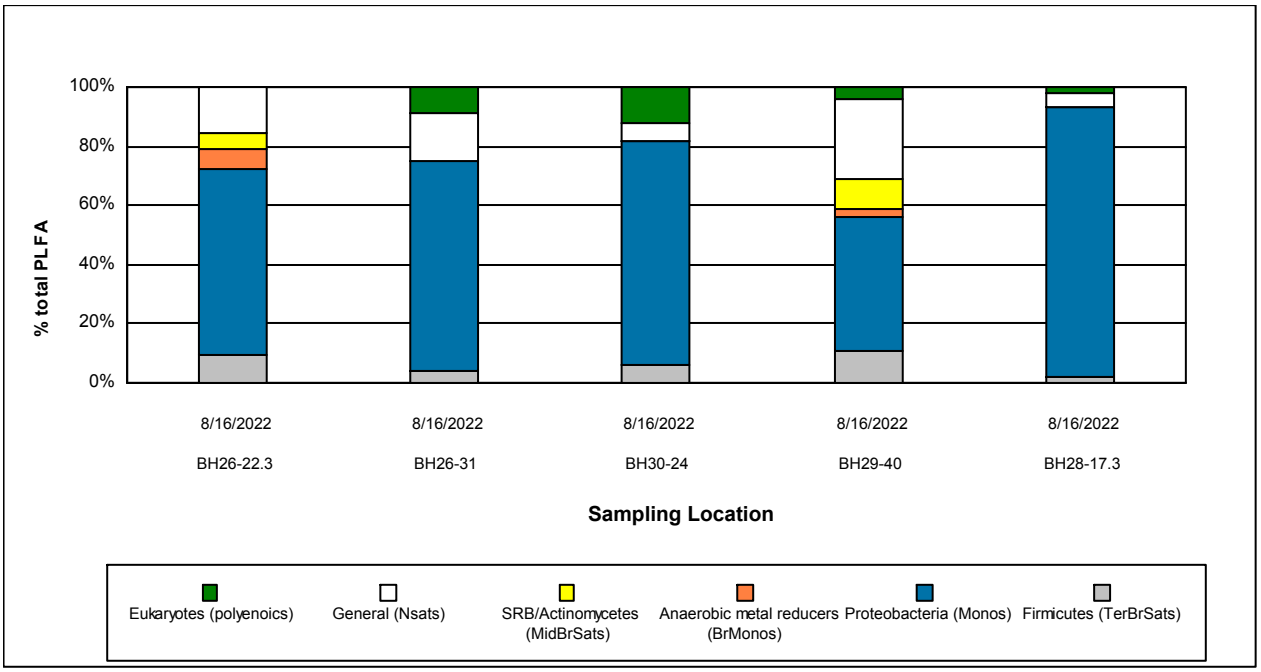

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Client: **Tetra Tech, Inc.**
Project: SWFTS Borings

MI Project Number: **052TH**
Date Received: 08/12/2022

Sample Information

Sample Name:	**BH28-21**	**BH28-26**	**BH28-32.5**
Sample Date:	08/16/2022	08/16/2022	08/16/2022
Sample Matrix:	Soil	Soil	Soil
Analyst/Reviewer:	AT/KC	AT/KC	AT/KC

Biomass

Total Biomass (cells/g)	**<2.95E+05**	**3.16E+07**	**2.25E+06**

Community Structure (% total PLFA)

Firmicutes (TerBrSats)	**0.00**	**4.62**	**18.69**
Proteobacteria (Monos)	**0.00**	**78.74**	**71.90**
Anaerobic metal reducers (BrMonos)	**0.00**	**0.40**	**0.00**
SRB/Actinomycetes (MidBrSats)	**0.00**	**6.17**	**1.88**
General (Nsats)	**0.00**	**7.08**	**7.51**
Eukaryotes (polyenoics)	**0.00**	**3.00**	**0.00**

Physiological Status (Proteobacteria only)

Slowed Growth	**0.00**	**0.42**	**0.70**
Decreased Permeability	**0.00**	**0.07**	**0.14**

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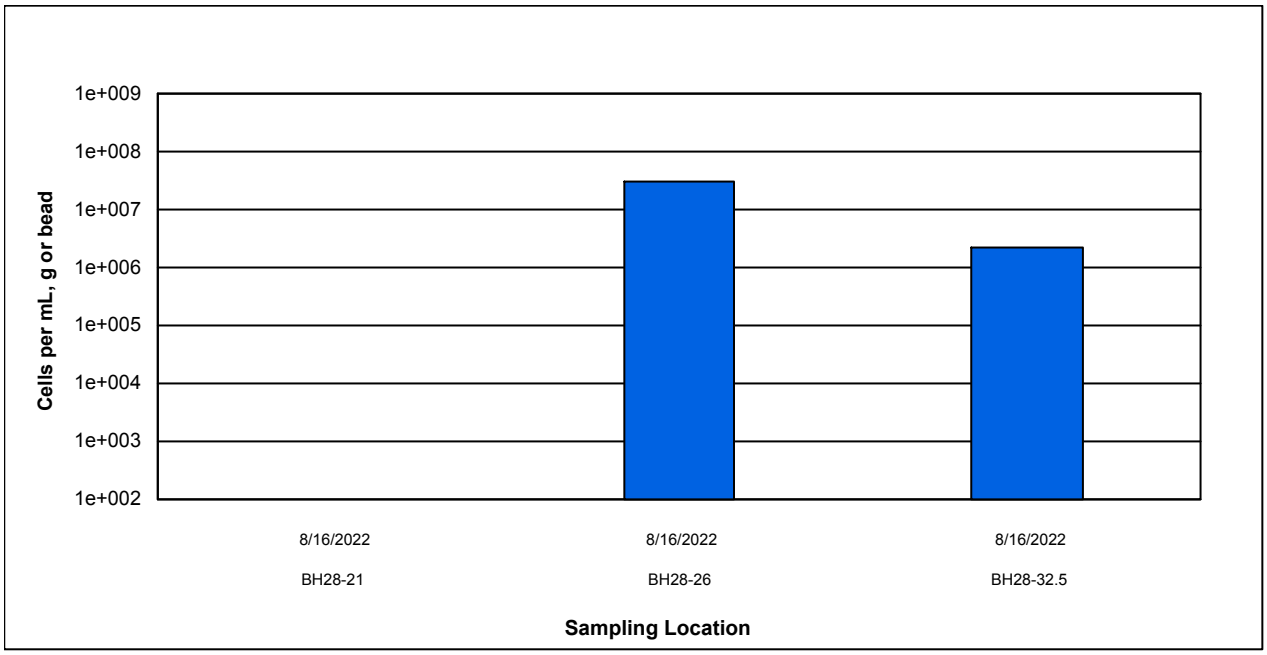
PLFA

Client: **Tetra Tech, Inc.**
Project: SWFTS Borings

MI Project Number: **052TH**
Date Received: 08/12/2022



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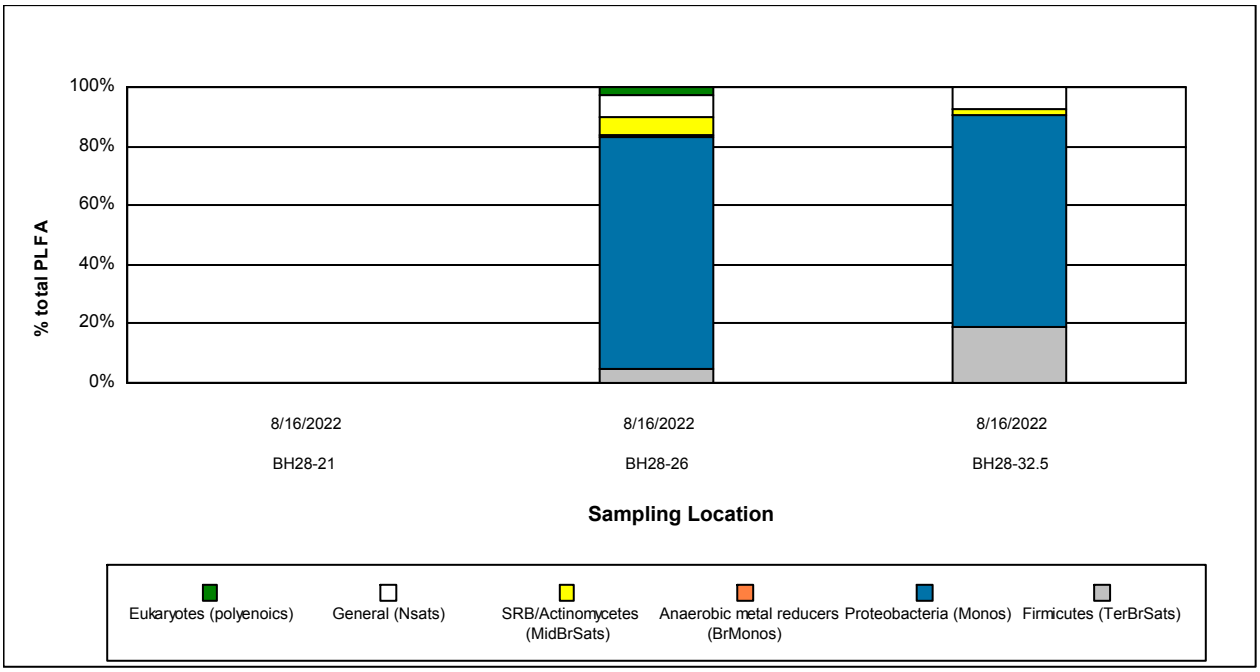

Figure 2. Relative percentages of total PLFA structural groups in the samples analyzed. Structural groups are assigned according to PLFA chemical structure, which is related to fatty acid biosynthesis.

Quality Assurance/Quality Control Data

Samples Received **8/12/2022**

Component	Date Prepared	Date Analyzed	Arrival Temperature	Positive Control	Extraction Blank	Negative Control
PLFA	08/12/2022	09/01/2022	2 °C	124%	non-detect	non-detect

Samples Received **8/13/2022**

Component	Date Prepared	Date Analyzed	Arrival Temperature	Positive Control	Extraction Blank	Negative Control
PLFA	08/13/2022	09/01/2022	4 °C	123%	non-detect	non-detect

Samples Received **8/16/2022**

Component	Date Prepared	Date Analyzed	Arrival Temperature	Positive Control	Extraction Blank	Negative Control
PLFA	08/16/2022	09/01/2022	1 °C	121%	non-detect	non-detect

10515 Research Drive
Knoxville, TN 37932
Phone: (865) 573-8188
Fax: (865) 573-8133

Identifier: 052TH **Date Rec:** 08/12/2022 **Report Date:** 09/02/2022

Client Project #: M11 **Client Project Name:** SWFTS Borings

Purchase Order #:

Comments: Please note, results for samples BH11-20, BH17-23, BH24-19, and BH24-29.3, fell between the reporting and detection limits for PLFA analysis. Results for BH18-20, BH12-27, BH22-12.4, BH22-20.5, BH22-28.5, BH22-36, BH19-15.5, and BH28-21, fell below the detection limit.

REPORT TO:
Name: Jenny Dabbs
Company: Tetra Tech
Address:
email: jenny.dabbs@tetratech.com
Phone: 865-964-5954
Fax:

INVOICE TO: (For Invoices paid by a third party it is imperative that all information be provided)
Name:
Company:
Address:
email:
Phone:
Fax:

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865-573-8188
www.microbe.com

Project Manager:
Project Name: SWFTS Borings
Project No.: M11

Purchase Order No.
Subcontract No.
MI Quote No.

Please Check One:
☐ More samples to follow
☐ No Additional Samples

Report Type: ☐ Standard (default) ☐ Microbial Insights Level III raw data(15% surcharge) ☐ Microbial Insights Level IV (25% surcharge) ☐ Comprehensive Interpretive(15%) ☐ Historical Interpretive (35%)

EDD type: ☐ Microbial Insights Standard (default) ☐ All other available EDDs (5% surcharge) Specify EDD Type:

Please contact us with any questions about the analyses or filling out the COC at (865) 573-8188 (9:00 am to 5:00 pm EST, M-F). After hours email: customerservice@microbe.com

Sample Information						Analyses						CENSUS: Please select the target organism/gene																			
MI ID (Laboratory Use Only)	Sample Name	Date Sampled	Time Sampled	Matrix	Total Number of Containers	PLFA	NGS	QuantArray Chlor	QuantArray Petro	QuantArray NSZD	QuantArray BGC	DHC (Dehalococcoides)	DHC Functional genes (bvc, tca, vcr)	DHBt (Dehalobacter)	DHG (Dehalogenimonas)	DSM (Desulfuromonas)	DSB (Desulfitobacterium)	EBAC (Total)	SRB (Sulfate Reducing Bacteria-APS)	MGN (Methanogens)	MOB (Methanotrophs)	SMMO	DNF (Denitrifiers-nirS and nirK)	AMO (ammonia oxidizing bacteria)	PM1 (MTBE aerobic)	RMO (Toluene Monooxygenase)	RDEG (Toluene Monooxygenase)	PHE (Phenol Hydroxylase)	NAH (Napthalene-aerobic)	BSSA (Toluene/Xylene-Anaerobic)	add. qPCR:	RNA (Expression Option)*	Other:
052TH 1	BH11-20	8/10/22	1040	SO	1	X																											
2	BH13-11	8/11/22	0740		1	X																											
3	BH13-22		0800		1	X																											
4	BH13-32.6		0805		1	X																											
5	BH13-39		0810		1	X																											
6	BH15-34.5		1000		1	X																											
7	BH16-26.5		1245		1	X																											
8	BH18-20	8/11/22	1340	SO	1	X																											

Relinquished by: [signature] Date 8/11/22 Received by: [signature] Date 8/12/22

It is vital that chain of custody is filled out correctly & that all relative information is provided.
Failure to provide sufficient and/or correct information regarding reporting, invoicing & analyses requested information may result in delays for which MI will not be liable.

* additional cost and sample preservation are associated with RNA samples.

**Saturday delivery: See sampling protocol for alternate shipping address.

REPORT TO:
Name: Jenny Dabbs
Company: Tetra Tech
Address:
email: jenny.dabbs@tetratech.com
Phone:
Fax:

INVOICE TO: (For Invoices paid by a third party it is imperative that all information be provided)
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Address:
email:
Phone:
Fax:

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Project Manager:
Project Name:
Project No.:

Purchase Order No.
Subcontract No.
MI Quote No.

Please Check One:
☐ More samples to follow
☐ No Additional Samples

Report Type: ☐ Standard (default) ☐ Microbial Insights Level III raw data(15% surcharge) ☐ Microbial Insights Level IV (25% surcharge) ☐ Comprehensive Interpretive(15%) ☐ Historical Interpretive (35%)

EDD type: ☐ Microbial Insights Standard (default) ☐ All other available EDDs (5% surcharge) Specify EDD Type:

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Sample Information						Analyses						CENSUS: Please select the target organism/gene																			
MI ID (Laboratory Use Only)	Sample Name	Date Sampled	Time Sampled	Matrix	Total Number of Containers	PLFA	NGS	QuantArray Chlor	QuantArray Petro	QuantArray NSZD	QuantArray BGC	DHC (Dehalococcoides)	DHC Functional genes (tvc, bca, vcr)	DHBt (Dehalobacter)	DHG (Dehalogenimonas)	DSM (Desulfuromonas)	DSB (Desulfitobacterium)	EBAC (Total)	SRB (Sulfate Reducing Bacteria-APS)	MGN (Methanogens)	MOB (Methanotrophs)	SMMO	DNF (Denitrifiers-nirS and nirK)	AMO (ammonia oxidizing bacteria)	PM1 (MTBE aerobic)	RMO (Toluene Monooxygenase)	RDEG (Toluene Monooxygenase)	PHE (Phenol Hydroxylase)	NAH (Napthalene-aerobic)	BSSA (Toluene/Xylene-Anaerobic)	add. qPCR:	RNA (Expression Option)*	Other: ClO4 reductase
052THq	BH17-13	8/12/22	1200	S	1	X																										X
10	BH17-17	↓	1210	S	1	X																										X
11	BH17-26	↓	1240	S	1	X																										X

Relinquished by: Date Received by: Elizabeth Browning Date 08/13/22

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REPORT TO:
Name: Jenny Dabbs
Company: Tetra Tech
Address:

email: jenny.dabbs@tetratech.com
Phone:
Fax:

Project Manager:
Project Name:
Project No.:

INVOICE TO: (For Invoices paid by a third party it is imperative that all information be provided)
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Sample Information						Analyses				CENSUS: Please select the target organism/gene																						
MI ID (Laboratory Use Only)	Sample Name	Date Sampled	Time Sampled	Matrix	Total Number of Containers	PLFA	NGS	QuantArray Chlor	QuantArray Petro	DHC (Dehalococcoides)	DHC Functional genes (bvc, tce, vcr)	DHBt (Dehalobacter)	DHG (Dehalogenimonas)	DSM (Desulfuromonas)	DSB (Desulfitobacterium)	EBAC (Total)	SRB (Sulfate Reducing Bacteria-APS)	MGN (Methanogens)	MOB (Methanotrophs)	SMMO	DNF (Dentrifiers-nirS and nirK)	AMO (ammonia oxidizing bacteria)	PM1 (MTBE aerobic)	RMO (Toluene Monooxygenase)	RDEG (Toluene Monooxygenase)	PHE (Phenol Hydroxylase)	NAH (Napthalene-aerobic)	BSSA (Toluene/Xylene-Anaerobic)	add. qPCR:	RNA (Expression Option)*	Other: perchlorate reductase	Other:	Other:
052TH 12	BH12-27	8/12/22	1010	S	1	X																									X		
13	BH17-23	8/12/22	1230	S	1	X																									X		

Relinquished by: [signature] Date 8/12/22
Received by: Elizabeth Bowing Date 08/13/22

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REPORT TO:
Name: Jenny Dabbs
Company: Tetra Tech
Address:

email: Jenny.Dabbs@Tetratech.com
Phone:
Fax:

Project Manager:
Project Name:
Project No.:

INVOICE TO: (For Invoices paid by a third party it is imperative that all information be provided)
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EDD type: ☐ Microbial Insights Standard (default) ☐ All other available EDDs (5% surcharge) Specify EDD Type:

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Sample Information						Analyses				CENSUS: Please select the target organism/gene																					
MI ID (Laboratory Use Only)	Sample Name	Date Sampled	Time Sampled	Matrix	Total Number of Containers	PLFA	NGS	QuantArray Chlor	QuantArray Petro	DHC (Dehalococcoides)	DHC Functional genes (bvc, tce, vc)	DHBt (Dehalobacter)	DHG (Dehalogenimonas)	DSM (Desulfuromonas)	DSB (Desulfitobacterium)	EBAC (Total)	SRB (Sulfate Reducing Bacteria-APS)	MGN (Methanogens)	MOB (Methanotrophs)	SMMO	DNF (Denitrifiers-nirS and nirK)	AMO (ammonia oxidizing bacteria)	PM1 (MTBE aerobic)	RMO (Toluene Monooxygenase)	RDEG (Toluene Monooxygenase)	PHE (Phenol Hydroxylase)	NAH (Napthalene-aerobic)	BSSA (Toluene/Xylene-Anaerobic)	add. qPCR:	RNA (Expression Option)*	Other: Perchlorate Reduct	Other:	Other:
0527H14	BH20-31	8/13/22	0830	S	1	X																								X		
15	BH22-12.4	8/13/22	1200	S	1	X																								X		
16	BH22-20.5	8/13/22	1210	S	1	X																								X		
17	BH22-28.5	8/13/22	1220	S	1	X																								X		
18	BH22-36	8/13/22	1230	S	1	X																								X		
19	BH21-19.5	8/13/22	1440	S	1	X																								X		

Relinquished by: Date 8/14/22
Received by: Date 8-16-22

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Failure to provide sufficient and/or correct information regarding reporting, invoicing & analyses requested information may result in delays for which MI will not be liable.

* additional cost and sample preservation are associated with RNA samples.

**Saturday delivery: See sampling protocol for alternate shipping address.

REPORT TO:

Name: Jenny Dabbs
Company: Tetra Tech
Address:

email: Jenny.Dabbs@Tetratech.com
Phone:
Fax:

Project Manager:
Project Name:
Project No.:

INVOICE TO: (For Invoices paid by a third party it is imperative that all information be provided)

Name:
Company:
Address:

email:
Phone:
Fax:

Purchase Order No.
Subcontract No.
MI Quote No.

microbialinsights
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Knoxville, TN 37932
865-573-8188
www.microbe.com

Please Check One:
☐ More samples to follow
☐ No Additional Samples

Report Type: ☐ Standard (default) ☐ Microbial Insights Level III raw data(15% surcharge) ☐ Microbial Insights Level IV (25% surcharge) ☐ Comprehensive Interpretive(15%) ☐ Historical Interpretive (35%)

EDD type: ☐ Microbial Insights Standard (default) ☐ All other available EDDs (5% surcharge) Specify EDD Type:

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052714 20	BH14-18	8/15/22	0840			X																									X		
21	BH19-15.5	"	0950			X																									X		
22	BH24-19	"	1230			X																									X		
23	BH24-24.5	"	1240			X																									X		
24	BH24-27	"	1250			X																									X		
25	BH24-29.3	"	1300			X																									X		
26	BH23-24	"	1325			X																									X		
27	BH25-17	✓	1500			X																									X		

Relinquished by: Date 8/15/22 Received by: Date 8-16-22

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REPORT TO:

Name: Jenny Dabbs
Company: Tetra Tech
Address:

email: Jenny.Dabbs@tetratech.com
Phone:
Fax:

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Project Manager:
Project Name:
Project No.:

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☐ More samples to follow
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052TH 28	BH27-11.8	8/16/22	0800	S	1	X																								X		
29	BH26-16.3	↓	0910	↓	↓	X																								X		
30	BH26-18.5		0915			X																								X		
31	BH26-22.3		0920			X																								X		
32	BH26-31		0925			X																								X		
33	BH30-24		1210			X																								X		
34	BH29-40		1255			X																								X		
35	BH28-17.3		1505			X																								X		
36	BH28-21		1510			X																								X		
37	BH28-26	↓	1515	↓	↓	X																								X		

Relinquished by: **Date** **Received by:** Chad **Date** 8-17-22

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REPORT TO:

Name: Jenny Dabbs
Company: Tetra Tech
Address:

email: Jenny.Dabbs@tetratech
Phone:
Fax:

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Name:
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865-573-8188
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Project Manager:
Project Name:
Project No.:

Purchase Order No.
Subcontract No.
MI Quote No.

Please Check One:
☐ More samples to follow
☐ No Additional Samples

Report Type: ☐ Standard (default) ☐ Microbial Insights Level III raw data(15% surcharge) ☐ Microbial Insights Level IV (25% surcharge) ☐ Comprehensive Interpretive(15%) ☐ Historical Interpretive (35%)

EDD type: ☐ Microbial Insights Standard (default) ☐ All other available EDDs (5% surcharge) Specify EDD Type:

Please contact us with any questions about the analyses or filling out the COC at (865) 573-8188 (9:00 am to 5:00 pm EST, M-F). After hours email: customerservice@microbe.com

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MI ID (Laboratory Use Only)	Sample Name	Date Sampled	Time Sampled	Matrix	Total Number of Containers	PLFA	NGS	QuantArray Chlor	QuantArray Petro	DHC (Dehalococcoides)	DHC Functional genes (bvc, tce, vcr)	DHBt (Dehalobacter)	DHG (Dehalogenimonas)	DSM (Desulfuromonas)	DSB (Desulfitobacterium)	EBAC (Total)	SRB (Sulfate Reducing Bacteria-APS)	MGN (Methanogens)	MOB (Methanotrophs)	SMMO	DNF (Dentrifiers-nirS and nirK)	AMO (ammonia oxidizing bacteria)	PM1 (MTBE aerobic)	RMO (Toluene Monooxygenase)	RDEG (Toluene Monooxygenase)	PHE (Phenol Hydroxylase)	NAH (Naphthalene-aerobic)	BSSA (Toluene/Xylene-Anaerobic)	add qPCR	RNA (Expression Option)*	Other: Perchlorate (chlorate)	Other:	Other:
38	BH28-32.5	8/16/22	1520	S	1	X																										

Relinquished by: Date Received by: Date 8-17-22

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Knoxville, TN 37932
Phone: (865) 573-8188
Fax: (865) 573-8133

Client:	Valerie Bogle Tetra Tech, Inc. 1093 Commerce Park Drive Suite 100 Oak Ridge, TN 37830	**Phone:** **Fax:**	865-535-2030 865-482-6052

Identifier: 045UA **Date Rec:** 01/17/2023 **Report Date:** 01/24/2023

Client Project #: M11 **Client Project Name:** SWFTS

Purchase Order #:

Test results provided for: CENSUS

Reviewed By:

Charles Slater

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Results relate only to the items tested and the sample(s) as received by the laboratory.

MICROBIAL INSIGHTS, INC.

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Tel. (865) 573-8188 Fax. (865) 573-8133

CENSUS

Client: **Tetra Tech, Inc.**
Project: SWFTS

MI Project Number: **045UA**
Date Received: 01/17/2023

Sample Information

Client Sample ID:		**SWFTS-IW02A-20230116**	**SWFTS-MW07A-20230116**	**SWFTS-MW09B-20230116**	**SWFTS-MW14-20230116**
Sample Date:		01/16/2023	01/16/2023	01/16/2023	01/16/2023
Units:		cells/bead	cells/bead	cells/bead	cells/bead
Analyst/Reviewer:		OR/CS	OR/CS	OR/CS	OR/CS
Functional Genes					
Sulfate Reducing Bacteria	APS	**9.26E+05**	**2.23E+04**	**7.49E+04**	**4.81E+04**
Perchlorate Reductase	pcrA	<2.50E+02	<2.50E+02	<2.50E+02	<2.50E+02
Denitrifying Bacteria	nirK	<2.50E+02	<2.50E+02	**6.71E+03**	<2.50E+02
Denitrifying Bacteria	nirS	<2.50E+02	<2.50E+02	<2.50E+02	<2.50E+02

Legend:
NA = Not Analyzed NS = Not Sampled J = Estimated gene copies below PQL but above LQL I = Inhibited
< = Result not detected

Quality Assurance/Quality Control Data

Samples Received **1/17/2023**

Component	Date Prepared	Date Analyzed	Arrival Temperature	Positive Control	Extraction Blank	Negative Control
nirS	01/17/2023	01/24/2023	1 °C	107%	non-detect	non-detect
pcrA	01/17/2023	01/24/2023	1 °C	87%	non-detect	non-detect
APS	01/17/2023	01/24/2023	1 °C	105%	non-detect	non-detect
nirK	01/17/2023	01/24/2023	1 °C	111%	non-detect	non-detect

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Client: Valerie Bogle
Tetra Tech, Inc.
1093 Commerce Park Drive
Suite 100
Oak Ridge, TN 37830

Phone: 865-535-2030

Fax: 865-482-6052

Identifier: 045UA **Date Rec:** 01/17/2023 **Report Date:** 01/25/2023

Client Project #: M11 **Client Project Name:** SWFTS

Purchase Order #:

Test results provided for: PLFA

Reviewed By:

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Results relate only to the items tested and the sample(s) as received by the laboratory.

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Tel. (865) 573-8188 Fax. (865) 573-8133

PLFA

Client: **Tetra Tech, Inc.**
Project: SWFTS

MI Project Number: **045UA**
Date Received: 01/17/2023

Sample Information

Sample Name:	**SWFTS-IW02A-20230116**	**SWFTS-MW07A-20230116**	**SWFTS-MW09B-20230116**	**SWFTS-MW14-20230116**
Sample Date:	01/16/2023	01/16/2023	01/16/2023	01/16/2023
Sample Matrix:	Std. Bio-Trap	Std. Bio-Trap	Std. Bio-Trap	Std. Bio-Trap
Analyst/Reviewer:	AT/MW	AT/MW	AT/MW	AT/MW

Biomass Concentrations

Total Biomass (cells/bead)	**8.98E+05**	**4.12E+04**	**<1.66E+04**	**1.06E+05**

Community Structure (% total PLFA)

Firmicutes (TerBrSats)	**16.94**	**0.00**	**0.00**	**8.59**
Proteobacteria (Monos)	**46.39**	**58.51**	**0.00**	**45.95**
Anaerobic metal reducers (BrMonos)	**1.82**	**0.00**	**0.00**	**0.00**
SRB/Actinomycetes (MidBrSats)	**4.96**	**0.00**	**0.00**	**0.00**
General (Nsats)	**21.30**	**41.49**	**0.00**	**43.18**
Eukaryotes (polyenoics)	**8.58**	**0.00**	**0.00**	**2.28**

Physiological Status (Proteobacteria only)

Slowed Growth	**0.79**	**0.00**	**0.00**	**3.84**
Decreased Permeability	**0.90**	**0.00**	**0.00**	**0.00**

Legend:
NA = Not Analyzed NS = Not Sampled

MICROBIAL INSIGHTS, INC.

10515 Research Dr., Knoxville, TN 37932
Tel. (865) 573-8188 Fax. (865) 573-8133

PLFA

Client: **Tetra Tech, Inc.**
Project: SWFTS

MI Project Number: **045UA**
Date Received: 01/17/2023

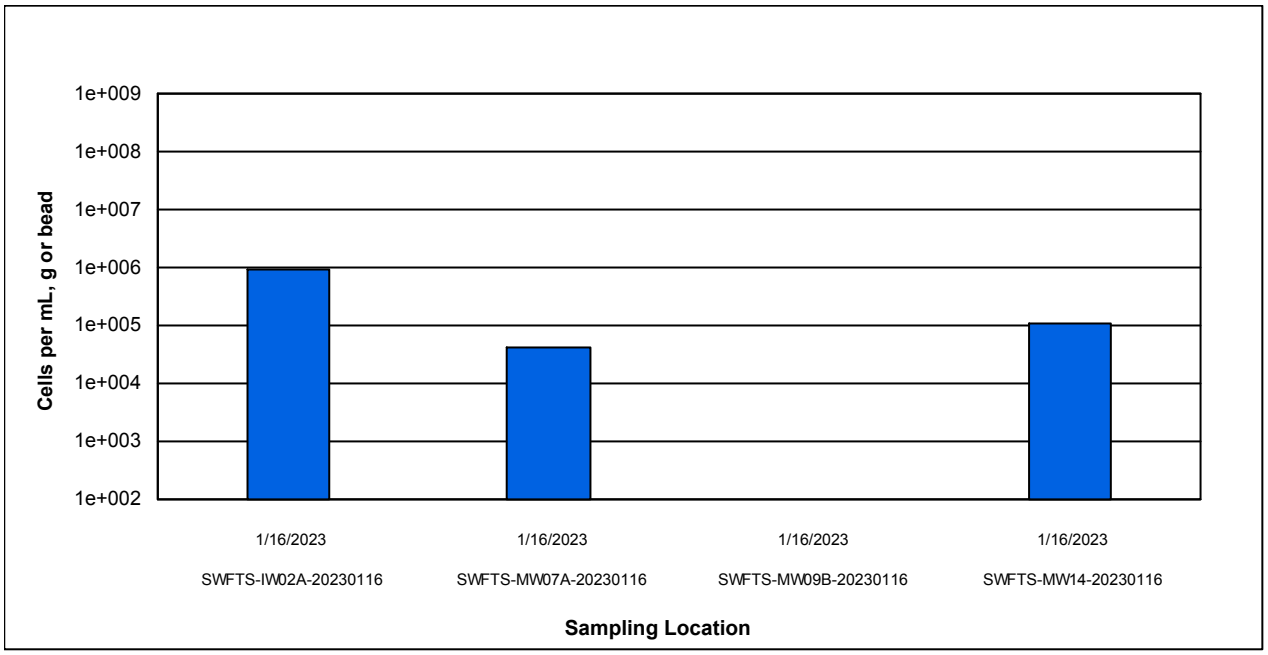

Figure 1. Biomass content is presented as a cell equivalent based on the total amount of phospholipid fatty acids (PLFA) extracted from a given sample. Total biomass is calculated based upon PLFA attributed to bacterial and eukaryotic biomass

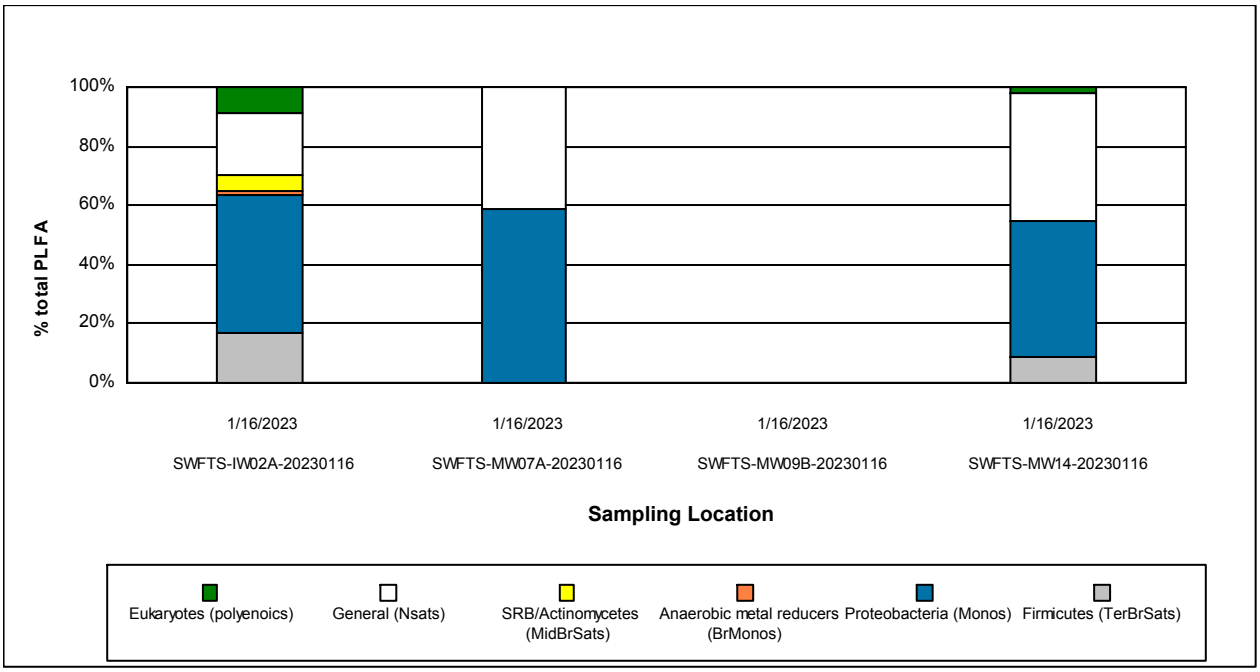

Figure 2. Relative percentages of total PLFA structural groups in the samples analyzed. Structural groups are assigned according to PLFA chemical structure, which is related to fatty acid biosynthesis.

Quality Assurance/Quality Control Data

Samples Received **1/17/2023**

Component	Date Prepared	Date Analyzed	Arrival Temperature	Positive Control	Extraction Blank	Negative Control
PLFA	01/17/2023	01/24/2023	1 °C	118%	non-detect	non-detect

10515 Research Drive
Knoxville, TN 37932
Phone: (865) 573-8188
Fax: (865) 573-8133

Identifier: 045UA **Date Rec:** 01/17/2023 **Report Date:** 01/25/2023

Client Project #: M11 **Client Project Name:** SWFTS

Purchase Order #:

Comments: Please note, results for sample SWFTS-MW07A-20230116 fell between the reporting and detection limits for PLFA analysis. Results for SWFTS-MW09B-20230116 fell below the detection limit.

REPORT TO:

Name: Valerie Bogle
Company: Tetra Tech
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Suite 100
Oak Ridge, TN 37830
email: valerie.bogle@tetratech.com
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www.microbe.com

Project Manager: Dana Grady
Project Name: SWFTS
Project No.: M11

Purchase Order No.
Subcontract No.
MI Quote No.

Please Check One:
☐ More samples to follow
☐ No Additional Samples

Report Type: ☒ Standard (default) ☐ Microbial Insights Level III raw data(15% surcharge) ☐ Microbial Insights Level IV (25% surcharge) ☐ Comprehensive Interpretive(15%) ☐ Historical Interpretive (35%)

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Sample Information						Analyses				CENSUS: Please select the target organism/gene																						
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045UA1	SWFTS-IW02A-20230116	1/16/23	1035	W	1	X																							X		X		
2	SWFTS-MW07A-20230116	1/16/23	1050	W	1	X																							X		X		
3	SWFTS-MW09B-20230116	1/16/23	1100	W	1	X																							X		X		
4	SWFTS-MW14-20230116	1/16/23	1110	W	1	X																							X		X		

Relinquished by: Date Received by: Date 1/17/23

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**Saturday delivery: See sampling protocol for alternate shipping address.

Appendix G
Soil Boring and Core Photo Logs

Table G.1
Soil Boring Locations
Seep Well Field Area Bioremediation Treatability Study

Borehole ID	Northing	Easting	Ground Surface Elevation	Borehole Total Depth
			feet amsl	feet bgs
SWFTS-BH11	26733052.61	831918.04	1551.41	50
SWFTS-BH12	26733023.59	831913.18	1551.41	40
SWFTS-BH13	26733016.49	831813.79	1552.66	45
SWFTS-BH14	26733006.71	831716.91	1553.30	45
SWFTS-BH15	26733009.18	831819.91	1552.51	45
SWFTS-BH16	26733000.97	831824.20	1551.81	45
SWFTS-BH17	26732994.19	831911.97	1551.51	50
SWFTS-BH18	26732981.88	831809.72	1552.01	40
SWFTS-BH19	26732972.24	831734.68	1552.74	35
SWFTS-BH20	26732963.95	831925.54	1551.16	45
SWFTS-BH21	26732942.51	831662.67	1554.96	45
SWFTS-BH22	26732917.59	831605.50	1555.52	50
SWFTS-BH23	26732847.82	832069.72	1554.09	40
SWFTS-BH24	26732847.98	832058.09	1554.02	45
SWFTS-BH25	26732846.89	832082.86	1554.28	40
SWFTS-BH26	26732836.51	831921.88	1552.90	50
SWFTS-BH27	26732808.07	831930.90	1553.88	45
SWFTS-BH28	26732745.81	832152.61	1557.36	48
SWFTS-BH29	26732731.02	832074.84	1562.67	45
SWFTS-BH30	26732719.85	832042.95	1561.54	50

Notes
amsl - above mean sea level
bgs - below ground surface

WELL NUMBER SWFTS-BH11

TETRA TECH

CLIENT Nevada Environmental Response Trust	**PROJECT NAME** SWF Treatability Study - Post Injection Soil Borings
PROJECT NUMBER 117-7502021-M11	**PROJECT LOCATION** Henderson, NV
DATE STARTED 8/10/22 **COMPLETED** 8/10/22	**NORTHING** 26733052.61
DRILLING METHOD Sonic	**EASTING** 831918.04
DRILLING CONTRACTOR BC2 Environmental	**GROUND ELEVATION** 1551.41 ft AMSL
LOGGED BY J. Bunkers **CHECKED BY** J. Dabbs	**TOP OF CASING ELEVATION** NA
NOTES	**BOREHOLE DIAMETER** 6" **TOTAL DEPTH** 50 ft

DEPTH (ft)	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION		WELL DIAGRAM
0			0' - 5'- Air knife to 5 feet below ground surface for utility clearance.		
5				1546.4	
			5' - 8.5'- (SW-SM) Brown (7.5YR 5/4); **Well graded SAND with SILT and GRAVEL**; Dry; Loose; 20% gravel, 70% sand, 10% silt; (30% coarse, 35% medium, 35% fine grained sand); Subangular to subrounded grains; No cementation; Moderate HCl reaction; No odor; Gravel and cobbles up to 3-inch. Below 7' - Moist.		
	SW-SM			1542.9	
			8.5' - 12'- (ML) Strong brown (7.5YR 5/6); **SANDY SILT**; Moist; Soft; 5% gravel, 35% sand, 55% silt, 5% clay; (5% coarse, 25% medium, 70% fine grained sand); Subrounded grains; Homogeneous; Weak cementation; Low plasticity; No odor; Gravel up to 0.5-inch; Coarse sand sized gypsum crsytals; Grades to cobbles up to 3-inch. Below 10' - Wet.		
10	ML			1539.4	
			12' - 21.5'- (SM) Strong brown (7.5YR 5/6); **SILTY SAND**; Wet; Compact; 5% gravel, 55% sand, 40% silt; (10% coarse, 25% medium, 65% fine grained sand); Subrounded grains; Weak cementation; No odor; Trace clay; Gravel up to 0.5-inch.		Bentonite Cement Slurry (0'-50')
15					
	SM		Below 16.5' - 60% sand, 35% silt, 5% clay; (5% coarse, 15% medium, 80% fine grained sand); Subrounded to rounded grains; Trace gravel up to 0.25-inch.		
20					
				1529.9	
			21.5' - 25.4'- (SP-SM) Brown (7.5YR 5/4); **Poorly graded SAND with SILT**; Wet; Compact; 90% sand, 10% silt; (10% medium, 90% fine grained sand); Rounded grains; Weak cementation; No odor; Trace gravel; Few scattered caliche nodules up to 0.25-inch.		
	SP-SM				
25				1526.0	
	SM		25.4' - 26.5'- (SM) Brown (7.5YR 5/4); **SILTY SAND**; Wet; Compact; 5% gravel, 60% sand, 30% silt, 5% clay; (25% coarse, 35% medium, 40% fine grained sand); Subangular to subrounded grains; Weak cementation; Strong HCl reaction; No odor; Gravel up to 1-inch.	1524.9	
	SW		26.5' - 29.6'- (SW) Dark brown (7.5YR 3/4); **Well graded SAND with GRAVEL**; Wet; Loose; 15% gravel, 80% sand, 5% silt; (45% coarse, 35% medium, 20% fine grained sand); Angular to subangular grains; Weak cementation; No odor; Gravel up to 2-inch.		
30				1521.8	
				1521.4	

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NERT GENERAL BH/WELL REV - GINT STD US.GDT - 12/9/22 15:59 - P:\GINT\NERT\M11\M11 LOGS.GPJ

WELL NUMBER SWFTS-BH11

TETRA TECH

CLIENT Nevada Environmental Response Trust **PROJECT NAME** SWF Treatability Study - Post Injection Soil Borings

PROJECT NUMBER 117-7502021-M11 **PROJECT LOCATION** Henderson, NV

DEPTH (ft)	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION	WELL DIAGRAM
30	SW-SM		29.6' - 30'- (SW-SM) Brown (7.5YR 5/4); **Well graded SAND with SILT**; Wet; Compact; 90% sand, 10% silt; (5% coarse, 25% medium, 70% fine grained sand); Subrounded to rounded grains; Weak cementation; No odor. 30' - 34'- No recovery.	
			34.0 — 1517.4	
35	SW		34' - 36'- (SW) Grayish brown (10YR 5/2); **Well graded SAND with GRAVEL**; Wet; Loose; 40% gravel, 60% sand; (50% coarse, 35% medium, 15% fine grained sand); Rounded grains; Weak cementation; No odor; Gravel and cobbles up to 3.5-inch.	
			36.0 — 1515.4	
	SM		36' - 38.7'- (SM) Grayish brown (10YR 5/2); **SILTY SAND with GRAVEL**; Wet; Compact; 15% gravel, 65% sand, 15% silt, 5% clay; (20% coarse, 15% medium, 65% fine grained sand); Subangular to subrounded grains; Moderate cementation; Strong HCl reaction; No odor; Gravel and cobbles up to 3-inch.	
			38.7 — 1512.7	
40	SW		38.7' - 40'- (SW) Brown (7.5YR 5/4); **Well graded SAND with GRAVEL**; Wet; Loose; 30% gravel, 65% sand, 5% silt; (55% coarse, 25% medium, 20% fine grained sand); Subrounded to rounded grains; No cementation; Strong HCl reaction; No odor; Gravel up to 1.5-inch.	
			40.0 — 1511.4	
	ML		40' - 50'- (ML) Light gray (10YR 7/1); **SILT with SAND**; Wet; Stiff; 20% sand, 55% silt, 25% clay; (100% fine grained sand); Rounded grains; Lensed; Moderate cementation; Medium plasticity; No odor; Blocky; 1 to 2-inch lenses. Below 42.5' - Gray (5Y 6/1). Below 45.8' - Light gray (10YR 7/1).	
45				
50			50.0 — 1501.4	

Bottom of borehole at 50.0 feet.

NERT GENERAL BH/WELL REV - GINT STD US.GDT - 12/9/22 15:59 - P:\GINT\NERT\M11\M11 LOGS.GPJ

WELL NUMBER SWFTS-BH12

TETRA TECH

CLIENT Nevada Environmental Response Trust	**PROJECT NAME** SWF Treatability Study - Post Injection Soil Borings
PROJECT NUMBER 117-7502021-M11	**PROJECT LOCATION** Henderson, NV
DATE STARTED 8/12/22 **COMPLETED** 8/12/22	**NORTHING** 26733023.59
DRILLING METHOD Sonic	**EASTING** 831913.18
DRILLING CONTRACTOR BC2 Environmental	**GROUND ELEVATION** 1551.41 ft AMSL
LOGGED BY J. Bunkers **CHECKED BY** J. Dabbs	**TOP OF CASING ELEVATION** NA
NOTES	**BOREHOLE DIAMETER** 6" **TOTAL DEPTH** 40 ft

DEPTH (ft)	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION		WELL DIAGRAM
0			0' - 5'- Air knife to 5 feet below ground surface for utility clearance.		
5				5.0 / 1546.4	
	SW		5' - 7'- (SW) Brown (7.5YR 5/4); **Well graded SAND with GRAVEL**; Dry; Loose; 20% gravel, 75% sand, 5% silt; (40% coarse, 30% medium, 30% fine grained sand); Subangular grains; No cementation; Moderate HCl reaction; No odor; Gravel up to 1.5-inch.	7.0 / 1544.4	
	SP		7' - 9.8'- (SP) Brown (7.5YR 5/4); **Poorly graded SAND**; Moist; Loose to compact; 95% sand, 5% silt; (15% coarse, 25% medium, 60% fine grained sand); Subrounded to rounded grains; Weak cementation; Weak HCl reaction; No odor; Trace gravel up to 0.25-inch.	9.8 / 1541.6	
10	SM		9.8' - 10.5'- (SM) Brown (7.5YR 5/4); **SILTY SAND**; Moist; Compact; 80% sand, 20% silt; (25% medium, 75% fine grained sand); Rounded grains; Weak cementation; Weak HCl reaction; No odor.	10.5 / 1540.9	
	ML		10.5' - 14'- (ML) Brown (7.5YR 5/4); **SANDY SILT**; Wet; Firm; 35% sand, 50% silt, 15% clay; (10% medium, 90% fine grained sand); Rounded grains; Homogeneous; Moderate cementation; Medium plasticity; Weak HCl reaction; No odor.	14.0 / 1537.4	
15	SM		14' - 15.5'- (SM) Brown (7.5YR 5/4); **SILTY SAND**; Wet; Compact; 75% sand, 20% silt, 5% clay; (15% medium, 85% fine grained sand); Rounded grains; Weak cementation; Weak HCl reaction; No odor.	15.5 / 1535.9	Bentonite Cement Slurry (0'-40')
	ML		15.5' - 17.8'- (ML) Brown (7.5YR 5/4); **SANDY SILT**; Wet; Firm; 40% sand, 45% silt, 15% clay; (10% medium, 90% fine grained sand); Rounded grains; Homogeneous; Moderate cementation; Low plasticity; Moderate HCl reaction; No odor.	17.8 / 1533.6	
			Below 17' - Dark brown (7.5YR 3/4); Organic odor.		
20	SM		17.8' - 26'- (SM) Dark brown (7.5YR 3/4); **SILTY SAND**; Wet; Loose to compact; 80% sand, 20% silt; (10% coarse, 20% medium, 70% fine grained sand); Subrounded to rounded grains; Weak cementation; Weak HCl reaction; Organic odor; Few white, clayey nodules up to 0.25-inch; Visible biomass; Visible precipitates; 10% organics; Trace gravel.		
25				26.0 / 1525.4	
	SW		26' - 28'- (SW) Strong brown (7.5YR 4/6); **Well graded SAND with GRAVEL**; Wet; Loose; 15% gravel, 80% sand, 5% silt; (50% coarse, 30% medium, 20% fine grained sand); Subangular to subrounded grains; Organic odor; Gravel up to 1.5-inch; Visible biomass; 5% organics; Sand grades coarser with depth.	28.0 / 1523.4	
30	SP-SM			30.0 / 1521.4	

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CLIENT Nevada Environmental Response Trust **PROJECT NAME** SWF Treatability Study - Post Injection Soil Borings

PROJECT NUMBER 117-7502021-M11 **PROJECT LOCATION** Henderson, NV

DEPTH (ft)	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION	WELL DIAGRAM
30				
	SW		28' - 30'- (SP-SM) Light brown (7.5YR 6/3); **Poorly graded SAND with SILT**; Wet; Loose; 90% sand, 10% silt; (10% medium, 90% fine grained sand); Rounded grains; No cementation; Weak HCl reaction; Organic odor; 5% organics; Trace clay.	
35			30' - 35.2'- (SW) Dark gray (7.5YR 4/1); **Well graded SAND with GRAVEL**; Wet; Loose; 35% gravel, 65% sand; (60% coarse, 30% medium, 10% fine grained sand); Subangular to rounded grains; No cementation; Moderate HCl reaction; Organic odor; Gravel up to 2-inch; Trace silt; Few rounded caliche nodules up to 2-inch; Visible biomass; 15% organics.	
			35.2 1516.2	
	ML		35.2' - 40'- (ML) White (7.5YR 8/1); **SILT with SAND**; Wet; Firm to stiff; 20% sand, 70% silt, 10% clay; (100% fine grained sand); Rounded grains; Homogeneous; Moderate cementation; Low plasticity; Weak HCl reaction; No odor; Trace angular gravel; Laminated; Clay lenses up to 3-inch. Below 36.2' - No gravel.	
40			40.0 1511.4	

Bottom of borehole at 40.0 feet.

NERT GENERAL BH/WELL REV - GINT STD US.GDT - 12/9/22 15:59 - P:\GINT\NERT\M11\M11 LOGS.GPJ

WELL NUMBER SWFTS-BH13

TETRA TECH

CLIENT Nevada Environmental Response Trust	**PROJECT NAME** SWF Treatability Study - Post Injection Soil Borings
PROJECT NUMBER 117-7502021-M11	**PROJECT LOCATION** Henderson, NV
DATE STARTED 8/11/22 **COMPLETED** 8/11/22	**NORTHING** 26733016.49
DRILLING METHOD Sonic	**EASTING** 831813.79
DRILLING CONTRACTOR BC2 Environmental	**GROUND ELEVATION** 1552.66 ft AMSL
LOGGED BY J. Bunkers **CHECKED BY** J. Dabbs	**TOP OF CASING ELEVATION** NA
NOTES	**BOREHOLE DIAMETER** 6" **TOTAL DEPTH** 45 ft

DEPTH (ft)	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION		WELL DIAGRAM
0			0' - 5'- Air knife to 5 feet below ground surface for utility clearance.		
5				5.0 / 1547.7	
	SW		5' - 7.2'- (SW) Brown (7.5YR 5/4); **Well graded SAND with GRAVEL**; Dry; Loose; 25% gravel, 70% sand, 5% silt; (40% coarse, 35% medium, 25% fine grained sand); Angular to subangular grains; No cementation; Strong HCl reaction; Organic odor; Gravel and cobbles up to 3.5-inch.	7.2 / 1545.5	
	SW-SM		7.2' - 8.5'- (SW-SM) Strong brown (7.5YR 5/6); **Well graded SAND with SILT**; Moist; Loose; 5% gravel, 85% sand, 10% silt; (15% coarse, 30% medium, 55% fine grained sand); Angular to subangular grains; No cementation; Weak HCl reaction; Organic odor; Gravel up to 0.5-inch.	8.5 / 1544.2	
10	SM		8.5' - 16'- (SM) Strong brown (7.5YR 5/6); **SILTY SAND**; Wet; Compact; 5% gravel, 75% sand, 20% silt; (15% coarse, 30% medium, 55% fine grained sand); Subangular to subrounded grains; Weak cementation; Weak HCl reaction; Organic odor; Gravel up to 0.25-inch; Visible biomass; 5% organics. Below 10' - Dark brown (7.5YR 3/4); 80% sand, 20% silt; (5% coarse, 15% medium, 80% fine grained sand); Subrounded to rounded grains; 15% organics. 11' - 11.2' - Black sand lens. Below 13.5' - Brown (7.5YR 4/2); Wet; Compact; 65% sand, 30% silt, 5% clay; (5% medium, 95% fine grained sand); Rounded grains; Weak cementation; Weak HCl reaction; Organic odor; 10% organics.		
15				16.0 / 1536.7	← Bentonite Cement Slurry (0'-45')
	ML		16' - 18.2'- (ML) Olive brown (2.5Y 4/3); **SILT with SAND**; Wet; Firm; 20% sand, 65% silt, 15% clay; (100% fine grained sand); Rounded grains; Homogeneous; Moderate cementation; Medium plasticity; Weak HCl reaction; Organic odor; Mottled black organic clay; Visible biomass; 10% organics.	18.2 / 1534.5	
20	SM		18.2' - 21'- (SM) Dark brown (7.5YR 3/2); **SILTY SAND**; Wet; Compact; 70% sand, 25% silt, 5% clay; (5% medium, 95% fine grained sand); Rounded grains; Weak to moderate cementation; Organic odor; Light black mottling; Visible biomass; 10% organics.	21.0 / 1531.7	
	SW-SM		21' - 23.5'- (SW-SM) Black (7.5YR 2.5/1); **Well graded SAND with SILT**; Wet; Loose; 90% sand, 10% silt; (35% coarse, 40% medium, 25% fine grained sand); Subangular to subrounded grains; No cementation; Weak HCl reaction; Organic odor; Trace gravel up to 0.5-inch; Visible biomass; 20% organics.	23.5 / 1529.2	
25	SM		23.5' - 26'- (SM) Dark gray (7.5YR 4/1); **SILTY SAND**; Wet; Loose; 75% sand, 20% silt, 5% clay; (15% medium, 85% fine grained sand); Subrounded to rounded grains; Weak cementation; Weak HCl reaction; Organic odor; Visible biomass; 10% organics; Trace coarse grained sand. 25.5' - 25.8' - Medium grained black sand lens; Visible biomass.	26.0 / 1526.7	
	ML		26' - 27.5'- (ML) Brown (7.5YR 5/2); **SANDY SILT**; Wet; Firm; 45% sand, 40% silt, 15% clay; (10% coarse, 20% medium, 70% fine grained sand); Subangular to subrounded grains; Homogeneous; Moderate cementation; Low plasticity; Weak HCl reaction; Organic odor; 5% organics; Visible biomass. 27' - 27.2' - Coarse grained sand lens.	27.5 / 1525.2	
30	SW				

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WELL NUMBER SWFTS-BH13

TETRA TECH

CLIENT Nevada Environmental Response Trust **PROJECT NAME** SWF Treatability Study - Post Injection Soil Borings

PROJECT NUMBER 117-7502021-M11 **PROJECT LOCATION** Henderson, NV

DEPTH (ft)	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION	WELL DIAGRAM
30				
			31.0 — 27.5' - 31'- (SW) Dark gray (7.5YR 4/1); **Well graded SAND with GRAVEL**; Wet; Loose; 15% gravel, 85% sand; (45% coarse, 35% medium, 20% fine grained sand); Subrounded to rounded grains; No cementation; Weak HCl reaction; Organic odor; Gravel up to 2-inch; Visible biomass; 15% organics.*(continued from previous)* — 1521.7	
	GW		31' - 35.4'- (GW) Black (7.5YR 2.5/1); **Well graded GRAVEL with SAND**; Wet; Loose; 60% gravel, 40% sand; (60% coarse, 30% medium, 10% fine grained sand); Subangular to rounded grains; No cementation; Weak HCl reaction; Organic odor; Gravel and cobbles up to 3.5-inch; Trace silt; Visible biomass; 20% organics.	
35			35.4 — 1517.3	
	SP-SM		36.2 — 35.4' - 36.2'- (SP-SM) Brown (7.5YR 4/4); **Poorly graded SAND with SILT**; Wet; Loose; 10% gravel, 80% sand, 10% silt; (25% coarse, 30% medium, 45% fine grained sand); Subangular to subrounded grains; No cementation; Moderate HCl reaction; No odor; Gravel up to 0.75-inch. — 1516.5	
	GW		36.2' - 39.6'- (GW) Black (7.5YR 2.5/1); **Well graded GRAVEL with SAND**; Wet; Loose; 60% gravel, 40% sand; (70% coarse, 25% medium, 5% fine grained sand); Subrounded to rounded grains; No cementation; Weak HCl reaction; Organic odor; Gravel and cobbles up to 4-inch; Visible biomass; 20% organics.	
40			39.6 — 1513.1	
	ML		39.6' - 45'- (ML) Light gray (10YR 7/1); **SILT with SAND**; Wet; Stiff; 20% sand, 55% silt, 25% clay; (100% fine grained sand); Rounded grains; Homogeneous; Moderate cementation; Medium plasticity; Moderate HCl reaction; Organic odor. Below 41.2' - Stiff; 15% sand, 50% silt, 35% clay; Blocky; Weak cementation; Weak HCl reaction.	
45			45.0 — 1507.7	

Bottom of borehole at 45.0 feet.

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WELL NUMBER SWFTS-BH14

TETRA TECH

CLIENT Nevada Environmental Response Trust	**PROJECT NAME** SWF Treatability Study - Post Injection Soil Borings
PROJECT NUMBER 117-7502021-M11	**PROJECT LOCATION** Henderson, NV
DATE STARTED 8/15/22 **COMPLETED** 8/15/22	**NORTHING** 26733006.71
DRILLING METHOD Sonic	**EASTING** 831716.91
DRILLING CONTRACTOR BC2 Environmental	**GROUND ELEVATION** 1553.30 ft AMSL
LOGGED BY J. Bunkers **CHECKED BY** J. Dabbs	**TOP OF CASING ELEVATION** NA
NOTES	**BOREHOLE DIAMETER** 6" **TOTAL DEPTH** 45 ft

DEPTH (ft)	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION		WELL DIAGRAM
0			0' - 10'- Air knife to 10 feet below ground surface for utility clearance.		
10				10.0 / 1543.3	
15	SM		10' - 23'- (SM) Brown (7.5YR 5/4); **SILTY SAND**; Wet; Loose; 10% gravel, 75% sand, 15% silt; (40% coarse, 30% medium, 30% fine grained sand); Angular to subangular grains; No cementation; Moderate HCl reaction; No odor; Gravel up to 1-inch. Below 11.2' - Compact; 5% gravel, 80% sand, 15% silt; (20% coarse, 25% medium, 55% fine grained sand); Subangular to subrounded grains; Weak cementation; No HCl reaction; Gravel up to 0.5-inch. Below 13' - Dark brown (7.5YR 3/4); 80% sand, 20% silt; (5% medium, 95% fine grained sand); Rounded grains; Weak cementation; Weak HCl reaction; No odor; Trace clay; Visible biomass. 14.5' - 15.8' - Light black mottling; 2% organics. Below 16' - Brown (7.5YR 5/4); 5% gravel, 65% sand, 20% silt, 10% clay; (10% coarse, 25% medium, 65% fine grained sand); Subangular to subrounded grains; Black mottling throughout; Gravel up to 1.5-inch; 2% organics.		Bentonite Cement Slurry (0'-45')
20			19.8' - 20' - Coarse grained sand lens; Rounded grains. Below 20' - Light brown (7.5YR 6/4); 80% sand, 15% silt, 5% clay; (5% medium, 95% fine grained sand); Rounded grains.		
25	SP-SM		23' - 25'- (SP-SM) Light brown (7.5YR 6/4); **Poorly graded SAND with SILT**; Wet; Compact; 90% sand, 10% silt; (10% medium, 90% fine grained sand); Rounded grains; No cementation; Weak HCl reaction; No odor.	23.0 / 1530.3 25.0 / 1528.3	
	SW		25' - 26'- (SW) Dark brown (7.5YR 3/4); **Well graded SAND**; Wet; Loose; 5% gravel, 90% sand, 5% silt; (35% coarse, 35% medium, 30% fine grained sand); Subangular to subrounded grains; No cementation; Weak HCl reaction; No odor; Visible biomass; 2% organics.	26.0 / 1527.3	
	SM		26' - 27.5'- (SM) Light brown (7.5YR 6/4); **SILTY SAND**; Wet; Compact; 70% sand, 25% silt, 5% clay; (10% medium, 90% fine grained sand); Rounded grains; Weak cementation; Weak HCl reaction; No odor.	27.5 / 1525.8	
	SW-SM			29.3 / 1524.0	
30				30.0 / 1523.3	

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CLIENT Nevada Environmental Response Trust
PROJECT NAME SWF Treatability Study - Post Injection Soil Borings
PROJECT NUMBER 117-7502021-M11
PROJECT LOCATION Henderson, NV

DEPTH (ft)	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION	WELL DIAGRAM
30	GW		30.5 — 27.5' - 29.3'- (SW-SM) Dark brown (7.5YR 3/4); **Well graded SAND with SILT**; Wet; Loose; 5% gravel, 85% sand, 10% silt; (40% coarse, 30% medium, 30% fine grained sand); Subangular to subrounded grains; No cementation; Weak HCl reaction; No odor; Gravel up to 0.5-inch; Visible biomass; 2% organics.	1522.8
			29.3' - 30'- (GW) Dark brown (7.5YR 3/4); **Well graded GRAVEL with SAND**; Wet; Loose; 50% gravel, 45% sand, 5% silt; (45% coarse, 30% medium, 25% fine grained sand); Subrounded to rounded grains; No cementation; Moderate HCl reaction; No odor; Gravel up to 2-inch; Trace clay; Visible biomass; 5% organics.	
35			30' - 30.5'- No recovery.	
	ML		30.5' - 45'- (ML) Pale yellow (5Y 8/2); **SILT**; Wet; Firm; 10% sand, 60% silt, 30% clay; (100% fine grained sand); Rounded grains; Homogeneous; Moderate cementation; Medium plasticity; No HCl reaction; No odor; Laminated 0.25 to 1-inch; Blocky.	
			35' - 36.5' - Organic (decayed plant matter).	
40				
45			45.0	1508.3

Bottom of borehole at 45.0 feet.

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WELL NUMBER SWFTS-BH15

TETRA TECH

CLIENT Nevada Environmental Response Trust	**PROJECT NAME** SWF Treatability Study - Post Injection Soil Borings
PROJECT NUMBER 117-7502021-M11	**PROJECT LOCATION** Henderson, NV
DATE STARTED 8/11/22 **COMPLETED** 8/11/22	**NORTHING** 26733009.18
DRILLING METHOD Sonic	**EASTING** 831819.91
DRILLING CONTRACTOR BC2 Environmental	**GROUND ELEVATION** 1552.51 ft AMSL
LOGGED BY J. Bunkers **CHECKED BY** J. Dabbs	**TOP OF CASING ELEVATION** NA
NOTES	**BOREHOLE DIAMETER** 6" **TOTAL DEPTH** 45 ft

DEPTH (ft)	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION	WELL DIAGRAM
0			0' - 5'- Air knife to 5 feet below ground surface for utility clearance.	
5			5.0 / 1547.5	
	SW		5' - 8'- (SW) Brown (7.5YR 5/4); **Well graded SAND with GRAVEL**; Dry; Loose; 25% gravel, 70% sand, 5% silt; (40% coarse, 35% medium, 25% fine grained sand); Angular to subangular grains; No cementation; Strong HCl reaction; No odor; Gravel and cobbles up to 3.5-inch.	
			8.0 / 1544.5	
	SW-SM		8' - 9.3'- (SW-SM) Strong brown (7.5YR 5/6); **Well graded SAND with SILT**; Moist; Loose; 5% gravel, 85% sand, 10% silt; (15% coarse, 30% medium, 55% fine grained sand); Angular to subangular grains; No cementation; Weak HCl reaction; No odor; Gravel up to 0.5-inch.	
			9.3 / 1543.2	
10	SM		9.3' - 17'- (SM) Strong brown (7.5YR 5/6); **SILTY SAND**; Wet; Compact; 5% gravel, 75% sand, 20% silt; (15% coarse, 30% medium, 55% fine grained sand); Subangular to subrounded grains; Weak cementation; Weak HCl reaction; Organic odor; Gravel up to 0.3-inch. Below 10.3' - Dark brown (7.5YR 3/4); 80% sand, 20% silt; (5% coarse, 15% medium, 80% fine grained sand); Subrounded to rounded grains; 15% organics. Below 13' - Brown (7.5YR 4/2); 65% sand, 30% silt, 5% clay; (5% medium, 95% fine grained sand).	
15			17.0 / 1535.5	Bentonite Cement Slurry (0'-45')
20	ML		17' - 21.5'- (ML) Olive brown (2.5Y 4/3); **SILT with SAND**; Wet; Firm; 20% sand, 65% silt, 15% clay; (100% fine grained sand); Rounded grains; Homogeneous; Moderate cementation; Medium plasticity; Weak HCl reaction; Organic odor; Mottled black organic clay; Visible biomass; 10% organics.	
			21.5 / 1531.0	
	SM		22.0 / 1530.5 21.5' - 22'- (SM) Dark brown (7.5YR 3/2); **SILTY SAND**; Wet; Compact; 75% sand, 20% silt, 5% clay; (10% medium, 90% fine grained sand); Subrounded to rounded grains; Weak to moderate cementation; Weak HCl reaction; Organic odor; Visible biomass; 5% organics.	
25	SW-SM		22' - 26'- (SW-SM) Black (7.5YR 2.5/1); **Well graded SAND with SILT**; Wet; Loose; 5% gravel, 85% sand, 10% silt; (35% coarse, 40% medium, 25% fine grained sand); Subangular to subrounded grains; No cementation; Weak HCl reaction; Organic odor; Gravel up to 0.75-inch; Visible biomass; 20% organics.	
			26.0 / 1526.5	
	ML		26' - 26.8'- (ML) Brown (7.5YR 5/2); **SANDY SILT**; Wet; Firm; 45% sand, 40% silt, 15% clay; (10% coarse, 20% medium, 70% fine grained sand); Subrounded to rounded grains; Homogeneous; Moderate cementation; Medium plasticity; Weak HCl reaction; Organic odor; Visible biomass; Mottling; Less than 5% organics.	
			26.8 / 1525.7	
	SW			
			28.5 / 1524.0	
30	GW			

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WELL NUMBER SWFTS-BH15

TETRA TECH

CLIENT Nevada Environmental Response Trust **PROJECT NAME** SWF Treatability Study - Post Injection Soil Borings

PROJECT NUMBER 117-7502021-M11 **PROJECT LOCATION** Henderson, NV

DEPTH (ft)	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION	WELL DIAGRAM
30				
	GW		26.8' - 28.5'- (SW) Dark gray (7.5YR 4/1); **Well graded SAND with GRAVEL**; Wet; Loose; 15% gravel, 85% sand; (45% coarse, 35% medium, 20% fine grained sand); Subrounded to rounded grains; No cementation; Weak HCl reaction; Organic odor; Gravel up to 2-inch; Visible biomass; 15% organics.	
			28.5' - 34.3'- (GW) Black (7.5YR 2.5/1); **Well graded GRAVEL with SAND**; Wet; Loose; 60% gravel, 40% sand; (60% coarse, 30% medium, 10% fine grained sand); Subrounded to rounded grains; No cementation; Weak HCl reaction; Organic odor; Gravel and cobbles up to 3-inch; Visible biomass; 15% organics.*(continued from previous)*	
			34.3 — 1518.2	
35	SP-SM		34.3' - 35'- (SP-SM) Brown (7.5YR 4/4); **Poorly graded SAND with SILT**; Wet; Loose; 10% gravel, 80% sand, 10% silt; (25% coarse, 30% medium, 45% fine grained sand); Subangular to subrounded grains; No cementation; Moderate HCl reaction; No odor; Gravel up to 1-inch.	
			35.0 — 1517.5	
	GW		35' - 40'- (GW) Black (7.5YR 2.5/1); **Well graded GRAVEL with SAND**; Wet; Loose; 60% gravel, 40% sand; (70% coarse, 25% medium, 5% fine grained sand); Subrounded to rounded grains; No cementation; Weak HCl reaction; Organic odor; Gravel and cobbles up to 4-inch; Visible biomass; 15% organics.	
40			40.0 — 1512.5	
	ML		40' - 45'- (ML) Light gray (10YR 7/1); **SILT with SAND**; Wet; Stiff; 20% sand, 55% silt, 25% clay; (100% fine grained sand); Rounded grains; Moderate cementation; Medium plasticity; Moderate HCl reaction; Organic odor; Laminated 0.25 to 1-inch.	
45			45.0 — 1507.5	

Bottom of borehole at 45.0 feet.

NERT GENERAL BH/WELL REV - GINT STD US.GDT - 12/9/22 15:59 - P:\GINT\NERT\M11\M11 LOGS.GPJ

WELL NUMBER SWFTS-BH16

TETRA TECH

CLIENT Nevada Environmental Response Trust	**PROJECT NAME** SWF Treatability Study - Post Injection Soil Borings
PROJECT NUMBER 117-7502021-M11	**PROJECT LOCATION** Henderson, NV
DATE STARTED 8/11/22 **COMPLETED** 8/11/22	**NORTHING** 26733000.97
DRILLING METHOD Sonic	**EASTING** 831824.2
DRILLING CONTRACTOR BC2 Environmental	**GROUND ELEVATION** 1551.81 ft AMSL
LOGGED BY J. Bunkers **CHECKED BY** J. Dabbs	**TOP OF CASING ELEVATION** NA
NOTES	**BOREHOLE DIAMETER** 6" **TOTAL DEPTH** 45 ft

DEPTH (ft)	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION		WELL DIAGRAM
0			0' - 5'- Air knife to 5 feet below ground surface for utility clearance.		
5				1546.8	
	SW		5' - 7.5'- (SW) Brown (7.5YR 5/4); **Well graded SAND with GRAVEL**; Dry; Loose; 20% gravel, 75% sand, 5% silt; (40% coarse, 30% medium, 30% fine grained sand); Subangular to subrounded grains; No cementation; Moderate HCl reaction; No odor; Gravel and cobbles up to 3.5-inch.		
				1544.3	
10	SW-SM		7.5' - 10.5'- (SW-SM) Brown (7.5YR 5/4); **Well graded SAND with SILT**; Moist; Compact; 10% gravel, 80% sand, 10% silt; (30% coarse, 30% medium, 40% fine grained sand); Subangular to rounded grains; Weak cementation; Moderate HCl reaction; No odor; Gravel and cobbles up to 3-inch.		
				1541.3	
15	ML		10.5' - 21'- (ML) Dark brown (7.5YR 3/4); **SILT with SAND**; Wet; Firm; 15% sand, 60% silt, 25% clay; (5% coarse, 15% medium, 80% fine grained sand); Rounded grains; Homogeneous; Moderate cementation; Medium plasticity; Weak HCl reaction; No odor; Trace gravel.		Bentonite Cement Slurry (0'-45')
20				1530.8	
	SM		21' - 23.5'- (SM) Brown (7.5YR 5/4); **SILTY SAND**; Wet; Compact; 85% sand, 15% silt; (5% coarse, 10% medium, 85% fine grained sand); Weak cementation; Moderate HCl reaction; Organic odor; Trace gravel up to 0.5-inch; Trace clay.		
				1528.3	
	SW		23.5' - 24.3'- (SW) Brown (7.5YR 5/4); **Well graded SAND with GRAVEL**; Wet; Loose; 15% gravel, 80% sand, 5% silt; (40% coarse, 30% medium, 30% fine grained sand); Subangular to subrounded grains; No cementation; Organic odor; Gravel and cobbles up to 3-inch.	1527.5	
25	SP-SM		24.3' - 30'- (SP-SM) Light brown (7.5YR 6/4); **Poorly graded SAND with SILT**; Wet; Compact; 90% sand, 10% silt; (5% coarse, 10% medium, 85% fine grained sand); Rounded grains; Weak cementation; Moderate HCl reaction; No odor.		
30				1521.8	

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NERT GENERAL BH/WELL REV - GINT STD US.GDT - 12/9/22 15:59 - P:\GINT\NERT\M11\M11 LOGS.GPJ

CLIENT Nevada Environmental Response Trust **PROJECT NAME** SWF Treatability Study - Post Injection Soil Borings

PROJECT NUMBER 117-7502021-M11 **PROJECT LOCATION** Henderson, NV

DEPTH (ft)	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION	WELL DIAGRAM
30				
35	GW		30' - 35'- (GW) Black (7.5YR 2.5/1); **Well graded GRAVEL with SAND**; Wet; Loose; 60% gravel, 35% sand, 5% silt; (60% coarse, 30% medium, 10% fine grained sand); Subangular to rounded grains; No cementation; Weak HCl reaction; Organic odor; Gravel and cobbles up to 4-inch; Visible biomass; 15% organics.	
40	ML		35' - 40'- (ML) Light gray (10YR 7/1); **SILT with SAND**; Wet; Stiff; 15% sand, 50% silt, 35% clay; (100% fine grained sand); Blocky; Weak cementation; Medium plasticity; Weak HCl reaction; Organic odor; Laminated 0.25 to 1-inch.	
45	ML		40' - 45'- (ML) Very pale brown (10YR 8/2); **SILT**; Wet; Stiff; 10% sand, 70% silt, 20% clay; (100% fine grained sand); Rounded grains; Blocky; Moderate cementation; Medium plasticity; Weak HCl reaction; Organic odor; 1-inch dark lens at top of unit. 42' - 42.1' - Dark lens. 44.5' - 44.6' - Dark lens.	

35.0 — 1516.8
40.0 — 1511.8
45.0 — 1506.8

Bottom of borehole at 45.0 feet.

NERT GENERAL BH/WELL REV - GINT STD US.GDT - 12/9/22 15:59 - P:\GINT\NERT\M11\M11 LOGS.GPJ

WELL NUMBER SWFTS-BH17

TETRA TECH

CLIENT Nevada Environmental Response Trust	**PROJECT NAME** SWF Treatability Study - Post Injection Soil Borings
PROJECT NUMBER 117-7502021-M11	**PROJECT LOCATION** Henderson, NV
DATE STARTED 8/12/22 **COMPLETED** 8/12/22	**NORTHING** 26732994.19
DRILLING METHOD Sonic	**EASTING** 831911.97
DRILLING CONTRACTOR BC2 Environmental	**GROUND ELEVATION** 1551.51 ft AMSL
LOGGED BY J. Bunkers **CHECKED BY** J. Dabbs	**TOP OF CASING ELEVATION** NA
NOTES	**BOREHOLE DIAMETER** 6" **TOTAL DEPTH** 50 ft

DEPTH (ft)	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION		WELL DIAGRAM
0			0' - 5'- Air knife to 5 feet below ground surface for utility clearance.		
5	SW		5' - 8.2'- (SW) Brown (7.5YR 5/4); **Well graded SAND with GRAVEL**; Dry; Loose; 30% gravel, 65% sand, 5% silt; (45% coarse, 30% medium, 25% fine grained sand); Angular to subangular grains; No cementation; Moderate HCl reaction; No odor; Gravel up to 2-inch.	5.0 / 1546.5	
	SP		8.2' - 8.8'- (SP) Brown (7.5YR 5/4); **Poorly graded SAND**; Dry; Loose; 95% sand, 5% silt; (10% coarse, 20% medium, 70% fine grained sand); Rounded grains; No cementation; Weak HCl reaction; No odor; Trace gravel.	8.2 / 1543.3 8.8 / 1542.7	
10	SW		8.8' - 9.2'- (SW) Brown (7.5YR 5/4); **Well graded SAND with GRAVEL**; Moist; Loose; 25% gravel, 70% sand, 5% silt; (50% coarse, 35% medium, 15% fine grained sand); Subangular to subrounded grains; No cementation; Moderate HCl reaction; No odor; Gravel up to 0.75-inch.	9.2 / 1542.3 9.6 / 1541.9 10.1 / 1541.4	
	SM		9.2' - 9.6'- (SM) Brown (7.5YR 5/3); **SILTY SAND**; Wet; Compact; 80% sand, 15% silt, 5% clay; (15% medium, 85% fine grained sand); Moderate cementation; No odor; Trace gravel.	11.5 / 1540.0	
	SW		9.6' - 10.1'- (SW) Brown (7.5YR 5/4); **Well graded SAND**; Moist; Loose; 10% gravel, 85% sand, 5% silt; (60% coarse, 30% medium, 10% fine grained sand); Angular to subangular grains; No cementation; Moderate HCl reaction; No odor.		
	SP-SM		10.1' - 11.5'- (SP-SM) Dark brown (7.5YR 3/4); **Poorly graded SAND with SILT**; Wet; Loose; 90% sand, 10% silt; (15% medium, 85% fine grained sand); Subrounded to rounded grains; No cementation; No odor.		
15	ML		11.5' - 14.7'- (ML) Strong brown (7.5YR 4/6); **SILT with SAND**; Wet; Soft; 25% sand, 60% silt, 15% clay; (100% fine grained sand); Rounded grains; Homogeneous; Weak cementation; Low plasticity; Weak HCl reaction; Organic odor; Visible biomass; 5% organics. Below 12.2' - Dark brown.	14.7 / 1536.8	Bentonite Cement Slurry (0'-50')
20	SM		14.7' - 26'- (SM) Brown (7.5YR 5/4); **SILTY SAND**; Wet; Compact; 70% sand, 30% silt; (10% medium, 90% fine grained sand); Rounded grains; Weak cementation; Weak HCl reaction; Organic odor. Below 17.3' - Dark brown (7.5YR 3/3); 55% sand, 40% silt, 5% clay; (100% fine grained sand); Visible biomass; 5% organics. Below 18' - Loose; 75% sand, 25% silt; (20% medium, 80% fine grained sand); No cementation; 10% organics. 19' - 19.3' - Angular gravel lens. 22' - 22.2' - Coarse grained sand lens.		
25	SW		26' - 27'- (SW) Dark brown (7.5YR 3/3); **Well graded SAND with GRAVEL**; Wet; Loose; 20% gravel, 75% sand, 5% silt; (35% coarse, 35% medium, 30% fine grained sand); Angular to subangular grains; No cementation; Weak HCl reaction; Organic odor; Gravel and cobbles up to 2.5-inch; Visible biomass; 10% organics.	26.0 / 1525.5 27.0 / 1524.5	
	SP		27' - 28.5'- (SP) Light brown (7.5YR 6/4); **Poorly graded SAND**; Wet; Compact; 5% gravel, 90% sand, 5% silt; (5% coarse, 20% medium, 75% fine grained sand); Subangular to rounded grains; Moderate cementation; Weak HCl reaction; No odor.	28.5 / 1523.0	
30	SW				

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CLIENT Nevada Environmental Response Trust
PROJECT NAME SWF Treatability Study - Post Injection Soil Borings
PROJECT NUMBER 117-7502021-M11
PROJECT LOCATION Henderson, NV

DEPTH (ft)	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION	WELL DIAGRAM
30	SW		28.5' - 34.5'- (SW) Brown (7.5YR 5/4); **Well graded SAND with GRAVEL**; Wet; Loose; 20% gravel, 75% sand, 5% silt; (30% coarse, 35% medium, 35% fine grained sand); Subrounded to rounded grains; No cementation; Weak HCl reaction; Organic odor; Gravel up to 1-inch.*(continued from previous)* Below 31' - Dark brown (7.5YR 3/3); 40% gravel, 60% sand; (60% coarse, 30% medium, 10% fine grained sand); Gravel and cobbles up to 4-inch; 5% organics; Visible biomass.	
34.5				1517.0
35			34.5' - 39'- No recovery.	
39.0				1512.5
40	ML		39' - 50'- (ML) Pale yellow (2.5Y 7/3); **SILT with SAND**; Wet; Firm to stiff; 15% sand, 70% silt, 15% clay; (100% fine grained sand); Rounded grains; Blocky; Moderate cementation; Medium plasticity; Weak HCl reaction; Organic odor; Laminated 0.25 to 1-inch; Trace medium grained sand.	
45				
50				
50.0				1501.5

Bottom of borehole at 50.0 feet.

NERT GENERAL BH/WELL REV - GINT STD US.GDT - 12/9/22 15:59 - P:\GINT\NERT\M11\M11 LOGS.GPJ

WELL NUMBER SWFTS-BH18

TETRA TECH

CLIENT Nevada Environmental Response Trust	**PROJECT NAME** SWF Treatability Study - Post Injection Soil Borings
PROJECT NUMBER 117-7502021-M11	**PROJECT LOCATION** Henderson, NV
DATE STARTED 8/11/22 **COMPLETED** 8/11/22	**NORTHING** 26732981.88
DRILLING METHOD Sonic	**EASTING** 831809.72
DRILLING CONTRACTOR BC2 Environmental	**GROUND ELEVATION** 1552.01 ft AMSL
LOGGED BY J. Bunkers **CHECKED BY** J. Dabbs	**TOP OF CASING ELEVATION** NA
NOTES	**BOREHOLE DIAMETER** 6" **TOTAL DEPTH** 40 ft

DEPTH (ft)	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION	WELL DIAGRAM
0			0' - 10'- Air knife to 10 feet below ground surface for utility clearance.	
10			10.0 / 1542.0	
	SM		10' - 13'- (SM) Brown (7.5YR 5/4); **SILTY SAND**; Wet; Loose; 85% sand, 15% silt; (5% coarse, 15% medium, 80% fine grained sand); Rounded grains; Weak cementation; Moderate HCl reaction; No odor.	
			13.0 / 1539.0	
	SW		13' - 14'- (SW) Dark brown (7.5YR 3/4); **Well graded SAND**; Wet; Loose; 95% sand, 5% silt; (25% coarse, 40% medium, 35% fine grained sand); Subrounded to rounded grains; No cementation; Weak HCl reaction; Organic odor; 5% organics; Visible biomass. 14.0 / 1538.0	
15	ML		14' - 19.5'- (ML) Light brown (7.5YR 6/4); **SILT with SAND**; Wet; Firm; 20% sand, 55% silt, 25% clay; (100% fine grained sand); Rounded grains; Homogeneous; Moderate cementation; Low plasticity; Weak HCl reaction; Organic odor.	← Bentonite Cement Slurry (0'-40')
			19.5 / 1532.5	
20	SM		19.5' - 22.2'- (SM) Brown (7.5YR 5/4); **SILTY SAND**; Wet; Compact; 85% sand, 15% silt; (15% medium, 85% fine grained sand); Rounded grains; Weak cementation; Weak HCl reaction; Organic odor.	
			22.2 / 1529.8	
	SW		22.2' - 25'- (SW) Dark yellowish brown (10YR 4/6); **Well graded SAND**; Wet; Loose; 5% gravel, 90% sand, 5% silt; (30% coarse, 40% medium, 30% fine grained sand); Subrounded to rounded grains; No cementation; Weak HCl reaction; Organic odor.	
25			25.0 / 1527.0	
	SM		25' - 26'- (SM) Light brown (7.5YR 6/4); **SILTY SAND**; Wet; Compact; 70% sand, 30% silt; (15% medium, 85% fine grained sand); Subrounded to rounded grains; Weak cementation; Weak HCl reaction; No odor. 26.0 / 1526.0	
	SP-SM		Below 25.8' - Coarse grained sand lens. 27.0 / 1525.0	
	SW		26' - 27'- (SP-SM) Brown (7.5YR 5/4); **Poorly graded SAND with SILT**; Wet; Compact; 90% sand, 10% silt; (20% medium, 80% fine grained sand); Subrounded to rounded grains; No cementation; Weak HCl reaction; Organic odor. 28.0 / 1524.0	
30	SM		30.0 / 1522.0	

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CLIENT Nevada Environmental Response Trust
PROJECT NAME SWF Treatability Study - Post Injection Soil Borings
PROJECT NUMBER 117-7502021-M11
PROJECT LOCATION Henderson, NV

DEPTH (ft)	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION	WELL DIAGRAM
30				
	GW		27' - 28'- (SW) Dark brown (7.5YR 3/4); **Well graded SAND with GRAVEL**; Wet; Loose; 15% gravel, 80% sand, 5% silt; (45% coarse, 35% medium, 20% fine grained sand); Subangular to subrounded grains; No cementation; No HCl reaction; Organic odor; Gravel up to 2-inch; 10% organics; Visible biomass.	
			28' - 30'- (SM) Brown (7.5YR 5/4); **SILTY SAND**; Wet; Compact; 85% sand, 15% silt; (10% coarse, 25% medium, 65% fine grained sand); Subrounded grains; Moderate cementation; Moderate HCl reaction; Organic odor; Trace gravel; Visible biomass.	
35			30' - 38.5'- (GW) Black (7.5YR 2.5/1); **Well graded GRAVEL with SAND**; Wet; Loose; 60% gravel, 35% sand, 5% silt; (50% coarse, 30% medium, 20% fine grained sand); Subrounded to rounded grains; No cementation; Moderate HCl reaction; Organic odor; Gravel and cobbles up to 4-inch; Visible biomass.	
			38.5 1513.5	
	ML		38.5' - 40'- (ML) Light gray (10YR 7/1); **SILT with SAND**; Wet; Stiff; 15% sand, 60% silt, 25% clay; (100% fine grained sand); Rounded grains; Moderate cementation; Medium plasticity; Weak HCl reaction.	
40			40.0 1512.0	
			Below 38.8' - One 3-inch cobble.	
			Bottom of borehole at 40.0 feet.	

NERT GENERAL BH/WELL REV - GINT STD US.GDT - 12/9/22 15:59 - P:\GINT\NERT\M11\M11 LOGS.GPJ

WELL NUMBER SWFTS-BH19

TETRA TECH

CLIENT Nevada Environmental Response Trust	**PROJECT NAME** SWF Treatability Study - Post Injection Soil Borings
PROJECT NUMBER 117-7502021-M11	**PROJECT LOCATION** Henderson, NV
DATE STARTED 8/15/22 **COMPLETED** 8/15/22	**NORTHING** 26732972.24
DRILLING METHOD Sonic	**EASTING** 831734.68
DRILLING CONTRACTOR BC2 Environmental	**GROUND ELEVATION** 1552.74 ft AMSL
LOGGED BY J. Bunkers **CHECKED BY** J. Dabbs	**TOP OF CASING ELEVATION** NA
NOTES	**BOREHOLE DIAMETER** 6" **TOTAL DEPTH** 35 ft

DEPTH (ft)	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION	WELL DIAGRAM
0			0' - 10'- Air knife to 10 feet below ground surface for utility clearance.	
10			10.0 / 1542.7	
	SM		10' - 12.4'- (SM) Brown (7.5YR 5/4); **SILTY SAND with GRAVEL**; Wet; Compact; 20% gravel, 60% sand, 20% silt; (25% coarse, 40% medium, 35% fine grained sand); Subrounded to rounded grains; Weak cementation; Weak HCl reaction; No odor; Gravel up to 1.5-inch; 2% organics; Visible biomass. Below 11' - Dark brown.	
	SM		12.4 / 1540.3 12.4' - 15.3'- (SM) Strong brown (7.5YR 5/6); **SILTY SAND**; Wet; Compact; 85% sand, 15% silt; (10% coarse, 20% medium, 70% fine grained sand); Subrounded to rounded grains; Weak cementation; Weak HCl reaction; No odor.	
15			15.3 / 1537.4	Bentonite Cement Slurry (0'-35')
	SP-SM		15.3' - 16.2'- (SP-SM) Dark brown (7.5YR 3/4); **Poorly graded SAND with SILT**; Wet; Loose; 90% sand, 10% silt; (10% medium, 90% fine grained sand); Rounded grains; No cementation; Weak HCl reaction; No odor; 5% organics; Visible biomass.	
	SM		16.2 / 1536.5 16.2' - 20'- (SM) Strong brown; **SILTY SAND**; Wet; Compact; 70% sand, 20% silt, 10% clay; (10% medium, 90% fine grained sand); Rounded grains; Moderate cementation; Weak HCl reaction; Organic odor; 5% organics; Visible biomass. Below 17' - Dark gray. Below 17.4' - Dark brown (7.5YR 3/3).	
20			20.0 / 1532.7	
	SP		20.8 / 1531.9 20' - 20.8'- (SP) Dark brown (7.5YR 3/3); **Poorly graded SAND**; Wet; Loose; 95% sand, 5% silt; (10% medium, 90% fine grained sand); Rounded grains; No cementation; Weak HCl reaction; Organic odor; 5% organics; Visible biomass.	
	SM		22.3 / 1530.4 20.8' - 22.3'- (SM) Gray (7.5YR 6/1); **SILTY SAND**; Wet; Compact; 65% sand, 25% silt, 10% clay; (20% coarse, 30% medium, 50% fine grained sand); Rounded grains; Moderate cementation; Strong HCl reaction; No odor.	
25	SP		22.3' - 27'- (SP) Light brown (7.5YR 6/3); **Poorly graded SAND**; Wet; Loose; 95% sand, 5% silt; (5% coarse, 10% medium, 85% fine grained sand); Rounded grains; Weak cementation; Strong HCl reaction; No odor. 23' - 24' - Caliche nodules up to 1-inch.	
			27.0 / 1525.7	
30	SW		27' - 31.5'- (SW) Olive brown (2.5Y 4/4); **Well graded SAND with GRAVEL**; Wet; Loose; 40% gravel, 55% sand, 5% silt; (60% coarse, 20% medium, 20% fine grained sand); Rounded grains; No cementation; Strong HCl reaction; Organic odor; Gravel and cobbles up to 3-inch; 5% organics; Visible biomass.	

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WELL NUMBER SWFTS-BH19

CLIENT Nevada Environmental Response Trust **PROJECT NAME** SWF Treatability Study - Post Injection Soil Borings

PROJECT NUMBER 117-7502021-M11 **PROJECT LOCATION** Henderson, NV

DEPTH (ft)	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION		WELL DIAGRAM
30					
	SW		Below 29.5' - Black (7.5YR 2.5/1); 30% gravel, 70% sand; (40% coarse, 40% medium, 20% fine grained sand); Subrounded to rounded grains; Moderate HCl reaction; Gravel and cobbles up to 3-inch; 10% organics.	1521.2	
			31.5		
	GW		31.5' - 32.2'- (GW) Dark gray (2.5Y 4/1); **Well graded GRAVEL with SAND**; Wet; Loose; 60% gravel, 40% sand; (65% coarse, 25% medium, 10% fine grained sand); Rounded grains; No cementation; Strong HCl reaction; Organic odor; Gravel and cobbles up to 3.5-inch; 5% organics; Visible biomass.	1520.5	
			32.2		
	SW		32.2' - 33.5'- (SW) Dark gray (2.5Y 4/1); **Well graded SAND with GRAVEL**; Wet; Loose; 35% gravel, 60% sand, 5% silt; (60% coarse, 30% medium, 10% fine grained sand); Subrounded to rounded grains; No cementation; Strong HCl reaction; Organic odor; Gravel and cobbles up to 3-inch; 10% organics; Visible biomass.	1519.2	
			33.5		
	GW		33.5' - 34.9'- (GW) Dark gray (2.5Y 4/1); **Well graded GRAVEL with SAND**; Wet; Loose; 60% gravel, 40% sand; (60% coarse, 30% medium, 10% fine grained sand); Rounded grains; No cementation; Moderate HCl reaction; Organic odor; Gravel and cobbles up to 5-inch; 10% organics; Visible biomass.	1517.8	
35			34.9		
	ML		34.9' - 35'- (ML) Pale yellow (5Y 8/2); **SILT**; Wet; Firm; 10% sand, 60% silt, 30% clay; (100% fine grained sand); Rounded grains; Homogeneous; Moderate cementation; Medium plasticity; Moderate HCl reaction; No odor.	1517.7	
			35.0		

Bottom of borehole at 35.0 feet.

NERT GENERAL BH/WELL REV - GINT STD US.GDT - 12/9/22 15:59 - P:\GINT\NERT\M11\M11 LOGS.GPJ

WELL NUMBER SWFTS-BH20

TETRA TECH

CLIENT Nevada Environmental Response Trust	**PROJECT NAME** SWF Treatability Study - Post Injection Soil Borings
PROJECT NUMBER 117-7502021-M11	**PROJECT LOCATION** Henderson, NV
DATE STARTED 8/13/22 **COMPLETED** 8/13/22	**NORTHING** 26732963.95
DRILLING METHOD Sonic	**EASTING** 831925.54
DRILLING CONTRACTOR BC2 Environmental	**GROUND ELEVATION** 1551.16 ft AMSL
LOGGED BY J. Bunkers **CHECKED BY** J. Dabbs	**TOP OF CASING ELEVATION** NA
NOTES	**BOREHOLE DIAMETER** 6" **TOTAL DEPTH** 45 ft

DEPTH (ft)	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION	WELL DIAGRAM
0			0' - 5'- Air knife to 5 feet below ground surface for utility clearance.	
5			5.0 — 1546.2	
10	SW		5' - 10'- (SW) Strong brown (7.5YR 5/6); **Well graded SAND with GRAVEL**; Dry; Loose; 15% gravel, 80% sand, 5% silt; (45% coarse, 35% medium, 20% fine grained sand); Subangular to subrounded grains; No cementation; Moderate HCl reaction; No odor; Gravel up to 2-inch. Below 7' - Dark brown.	
			10.0 — 1541.2	
	SW-SM		10' - 11'- (SW-SM) Dark brown (7.5YR 3/4); **Well graded SAND with SILT**; Wet; Loose; 5% gravel, 85% sand, 10% silt; (20% coarse, 30% medium, 50% fine grained sand); Subrounded to rounded grains; No cementation; Organic odor; Gravel up to 0.5-inch.	
			11.0 — 1540.2	
15	SM		11' - 19.5'- (SM) Dark gray (7.5YR 4/1); **SILTY SAND**; Wet; Compact; 60% sand, 35% silt, 5% clay; (10% medium, 90% fine grained sand); Rounded grains; Weak cementation; Organic odor; Trace gravel; 15% organics; Visible biomass; Black and light gray/white mottling throughout.	Bentonite Cement Slurry (0'-45')
			18.5' - 19' - Clay lens.	
			19.5 — 1531.7	
20	SW		19.5' - 22.7'- (SW) Black (7.5YR 2.5/1); **Well graded SAND**; Wet; Loose; 5% gravel, 90% sand, 5% silt; (25% coarse, 40% medium, 35% fine grained sand); Subrounded to rounded grains; No cementation; Organic odor; Gravel and cobbles up to 3-inch; 15% organics; Visible biomass.	
			22.7 — 1528.5	
25	SW		22.7' - 25.3'- (SW) Black (7.5YR 2.5/1); **Well graded SAND with GRAVEL**; Wet; Loose; 30% gravel, 70% sand; (45% coarse, 35% medium, 20% fine grained sand); Subangular to rounded grains; No cementation; Weak HCl reaction; Organic odor; Gravel and cobbles up to 3-inch; 15% organics; Visible biomass.	
			25.3 — 1525.9	
	SM		25.3' - 26.5'- (SM) Dark brown (7.5YR 3/3); **SILTY SAND**; Wet; Loose; 5% gravel, 80% sand, 15% silt; (40% coarse, 30% medium, 30% fine grained sand); Subangular to subrounded grains; Weak cementation; Weak HCl reaction; Organic odor; Gravel up to 0.75-inch; 10% organics; Visible biomass.	
			26.5 — 1524.7	
30	SW		26.5' - 30'- (SW) Brown (7.5YR 4/4); **Well graded SAND with GRAVEL**; Wet; Loose; 30% gravel, 65% sand, 5% silt; (50% coarse, 30% medium, 20% fine grained sand); Subrounded to rounded grains; No cementation; Weak HCl reaction; Organic odor; Gravel and cobbles up to 2.5-inch; 5% organics; Visible biomass.	
			30.0 — 1521.2	

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NERT GENERAL BH/WELL REV - GINT STD US.GDT - 12/9/22 15:59 - P:\GINT\NERT\M11\M11 LOGS.GPJ

CLIENT Nevada Environmental Response Trust **PROJECT NAME** SWF Treatability Study - Post Injection Soil Borings

PROJECT NUMBER 117-7502021-M11 **PROJECT LOCATION** Henderson, NV

DEPTH (ft)	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION	WELL DIAGRAM
30				
	SM		30' - 31.2'- (SM) Gray (7.5YR 6/1); **SILTY SAND**; Wet; Loose; 5% gravel, 75% sand, 20% silt; (5% coarse, 10% medium, 85% fine grained sand); Subrounded to rounded grains; Weak HCl reaction; Organic odor.	
			31.2	1520.0
	SW		31.2' - 33.3'- (SW) Black (7.5YR 2.5/1); **Well graded SAND with GRAVEL**; Wet; Loose; 40% gravel, 55% sand, 5% silt; (65% coarse, 25% medium, 10% fine grained sand); Angular to subangular grains; No cementation; Weak HCl reaction; Organic odor; Gravel and cobbles up to 4-inch; 15% organics; Visible biomass; Visible precipitates.	
			33.3	1517.9
35			33.3' - 40'- (ML) Light gray (2.5Y 7/2); **SILT with SAND**; Wet; Stiff; 15% sand, 70% silt, 15% clay; (100% fine grained sand); Rounded grains; Blocky; Moderate cementation; Medium plasticity; Weak HCl reaction; No odor; Laminated 1-inch.	
	ML			
40			40.0	1511.2
	ML		40' - 45'- (ML) Light yellowish brown (2.5Y 6/3); **SILT**; Wet; Stiff; 10% sand, 70% silt, 20% clay; (100% fine grained sand); Rounded grains; Blocky; Moderate cementation; Medium plasticity; No HCl reaction; No odor; Laminated 1-inch.	
45			45.0	1506.2

Bottom of borehole at 45.0 feet.

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WELL NUMBER SWFTS-BH21

TETRA TECH

CLIENT Nevada Environmental Response Trust	**PROJECT NAME** SWF Treatability Study - Post Injection Soil Borings
PROJECT NUMBER 117-7502021-M11	**PROJECT LOCATION** Henderson, NV
DATE STARTED 8/13/22 **COMPLETED** 8/13/22	**NORTHING** 26732942.51
DRILLING METHOD Sonic	**EASTING** 831662.67
DRILLING CONTRACTOR BC2 Environmental	**GROUND ELEVATION** 1554.96 ft AMSL
LOGGED BY J. Bunkers **CHECKED BY** J. Dabbs	**TOP OF CASING ELEVATION** NA
NOTES	**BOREHOLE DIAMETER** 6" **TOTAL DEPTH** 45 ft

DEPTH (ft)	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION		WELL DIAGRAM
0			0' - 5'- Air knife to 5 feet below ground surface for utility clearance.		
5				1550.0	
	SW		5' - 9.5'- (SW) Brown (7.5YR 5/4); **Well graded SAND with GRAVEL**; Dry; Loose; 15% gravel, 80% sand, 5% silt; (35% coarse, 35% medium, 30% fine grained sand); Subangular to subrounded grains; No cementation; Weak HCl reaction; No odor; Gravel up to 2-inch.		
			9.5	1545.5	
10	SW-SM		9.5' - 13.5'- (SW-SM) Brown (7.5YR 5/4); **Well graded SAND with SILT**; Moist; Loose; 5% gravel, 85% sand, 10% silt; (20% coarse, 35% medium, 45% fine grained sand); Subangular to subrounded grains; No cementation; Weak HCl reaction; No odor; Gravel up to 0.25-inch.		
			13.5	1541.5	
15	SM		13.5' - 20.8'- (SM) Brown (7.5YR 5/4); **SILTY SAND**; Wet; Loose; 5% gravel, 70% sand, 25% silt; (45% coarse, 30% medium, 25% fine grained sand); Angular to subangular grains; No cementation; Weak HCl reaction; No odor; Gravel up to 0.5-inch.		← Bentonite Cement Slurry (0'-45')
			Below 15.2' - Brown (7.5YR 5/3); Compact; 65% sand, 30% silt, 5% clay; (5% coarse, 15% medium, 80% fine grained sand); Rounded grains; Weak cementation; Weak HCl reaction.		
20			19' - 20' - Dark mottling.		
			20.8	1534.2	
	ML		20.8' - 22.5'- (ML) Strong brown (7.5YR 4/6); **SANDY SILT**; Wet; Firm; 45% sand, 35% silt, 20% clay; (100% fine grained sand); Rounded grains; Homogeneous; Weak cementation; Medium plasticity; No HCl reaction; No odor.	1532.5	
	SM		22.5		
			22.5' - 23.5'- (SM) Strong brown (7.5YR 4/6); **SILTY SAND**; Wet; Compact; 60% sand, 30% silt, 10% clay; (5% medium, 95% fine grained sand); Rounded grains; Moderate cementation; Weak HCl reaction; No odor; 5% organics; Visible biomass; Mottling.	1531.5	
25			23.5		
	ML		23.5' - 27'- (ML) Strong brown (7.5YR 4/6); **SANDY SILT**; Wet; Firm; 30% sand, 60% silt, 10% clay; (100% fine grained sand); Rounded grains; Homogeneous; Moderate cementation; Medium plasticity; Weak HCl reaction; Organic odor; 5% organics; Visible biomass; Mottling.		
			27.0	1528.0	
	SM		27' - 28.7'- (SM) Brown (7.5YR 5/3); **SILTY SAND**; Wet; Compact; 70% sand, 30% silt; (10% medium, 90% fine grained sand); Rounded grains; Weak cementation; No odor; 5% organics; Visible biomass; Mottling.		
			28.7	1526.3	
30	SW		29.7	1525.3	

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WELL NUMBER SWFTS-BH21

TETRA TECH

CLIENT Nevada Environmental Response Trust **PROJECT NAME** SWF Treatability Study - Post Injection Soil Borings

PROJECT NUMBER 117-7502021-M11 **PROJECT LOCATION** Henderson, NV

DEPTH (ft)	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION	WELL DIAGRAM
30				
	SM		28.7' - 29.7'- (SW) Dark brown (7.5YR 3/4); **Well graded SAND with GRAVEL**; Wet; Loose; 15% gravel, 80% sand, 5% silt; (40% coarse, 40% medium, 20% fine grained sand); Subangular to subrounded grains; No cementation; Weak HCl reaction; No odor; Gravel up to 1-inch; 5% organics; Visible biomass.	
			31.5 / 1523.5	
	SW		29.7' - 31.5'- (SM) Brown (7.5YR 5/4); **SILTY SAND**; Wet; Loose; 85% sand, 15% silt; (5% medium, 95% fine grained sand); Rounded grains; No cementation; Weak HCl reaction; Organic odor; 5% organics; Visible biomass.*(continued from previous)*	
			34.5 / 1520.5	
35				
	SW-SM		31.5' - 34.5'- (SW) Very dark gray (7.5YR 3/1); **Well graded SAND with GRAVEL**; Wet; Loose; 20% gravel, 75% sand, 5% silt; (60% coarse, 30% medium, 10% fine grained sand); Angular to subangular grains; No cementation; No HCl reaction; Organic odor; Gravel and cobbles up to 2.5-inch; 10% organics; Visible biomass.	
			36.5 / 1518.5	
	GW		34.5' - 36.5'- (SW-SM) Dark gray (7.5YR 4/1); **Well graded SAND with SILT**; Wet; Loose; 10% gravel, 80% sand, 10% silt; (50% coarse, 30% medium, 20% fine grained sand); Subrounded to rounded grains; No cementation; Weak HCl reaction; Organic odor; Gravel up to 1-inch; 10% organics.	
40			36.5' - 44.8'- (GW) Dark gray (7.5YR 4/1); **Well graded GRAVEL with SAND**; Wet; Loose; 55% gravel, 45% sand; (50% coarse, 35% medium, 15% fine grained sand); Subrounded to rounded grains; No cementation; Moderate HCl reaction; Organic odor; Gravel and cobbles up to 5-inch; 10% organics; Visible biomass.	
			44.8 / 1510.2	
45	ML		45.0 / 1510.0 — 44.8' - 45'- (ML) Light gray (2.5Y 7/1); **SILT with SAND**; Wet; Firm; 15% sand, 50% silt, 35% clay; (100% fine grained sand); Rounded grains; Blocky; Moderate cementation; Medium plasticity; No HCl reaction; No odor; Laminated 2-millimeters.	
			Bottom of borehole at 45.0 feet.	

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WELL NUMBER SWFTS-BH22

TETRA TECH

CLIENT Nevada Environmental Response Trust	**PROJECT NAME** SWF Treatability Study - Post Injection Soil Borings
PROJECT NUMBER 117-7502021-M11	**PROJECT LOCATION** Henderson, NV
DATE STARTED 8/13/22 **COMPLETED** 8/13/22	**NORTHING** 26732917.59
DRILLING METHOD Sonic	**EASTING** 831605.5
DRILLING CONTRACTOR BC2 Environmental	**GROUND ELEVATION** 1555.52 ft AMSL
LOGGED BY J. Bunkers **CHECKED BY** J. Dabbs	**TOP OF CASING ELEVATION** NA
NOTES	**BOREHOLE DIAMETER** 6" **TOTAL DEPTH** 50 ft

DEPTH (ft)	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION		WELL DIAGRAM
0			0' - 5'- Air knife to 5 feet below ground surface for utility clearance.		
5				1550.5	
	SM		5' - 8.5'- (SM) Brown (7.5YR 5/4); **SILTY SAND with GRAVEL**; Dry; Loose; 30% gravel, 55% sand, 15% silt; (40% coarse, 30% medium, 30% fine grained sand); Angular to subangular grains; No cementation; Moderate HCl reaction; No odor; Gravel and cobbles up to 2.5-inch.		
			8.5	1547.0	
10	SW		8.5' - 10'- (SW) Dark brown (7.5YR 3/4); **Well graded SAND with GRAVEL**; Moist; Loose; 20% gravel, 75% sand, 5% silt; (45% coarse, 30% medium, 25% fine grained sand); Angular to subrounded grains; No cementation; Moderate HCl reaction; No odor; Gravel up to 1-inch; Caliche nodules up to 0.5-inch. Below 9.5' - Fine grained sand and silt lens.		
			10.0	1545.5	
	SP		10' - 11.6'- (SP) Brown (7.5YR 4/4); **Poorly graded SAND with GRAVEL**; Wet; Loose; 15% gravel, 85% sand; (70% coarse, 25% medium, 5% fine grained sand); Subangular to subrounded grains; No cementation; Weak HCl reaction; No odor; Gravel up to 0.5-inch.		
			11.6	1543.9	
15	SM		11.6' - 26.2'- (SM) Brown (7.5YR 5/4); **SILTY SAND**; Wet; Compact; 5% gravel, 75% sand, 20% silt; (35% coarse, 20% medium, 45% fine grained sand); Subangular to subrounded grains; Weak cementation; Weak HCl reaction; No odor; Gravel up to 0.25-inch; Trace clay. 12.5' - 12.7' - Gravel lens. Below 13.6' - Coarse grained sand lens. Below 13.7' - Brown (7.5YR 4/4); 65% sand, 35% silt; (5% medium, 95% fine grained sand); Rounded grains; No cementation; Organic odor; 0.25 to 0.5-inch, black, lenticular mottling throughout; 5% organics; Visible biomass. Below 18.2' - Dark brown (7.5YR 3/4); 85% sand, 15% silt; (10% medium, 90% fine grained sand). Below 19.5' - Brown (7.5YR 4/4); 60% sand, 40% silt; (100% fine grained sand); Weak cementation; Black lenticular mottling.		← Bentonite Cement Slurry (0'-50')
20					
25					
			26.2	1529.3	
	SW		26.2' - 28.1'- (SW) Dark brown (7.5YR 3/3); **Well graded SAND**; Wet; Loose; 10% gravel, 85% sand, 5% silt; (45% coarse, 35% medium, 20% fine grained sand); Subangular to subrounded grains; No cementation; Weak HCl reaction; Organic odor; Gravel up to 0.75-inch; 5% organics; Visible biomass.		
			28.1	1527.4	
30	SP-SM		30.0	1525.5	

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WELL NUMBER SWFTS-BH22

TETRA TECH

CLIENT Nevada Environmental Response Trust **PROJECT NAME** SWF Treatability Study - Post Injection Soil Borings

PROJECT NUMBER 117-7502021-M11 **PROJECT LOCATION** Henderson, NV

DEPTH (ft)	U.S.C.S.	GRAPHIC LOG		MATERIAL DESCRIPTION		WELL DIAGRAM
30						
	SM		30.6	28.1' - 30'- (SP-SM) Dark brown (7.5YR 3/4); **Poorly graded SAND with SILT**; Wet; Loose; 90% sand, 10% silt; (5% coarse, 30% medium, 65% fine grained sand); Rounded grains; Weak cementation; Weak HCl reaction; Organic odor; 5% organics.	1524.9	
	ML		32.8	Below 28.3' - Black mottling. Below 29.9' - Coarse grained sand lens.	1522.7	
35	GW			30' - 30.6'- (SM) Light brown (7.5YR 6/4); **SILTY SAND**; Wet; Dense; 60% sand, 35% silt, 5% clay; (10% coarse, 25% medium, 65% fine grained sand); Subrounded to rounded grains; Moderate cementation; Moderate HCl reaction; No odor; Trace gravel.		
			35.8	30.6' - 32.8'- (ML) Light brown (7.5YR 6/4); **GRAVELLY SILT**; Wet; Firm; 30% gravel, 10% sand, 35% silt, 25% clay; (5% coarse, 10% medium, 85% fine grained sand); Rounded grains; Weak cementation; Medium plasticity; Moderate HCl reaction; No odor; Gravel up to 2-inch.	1519.7	
	SW		37.0		1518.5	
	GW		38.7	32.8' - 35.8'- (GW) Olive brown (2.5Y 4/4); **Well graded GRAVEL with SAND**; Wet; Loose; 60% gravel, 35% sand, 5% silt; (50% coarse, 30% medium, 20% fine grained sand); Subrounded to rounded grains; No cementation; Moderate HCl reaction; Organic odor; Gravel and cobbles up to 4-inch.	1516.8	
40				35.8' - 37'- (SW) Olive yellow (2.5Y 6/6); **Well graded SAND with GRAVEL**; Wet; Loose; 25% gravel, 70% sand, 5% silt; (65% coarse, 25% medium, 10% fine grained sand); Subrounded to rounded grains; No cementation; Weak HCl reaction; No odor; Gravel up to 0.7-inch; 5% organics; Visible biomass.		
				37' - 38.7'- (GW) Black (7.5YR 2.5/1); **Well graded GRAVEL with SAND**; Wet; Loose; 60% gravel, 35% sand, 5% silt; (65% coarse, 25% medium, 10% fine grained sand); Rounded grains; No cementation; Weak HCl reaction; Organic odor; Gravel and cobbles up to 4.5-inch; 15% organics; Visible biomass.		
	ML			38.7' - 48.5'- (ML) Light gray (2.5Y 7/1); **SILT with SAND**; Wet; Firm; 15% sand, 50% silt, 35% clay; (100% fine grained sand); Rounded grains; Blocky; Moderate cementation; High plasticity; No HCl reaction; No odor; Laminated 2-millimeters.		
45						
			48.5		1507.0	
	ML			48.5' - 50'- (ML) Light yellowish brown (2.5Y 6/3); **SANDY SILT with GRAVEL**; Wet; Hard; 20% gravel, 25% sand, 40% silt, 15% clay; (30% coarse, 30% medium, 40% fine grained sand); Angular grains; Blocky; Moderate cementation; No plasticity; Weak HCl reaction; No odor; Gravel and cobbles up to 3-inch; 3-inch yellow lens at top of unit.		
50			50.0		1505.5	

Bottom of borehole at 50.0 feet.

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WELL NUMBER SWFTS-BH23

TETRA TECH

CLIENT Nevada Environmental Response Trust	**PROJECT NAME** SWF Treatability Study - Post Injection Soil Borings
PROJECT NUMBER 117-7502021-M11	**PROJECT LOCATION** Henderson, NV
DATE STARTED 8/15/22 **COMPLETED** 8/15/22	**NORTHING** 26732847.82
DRILLING METHOD Sonic	**EASTING** 832069.72
DRILLING CONTRACTOR BC2 Environmental	**GROUND ELEVATION** 1554.09 ft AMSL
LOGGED BY J. Bunkers **CHECKED BY** J. Dabbs	**TOP OF CASING ELEVATION** NA
NOTES	**BOREHOLE DIAMETER** 6" **TOTAL DEPTH** 40 ft

DEPTH (ft)	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION	WELL DIAGRAM
0			0' - 10'- Air knife to 10 feet below ground surface for utility clearance.	
10			10.0 / 1544.1	
	SW		10' - 12.3'- (SW) Brown (7.5YR 5/4); **Well graded SAND with GRAVEL**; Dry; Loose; 20% gravel, 75% sand, 5% silt; (50% coarse, 30% medium, 20% fine grained sand); Subangular to subrounded grains; No cementation; Strong HCl reaction; No odor; Gravel and cobbles up to 2.5-inch. 12.3 / 1541.8	
	SW		12.3' - 14'- (SW) Dark brown (7.5YR 3/4); **Well graded SAND**; Moist; Compact; 5% gravel, 90% sand, 5% silt; (30% coarse, 35% medium, 35% fine grained sand); Subrounded to rounded grains; Weak cementation; Moderate HCl reaction; Organic odor; Gravel up to 0.25-inch. 14.0 / 1540.1	
15	SW-SM		14' - 19.5'- (SW-SM) Brown (7.5YR 5/4); **Well graded SAND with SILT and GRAVEL**; Wet; Compact; 20% gravel, 70% sand, 10% silt; (40% coarse, 30% medium, 30% fine grained sand); Subrounded to rounded grains; Weak cementation; Moderate HCl reaction; No odor; Gravel and cobbles up to 3-inch. 19.5 / 1534.6	Bentonite Cement Slurry (0'-40')
20	SW		19.5' - 20.7'- (SW) Dark brown (7.5YR 3/4); **Well graded SAND with GRAVEL**; Wet; Loose; 15% gravel, 80% sand, 5% silt; (30% coarse, 40% medium, 30% fine grained sand); Subrounded to rounded grains; Weak cementation; Moderate HCl reaction; Organic odor; Gravel up to 2-inch; 5% organics. Below 20.2' - Yellowish brown mottling. 20.7 / 1533.4	
	SW		20.7' - 24'- (SW) Dark brown (7.5YR 3/3); **Well graded SAND**; Wet; Loose; 5% gravel, 95% sand; (55% coarse, 30% medium, 15% fine grained sand); Subangular to subrounded grains; No cementation; Moderate HCl reaction; Organic odor; Gravel up to 0.5-inch; 5% organics; Visible biomass. 24.0 / 1530.1	
25	SW		24' - 25.1'- (SW) Black (7.5YR 2.5/1); **Well graded SAND with GRAVEL**; Wet; Loose; 20% gravel, 80% sand; (70% coarse, 20% medium, 10% fine grained sand); Subangular to subrounded grains; No cementation; Moderate HCl reaction; Organic odor; Gravel up to 1-inch; 20% organics; Visible biomass. 25.1 / 1529.0	
	SW-SM		26.7 / 1527.4	
	SW		25.1' - 26.7'- (SW-SM) Brown (7.5YR 4/4); **Well graded SAND with SILT**; Wet; Loose; 10% gravel, 80% sand, 10% silt; (20% coarse, 30% medium, 50% fine grained sand); Subrounded to rounded grains; No cementation; Strong HCl reaction; Organic odor; Gravel up to 1.5-inch. 28.5 / 1525.6	
30	SP		30.0 / 1524.1	

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WELL NUMBER SWFTS-BH23

TETRA TECH

CLIENT Nevada Environmental Response Trust **PROJECT NAME** SWF Treatability Study - Post Injection Soil Borings

PROJECT NUMBER 117-7502021-M11 **PROJECT LOCATION** Henderson, NV

DEPTH (ft)	U.S.C.S.	GRAPHIC LOG		MATERIAL DESCRIPTION		WELL DIAGRAM
30						
	SW		30.7	26.7' - 28.5'- (SW) Dark brown (7.5YR 3/4); **Well graded SAND with GRAVEL**; Wet; Loose; 25% gravel, 75% sand; (65% coarse, 25% medium, 10% fine grained sand); Subangular to subrounded grains; No cementation; Moderate HCl reaction; Organic odor; Gravel up to 1-inch; 5% organics; Visible biomass.	1523.4	
	SP-SM		32.5	28.5' - 30'- (SP) Brown (7.5YR 5/4); **Poorly graded SAND**; Wet; Compact; 95% sand, 5% silt; (10% medium, 90% fine grained sand); Rounded grains; No cementation; Moderate HCl reaction; No odor.	1521.6	
	SW		33.5	30' - 30.7'- (SW) Light brown (7.5YR 6/3); **Well graded SAND with GRAVEL**; Wet; Loose; 30% gravel, 65% sand, 5% silt; (25% coarse, 15% medium, 60% fine grained sand); Angular to subrounded grains; No cementation; Strong HCl reaction; No odor; Gravel up to 0.75-inch.	1520.6	
35	SW-SM		35.8	30.7' - 32.5'- (SP-SM) Light brown (7.5YR 6/3); **Poorly graded SAND with SILT**; Wet; Loose; 90% sand, 10% silt; (15% coarse, 20% medium, 65% fine grained sand); Subrounded to rounded grains; No cementation; Strong HCl reaction; No odor.	1518.3	
	SM		37.0	32.5' - 33.5'- (SW) Gray (7.5YR 5/1); **Well graded SAND with GRAVEL**; Wet; Loose; 20% gravel, 80% sand; (35% coarse, 35% medium, 30% fine grained sand); Rounded grains; No cementation; Moderate HCl reaction; Organic odor; Gravel up to 2-inch; 1% organics.	1517.1	
	GW		38.5	33.5' - 35.8'- (SW-SM) Pinkish gray (7.5YR 6/2); **Well graded SAND with SILT and GRAVEL**; Wet; Compact; 35% gravel, 55% sand, 10% silt; (30% coarse, 30% medium, 40% fine grained sand); Rounded grains; Weak cementation; Strong HCl reaction; No odor; Gravel and cobbles up to 3-inch. 33.6' - 33.9' - Fine grained sand lens. Below 35.7' - Coarse grained sand lens.	1515.6	
40	ML		40.0	35.8' - 37'- (SM) Light brown (7.5YR 6/3); **SILTY SAND**; Wet; Compact; 70% sand, 25% silt, 5% clay; (10% medium, 90% fine grained sand); Rounded grains; Weak cementation; Strong HCl reaction; No odor.	1514.1	
				37' - 38.5'- (GW) Brown (7.5YR 5/4); **Well graded GRAVEL with SAND**; Wet; Loose; 60% gravel, 40% sand; (65% coarse, 30% medium, 5% fine grained sand); Rounded grains; No cementation; Strong HCl reaction; Organic odor; Gravel and cobbles up to 3.5-inch.		
				38.5' - 40'- (ML) Light gray (5Y 7/2); **SILT with SAND**; Wet; Firm; 15% sand, 70% silt, 15% clay; (100% fine grained sand); Rounded grains; Homogeneous; Moderate cementation; Medium plasticity; No HCl reaction; No odor.		
				Bottom of borehole at 40.0 feet.		

NERT GENERAL BH/WELL REV - GINT STD US.GDT - 12/9/22 15:59 - P:\GINT\NERT\M11\M11 LOGS.GPJ

WELL NUMBER SWFTS-BH24

TETRA TECH

CLIENT Nevada Environmental Response Trust	**PROJECT NAME** SWF Treatability Study - Post Injection Soil Borings
PROJECT NUMBER 117-7502021-M11	**PROJECT LOCATION** Henderson, NV
DATE STARTED 8/15/22 **COMPLETED** 8/15/22	**NORTHING** 26732847.98
DRILLING METHOD Sonic	**EASTING** 832058.09
DRILLING CONTRACTOR BC2 Environmental	**GROUND ELEVATION** 1554.02 ft AMSL
LOGGED BY J. Bunkers **CHECKED BY** J. Dabbs	**TOP OF CASING ELEVATION** NA
NOTES	**BOREHOLE DIAMETER** 6" **TOTAL DEPTH** 45 ft

DEPTH (ft)	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION	WELL DIAGRAM
0			0' - 10'- Air knife to 10 feet below ground surface for utility clearance.	
10			10.0 / 1544.0	
	SW		10' - 13.5'- (SW) Brown (7.5YR 5/4); **Well graded SAND with GRAVEL**; Dry; Loose; 20% gravel, 75% sand, 5% silt; (50% coarse, 30% medium, 20% fine grained sand); Subangular to subrounded grains; No cementation; Strong HCl reaction; No odor; Gravel up to 2-inch.	
			13.5 / 1540.5	
15	SW-SM		13.5' - 16'- (SW-SM) Brown (7.5YR 5/4); **Well graded SAND with SILT and GRAVEL**; Moist; Compact; 15% gravel, 75% sand, 10% silt; (40% coarse, 30% medium, 30% fine grained sand); Subrounded to rounded grains; Weak cementation; Moderate HCl reaction; No odor; Gravel and cobbles up to 3-inch. Below 14' - Wet.	Bentonite Cement Slurry (0'-45')
			16.0 / 1538.0	
20	SW		16' - 29'- (SW) Gray (7.5YR 5/1); **Well graded SAND with GRAVEL**; Wet; Compact; 20% gravel, 75% sand, 5% silt; (50% coarse, 30% medium, 20% fine grained sand); Subrounded to rounded grains; Weak cementation; Weak HCl reaction; Organic odor; Gravel and cobbles up to 3-inch; 15% organics; Visible biomass; Color grades to dark gray downwards.	
25			Below 22.8' - Black (7.5YR 2.5/1); Loose; Subangular to subrounded grains; No cementation; Gravel up to 2-inch; 30% organics.	
			Below 27.2' - Brown (7.5YR 4/4); 15% gravel, 80% sand, 5% silt; (40% coarse, 30% medium, 30% fine grained sand); Moderate HCl reaction; Organic odor; Gravel up to 1.5-inch; 10% organics; Visible biomass. 27.8' - 27.9' - Black. 28.9' - 29' - Black.	
			29.0 / 1525.0	
30	SW			

NERT GENERAL BH/WELL REV - GINT STD US.GDT - 12/9/22 15:59 - P:\GINT\NERT\M11\M11 LOGS.GPJ

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CLIENT Nevada Environmental Response Trust
PROJECT NAME SWF Treatability Study - Post Injection Soil Borings
PROJECT NUMBER 117-7502021-M11
PROJECT LOCATION Henderson, NV

DEPTH (ft)	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION		WELL DIAGRAM
30					
	SW		29' - 35'- (SW) Light brown (7.5YR 6/3); **Well graded SAND**; Wet; Loose; 5% gravel, 90% sand, 5% silt; (20% coarse, 45% medium, 35% fine grained sand); Subrounded to rounded grains; Weak cementation; Strong HCl reaction; Organic odor; Gravel up to 0.75-inch.*(continued from previous)* Below 31' - 95% sand, 5% silt; (15% medium, 85% fine grained sand); Rounded grains; No cementation; No odor. Below 32.7' - Brown (7.5YR 5/2); (30% coarse, 40% medium, 30% fine grained sand); Subrounded to rounded grains. 33.5' - 33.8' - Coarse grained sand lens.		
35				1519.0	
	SM		Below 34.9' - Coarse grained sand lens. 35' - 36.5'- (SM) Light brown (7.5YR 6/3); **SILTY SAND**; Wet; Loose; 10% gravel, 75% sand, 15% silt; (30% coarse, 30% medium, 40% fine grained sand); Weak cementation; Moderate HCl reaction; No odor; Gravel up to 0.75-inch. 35.5' - 35.7' - Coarse grained sand lens.	1517.5	
	SW		36.5' - 38.5'- (SW) Dark gray (7.5YR 4/1); **Well graded SAND with GRAVEL**; Wet; Loose; 35% gravel, 60% sand, 5% silt; (50% coarse, 30% medium, 20% fine grained sand); Subangular to subrounded grains; No cementation; Weak HCl reaction; Organic odor; Gravel and cobbles up to 2.5-inch; 10% organics; Visible biomass.	1515.5	
40					
	ML		38.5' - 45'- (ML) White (7.5YR 8/1); **SILT with SAND**; Wet; Firm; 15% sand, 60% silt, 25% clay; (100% fine grained sand); Rounded grains; Blocky; Moderate cementation; No HCl reaction; No odor; Laminated 1 to 4-millimeters.		
45				1509.0	

Bottom of borehole at 45.0 feet.

NERT GENERAL BH/WELL REV - GINT STD US.GDT - 12/9/22 15:59 - P:\GINT\NERT\M11\M11 LOGS.GPJ

WELL NUMBER SWFTS-BH25

TETRA TECH

CLIENT Nevada Environmental Response Trust	**PROJECT NAME** SWF Treatability Study - Post Injection Soil Borings
PROJECT NUMBER 117-7502021-M11	**PROJECT LOCATION** Henderson, NV
DATE STARTED 8/15/22 **COMPLETED** 8/15/22	**NORTHING** 26732846.89
DRILLING METHOD Sonic	**EASTING** 832082.86
DRILLING CONTRACTOR BC2 Environmental	**GROUND ELEVATION** 1554.28 ft AMSL
LOGGED BY J. Bunkers **CHECKED BY** J. Dabbs	**TOP OF CASING ELEVATION** NA
NOTES	**BOREHOLE DIAMETER** 6" **TOTAL DEPTH** 40 ft

DEPTH (ft)	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION	WELL DIAGRAM
0			0' - 10'- Air knife to 10 feet below ground surface for utility clearance.	
10			10.0 / 1544.3	
	SW		10' - 13'- (SW) Brown (7.5YR 5/4); **Well graded SAND with GRAVEL**; Dry; Loose; 25% gravel, 70% sand, 5% silt; (40% coarse, 30% medium, 30% fine grained sand); Subangular to subrounded grains; No cementation; Strong HCl reaction; No odor; Gravel and cobbles up to 2.5-inch. Below 12' - Moist.	
			13.0 / 1541.3	
15	SW-SM		13' - 16.7'- (SW-SM) Brown (7.5YR 4/4); **Well graded SAND with SILT and GRAVEL**; Moist; Compact; 15% gravel, 75% sand, 10% silt; (20% coarse, 40% medium, 40% fine grained sand); Subrounded to rounded grains; Weak cementation; Strong HCl reaction; No odor; Gravel up to 1.5-inch. Below 14' - Wet.	← Bentonite Cement Slurry (0'-40')
			16.7 / 1537.6	
	SM		16.7' - 19.7'- (SM) Brown (7.5YR 4/4); **SILTY SAND**; Wet; Compact; 5% gravel, 75% sand, 20% silt; (20% coarse, 25% medium, 55% fine grained sand); Subrounded to rounded grains; Weak cementation; Strong HCl reaction; No odor; Gravel up to 0.5-inch.	
20			19.7 / 1534.6	
	SW		19.7' - 21.2'- (SW) Dark brown (7.5YR 3/4); **Well graded SAND with GRAVEL**; Wet; Loose; 25% gravel, 70% sand, 5% silt; (45% coarse, 30% medium, 25% fine grained sand); Subangular to subrounded grains; No cementation; Strong HCl reaction; No odor; Gravel up to 1-inch.	
			21.2 / 1533.1	
	SW-SM		21.2' - 22.3'- (SW-SM) Dark brown (7.5YR 3/4); **Well graded SAND with SILT and GRAVEL**; Wet; Compact; 30% gravel, 60% sand, 10% silt; (50% coarse, 20% medium, 30% fine grained sand); Subrounded to rounded grains; Weak cementation; Strong HCl reaction; No odor; Gravel and cobbles up to 3-inch.	
			22.3 / 1532.0	
25	SW		22.3' - 30'- (SW) Dark brown (7.5YR 3/3); **Well graded SAND with GRAVEL**; Wet; Loose; 20% gravel, 80% sand; (50% coarse, 30% medium, 20% fine grained sand); Subangular to subrounded grains; No cementation; Strong HCl reaction; No odor; Gravel and cobbles up to 3-inch. 22.5' - 22.8' - Fine grained sand lens.	
30			30.0 / 1524.3	

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WELL NUMBER SWFTS-BH25

TETRA TECH

CLIENT Nevada Environmental Response Trust **PROJECT NAME** SWF Treatability Study - Post Injection Soil Borings

PROJECT NUMBER 117-7502021-M11 **PROJECT LOCATION** Henderson, NV

DEPTH (ft)	U.S.C.S.	GRAPHIC LOG		MATERIAL DESCRIPTION		WELL DIAGRAM
30				29.6' - 29.9' - Fine grained sand lens.		
	SP		31.0	30' - 31'- (SP) Light brown (7.5YR 6/4); **Poorly graded SAND**; Wet; Loose; 5% gravel, 90% sand, 5% silt; (15% coarse, 25% medium, 60% fine grained sand); Rounded grains; No cementation; Strong HCl reaction; No odor; Gravel up to 1-inch; Few caliche nodules up to 1-inch.	1523.3	
	SM		32.5	31' - 32.5'- (SM) Light brown (7.5YR 6/3); **SILTY SAND**; Wet; Compact; 75% sand, 20% silt, 5% clay; (10% medium, 90% fine grained sand); Rounded grains; Weak cementation; Strong HCl reaction; No odor.	1521.8	
	SW		34.5	32.5' - 34.5'- (SW) Dark brown (7.5YR 3/3); **Well graded SAND with GRAVEL**; Wet; Loose; 45% gravel, 55% sand; (70% coarse, 20% medium, 10% fine grained sand); Subangular to subrounded grains; No cementation; Strong HCl reaction; No odor; Gravel and cobbles up to 3-inch.	1519.8	
35	SP-SM		36.2	34.5' - 36.2'- (SP-SM) Light brown (7.5YR 6/3); **Poorly graded SAND with SILT**; Wet; Loose; 90% sand, 10% silt; (5% medium, 95% fine grained sand); Rounded grains; Strong HCl reaction; No odor.	1518.1	
	GW		38.5	36.2' - 38.5'- (GW) Brown (7.5YR 5/2); **Well graded GRAVEL with SAND**; Wet; Loose; 60% gravel, 40% sand; (75% coarse, 20% medium, 5% fine grained sand); Rounded grains; No cementation; Strong HCl reaction; No odor; Gravel and cobbles up to 3.5-inch.	1515.8	
40	ML		40.0	38.5' - 40'- (ML) Light gray (5Y 7/2); **SILT with SAND**; Wet; Firm; 15% sand, 70% silt, 15% clay; (100% fine grained sand); Rounded grains; Homogeneous; Moderate cementation; Medium plasticity; No HCl reaction; No odor.	1514.3	

Bottom of borehole at 40.0 feet.

NERT GENERAL BH/WELL REV - GINT STD US.GDT - 12/9/22 15:59 - P:\GINT\NERT\M11\M11 LOGS.GPJ

WELL NUMBER SWFTS-BH26

TETRA TECH

CLIENT Nevada Environmental Response Trust	**PROJECT NAME** SWF Treatability Study - Post Injection Soil Borings
PROJECT NUMBER 117-7502021-M11	**PROJECT LOCATION** Henderson, NV
DATE STARTED 8/16/22 **COMPLETED** 8/16/22	**NORTHING** 26732836.51
DRILLING METHOD Sonic	**EASTING** 831921.88
DRILLING CONTRACTOR BC2 Environmental	**GROUND ELEVATION** 1552.90 ft AMSL
LOGGED BY J. Bunkers **CHECKED BY** J. Dabbs	**TOP OF CASING ELEVATION** NA
NOTES	**BOREHOLE DIAMETER** 6" **TOTAL DEPTH** 50 ft

DEPTH (ft)	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION	WELL DIAGRAM
0			0' - 10'- Air knife to 10 feet below ground surface for utility clearance.	
10			10.0 / 1542.9	
15	SW		10' - 17.5'- (SW) Brown (7.5YR 4/4); **Well graded SAND with GRAVEL**; Moist; Loose; 15% gravel, 80% sand, 5% silt; (45% coarse, 35% medium, 20% fine grained sand); Subangular to subrounded grains; No cementation; Weak HCl reaction; No odor; Gravel up to 2-inch. Below 11' - Wet. Below 12.3' - Black (7.5YR 2.5/1); 30% gravel, 70% sand; (60% coarse, 30% medium, 10% fine grained sand); No HCl reaction; Organic odor; Gravel and cobbles up to 2.5-inch; 20% organics; Visible biomass.	Bentonite Cement Slurry (0'-50')
20	SP-SM		17.5 / 1535.4 17.5' - 19.8'- (SP-SM) Dark brown (7.5YR 3/2); **Poorly graded SAND with SILT**; Wet; Compact; 90% sand, 10% silt; (10% coarse, 20% medium, 70% fine grained sand); Rounded grains; Weak cementation; Weak HCl reaction; Organic odor; 5% organics; Visible biomass; Black mottling; Grades coarser with depth. 19.8 / 1533.1	
25	SW		19.8' - 23.5'- (SW) Brown (7.5YR 4/4); **Well graded SAND**; Wet; Loose; 10% gravel, 85% sand, 5% silt; (40% coarse, 35% medium, 25% fine grained sand); Subangular to subrounded grains; No cementation; Moderate HCl reaction; Organic odor; Gravel up to 1.5-inch; 1% organics; Visible biomass. Below 22' - Compact; 5% gravel, 90% sand, 5% silt; (30% coarse, 30% medium, 40% fine grained sand); Weak cementation; Weak HCl reaction; Gravel up to 0.75-inch; No organics; No visible biomass. 23.5 / 1529.4	
30	SW		23.5' - 30.2'- (SW) Dark brown (7.5YR 3/4); **Well graded SAND with GRAVEL**; Wet; Loose; 25% gravel, 70% sand, 5% silt; (65% coarse, 30% medium, 5% fine grained sand); Subrounded to rounded grains; No cementation; Moderate HCl reaction; Organic odor; Gravel and cobbles up to 2.5-inch. 23.6' - 23.9' - Sandy/gravelly silt lens.	

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WELL NUMBER SWFTS-BH26

TETRA TECH

CLIENT Nevada Environmental Response Trust **PROJECT NAME** SWF Treatability Study - Post Injection Soil Borings

PROJECT NUMBER 117-7502021-M11 **PROJECT LOCATION** Henderson, NV

DEPTH (ft)	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION	WELL DIAGRAM
30				
	SM		30.2 — 30.2' - 33.7'- (SM) Light brown (7.5YR 6/4); **SILTY SAND**; Wet; Dense; 75% sand, 20% silt, 5% clay; (10% medium, 90% fine grained sand); Rounded grains; Moderate cementation; Strong HCl reaction; No odor; Few scattered caliche. 1522.7 Below 32.4' - 10% gravel, 70% sand, 15% silt, 5% clay; (15% coarse, 25% medium, 60% fine grained sand); Weak cementation; Gravel up to 1.5-inch.	
			33.7 — 1519.2	
35	SW		33.7' - 37.5'- (SW) Gray (7.5YR 5/1); **Well graded SAND with GRAVEL**; Wet; Loose; 40% gravel, 55% sand, 5% silt; (60% coarse, 30% medium, 10% fine grained sand); Rounded grains; No cementation; Strong HCl reaction; No odor; Gravel and cobbles up to 5-inch.	
			37.5 — 1515.4	
40			37.5' - 42.5'- No recovery.	
			42.5 — 1510.4	
45	ML		42.5' - 47.5'- (ML) Light gray (5Y 7/2); **SILT with SAND**; Wet; Hard; 15% sand, 70% silt, 15% clay; (100% fine grained sand); Rounded grains; Homogeneous; Moderate cementation; High plasticity; No HCl reaction; No odor; Blocky. 46.8' - 47.2' - Fractured gravel and fat clay lens.	
			47.5 — 1505.4	
50	ML		47.5' - 50'- (ML) Pale olive (5Y 6/3); **SANDY SILT**; Wet; Hard; 45% sand, 50% silt, 5% clay; (100% fine grained sand); Rounded grains; Homogeneous; Moderate cementation; Medium plasticity; No HCl reaction; No odor; Blocky.	
			50.0 — 1502.9	

Bottom of borehole at 50.0 feet.

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WELL NUMBER SWFTS-BH27

TETRA TECH

CLIENT Nevada Environmental Response Trust	**PROJECT NAME** SWF Treatability Study - Post Injection Soil Borings
PROJECT NUMBER 117-7502021-M11	**PROJECT LOCATION** Henderson, NV
DATE STARTED 8/16/22 **COMPLETED** 8/16/22	**NORTHING** 26732808.07
DRILLING METHOD Sonic	**EASTING** 831930.9
DRILLING CONTRACTOR BC2 Environmental	**GROUND ELEVATION** 1553.88 ft AMSL
LOGGED BY J. Bunkers **CHECKED BY** J. Dabbs	**TOP OF CASING ELEVATION** NA
NOTES	**BOREHOLE DIAMETER** 6" **TOTAL DEPTH** 45 ft

DEPTH (ft)	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION		WELL DIAGRAM
0			0' - 5'- Air knife to 5 feet below ground surface for utility clearance.		
5				1548.9	
	SW		5' - 7.5'- (SW) Brown (7.5YR 5/4); **Well graded SAND with GRAVEL**; Dry; Loose; 20% gravel, 75% sand, 5% silt; (40% coarse, 40% medium, 20% fine grained sand); Subangular grains; No cementation; Strong HCl reaction; No odor; Gravel and cobbles up to 3.5-inch.		
			7.5	1546.4	
	SW-SM		7.5' - 8.5'- (SW-SM) Brown (7.5YR 5/4); **Well graded SAND with SILT**; Dry; Compact; 5% gravel, 85% sand, 10% silt; (20% coarse, 35% medium, 45% fine grained sand); Subrounded to rounded grains; No cementation; Moderate HCl reaction; No odor; Gravel up to 0.75-inch.		
			8.5	1545.4	
10	SW		8.5' - 11.5'- (SW) Brown (7.5YR 4/4); **Well graded SAND with GRAVEL**; Moist; Loose; 20% gravel, 75% sand, 5% silt; (45% coarse, 40% medium, 15% fine grained sand); Subangular to subrounded grains; No cementation; Weak HCl reaction; No odor; Gravel up to 2-inch. Below 9' - Moist. Below 11' - Wet. Below 11.3' - Coarse grained sand lens.		
			11.5	1542.4	
	SM		11.5' - 15'- (SM) Very dark gray (7.5YR 3/1); **SILTY SAND**; Wet; Compact; 85% sand, 10% silt, 5% clay; (5% coarse, 15% medium, 80% fine grained sand); Rounded grains; Weak cementation; Strong HCl reaction; Organic odor; Trace gravel; 10% organics; Visible biomass. Below 12.5' - One 3.5-inch cobble. Below 12.8' - Brown (7.5YR 5/4); 85% sand, 15% silt; (5% medium, 95% fine grained sand); Moderate cementation; No odor; Trace gravel; Light brown mottling and caliche throughout.		Bentonite Cement Slurry (0'-45')
15			15.0	1538.9	
	SP-SM				
			17.2	1536.7	
	SM		15' - 17.2'- (SP-SM) Brown (7.5YR 5/3); **Poorly graded SAND with SILT**; Wet; Compact; 90% sand, 10% silt; (100% fine grained sand); Rounded grains; Weak cementation; No odor.		
			18.2	1535.7	
	SP		17.2' - 18.2'- (SM) Brown (7.5YR 5/4); **SILTY SAND**; Wet; Compact; 5% gravel, 65% sand, 30% silt; (10% coarse, 20% medium, 70% fine grained sand); Subangular to rounded grains; Weak cementation; Strong HCl reaction; No odor; Gravel up to 1-inch; Coarse grained sand and gravel are caliche composition.		
			19.5	1534.4	
20	SW		18.2' - 19.5'- (SP) Brown (7.5YR 5/4); **Poorly graded SAND**; Wet; Compact; 95% sand, 5% silt; (5% medium, 95% fine grained sand); Rounded grains; No cementation; Weak HCl reaction; No odor. Below 19' - 5% gravel, 90% sand, 5% silt; (5% coarse, 20% medium, 75% fine grained sand); Weak cementation; Moderate HCl reaction; Few 1-inch rounded grains.		
25			19.5' - 26.2'- (SW) Brown (7.5YR 5/3); **Well graded SAND with GRAVEL**; Wet; Loose; 15% gravel, 80% sand, 5% silt; (45% coarse, 40% medium, 15% fine grained sand); Subangular to subrounded grains; No cementation; Strong HCl reaction; No odor; Gravel and cobbles up to 2.5-inch. 22.3' - 22.5' - Fine grained sand lens. 23' - 23.3' - Fine grained sand lens.		
			26.2	1527.7	
	SW-SM		26.2' - 30.5'- (SW-SM) Light brown (7.5YR 6/3); **Well graded SAND with SILT**; Wet; Dense; 5% gravel, 85% sand, 10% silt; (10% coarse, 20% medium, 70% fine grained sand); Rounded grains; Moderate cementation; Strong HCl reaction; No odor; Gravel up to 1-inch; Fractured caliche nodules up to 1-inch; Trace clay.		
30					

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CLIENT Nevada Environmental Response Trust
PROJECT NAME SWF Treatability Study - Post Injection Soil Borings
PROJECT NUMBER 117-7502021-M11
PROJECT LOCATION Henderson, NV

DEPTH (ft)	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION		WELL DIAGRAM
30			30.5	1523.4	
	SW		27' - 27.5' - Fine grained sand lens. 30.5' - 34.8'- (SW) Gray (7.5YR 6/1); **Well graded SAND with GRAVEL**; Wet; Loose; 40% gravel, 60% sand; (50% coarse, 30% medium, 20% fine grained sand); Rounded grains; Weak cementation; Strong HCl reaction; No odor; Gravel and cobbles up to 5-inch; Trace silt. 32' - 32.2' - Fine grained sand lens.		
35			34.8	1519.1	
	ML		34.8' - 45'- (ML) Pale yellow (5Y 8/2); **SILT with SAND**; Wet; Firm; 15% sand, 70% silt, 15% clay; (100% fine grained sand); Rounded grains; Homogeneous; Moderate cementation; Medium plasticity; No HCl reaction; No odor; Blocky; 1 to 2-inch lenses of olive to dark olive brown interspersed.		
40			Below 42.5' - Light olive brown (2.5Y 5/4); High plasticity; Biomass lenses; Visible biomass.		
45			45.0	1508.9	

Bottom of borehole at 45.0 feet.

NERT GENERAL BH/WELL REV - GINT STD US.GDT - 12/9/22 15:59 - P:\GINT\NERT\M11\M11 LOGS.GPJ

WELL NUMBER SWFTS-BH28

TETRA TECH

CLIENT Nevada Environmental Response Trust	**PROJECT NAME** SWF Treatability Study - Post Injection Soil Borings
PROJECT NUMBER 117-7502021-M11	**PROJECT LOCATION** Henderson, NV
DATE STARTED 8/16/22 **COMPLETED** 8/16/22	**NORTHING** 26732745.81
DRILLING METHOD Sonic	**EASTING** 832152.61
DRILLING CONTRACTOR BC2 Environmental	**GROUND ELEVATION** 1557.36 ft AMSL
LOGGED BY J. Bunkers **CHECKED BY** J. Dabbs	**TOP OF CASING ELEVATION** NA
NOTES	**BOREHOLE DIAMETER** 6" **TOTAL DEPTH** 48 ft

DEPTH (ft)	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION	WELL DIAGRAM
0			0' - 5'- Air knife to 5 feet below ground surface for utility clearance.	
5			5.0 — 1552.4	
10	SW		5' - 12'- (SW) Brown (7.5YR 5/4); **Well graded SAND with GRAVEL**; Dry; Loose; 20% gravel, 75% sand, 5% silt; (50% coarse, 30% medium, 20% fine grained sand); Subangular to subrounded grains; No cementation; Strong HCl reaction; No odor; Gravel and cobbles up to 3.5-inch.	
			12.0 — 1545.4	
	SW		12' - 13'- (SW) Brown (7.5YR 5/4); **Well graded SAND**; Moist; Loose; 5% gravel, 90% sand, 5% silt; (10% coarse, 40% medium, 50% fine grained sand); Subrounded grains; No cementation; Strong HCl reaction; No odor; Gravel up to 1-inch.	
			13.0 — 1544.4	
15	SP-SM		13' - 14.8'- (SP-SM) Brown (7.5YR 4/4); **Poorly graded SAND with SILT**; Moist; Compact; 90% sand, 10% silt; (10% coarse, 20% medium, 70% fine grained sand); Rounded grains; Weak cementation; Moderate HCl reaction; No odor; Trace gravel up to 1-inch.	
			14.8 — 1542.6	Bentonite Cement Slurry (0'-48')
	SW		15.8 — 1541.6	
	SW-SM		Below 13.5' - Wet.	
			17.5 — 1539.9	
20	SW		14.8' - 15.8'- (SW) Brown (7.5YR 4/4); **Well graded SAND with GRAVEL**; Wet; Loose; 20% gravel, 75% sand, 5% silt; (50% coarse, 30% medium, 20% fine grained sand); Subrounded to rounded grains; No cementation; Moderate HCl reaction; No odor; Gravel up to 2-inch.	
			15.8' - 17.5'- (SW-SM) Brown (7.5YR 4/4); **Well graded SAND with SILT**; Wet; Compact; 10% gravel, 80% sand, 10% silt; (30% coarse, 35% medium, 35% fine grained sand); Subangular to subrounded grains; Weak cementation; Strong HCl reaction; No odor; Gravel up to 1.5-inch.	
			20.2 — 1537.2	
	SP-SM		17.5' - 20.2'- (SW) Brown (7.5YR 4/4); **Well graded SAND with GRAVEL**; Wet; Loose; 20% gravel, 75% sand, 5% silt; (50% coarse, 30% medium, 20% fine grained sand); Subangular to subrounded grains; No cementation; Strong HCl reaction; No odor; Gravel up to 1.5-inch.	
			22.0 — 1535.4	
25	SW		20.2' - 22'- (SP-SM) Brown (7.5YR 4/4); **Poorly graded SAND with SILT**; Wet; Compact; 90% sand, 10% silt; (10% coarse, 35% medium, 55% fine grained sand); Subrounded to rounded grains; Weak cementation; Moderate HCl reaction; No odor; Trace gravel up to 0.5-inch.	
			22' - 31.5'- (SW) Dark brown (7.5YR 3/4); **Well graded SAND with GRAVEL**; Wet; Loose; 15% gravel, 85% sand; (65% coarse, 30% medium, 5% fine grained sand); Subangular to subrounded grains; No cementation; Weak HCl reaction; Organic odor; Gravel up to 2-inch; 10% organics; Visible biomass.	
30			26' - 26.2' - Black lens with organic odor.	

NERT GENERAL BH/WELL REV - GINT STD US.GDT - 12/9/22 15:59 - P:\GINT\NERT\M11\M11 LOGS.GPJ

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CLIENT Nevada Environmental Response Trust **PROJECT NAME** SWF Treatability Study - Post Injection Soil Borings

PROJECT NUMBER 117-7502021-M11 **PROJECT LOCATION** Henderson, NV

DEPTH (ft)	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION	WELL DIAGRAM
30				
	SW		31.5 1525.9	
	GP		32.2 1525.2 — 31.5' - 32.2'- (GP) Dark brown (7.5YR 3/3); **Poorly graded GRAVEL with SAND**; Wet; Loose; 60% gravel, 40% sand; (70% coarse, 25% medium, 5% fine grained sand); Rounded grains; No cementation; Weak HCl reaction; No odor; Gravel up to 1.5-inch; 2% organics; Visible biomass.	
35	SW		32.2' - 40'- (SW) Dark brown (7.5YR 3/3); **Well graded SAND with GRAVEL**; Wet; Loose; 15% gravel, 85% sand; (70% coarse, 20% medium, 10% fine grained sand); Subangular to subrounded grains; No cementation; Weak HCl reaction; No odor; Gravel up to 1-inch.	
			Below 37.4' - Gray (7.5YR 5/1); 30% gravel, 70% sand; (60% coarse, 25% medium, 15% fine grained sand); Subrounded to rounded grains; Moderate HCl reaction; Gravel and cobbles up to 3-inch.	
40			40.0 1517.4	
	ML		40' - 48'- (ML) Light gray (5Y 7/2); **SILT with SAND**; Wet; Firm; 15% sand, 70% silt, 15% clay; (100% fine grained sand); Rounded grains; Homogeneous; Moderate cementation; Medium to high plasticity; No HCl reaction; No odor; Blocky.	
45			48.0 1509.4	

Bottom of borehole at 48.0 feet.

NERT GENERAL BH/WELL REV - GINT STD US.GDT - 12/9/22 15:59 - P:\GINT\NERT\M11\M11 LOGS.GPJ

WELL NUMBER SWFTS-BH29

TETRA TECH

CLIENT Nevada Environmental Response Trust	**PROJECT NAME** SWF Treatability Study - Post Injection Soil Borings
PROJECT NUMBER 117-7502021-M11	**PROJECT LOCATION** Henderson, NV
DATE STARTED 8/16/22 **COMPLETED** 8/16/22	**NORTHING** 26732731.02
DRILLING METHOD Sonic	**EASTING** 832074.84
DRILLING CONTRACTOR BC2 Environmental	**GROUND ELEVATION** 1562.67 ft AMSL
LOGGED BY J. Bunkers **CHECKED BY** J. Dabbs	**TOP OF CASING ELEVATION** NA
NOTES	**BOREHOLE DIAMETER** 6" **TOTAL DEPTH** 45 ft

DEPTH (ft)	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION	WELL DIAGRAM
0			0' - 5'- Air knife to 5 feet below ground surface for utility clearance.	
5			5.0 — 1557.7	
10	SW		5' - 15'- (SW) Brown (7.5YR 5/4); **Well graded SAND with GRAVEL**; Dry; Loose; 20% gravel, 75% sand, 5% silt; (45% coarse, 30% medium, 25% fine grained sand); Subangular to subrounded grains; No cementation; Strong HCl reaction; No odor; Gravel and cobbles up to 5-inch.	
			11.5' - 12' - Medium grained sand lens.	
15			Below 14' - Wet. 15.0 — 1547.7	Bentonite Cement Slurry (0'-45')
	SP-SM		15' - 16.5'- (SP-SM) Brown (7.5YR 5/4); **Poorly graded SAND with SILT**; Wet; Loose; 90% sand, 10% silt; (10% coarse, 20% medium, 70% fine grained sand); Rounded grains; No cementation; Strong HCl reaction; No odor. 16.5 — 1546.2	
	SW		16.5' - 19'- (SW) Brown (7.5YR 5/4); **Well graded SAND with GRAVEL**; Wet; Loose; 15% gravel, 80% sand, 5% silt; (40% coarse, 30% medium, 30% fine grained sand); Subrounded to rounded grains; No cementation; No odor; Gravel up to 2-inch. 19.0 — 1543.7	
20	SP		19' - 22'- (SP) Brown (7.5YR 5/3); **Poorly graded SAND**; Wet; Loose; 95% sand, 5% silt; (5% coarse, 30% medium, 65% fine grained sand); Rounded grains; No cementation; Strong HCl reaction; No odor. 22.0 — 1540.7	
	SW		22' - 23.5'- (SW) Dark brown (7.5YR 3/4); **Well graded SAND**; Wet; Compact; 10% gravel, 85% sand, 5% silt; (45% coarse, 40% medium, 15% fine grained sand); Subrounded to rounded grains; Weak cementation; Strong HCl reaction; No odor; Gravel and cobbles up to 3.5-inch. 23.5 — 1539.2	
25	SM		23.5' - 27'- (SM) Dark brown (7.5YR 3/4); **SILTY SAND**; Wet; Compact; 85% sand, 15% silt; (10% coarse, 25% medium, 65% fine grained sand); Rounded grains; Weak cementation; Strong HCl reaction; No odor; Trace gravel up to 2-inch. 27.0 — 1535.7	
30	SW		27' - 43.1'- (SW) Dark brown (7.5YR 3/3); **Well graded SAND with GRAVEL**; Wet; Loose; 20% gravel, 75% sand, 5% silt; (65% coarse, 25% medium, 10% fine grained sand); Rounded grains; No cementation; Moderate HCl reaction; Organic odor; Gravel up to 2-inch; 2% organics; Visible biomass; Color grades to very dark brown.	

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NERT GENERAL BH/WELL REV - GINT STD US.GDT - 12/9/22 15:59 - P:\GINT\NERT\M11\M11 LOGS.GPJ

CLIENT Nevada Environmental Response Trust
PROJECT NAME SWF Treatability Study - Post Injection Soil Borings
PROJECT NUMBER 117-7502021-M11
PROJECT LOCATION Henderson, NV

DEPTH (ft)	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION	WELL DIAGRAM
30				
	SW		27' - 43.1'- (SW) Dark brown (7.5YR 3/3); **Well graded SAND with GRAVEL**; Wet; Loose; 20% gravel, 75% sand, 5% silt; (65% coarse, 25% medium, 10% fine grained sand); Rounded grains; No cementation; Moderate HCl reaction; Organic odor; Gravel up to 2-inch; 2% organics; Visible biomass; Color grades to very dark brown.*(continued from previous)*	
35			Below 33' - Black (7.5YR 2.5/1); 35% gravel, 65% sand; (70% coarse, 20% medium, 10% fine grained sand); No HCl reaction; Organic odor; 20% organics.	
40			Below 40.5' - Very dark gray (7.5YR 3/1); 15% gravel, 85% sand; (65% coarse, 25% medium, 10% fine grained sand); Subrounded to rounded grains; Weak HCl reaction; Organic odor; Gravel and cobbles up to 2.5-inch; 5% organics.	
			Below 41.5' - Dark gray (7.5YR 4/1); 35% gravel, 65% sand; (60% coarse, 30% medium, 10% fine grained sand); Strong HCl reaction; No odor; Gravel and cobbles up to 3.5-inch; 0% organics; No visible biomass.	
			43.1 1519.6	
	ML		43.1' - 45'- (ML) Light gray (5Y 7/2); **SILT with SAND**; Wet; Firm; 15% sand, 70% silt, 15% clay; (100% fine grained sand); Rounded grains; Homogeneous; Moderate cementation; High plasticity; No HCl reaction; No odor; Blocky.	
45			45.0 1517.7	
			Bottom of borehole at 45.0 feet.	

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WELL NUMBER SWFTS-BH30

TETRA TECH

CLIENT Nevada Environmental Response Trust	**PROJECT NAME** SWF Treatability Study - Post Injection Soil Borings
PROJECT NUMBER 117-7502021-M11	**PROJECT LOCATION** Henderson, NV
DATE STARTED 8/16/22 **COMPLETED** 8/16/22	**NORTHING** 26732719.85
DRILLING METHOD Sonic	**EASTING** 832042.95
DRILLING CONTRACTOR BC2 Environmental	**GROUND ELEVATION** 1561.54 ft AMSL
LOGGED BY J. Bunkers **CHECKED BY** J. Dabbs	**TOP OF CASING ELEVATION** NA
NOTES	**BOREHOLE DIAMETER** 6" **TOTAL DEPTH** 50 ft

DEPTH (ft)	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION	WELL DIAGRAM
0			0' - 5'- Air knife to 5 feet below ground surface for utility clearance.	
5			5.0 / 1556.5	
10	SW		5' - 12'- (SW) Brown (7.5YR 5/4); **Well graded SAND with GRAVEL**; Dry; Loose; 20% gravel, 75% sand, 5% silt; (40% coarse, 35% medium, 25% fine grained sand); Subangular to subrounded grains; No cementation; Strong HCl reaction; No odor; Gravel and cobbles up to 3.5-inch.	
12.0 / 1549.5				
15	SW		12' - 15.3'- (SW) Brown (7.5YR 5/4); **Well graded SAND**; Dry; Loose; 10% gravel, 85% sand, 5% silt; (55% coarse, 30% medium, 15% fine grained sand); Subangular to subrounded grains; No cementation; Strong HCl reaction; No odor; Gravel up to 2-inch.	
15.3 / 1546.2				Bentonite Cement Slurry (0'-50')
20	SP-SM		15.3' - 20'- (SP-SM) Brown (7.5YR 5/4); **Poorly graded SAND with SILT**; Moist; Loose; 90% sand, 10% silt; (5% coarse, 15% medium, 80% fine grained sand); Subrounded to rounded grains; No cementation; Strong HCl reaction; No odor. Below 17.5' - Trace gravel up to 1-inch. Below 18' - Wet.	
20.0 / 1541.5				
25	SW		20' - 20.8'- (SW) Brown (7.5YR 5/3); **Well graded SAND with GRAVEL**; Wet; Loose; 30% gravel, 70% sand; (50% coarse, 30% medium, 20% fine grained sand); Angular to subangular grains; Weak cementation; Strong HCl reaction; No odor; Gravel and cobbles up to 3-inch.	
20.8 / 1540.7				
	SW-SM		20.8' - 25.5'- (SW-SM) Dark brown (7.5YR 3/4); **Well graded SAND with SILT**; Wet; Loose; 10% gravel, 80% sand, 10% silt; (25% coarse, 40% medium, 35% fine grained sand); Subangular to subrounded grains; No cementation; Strong HCl reaction; No odor; Gravel up to 1.5-inch. Below 22.8' - Strong brown (7.5YR 4/6); Compact; 5% gravel, 85% sand, 10% silt; (25% coarse, 30% medium, 45% fine grained sand); Subrounded to rounded grains; Weak cementation; Gravel up to 1-inch.	
25.5 / 1536.0				
30	SW		25.5' - 30'- (SW) Dark brown (7.5YR 3/4); **Well graded SAND**; Wet; Compact; 5% gravel, 90% sand, 5% silt; (45% coarse, 35% medium, 20% fine grained sand); Subangular to subrounded grains; Weak cementation; Strong HCl reaction; No odor; Gravel up to 1.5-inch.	
30.0 / 1531.5				

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WELL NUMBER SWFTS-BH30

TETRA TECH

CLIENT Nevada Environmental Response Trust **PROJECT NAME** SWF Treatability Study - Post Injection Soil Borings

PROJECT NUMBER 117-7502021-M11 **PROJECT LOCATION** Henderson, NV

DEPTH (ft)	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION		WELL DIAGRAM
30					
	SW		30' - 33'- (SW) Dark brown (7.5YR 3/3); **Well graded SAND with GRAVEL**; Wet; Loose; 15% gravel, 85% sand; (50% coarse, 30% medium, 20% fine grained sand); Subangular to subrounded grains; No cementation; Strong HCl reaction; No odor; Gravel up to 1-inch.		
			33.0	1528.5	
	SP		33' - 35'- (SP) Brown (7.5YR 4/4); **Poorly graded SAND**; Wet; Loose; 95% sand, 5% silt; (5% coarse, 10% medium, 85% fine grained sand); Rounded grains; No cementation; Moderate HCl reaction; No odor.		
35			35.0 Below 34.5' - Caliche nodules up to 1-inch.	1526.5	
	SW		35' - 38'- (SW) Brown (7.5YR 4/4); **Well graded SAND**; Wet; Loose; 10% gravel, 90% sand; (60% coarse, 30% medium, 10% fine grained sand); Subangular to subrounded grains; No cementation; Moderate HCl reaction; No odor; Gravel up to 0.75-inch.		
			38.0	1523.5	
	SP		38' - 39'- (SP) Light brown (7.5YR 6/3); **Poorly graded SAND**; Wet; Loose; 95% sand, 5% silt; (10% coarse, 30% medium, 60% fine grained sand); Rounded grains; Weak cementation; Weak HCl reaction; No odor.		
			39.0	1522.5	
	SW		39' - 39.7'- (SW) Brown (7.5YR 5/2); **Well graded SAND**; Wet; Loose; 5% gravel, 95% sand; (50% coarse, 40% medium, 10% fine grained sand); Rounded grains; No cementation; Strong HCl reaction; No odor; Gravel up to 0.5-inch.		
40			39.7	1521.8	
	SP-SM		39.7' - 40.5'- (SP-SM) Light brown (7.5YR 6/3); **Poorly graded SAND with SILT**; Wet; Compact; 5% gravel, 85% sand, 10% silt; (5% coarse, 15% medium, 80% fine grained sand); Rounded grains; Weak cementation; Strong HCl reaction; No odor; Gravel up to 0.5-inch.		
			40.5	1521.0	
	SW		40.5' - 42.2'- (SW) Dark gray (7.5YR 4/1); **Well graded SAND with GRAVEL**; Wet; Loose; 35% gravel, 60% sand, 5% silt; (55% coarse, 25% medium, 20% fine grained sand); Rounded grains; No cementation; Strong HCl reaction; No odor; Gravel and cobbles up to 4-inch.		
			42.2	1519.3	
45					
	ML		42.2' - 50'- (ML) Light gray (5Y 7/2); **SILT with SAND**; Wet; Firm to stiff; 15% sand, 70% silt, 15% clay; (100% fine grained sand); Rounded grains; Homogeneous; Moderate cementation; High plasticity; No HCl reaction; No odor; Blocky.		
50			50.0	1511.5	

Bottom of borehole at 50.0 feet.

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Core Photos
SWFTS-BH11

SOIL BORING ID **SWFTS-BH11**
DEPTH (FT BGS) **5 - 7.5**
August 10, 2022
TETRA TECH, INC. **PROJECT NO.** **117-7502021-M11**

SOIL BORING ID **SWFTS-BH11**
DEPTH (FT BGS) **7.5 - 10**
August 10, 2022
TETRA TECH, INC. **PROJECT NO.** **117-7502021-M11**

	SOIL BORING ID **SWFTS-BH11**
	DEPTH (FT BGS) **10 - 14**
	August 10, 2022
	TETRA TECH, INC. **PROJECT NO.** **117-7502021-M11**

	SOIL BORING ID **SWFTS-BH11**
	DEPTH (FT BGS) **14 - 16.5**
	August 10, 2022
	TETRA TECH, INC. **PROJECT NO.** **117-7502021-M11**

SOIL BORING ID **SWFTS-BH11**
DEPTH (FT BGS) **16.5 - 20**
August 10, 2022
TETRA TECH, INC. **PROJECT NO.** **117-7502021-M11**

SOIL BORING ID **SWFTS-BH11**
DEPTH (FT BGS) **20 - 22.5**
August 10, 2022
TETRA TECH, INC. **PROJECT NO.** **117-7502021-M11**

	SOIL BORING ID **SWFTS-BH11**
	DEPTH (FT BGS) **22.5 - 25**
	August 10, 2022
	TETRA TECH, INC. **PROJECT NO.** **117-7502021-M11**

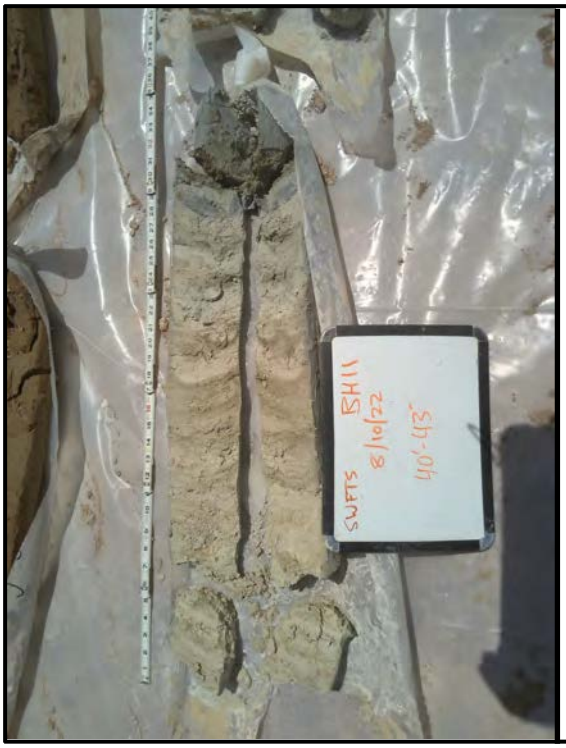
	SOIL BORING ID **SWFTS-BH11**
	DEPTH (FT BGS) **25 - 27**
	August 10, 2022
	TETRA TECH, INC. **PROJECT NO.** **117-7502021-M11**

SOIL BORING ID **SWFTS-BH11**
DEPTH (FT BGS) **27 - 30**
August 10, 2022
TETRA TECH, INC. **PROJECT NO.** **117-7502021-M11**

SOIL BORING ID **SWFTS-BH11**
DEPTH (FT BGS) **30 - 34**
August 10, 2022
TETRA TECH, INC. **PROJECT NO.** **117-7502021-M11**

	SOIL BORING ID **SWFTS-BH11**
	DEPTH (FT BGS) **34 - 37**
	August 10, 2022
	TETRA TECH, INC. **PROJECT NO.** **117-7502021-M11**

	SOIL BORING ID **SWFTS-BH11**
	DEPTH (FT BGS) **37 - 40**
	August 10, 2022
	TETRA TECH, INC. **PROJECT NO.** **117-7502021-M11**



SOIL BORING ID **SWFTS-BH11**
DEPTH (FT BGS) **40 - 43**
August 10, 2022
TETRA TECH, INC. **PROJECT NO.** **117-7502021-M11**

SOIL BORING ID **SWFTS-BH11**
DEPTH (FT BGS) **43 - 45**
August 10, 2022
TETRA TECH, INC. **PROJECT NO.** **117-7502021-M11**

SOIL BORING ID **SWFTS-BH11**
DEPTH (FT BGS) **45 - 47.5**
August 10, 2022
TETRA TECH, INC. **PROJECT NO.** **117-7502021-M11**

SOIL BORING ID **SWFTS-BH11**
DEPTH (FT BGS) **47.5 - 50**
August 10, 2022
TETRA TECH, INC. **PROJECT NO.** **117-7502021-M11**

Core Photos
SWFTS-BH12

SOIL BORING ID **SWFTS-BH12**
DEPTH (FT BGS) **0 - 5**
August 12, 2022
TETRA TECH, INC. **PROJECT NO.** **117-7502021-M11**

SOIL BORING ID **SWFTS-BH12**
DEPTH (FT BGS) **5 - 7.5**
August 12, 2022
TETRA TECH, INC. **PROJECT NO.** **117-7502021-M11**

	SOIL BORING ID **SWFTS-BH12**
	DEPTH (FT BGS) **7.5 - 10**
	August 12, 2022
	TETRA TECH, INC. **PROJECT NO.** **117-7502021-M11**

	SOIL BORING ID **SWFTS-BH12**
	DEPTH (FT BGS) **10 - 12.6**
	August 12, 2022
	TETRA TECH, INC. **PROJECT NO.** **117-7502021-M11**

SOIL BORING ID **SWFTS-BH12**
DEPTH (FT BGS) **12.6 - 15**
August 12, 2022
TETRA TECH, INC. **PROJECT NO.** **117-7502021-M11**

SOIL BORING ID **SWFTS-BH12**
DEPTH (FT BGS) **15 - 17.5**
August 12, 2022
TETRA TECH, INC. **PROJECT NO.** **117-7502021-M11**

SOIL BORING ID **SWFTS-BH12**
DEPTH (FT BGS) **17.5 - 20**
August 12, 2022
TETRA TECH, INC. PROJECT NO. 117-7502021-M11

SOIL BORING ID **SWFTS-BH12**
DEPTH (FT BGS) **20 - 22.5**
August 12, 2022
TETRA TECH, INC. PROJECT NO. 117-7502021-M11

SOIL BORING ID **SWFTS-BH12**
DEPTH (FT BGS) **22.5 - 25**
August 12, 2022
TETRA TECH, INC. **PROJECT NO.** **117-7502021-M11**

SOIL BORING ID **SWFTS-BH12**
DEPTH (FT BGS) **25 - 27.5**
August 12, 2022
TETRA TECH, INC. **PROJECT NO.** **117-7502021-M11**

	SOIL BORING ID **SWFTS-BH12**
	DEPTH (FT BGS) **27.5 - 30**
	August 12, 2022
	TETRA TECH, INC. PROJECT NO. 117-7502021-M11

	SOIL BORING ID **SWFTS-BH12**
	DEPTH (FT BGS) **30 - 32.5**
	August 12, 2022
	TETRA TECH, INC. PROJECT NO. 117-7502021-M11

		SOIL BORING ID **SWFTS-BH12** ***DEPTH (FT BGS)*** **32.5 - 35** **August 12, 2022** **TETRA TECH, INC.** **PROJECT NO.** **117-7502021-M11**

		SOIL BORING ID **SWFTS-BH12** ***DEPTH (FT BGS)*** **35 - 37.5** **August 12, 2022** **TETRA TECH, INC.** **PROJECT NO.** **117-7502021-M11**

SOIL BORING ID **SWFTS-BH12**
DEPTH (FT BGS) **37.5 - 40**
August 12, 2022
TETRA TECH, INC. **PROJECT NO.** **117-7502021-M11**

Core Photos
SWFTS-BH13

SOIL BORING ID **SWFTS-BH13**
DEPTH (FT BGS) **5 - 7.5**
August 11, 2022
TETRA TECH, INC. **PROJECT NO.** **117-7502021-M11**

SOIL BORING ID **SWFTS-BH13**
DEPTH (FT BGS) **7.5 - 10**
August 11, 2022
TETRA TECH, INC. **PROJECT NO.** **117-7502021-M11**

SOIL BORING ID **SWFTS-BH13**
DEPTH (FT BGS) **10 - 12.5**
August 11, 2022
TETRA TECH, INC. **PROJECT NO.** **117-7502021-M11**

SOIL BORING ID **SWFTS-BH13**
DEPTH (FT BGS) **12.5 - 15**
August 11, 2022
TETRA TECH, INC. **PROJECT NO.** **117-7502021-M11**

SOIL BORING ID **SWFTS-BH13**
DEPTH (FT BGS) **15 - 17.5**
August 11, 2022
TETRA TECH, INC. **PROJECT NO.** **117-7502021-M11**

SOIL BORING ID **SWFTS-BH13**
DEPTH (FT BGS) **17.5 - 20**
August 11, 2022
TETRA TECH, INC. **PROJECT NO.** **117-7502021-M11**

	SOIL BORING ID **SWFTS-BH13**
	DEPTH (FT BGS) **20 - 22.5**
	August 11, 2022
	TETRA TECH, INC. **PROJECT NO.** **117-7502021-M11**

	SOIL BORING ID **SWFTS-BH13**
	DEPTH (FT BGS) **22.5 - 25**
	August 11, 2022
	TETRA TECH, INC. **PROJECT NO.** **117-7502021-M11**

	SOIL BORING ID **SWFTS-BH13**
	DEPTH (FT BGS) **25 - 27.5**
	August 11, 2022
	TETRA TECH, INC. **PROJECT NO.** **117-7502021-M11**

	SOIL BORING ID **SWFTS-BH13**
	DEPTH (FT BGS) **27.5 - 30**
	August 11, 2022
	TETRA TECH, INC. **PROJECT NO.** **117-7502021-M11**

SOIL BORING ID **SWFTS-BH13**
DEPTH (FT BGS) **30 - 32.5**
August 11, 2022
TETRA TECH, INC. **PROJECT NO.** **117-7502021-M11**

SOIL BORING ID **SWFTS-BH13**
DEPTH (FT BGS) **32.5 - 35**
August 11, 2022
TETRA TECH, INC. **PROJECT NO.** **117-7502021-M11**

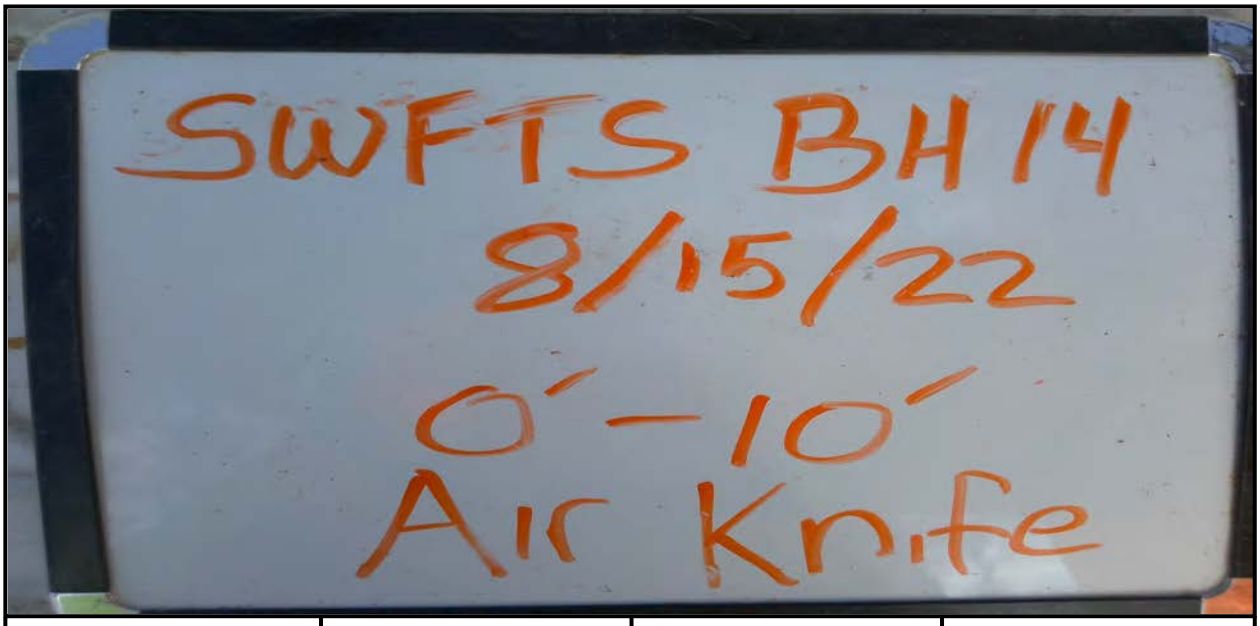
SOIL BORING ID **SWFTS-BH13**
DEPTH (FT BGS) **35 - 37.5**
August 11, 2022
TETRA TECH, INC. **PROJECT NO.** **117-7502021-M11**

SOIL BORING ID **SWFTS-BH13**
DEPTH (FT BGS) **37.5 - 40**
August 11, 2022
TETRA TECH, INC. **PROJECT NO.** **117-7502021-M11**

SOIL BORING ID **SWFTS-BH13**
DEPTH (FT BGS) **40 - 42.5**
August 11, 2022
TETRA TECH, INC. **PROJECT NO.** **117-7502021-M11**

SOIL BORING ID **SWFTS-BH13**
DEPTH (FT BGS) **42.5 - 45**
August 11, 2022
TETRA TECH, INC. **PROJECT NO.** **117-7502021-M11**

Core Photos
SWFTS-BH14



TETRA TECH, INC. PROJECT NO. 117-7502021-M11	**DEPTH (FT BGS)**	**0 - 10**	**August 15, 2022**
	SOIL BORING ID	**SWFTS-BH14**	

TETRA TECH, INC. PROJECT NO. 117-7502021-M11	**DEPTH (FT BGS)**	**10 - 12.5**	**August 15, 2022**
	SOIL BORING ID	**SWFTS-BH14**	

TETRA TECH, INC. PROJECT NO. 117-7502021-M11	DEPTH (FT BGS)	12.5 - 15	August 15, 2022
	SOIL BORING ID	SWFTS-BH14	

TETRA TECH, INC. PROJECT NO. 117-7502021-M11	DEPTH (FT BGS)	15 - 18	August 15, 2022
	SOIL BORING ID	SWFTS-BH14	

TETRA TECH, INC. PROJECT NO. 117-7502021-M11	DEPTH (FT BGS)	18 - 20	August 15, 2022
	SOIL BORING ID	SWFTS-BH14	

TETRA TECH, INC. PROJECT NO. 117-7502021-M11	DEPTH (FT BGS)	20 - 22.5	August 15, 2022
	SOIL BORING ID	SWFTS-BH14	

TETRA TECH, INC. PROJECT NO. 117-7502021-M11	DEPTH (FT BGS)	22.5 - 25	August 15, 2022
	SOIL BORING ID	SWFTS-BH14	

TETRA TECH, INC. PROJECT NO. 117-7502021-M11	DEPTH (FT BGS)	25 - 27.5	August 15, 2022
	SOIL BORING ID	SWFTS-BH14	

TETRA TECH, INC. PROJECT NO. 117-7502021-M11	DEPTH (FT BGS)	27.5 - 30	August 15, 2022
	SOIL BORING ID	SWFTS-BH14	

TETRA TECH, INC. PROJECT NO. 117-7502021-M11	DEPTH (FT BGS)	30 - 30.5	August 15, 2022
	SOIL BORING ID	SWFTS-BH14	

TETRA TECH, INC. PROJECT NO. 117-7502021-M11	**DEPTH (FT BGS)**	**30.5 - 33**	**August 15, 2022**
	SOIL BORING ID	**SWFTS-BH14**	

TETRA TECH, INC. PROJECT NO. 117-7502021-M11	**DEPTH (FT BGS)**	**33 - 35.5**	**August 15, 2022**
	SOIL BORING ID	**SWFTS-BH14**	

TETRA TECH, INC. PROJECT NO. 117-7502021-M11	DEPTH (FT BGS)	35.5 - 38	August 15, 2022
	SOIL BORING ID	SWFTS-BH14	

TETRA TECH, INC. PROJECT NO. 117-7502021-M11	DEPTH (FT BGS)	38 - 41	August 15, 2022
	SOIL BORING ID	SWFTS-BH14	

TETRA TECH, INC. PROJECT NO. 117-7502021-M11	DEPTH (FT BGS)	41 - 43	August 15, 2022
	SOIL BORING ID	SWFTS-BH14	

TETRA TECH, INC. PROJECT NO. 117-7502021-M11	DEPTH (FT BGS)	43 - 45	August 15, 2022
	SOIL BORING ID	SWFTS-BH14	

Core Photos
SWFTS-BH15

SOIL BORING ID **SWFTS-BH15**
DEPTH (FT BGS) **5 - 6.5**
August 11, 2022
TETRA TECH, INC. PROJECT NO. 117-7502021-M11

SOIL BORING ID **SWFTS-BH15**
DEPTH (FT BGS) **6.5 - 10**
August 11, 2022
TETRA TECH, INC. PROJECT NO. 117-7502021-M11

SOIL BORING ID **SWFTS-BH15**
DEPTH (FT BGS) **10 - 12.5**
August 11, 2022
TETRA TECH, INC. **PROJECT NO.** **117-7502021-M11**

SOIL BORING ID **SWFTS-BH15**
DEPTH (FT BGS) **12.5 - 15**
August 11, 2022
TETRA TECH, INC. **PROJECT NO.** **117-7502021-M11**

SOIL BORING ID **SWFTS-BH15**
DEPTH (FT BGS) **15 - 17.5**
August 11, 2022
TETRA TECH, INC. **PROJECT NO.** **117-7502021-M11**

SOIL BORING ID **SWFTS-BH15**
DEPTH (FT BGS) **17.5 - 20**
August 11, 2022
TETRA TECH, INC. **PROJECT NO.** **117-7502021-M11**

SOIL BORING ID **SWFTS-BH15**
DEPTH (FT BGS) **20 - 22.5**
August 11, 2022
TETRA TECH, INC. **PROJECT NO.** **117-7502021-M11**

SOIL BORING ID **SWFTS-BH15**
DEPTH (FT BGS) **22.5 - 25**
August 11, 2022
TETRA TECH, INC. **PROJECT NO.** **117-7502021-M11**

SOIL BORING ID **SWFTS-BH15**
DEPTH (FT BGS) **25 - 27.5**
August 11, 2022
TETRA TECH, INC. **PROJECT NO.** **117-7502021-M11**

SOIL BORING ID **SWFTS-BH15**
DEPTH (FT BGS) **27.5 - 30**
August 11, 2022
TETRA TECH, INC. **PROJECT NO.** **117-7502021-M11**

	SOIL BORING ID **SWFTS-BH15**
	DEPTH (FT BGS) **30 - 32**
	August 11, 2022
	TETRA TECH, INC. **PROJECT NO.** **117-7502021-M11**

	SOIL BORING ID **SWFTS-BH15**
	DEPTH (FT BGS) **32 - 35**
	August 11, 2022
	TETRA TECH, INC. **PROJECT NO.** **117-7502021-M11**

SOIL BORING ID **SWFTS-BH15**
DEPTH (FT BGS) **35 - 37.5**
August 11, 2022
TETRA TECH, INC. **PROJECT NO.** **117-7502021-M11**

SOIL BORING ID **SWFTS-BH15**
DEPTH (FT BGS) **37.5 - 40**
August 11, 2022
TETRA TECH, INC. **PROJECT NO.** **117-7502021-M11**

SOIL BORING ID **SWFTS-BH15**
DEPTH (FT BGS) **40 - 42.5**
August 11, 2022
TETRA TECH, INC. **PROJECT NO.** **117-7502021-M11**

SOIL BORING ID **SWFTS-BH15**
DEPTH (FT BGS) **42.5 - 45**
August 11, 2022
TETRA TECH, INC. **PROJECT NO.** **117-7502021-M11**

Core Photos
SWFTS-BH16

SOIL BORING ID **SWFTS-BH16**
DEPTH (FT BGS) **5 - 7.5**
August 11, 2022
TETRA TECH, INC. **PROJECT NO.** **117-7502021-M11**

SOIL BORING ID **SWFTS-BH16**
DEPTH (FT BGS) **7.5 - 10**
August 11, 2022
TETRA TECH, INC. **PROJECT NO.** **117-7502021-M11**

SOIL BORING ID **SWFTS-BH16**
DEPTH (FT BGS) **10 - 15**
August 11, 2022
TETRA TECH, INC. **PROJECT NO.** **117-7502021-M11**

SOIL BORING ID **SWFTS-BH16**
DEPTH (FT BGS) **15 - 17.5**
August 11, 2022
TETRA TECH, INC. **PROJECT NO.** **117-7502021-M11**

		SOIL BORING ID **SWFTS-BH16**
		DEPTH (FT BGS) **17.5 - 20**
		August 11, 2022
		TETRA TECH, INC. **PROJECT NO.** **117-7502021-M11**

		SOIL BORING ID **SWFTS-BH16**
		DEPTH (FT BGS) **20 - 21**
		August 11, 2022
		TETRA TECH, INC. **PROJECT NO.** **117-7502021-M11**

		SOIL BORING ID **SWFTS-BH16**
		DEPTH (FT BGS) **21 - 24**
		August 11, 2022
		TETRA TECH, INC. PROJECT NO. 117-7502021-M11

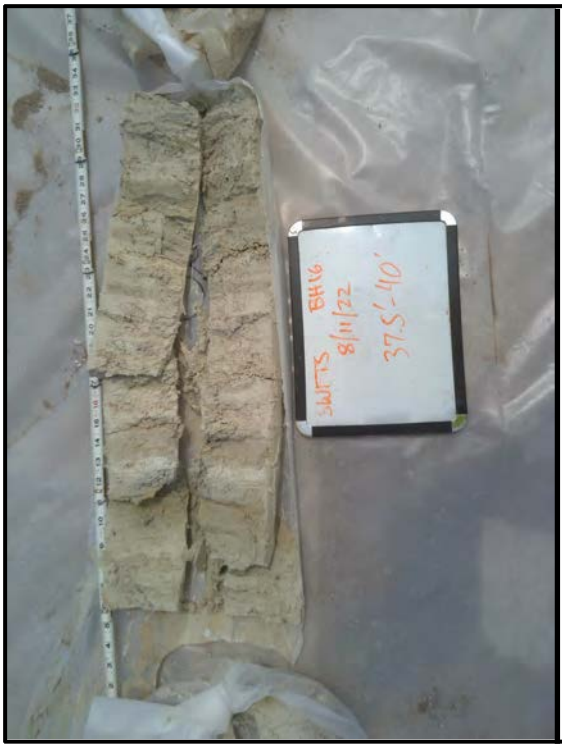
		SOIL BORING ID **SWFTS-BH16**
		DEPTH (FT BGS) **24 - 27**
		August 11, 2022
		TETRA TECH, INC. PROJECT NO. 117-7502021-M11

SOIL BORING ID **SWFTS-BH16**
DEPTH (FT BGS) **27 - 30**
August 11, 2022
TETRA TECH, INC. **PROJECT NO.** **117-7502021-M11**

SOIL BORING ID **SWFTS-BH16**
DEPTH (FT BGS) **30 - 32.5**
August 11, 2022
TETRA TECH, INC. **PROJECT NO.** **117-7502021-M11**

SOIL BORING ID **SWFTS-BH16**
DEPTH (FT BGS) **32.5 - 35**
August 11, 2022
TETRA TECH, INC. **PROJECT NO.** **117-7502021-M11**

SOIL BORING ID **SWFTS-BH16**
DEPTH (FT BGS) **35 - 37.5**
August 11, 2022
TETRA TECH, INC. **PROJECT NO.** **117-7502021-M11**



SOIL BORING ID **SWFTS-BH16**
DEPTH (FT BGS) **37.5 - 40**
August 11, 2022
TETRA TECH, INC. **PROJECT NO.** **117-7502021-M11**

SOIL BORING ID **SWFTS-BH16**
DEPTH (FT BGS) **40 - 42.5**
August 11, 2022
TETRA TECH, INC. **PROJECT NO.** **117-7502021-M11**

	SOIL BORING ID **SWFTS-BH16**
	DEPTH (FT BGS) **42.5 - 45**
	August 11, 2022
	TETRA TECH, INC. **PROJECT NO.** **117-7502021-M11**

Core Photos
SWFTS-BH17

TETRA TECH, INC. PROJECT NO. 117-7502021-M11	**DEPTH (FT BGS)**	**0 - 5**	**August 12, 2022**
	SOIL BORING ID	**SWFTS-BH17**	

TETRA TECH, INC. PROJECT NO. 117-7502021-M11	**DEPTH (FT BGS)**	**5 - 8**	**August 12, 2022**
	SOIL BORING ID	**SWFTS-BH17**	

TETRA TECH, INC. PROJECT NO. 117-7502021-M11	**DEPTH (FT BGS)**	**8 - 10**	**August 12, 2022**
	SOIL BORING ID	**SWFTS-BH17**	

TETRA TECH, INC. PROJECT NO. 117-7502021-M11	**DEPTH (FT BGS)**	**10 - 12.5**	**August 12, 2022**
	SOIL BORING ID	**SWFTS-BH17**	

TETRA TECH, INC. PROJECT NO. 117-7502021-M11	**DEPTH (FT BGS)**	**12.5 - 15**	**August 12, 2022**
	SOIL BORING ID	**SWFTS-BH17**	

TETRA TECH, INC. PROJECT NO. 117-7502021-M11	**DEPTH (FT BGS)**	**15 - 17.5**	**August 12, 2022**
	SOIL BORING ID	**SWFTS-BH17**	

TETRA TECH, INC. PROJECT NO. 117-7502021-M11	DEPTH (FT BGS)	17.5 - 20	August 12, 2022
	SOIL BORING ID	SWFTS-BH17	

TETRA TECH, INC. PROJECT NO. 117-7502021-M11	DEPTH (FT BGS)	20 - 22.5	August 12, 2022
	SOIL BORING ID	SWFTS-BH17	

TETRA TECH, INC. PROJECT NO. 117-7502021-M11	DEPTH (FT BGS)	22.5 - 25	August 12, 2022
	SOIL BORING ID	SWFTS-BH17	

TETRA TECH, INC. PROJECT NO. 117-7502021-M11	DEPTH (FT BGS)	25 - 28	August 12, 2022
	SOIL BORING ID	SWFTS-BH17	

TETRA TECH, INC. PROJECT NO. 117-7502021-M11	**DEPTH (FT BGS)**	**28 - 30**	**August 12, 2022**
	SOIL BORING ID	**SWFTS-BH17**	

TETRA TECH, INC. PROJECT NO. 117-7502021-M11	**DEPTH (FT BGS)**	**30 - 34.5**	**August 12, 2022**
	SOIL BORING ID	**SWFTS-BH17**	

TETRA TECH, INC. PROJECT NO. 117-7502021-M11	**DEPTH (FT BGS)**	**34.5 - 39**	**August 12, 2022**
	SOIL BORING ID	**SWFTS-BH17**	

TETRA TECH, INC. PROJECT NO. 117-7502021-M11	**DEPTH (FT BGS)**	**39 - 42**	**August 12, 2022**
	SOIL BORING ID	**SWFTS-BH17**	

TETRA TECH, INC. PROJECT NO. 117-7502021-M11	**DEPTH (FT BGS)**	**42 - 44.5**	**August 12, 2022**
	SOIL BORING ID	**SWFTS-BH17**	

TETRA TECH, INC. PROJECT NO. 117-7502021-M11	**DEPTH (FT BGS)**	**44.5 - 47.5**	**August 12, 2022**
	SOIL BORING ID	**SWFTS-BH17**	

TETRA TECH, INC. PROJECT NO. 117-7502021-M11	**DEPTH (FT BGS)**	**47.5 - 50**	**August 12, 2022**
	SOIL BORING ID	**SWFTS-BH17**	

Core Photos
SWFTS-BH18

SOIL BORING ID **SWFTS-BH18**
DEPTH (FT BGS) **0 - 10**
August 11, 2022
TETRA TECH, INC. **PROJECT NO.** **117-7502021-M11**

SOIL BORING ID **SWFTS-BH18**
DEPTH (FT BGS) **10 - 12.5**
August 11, 2022
TETRA TECH, INC. **PROJECT NO.** **117-7502021-M11**

SOIL BORING ID **SWFTS-BH18**
DEPTH (FT BGS) **12.5 - 15**
August 11, 2022
TETRA TECH, INC. **PROJECT NO.** **117-7502021-M11**

SOIL BORING ID **SWFTS-BH18**
DEPTH (FT BGS) **15 - 17.5**
August 11, 2022
TETRA TECH, INC. **PROJECT NO.** **117-7502021-M11**

SOIL BORING ID **SWFTS-BH18**	
DEPTH (FT BGS) **17.5 - 20**	
August 11, 2022	
TETRA TECH, INC. PROJECT NO. 117-7502021-M11	

SOIL BORING ID **SWFTS-BH18**	
DEPTH (FT BGS) **20 - 22.5**	
August 11, 2022	
TETRA TECH, INC. PROJECT NO. 117-7502021-M11	

SOIL BORING ID **SWFTS-BH18**
DEPTH (FT BGS) **22.5 - 25**
August 11, 2022
TETRA TECH, INC. **PROJECT NO.** **117-7502021-M11**

SOIL BORING ID **SWFTS-BH18**
DEPTH (FT BGS) **25 - 27.5**
August 11, 2022
TETRA TECH, INC. **PROJECT NO.** **117-7502021-M11**

	SOIL BORING ID **SWFTS-BH18**
	DEPTH (FT BGS) **27.5 - 30**
	August 11, 2022
	TETRA TECH, INC. PROJECT NO. 117-7502021-M11

	SOIL BORING ID **SWFTS-BH18**
	DEPTH (FT BGS) **30 - 32.5**
	August 11, 2022
	TETRA TECH, INC. PROJECT NO. 117-7502021-M11

SOIL BORING ID **SWFTS-BH18**
DEPTH (FT BGS) **32.5 - 35**
August 11, 2022
TETRA TECH, INC. **PROJECT NO.** **117-7502021-M11**

SOIL BORING ID **SWFTS-BH18**
DEPTH (FT BGS) **35 - 37.5**
August 11, 2022
TETRA TECH, INC. **PROJECT NO.** **117-7502021-M11**

	SOIL BORING ID **SWFTS-BH18**
	DEPTH (FT BGS) **37.5 - 40**
	August 11, 2022
	TETRA TECH, INC. **PROJECT NO.** **117-7502021-M11**

Core Photos
SWFTS-BH19

TETRA TECH, INC. PROJECT NO. 117-7502021-M11	DEPTH (FT BGS)	0 - 10	August 15, 2022
	SOIL BORING ID	SWFTS-BH19	

TETRA TECH, INC. PROJECT NO. 117-7502021-M11	DEPTH (FT BGS)	10 - 12.5	August 15, 2022
	SOIL BORING ID	SWFTS-BH19	

TETRA TECH, INC. PROJECT NO. 117-7502021-M11	**DEPTH (FT BGS)**	**12.5 - 15**	**August 15, 2022**
	SOIL BORING ID	**SWFTS-BH19**	

TETRA TECH, INC. PROJECT NO. 117-7502021-M11	**DEPTH (FT BGS)**	**15 - 17.5**	**August 15, 2022**
	SOIL BORING ID	**SWFTS-BH19**	

TETRA TECH, INC. PROJECT NO. 117-7502021-M11	DEPTH (FT BGS)	17.5 - 20	August 15, 2022
	SOIL BORING ID	SWFTS-BH19	

TETRA TECH, INC. PROJECT NO. 117-7502021-M11	DEPTH (FT BGS)	20 - 22	August 15, 2022
	SOIL BORING ID	SWFTS-BH19	

TETRA TECH, INC. PROJECT NO. 117-7502021-M11	DEPTH (FT BGS)	22 - 25	August 15, 2022
	SOIL BORING ID	SWFTS-BH19	

TETRA TECH, INC. PROJECT NO. 117-7502021-M11	DEPTH (FT BGS)	25 - 27.5	August 15, 2022
	SOIL BORING ID	SWFTS-BH19	

TETRA TECH, INC. PROJECT NO. 117-7502021-M11	DEPTH (FT BGS)	27.5 - 30	August 15, 2022
	SOIL BORING ID	SWFTS-BH19	

TETRA TECH, INC. PROJECT NO. 117-7502021-M11	DEPTH (FT BGS)	30 - 32.5	August 15, 2022
	SOIL BORING ID	SWFTS-BH19	

TETRA TECH, INC. PROJECT NO. 117-7502021-M11	**DEPTH (FT BGS)**	**32.5 - 35**	**August 15, 2022**
	SOIL BORING ID	**SWFTS-BH19**	

Core Photos
SWFTS-BH20

TETRA TECH, INC. PROJECT NO. 117-7502021-M11	**DEPTH (FT BGS)**	**0 - 5**	**August 13, 2022**
	SOIL BORING ID	**SWFTS-BH20**	

TETRA TECH, INC. PROJECT NO. 117-7502021-M11	**DEPTH (FT BGS)**	**5 - 7.5**	**August 13, 2022**
	SOIL BORING ID	**SWFTS-BH20**	

TETRA TECH, INC. PROJECT NO. 117-7502021-M11	DEPTH (FT BGS)	7.5 - 10	August 13, 2022
	SOIL BORING ID	SWFTS-BH20	

TETRA TECH, INC. PROJECT NO. 117-7502021-M11	DEPTH (FT BGS)	10 - 12.5	August 13, 2022
	SOIL BORING ID	SWFTS-BH20	

TETRA TECH, INC. PROJECT NO. 117-7502021-M11	DEPTH (FT BGS)	12.5 - 15	August 13, 2022
	SOIL BORING ID	SWFTS-BH20	

TETRA TECH, INC. PROJECT NO. 117-7502021-M11	DEPTH (FT BGS)	15 - 17.5	August 13, 2022
	SOIL BORING ID	SWFTS-BH20	

TETRA TECH, INC. PROJECT NO. 117-7502021-M11	DEPTH (FT BGS)	17.5 - 20	August 13, 2022
	SOIL BORING ID	SWFTS-BH20	

TETRA TECH, INC. PROJECT NO. 117-7502021-M11	DEPTH (FT BGS)	20 - 22.5	August 13, 2022
	SOIL BORING ID	SWFTS-BH20	

TETRA TECH, INC. PROJECT NO. 117-7502021-M11	DEPTH (FT BGS)	22.5 - 25	August 13, 2022
	SOIL BORING ID	SWFTS-BH20	

TETRA TECH, INC. PROJECT NO. 117-7502021-M11	DEPTH (FT BGS)	25 - 27.5	August 13, 2022
	SOIL BORING ID	SWFTS-BH20	

TETRA TECH, INC. PROJECT NO. 117-7502021-M11	DEPTH (FT BGS)	27.5 - 30	August 13, 2022
	SOIL BORING ID	SWFTS-BH20	

TETRA TECH, INC. PROJECT NO. 117-7502021-M11	DEPTH (FT BGS)	30 - 32.5	August 13, 2022
	SOIL BORING ID	SWFTS-BH20	

TETRA TECH, INC. PROJECT NO. 117-7502021-M11	DEPTH (FT BGS)	32.5 - 35	August 13, 2022
	SOIL BORING ID	SWFTS-BH20	

TETRA TECH, INC. PROJECT NO. 117-7502021-M11	DEPTH (FT BGS)	35 - 37.5	August 13, 2022
	SOIL BORING ID	SWFTS-BH20	

TETRA TECH, INC. PROJECT NO. 117-7502021-M11	DEPTH (FT BGS)	37.5 - 40	August 13, 2022
	SOIL BORING ID	SWFTS-BH20	

TETRA TECH, INC. PROJECT NO. 117-7502021-M11	DEPTH (FT BGS)	40 - 42.5	August 13, 2022
	SOIL BORING ID	SWFTS-BH20	

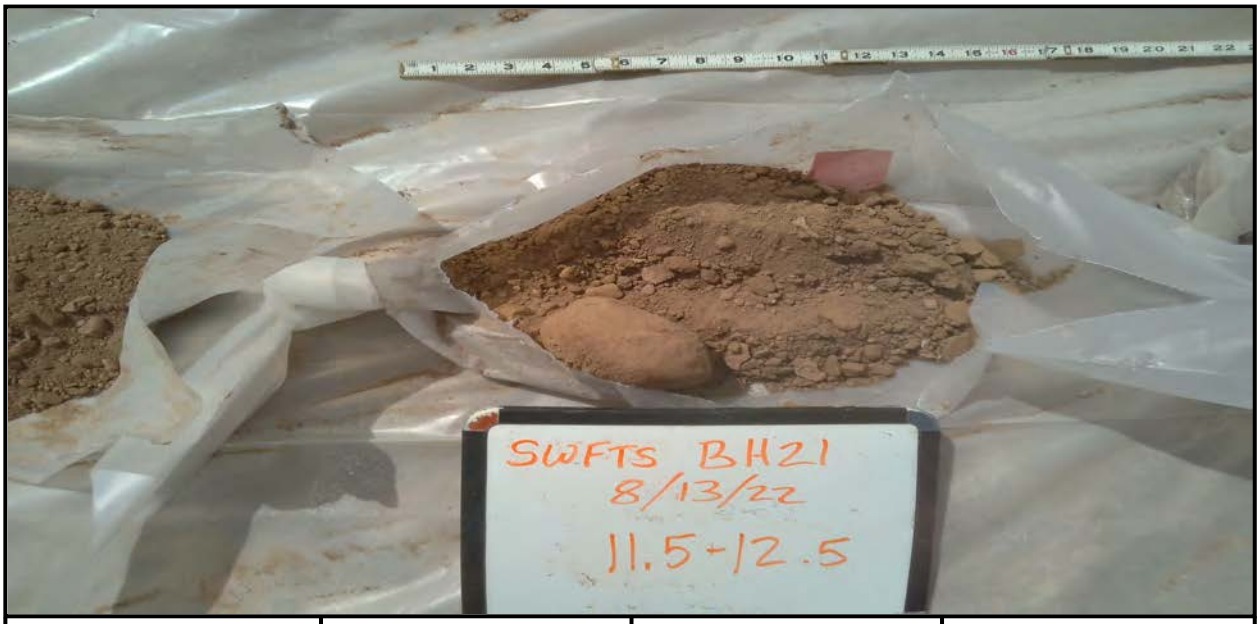
TETRA TECH, INC. **PROJECT NO.** **117-7502021-M11**	**DEPTH (FT BGS)**	**42.5 - 45**	**August 13, 2022**
	SOIL BORING ID	**SWFTS-BH20**	

Core Photos
SWFTS-BH21

TETRA TECH, INC. PROJECT NO. 117-7502021-M11	**DEPTH (FT BGS)**	**0 - 5**	**August 13, 2022**
	SOIL BORING ID	**SWFTS-BH21**	

TETRA TECH, INC. PROJECT NO. 117-7502021-M11	**DEPTH (FT BGS)**	**5 - 9**	**August 13, 2022**
	SOIL BORING ID	**SWFTS-BH21**	

TETRA TECH, INC. PROJECT NO. 117-7502021-M11	DEPTH (FT BGS)	9 - 11.5	August 13, 2022
	SOIL BORING ID	SWFTS-BH21	



TETRA TECH, INC. PROJECT NO. 117-7502021-M11	DEPTH (FT BGS)	11.5 - 12.5	August 13, 2022
	SOIL BORING ID	SWFTS-BH21	

TETRA TECH, INC. PROJECT NO. 117-7502021-M11	DEPTH (FT BGS)	12.5 - 15	August 13, 2022
	SOIL BORING ID	SWFTS-BH21	

TETRA TECH, INC. PROJECT NO. 117-7502021-M11	DEPTH (FT BGS)	15 - 17.5	August 13, 2022
	SOIL BORING ID	SWFTS-BH21	

TETRA TECH, INC. PROJECT NO. 117-7502021-M11	DEPTH (FT BGS)	17.5 - 20	August 13, 2022
	SOIL BORING ID	SWFTS-BH21	

TETRA TECH, INC. PROJECT NO. 117-7502021-M11	DEPTH (FT BGS)	20 - 22.5	August 13, 2022
	SOIL BORING ID	SWFTS-BH21	

TETRA TECH, INC. PROJECT NO. 117-7502021-M11	DEPTH (FT BGS)	22.5 - 25	August 13, 2022
	SOIL BORING ID	SWFTS-BH21	

TETRA TECH, INC. PROJECT NO. 117-7502021-M11	DEPTH (FT BGS)	25 - 27.5	August 13, 2022
	SOIL BORING ID	SWFTS-BH21	

TETRA TECH, INC. PROJECT NO. 117-7502021-M11	DEPTH (FT BGS)	27.5 - 30	August 13, 2022
	SOIL BORING ID	SWFTS-BH21	

TETRA TECH, INC. PROJECT NO. 117-7502021-M11	DEPTH (FT BGS)	30 - 32.5	August 13, 2022
	SOIL BORING ID	SWFTS-BH21	

TETRA TECH, INC. PROJECT NO. 117-7502021-M11	DEPTH (FT BGS)	32.5 - 35	August 13, 2022
	SOIL BORING ID	SWFTS-BH21	

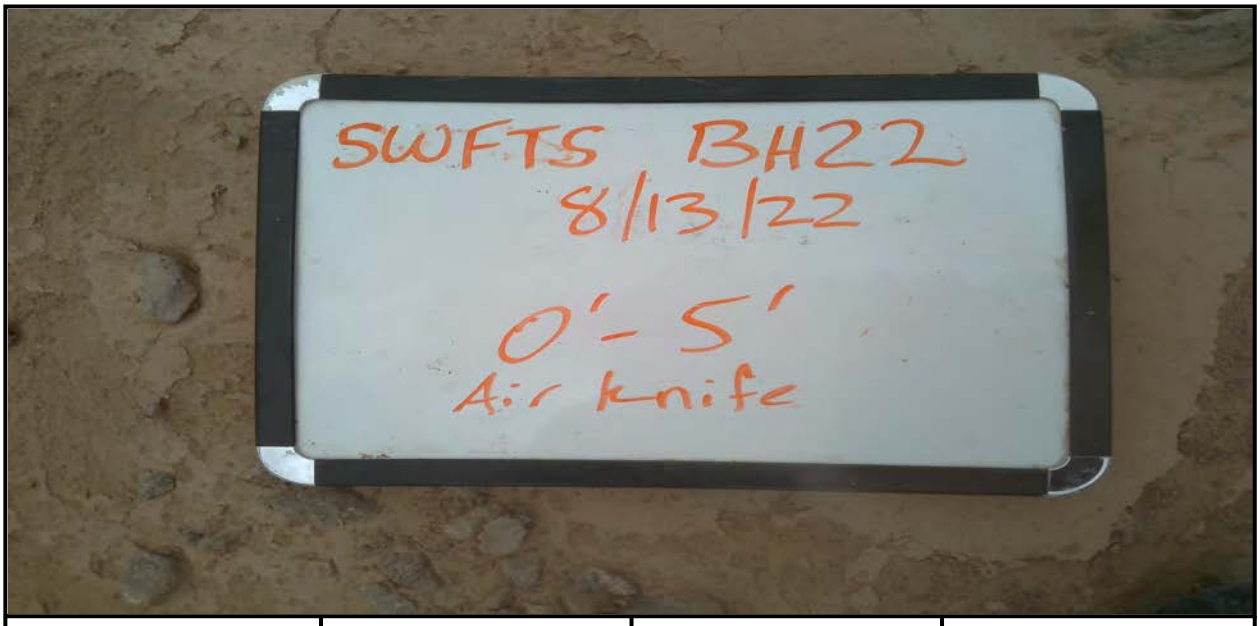
TETRA TECH, INC. PROJECT NO. 117-7502021-M11	DEPTH (FT BGS)	35 - 37.5	August 13, 2022
	SOIL BORING ID	SWFTS-BH21	

TETRA TECH, INC. PROJECT NO. 117-7502021-M11	**DEPTH (FT BGS)**	**37.5 - 40**	**August 13, 2022**
	SOIL BORING ID	**SWFTS-BH21**	

TETRA TECH, INC. PROJECT NO. 117-7502021-M11	**DEPTH (FT BGS)**	**40 - 42.5**	**August 13, 2022**
	SOIL BORING ID	**SWFTS-BH21**	

TETRA TECH, INC. **PROJECT NO.** **117-7502021-M11**	**DEPTH (FT BGS)**	**42.5 - 45**	**August 13, 2022**
	SOIL BORING ID	**SWFTS-BH21**	

Core Photos
SWFTS-BH22



TETRA TECH, INC. PROJECT NO. 117-7502021-M11	DEPTH (FT BGS)	0 - 5	August 13, 2022
	SOIL BORING ID	SWFTS-BH22	

TETRA TECH, INC. PROJECT NO. 117-7502021-M11	DEPTH (FT BGS)	5 - 7.5	August 13, 2022
	SOIL BORING ID	SWFTS-BH22	

TETRA TECH, INC. PROJECT NO. 117-7502021-M11	**DEPTH (FT BGS)**	**7.5 - 10**	**August 13, 2022**
	SOIL BORING ID	**SWFTS-BH22**	

TETRA TECH, INC. PROJECT NO. 117-7502021-M11	**DEPTH (FT BGS)**	**10 - 12.5**	**August 13, 2022**
	SOIL BORING ID	**SWFTS-BH22**	

TETRA TECH, INC. PROJECT NO. 117-7502021-M11	DEPTH (FT BGS)	12.5 - 15	August 13, 2022
	SOIL BORING ID	SWFTS-BH22	

TETRA TECH, INC. PROJECT NO. 117-7502021-M11	DEPTH (FT BGS)	15 - 17.5	August 13, 2022
	SOIL BORING ID	SWFTS-BH22	

TETRA TECH, INC. PROJECT NO. 117-7502021-M11	DEPTH (FT BGS)	17.5 - 20	August 13, 2022
	SOIL BORING ID	SWFTS-BH22	

TETRA TECH, INC. PROJECT NO. 117-7502021-M11	DEPTH (FT BGS)	20 - 22.5	August 13, 2022
	SOIL BORING ID	SWFTS-BH22	

TETRA TECH, INC. PROJECT NO. 117-7502021-M11	**DEPTH (FT BGS)**	**22.5 - 25**	**August 13, 2022**
	SOIL BORING ID	**SWFTS-BH22**	

TETRA TECH, INC. PROJECT NO. 117-7502021-M11	**DEPTH (FT BGS)**	**25 - 27.5**	**August 13, 2022**
	SOIL BORING ID	**SWFTS-BH22**	

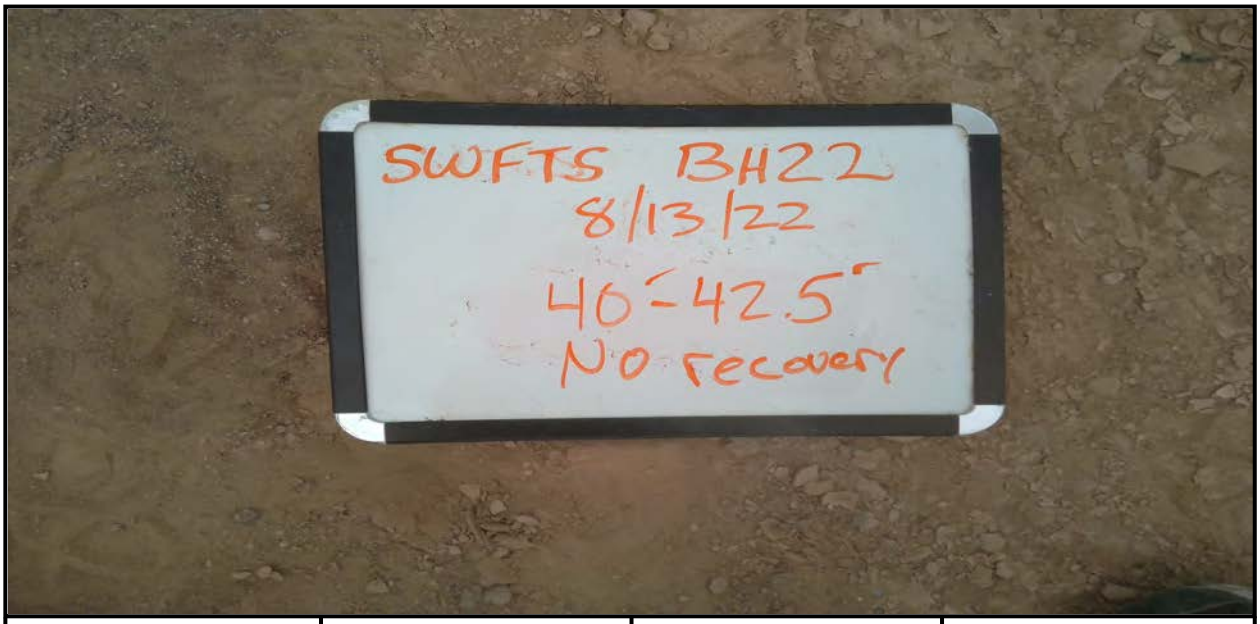
TETRA TECH, INC. PROJECT NO. 117-7502021-M11	**DEPTH (FT BGS)**	**27.5 - 30**	**August 13, 2022**
	SOIL BORING ID	**SWFTS-BH22**	

TETRA TECH, INC. PROJECT NO. 117-7502021-M11	**DEPTH (FT BGS)**	**30 - 32.5**	**August 13, 2022**
	SOIL BORING ID	**SWFTS-BH22**	

TETRA TECH, INC. PROJECT NO. 117-7502021-M11	**DEPTH (FT BGS)**	**32.5 - 35**	**August 13, 2022**
	SOIL BORING ID	**SWFTS-BH22**	

TETRA TECH, INC. PROJECT NO. 117-7502021-M11	**DEPTH (FT BGS)**	**35 - 37.5**	**August 13, 2022**
	SOIL BORING ID	**SWFTS-BH22**	

TETRA TECH, INC. PROJECT NO. 117-7502021-M11	DEPTH (FT BGS)	37.5 - 40	August 13, 2022
	SOIL BORING ID	SWFTS-BH22	



TETRA TECH, INC. PROJECT NO. 117-7502021-M11	DEPTH (FT BGS)	40 - 42.5	August 13, 2022
	SOIL BORING ID	SWFTS-BH22	

TETRA TECH, INC. PROJECT NO. 117-7502021-M11	**DEPTH (FT BGS)**	**42.5 - 45**	**August 13, 2022**
	SOIL BORING ID	**SWFTS-BH22**	

TETRA TECH, INC. PROJECT NO. 117-7502021-M11	**DEPTH (FT BGS)**	**45 - 47.5**	**August 13, 2022**
	SOIL BORING ID	**SWFTS-BH22**	

TETRA TECH, INC. PROJECT NO. 117-7502021-M11	**DEPTH (FT BGS)**	**47.5 - 50**	**August 13, 2022**
	SOIL BORING ID	**SWFTS-BH22**	

Core Photos
SWFTS-BH23

TETRA TECH, INC. PROJECT NO. 117-7502021-M11	DEPTH (FT BGS)	0 - 10	August 15, 2022
	SOIL BORING ID	SWFTS-BH23	

TETRA TECH, INC. PROJECT NO. 117-7502021-M11	DEPTH (FT BGS)	10 - 12.5	August 15, 2022
	SOIL BORING ID	SWFTS-BH23	

TETRA TECH, INC. PROJECT NO. 117-7502021-M11	DEPTH (FT BGS)	12.5 - 15	August 15, 2022
	SOIL BORING ID	SWFTS-BH23	

TETRA TECH, INC. PROJECT NO. 117-7502021-M11	DEPTH (FT BGS)	15 - 17.5	August 15, 2022
	SOIL BORING ID	SWFTS-BH23	

TETRA TECH, INC. PROJECT NO. 117-7502021-M11	DEPTH (FT BGS)	17.5 - 20	August 15, 2022
	SOIL BORING ID	SWFTS-BH23	

TETRA TECH, INC. PROJECT NO. 117-7502021-M11	DEPTH (FT BGS)	20 - 22.5	August 15, 2022
	SOIL BORING ID	SWFTS-BH23	

TETRA TECH, INC. PROJECT NO. 117-7502021-M11	DEPTH (FT BGS)	22.5 - 24.5	August 15, 2022
	SOIL BORING ID	SWFTS-BH23	

TETRA TECH, INC. PROJECT NO. 117-7502021-M11	DEPTH (FT BGS)	24.5 - 27	August 15, 2022
	SOIL BORING ID	SWFTS-BH23	

TETRA TECH, INC. PROJECT NO. 117-7502021-M11	DEPTH (FT BGS)	27 - 29.5	August 15, 2022
	SOIL BORING ID	SWFTS-BH23	

TETRA TECH, INC. PROJECT NO. 117-7502021-M11	DEPTH (FT BGS)	29.5 - 32.5	August 15, 2022
	SOIL BORING ID	SWFTS-BH23	

TETRA TECH, INC. PROJECT NO. 117-7502021-M11	DEPTH (FT BGS)	32.5 - 35	August 15, 2022
	SOIL BORING ID	SWFTS-BH23	

TETRA TECH, INC. PROJECT NO. 117-7502021-M11	DEPTH (FT BGS)	35 - 37.5	August 15, 2022
	SOIL BORING ID	SWFTS-BH23	

TETRA TECH, INC. **PROJECT NO.** **117-7502021-M11**	**DEPTH (FT BGS)**	**37.5 - 40**	**August 15, 2022**
	SOIL BORING ID	**SWFTS-BH23**	

Core Photos
SWFTS-BH24

TETRA TECH, INC. PROJECT NO. 117-7502021-M11	DEPTH (FT BGS)	0 - 10	August 15, 2022
	SOIL BORING ID	SWFTS-BH24	

TETRA TECH, INC. PROJECT NO. 117-7502021-M11	DEPTH (FT BGS)	10 - 12.5	August 15, 2022
	SOIL BORING ID	SWFTS-BH24	

TETRA TECH, INC. PROJECT NO. 117-7502021-M11	**DEPTH (FT BGS)**	**12.5 - 15**	**August 15, 2022**
	SOIL BORING ID	**SWFTS-BH24**	

TETRA TECH, INC. PROJECT NO. 117-7502021-M11	**DEPTH (FT BGS)**	**15 - 17.5**	**August 15, 2022**
	SOIL BORING ID	**SWFTS-BH24**	

TETRA TECH, INC. PROJECT NO. 117-7502021-M11	DEPTH (FT BGS)	17.5 - 20	August 15, 2022
	SOIL BORING ID	SWFTS-BH24	

TETRA TECH, INC. PROJECT NO. 117-7502021-M11	DEPTH (FT BGS)	20 - 22.5	August 15, 2022
	SOIL BORING ID	SWFTS-BH24	

TETRA TECH, INC. PROJECT NO. 117-7502021-M11	**DEPTH (FT BGS)**	**22.5 - 25**	**August 15, 2022**
	SOIL BORING ID	**SWFTS-BH24**	

TETRA TECH, INC. PROJECT NO. 117-7502021-M11	**DEPTH (FT BGS)**	**25 - 27.5**	**August 15, 2022**
	SOIL BORING ID	**SWFTS-BH24**	

TETRA TECH, INC. PROJECT NO. 117-7502021-M11	DEPTH (FT BGS)	27.5 - 30	August 15, 2022
	SOIL BORING ID	SWFTS-BH24	

TETRA TECH, INC. PROJECT NO. 117-7502021-M11	DEPTH (FT BGS)	30 - 32.5	August 15, 2022
	SOIL BORING ID	SWFTS-BH24	

TETRA TECH, INC. PROJECT NO. 117-7502021-M11	DEPTH (FT BGS)	32.5 - 35	August 15, 2022
	SOIL BORING ID	SWFTS-BH24	

TETRA TECH, INC. PROJECT NO. 117-7502021-M11	DEPTH (FT BGS)	35 - 37.5	August 15, 2022
	SOIL BORING ID	SWFTS-BH24	

TETRA TECH, INC. PROJECT NO. 117-7502021-M11	DEPTH (FT BGS)	37.5 - 40.5	August 15, 2022
	SOIL BORING ID	SWFTS-BH24	

TETRA TECH, INC. PROJECT NO. 117-7502021-M11	DEPTH (FT BGS)	40.5 - 42.5	August 15, 2022
	SOIL BORING ID	SWFTS-BH24	

TETRA TECH, INC. PROJECT NO. 117-7502021-M11	**DEPTH (FT BGS)**	**42.5 - 45**	**August 15, 2022**
	SOIL BORING ID	**SWFTS-BH24**	

Core Photos
SWFTS-BH25

TETRA TECH, INC. PROJECT NO. 117-7502021-M11	DEPTH (FT BGS)	0 - 10	August 15, 2022
	SOIL BORING ID	SWFTS-BH25	

TETRA TECH, INC. PROJECT NO. 117-7502021-M11	DEPTH (FT BGS)	10 - 12.5	August 15, 2022
	SOIL BORING ID	SWFTS-BH25	

TETRA TECH, INC. PROJECT NO. 117-7502021-M11	DEPTH (FT BGS)	12.5 - 15	August 15, 2022
	SOIL BORING ID	SWFTS-BH25	

TETRA TECH, INC. PROJECT NO. 117-7502021-M11	DEPTH (FT BGS)	15 - 17.5	August 15, 2022
	SOIL BORING ID	SWFTS-BH25	

TETRA TECH, INC. PROJECT NO. 117-7502021-M11	**DEPTH (FT BGS)**	**17.5 - 20**	**August 15, 2022**
	SOIL BORING ID	**SWFTS-BH25**	

TETRA TECH, INC. PROJECT NO. 117-7502021-M11	**DEPTH (FT BGS)**	**20 - 22.5**	**August 15, 2022**
	SOIL BORING ID	**SWFTS-BH25**	

TETRA TECH, INC. PROJECT NO. 117-7502021-M11	DEPTH (FT BGS)	22.5 - 25	August 15, 2022
	SOIL BORING ID	SWFTS-BH25	

TETRA TECH, INC. PROJECT NO. 117-7502021-M11	DEPTH (FT BGS)	25 - 27.5	August 15, 2022
	SOIL BORING ID	SWFTS-BH25	

TETRA TECH, INC. PROJECT NO. 117-7502021-M11	DEPTH (FT BGS)	27.5 - 30	August 15, 2022
	SOIL BORING ID	SWFTS-BH25	

TETRA TECH, INC. PROJECT NO. 117-7502021-M11	DEPTH (FT BGS)	30 - 32.5	August 15, 2022
	SOIL BORING ID	SWFTS-BH25	

TETRA TECH, INC. PROJECT NO. 117-7502021-M11	DEPTH (FT BGS)	32.5 - 35	August 15, 2022
	SOIL BORING ID	SWFTS-BH25	

TETRA TECH, INC. PROJECT NO. 117-7502021-M11	DEPTH (FT BGS)	35 - 37.5	August 15, 2022
	SOIL BORING ID	SWFTS-BH25	

TETRA TECH, INC. PROJECT NO. 117-7502021-M11	**DEPTH (FT BGS)**	**37.5 - 40**	**August 15, 2022**
	SOIL BORING ID	**SWFTS-BH25**	

Core Photos
SWFTS-BH26

TETRA TECH, INC. PROJECT NO. 117-7502021-M11	DEPTH (FT BGS)	0 - 10	August 16, 2022
	SOIL BORING ID	SWFTS-BH26	

TETRA TECH, INC. PROJECT NO. 117-7502021-M11	DEPTH (FT BGS)	10 - 12.5	August 16, 2022
	SOIL BORING ID	SWFTS-BH26	

TETRA TECH, INC. PROJECT NO. 117-7502021-M11	**DEPTH (FT BGS)**	**12.5 - 15**	**August 16, 2022**
	SOIL BORING ID	**SWFTS-BH26**	

TETRA TECH, INC. PROJECT NO. 117-7502021-M11	**DEPTH (FT BGS)**	**15 - 17.5**	**August 16, 2022**
	SOIL BORING ID	**SWFTS-BH26**	

TETRA TECH, INC. PROJECT NO. 117-7502021-M11	**DEPTH (FT BGS)**	**17.5 - 20**	**August 16, 2022**
	SOIL BORING ID	**SWFTS-BH26**	

TETRA TECH, INC. PROJECT NO. 117-7502021-M11	**DEPTH (FT BGS)**	**20 - 22.5**	**August 16, 2022**
	SOIL BORING ID	**SWFTS-BH26**	

TETRA TECH, INC. PROJECT NO. 117-7502021-M11	**DEPTH (FT BGS)**	**22.5 - 25**	**August 16, 2022**
	SOIL BORING ID	**SWFTS-BH26**	

TETRA TECH, INC. PROJECT NO. 117-7502021-M11	**DEPTH (FT BGS)**	**25 - 27.5**	**August 16, 2022**
	SOIL BORING ID	**SWFTS-BH26**	

TETRA TECH, INC. PROJECT NO. 117-7502021-M11	DEPTH (FT BGS)	27.5 - 30	August 16, 2022
	SOIL BORING ID	SWFTS-BH26	

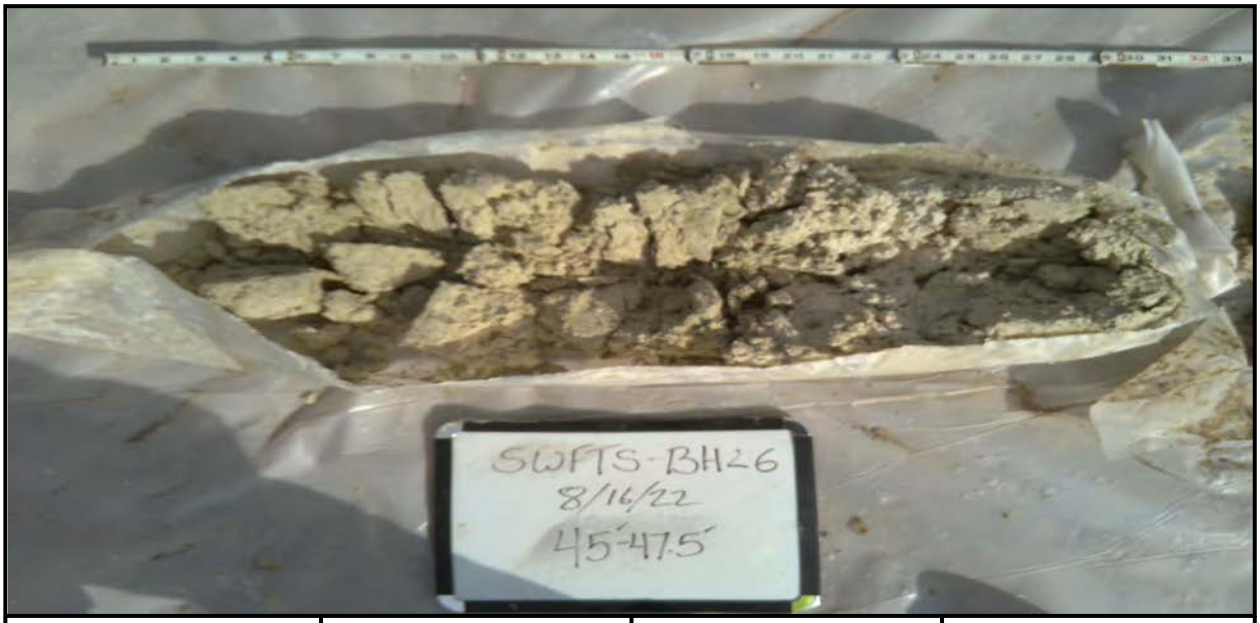
TETRA TECH, INC. PROJECT NO. 117-7502021-M11	DEPTH (FT BGS)	30 - 32.5	August 16, 2022
	SOIL BORING ID	SWFTS-BH26	

TETRA TECH, INC. PROJECT NO. 117-7502021-M11	**DEPTH (FT BGS)**	**32.5 - 35**	**August 16, 2022**
	SOIL BORING ID	**SWFTS-BH26**	

TETRA TECH, INC. PROJECT NO. 117-7502021-M11	**DEPTH (FT BGS)**	**35 - 37.5**	**August 16, 2022**
	SOIL BORING ID	**SWFTS-BH26**	

TETRA TECH, INC. PROJECT NO. 117-7502021-M11	**DEPTH (FT BGS)**	**37.5 - 42.5**	**August 16, 2022**
	SOIL BORING ID	**SWFTS-BH26**	

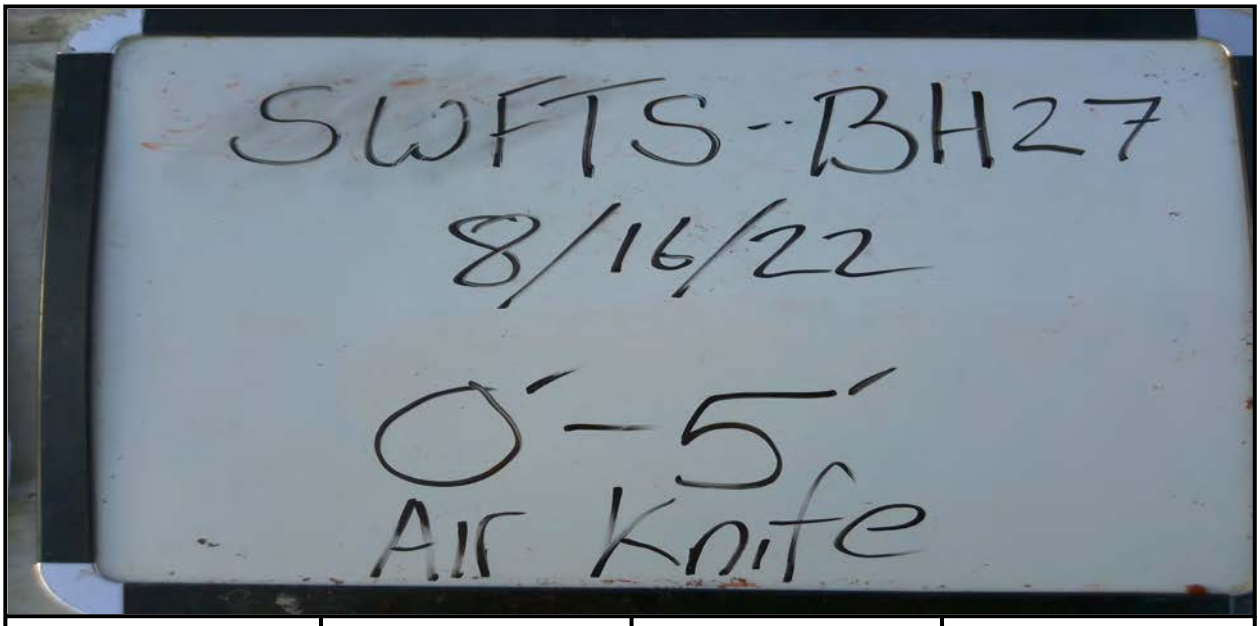
TETRA TECH, INC. PROJECT NO. 117-7502021-M11	**DEPTH (FT BGS)**	**42.5 - 45**	**August 16, 2022**
	SOIL BORING ID	**SWFTS-BH26**	



TETRA TECH, INC. PROJECT NO. 117-7502021-M11	DEPTH (FT BGS)	45 - 47.5	August 16, 2022
	SOIL BORING ID	SWFTS-BH26	

TETRA TECH, INC. PROJECT NO. 117-7502021-M11	DEPTH (FT BGS)	47.5 - 50	August 16, 2022
	SOIL BORING ID	SWFTS-BH26	

Core Photos
SWFTS-BH27



TETRA TECH, INC. PROJECT NO. 117-7502021-M11	**DEPTH (FT BGS)**	**0 - 5**	**August 16, 2022**
	SOIL BORING ID	**SWFTS-BH27**	

TETRA TECH, INC. PROJECT NO. 117-7502021-M11	**DEPTH (FT BGS)**	**5 - 7.5**	**August 16, 2022**
	SOIL BORING ID	**SWFTS-BH27**	

TETRA TECH, INC. PROJECT NO. 117-7502021-M11	DEPTH (FT BGS)	7.5 - 10	August 16, 2022
	SOIL BORING ID	SWFTS-BH27	

TETRA TECH, INC. PROJECT NO. 117-7502021-M11	DEPTH (FT BGS)	10 - 12.5	August 16, 2022
	SOIL BORING ID	SWFTS-BH27	

TETRA TECH, INC. PROJECT NO. 117-7502021-M11	DEPTH (FT BGS)	12.5 - 16	August 16, 2022
	SOIL BORING ID	SWFTS-BH27	

TETRA TECH, INC. PROJECT NO. 117-7502021-M11	DEPTH (FT BGS)	16 - 18	August 16, 2022
	SOIL BORING ID	SWFTS-BH27	

TETRA TECH, INC. PROJECT NO. 117-7502021-M11	**DEPTH (FT BGS)**	**18 - 20**	**August 16, 2022**
	SOIL BORING ID	**SWFTS-BH27**	

TETRA TECH, INC. PROJECT NO. 117-7502021-M11	**DEPTH (FT BGS)**	**20 - 22.5**	**August 16, 2022**
	SOIL BORING ID	**SWFTS-BH27**	

TETRA TECH, INC. PROJECT NO. 117-7502021-M11	**DEPTH (FT BGS)**	**22.5 - 25**	**August 16, 2022**
	SOIL BORING ID	**SWFTS-BH27**	

TETRA TECH, INC. PROJECT NO. 117-7502021-M11	**DEPTH (FT BGS)**	**25 - 27.5**	**August 16, 2022**
	SOIL BORING ID	**SWFTS-BH27**	

TETRA TECH, INC. PROJECT NO. 117-7502021-M11	**DEPTH (FT BGS)**	**27.5 - 30**	**August 16, 2022**
	SOIL BORING ID	**SWFTS-BH27**	

TETRA TECH, INC. PROJECT NO. 117-7502021-M11	**DEPTH (FT BGS)**	**30 - 33**	**August 16, 2022**
	SOIL BORING ID	**SWFTS-BH27**	

TETRA TECH, INC. PROJECT NO. 117-7502021-M11	**DEPTH (FT BGS)**	**33 - 35**	**August 16, 2022**
	SOIL BORING ID	**SWFTS-BH27**	

TETRA TECH, INC. PROJECT NO. 117-7502021-M11	**DEPTH (FT BGS)**	**35 - 37.5**	**August 16, 2022**
	SOIL BORING ID	**SWFTS-BH27**	

TETRA TECH, INC. PROJECT NO. 117-7502021-M11	DEPTH (FT BGS)	37.5 - 40	August 16, 2022
	SOIL BORING ID	SWFTS-BH27	

TETRA TECH, INC. PROJECT NO. 117-7502021-M11	DEPTH (FT BGS)	40 - 42.5	August 16, 2022
	SOIL BORING ID	SWFTS-BH27	

TETRA TECH, INC. **PROJECT NO.** **117-7502021-M11**	**DEPTH (FT BGS)**	**42.5 - 45**	**August 16, 2022**
	SOIL BORING ID	**SWFTS-BH27**	

Core Photos
SWFTS-BH28

TETRA TECH, INC. PROJECT NO. 117-7502021-M11	DEPTH (FT BGS)	0 - 5	August 16, 2022
	SOIL BORING ID	SWFTS-BH28	

TETRA TECH, INC. PROJECT NO. 117-7502021-M11	DEPTH (FT BGS)	5 - 7.5	August 16, 2022
	SOIL BORING ID	SWFTS-BH28	

TETRA TECH, INC. PROJECT NO. 117-7502021-M11	**DEPTH (FT BGS)**	**7.5 - 10**	**August 16, 2022**
	SOIL BORING ID	**SWFTS-BH28**	

TETRA TECH, INC. PROJECT NO. 117-7502021-M11	**DEPTH (FT BGS)**	**10 - 12.5**	**August 16, 2022**
	SOIL BORING ID	**SWFTS-BH28**	

TETRA TECH, INC. PROJECT NO. 117-7502021-M11	**DEPTH (FT BGS)**	**12.5 - 15**	**August 16, 2022**
	SOIL BORING ID	**SWFTS-BH28**	

TETRA TECH, INC. PROJECT NO. 117-7502021-M11	**DEPTH (FT BGS)**	**15 - 17.5**	**August 16, 2022**
	SOIL BORING ID	**SWFTS-BH28**	

TETRA TECH, INC. PROJECT NO. 117-7502021-M11	**DEPTH (FT BGS)**	**17.5 - 20**	**August 16, 2022**
	SOIL BORING ID	**SWFTS-BH28**	

TETRA TECH, INC. PROJECT NO. 117-7502021-M11	**DEPTH (FT BGS)**	**20 - 22.5**	**August 16, 2022**
	SOIL BORING ID	**SWFTS-BH28**	

TETRA TECH, INC. PROJECT NO. 117-7502021-M11	DEPTH (FT BGS)	22.5 - 25	August 16, 2022
	SOIL BORING ID	SWFTS-BH28	

TETRA TECH, INC. PROJECT NO. 117-7502021-M11	DEPTH (FT BGS)	25 - 27.5	August 16, 2022
	SOIL BORING ID	SWFTS-BH28	

TETRA TECH, INC. PROJECT NO. 117-7502021-M11	**DEPTH (FT BGS)**	**27.5 - 30**	**August 16, 2022**
	SOIL BORING ID	**SWFTS-BH28**	

TETRA TECH, INC. PROJECT NO. 117-7502021-M11	**DEPTH (FT BGS)**	**30 - 33**	**August 16, 2022**
	SOIL BORING ID	**SWFTS-BH28**	

TETRA TECH, INC. PROJECT NO. 117-7502021-M11	DEPTH (FT BGS)	33 - 35	August 16, 2022
	SOIL BORING ID	SWFTS-BH28	

TETRA TECH, INC. PROJECT NO. 117-7502021-M11	DEPTH (FT BGS)	35 - 37.5	August 16, 2022
	SOIL BORING ID	SWFTS-BH28	

TETRA TECH, INC. PROJECT NO. 117-7502021-M11	**DEPTH (FT BGS)**	**37.5 - 40**	**August 16, 2022**
	SOIL BORING ID	**SWFTS-BH28**	

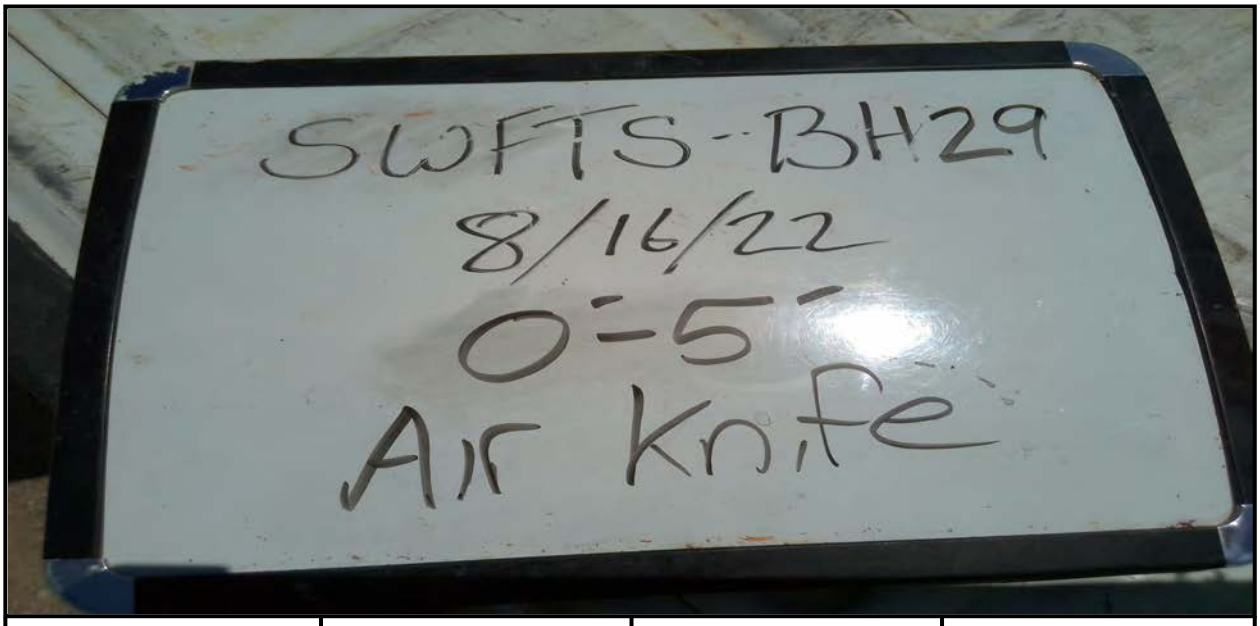
TETRA TECH, INC. PROJECT NO. 117-7502021-M11	**DEPTH (FT BGS)**	**40 - 42**	**August 16, 2022**
	SOIL BORING ID	**SWFTS-BH28**	

TETRA TECH, INC. PROJECT NO. 117-7502021-M11	**DEPTH (FT BGS)**	**42 - 44**	**August 16, 2022**
	SOIL BORING ID	**SWFTS-BH28**	

TETRA TECH, INC. PROJECT NO. 117-7502021-M11	**DEPTH (FT BGS)**	**44 - 46**	**August 16, 2022**
	SOIL BORING ID	**SWFTS-BH28**	

TETRA TECH, INC. **PROJECT NO.** **117-7502021-M11**	**DEPTH (FT BGS)**	**46 - 48**	**August 16, 2022**
	SOIL BORING ID	**SWFTS-BH28**	

Core Photos
SWFTS-BH29



TETRA TECH, INC. PROJECT NO. 117-7502021-M11	**DEPTH (FT BGS)**	**0 - 5**	**August 16, 2022**
	SOIL BORING ID	**SWFTS-BH29**	

TETRA TECH, INC. PROJECT NO. 117-7502021-M11	**DEPTH (FT BGS)**	**5 - 7.5**	**August 16, 2022**
	SOIL BORING ID	**SWFTS-BH29**	

TETRA TECH, INC. PROJECT NO. 117-7502021-M11	DEPTH (FT BGS)	7.5 - 10	August 16, 2022
	SOIL BORING ID	SWFTS-BH29	

TETRA TECH, INC. PROJECT NO. 117-7502021-M11	DEPTH (FT BGS)	10 - 12.5	August 16, 2022
	SOIL BORING ID	SWFTS-BH29	

TETRA TECH, INC. PROJECT NO. 117-7502021-M11	DEPTH (FT BGS)	12.5 - 15	August 16, 2022
	SOIL BORING ID	SWFTS-BH29	

TETRA TECH, INC. PROJECT NO. 117-7502021-M11	DEPTH (FT BGS)	15 - 17.5	August 16, 2022
	SOIL BORING ID	SWFTS-BH29	

TETRA TECH, INC. PROJECT NO. 117-7502021-M11	DEPTH (FT BGS)	17.5 - 20	August 16, 2022
	SOIL BORING ID	SWFTS-BH29	

TETRA TECH, INC. PROJECT NO. 117-7502021-M11	DEPTH (FT BGS)	20 - 22.5	August 16, 2022
	SOIL BORING ID	SWFTS-BH29	

TETRA TECH, INC. PROJECT NO. 117-7502021-M11	**DEPTH (FT BGS)**	**22.5 - 25**	**August 16, 2022**
	SOIL BORING ID	**SWFTS-BH29**	

TETRA TECH, INC. PROJECT NO. 117-7502021-M11	**DEPTH (FT BGS)**	**25 - 27.5**	**August 16, 2022**
	SOIL BORING ID	**SWFTS-BH29**	

TETRA TECH, INC. PROJECT NO. 117-7502021-M11	DEPTH (FT BGS)	27.5 - 30	August 16, 2022
	SOIL BORING ID	SWFTS-BH29	

TETRA TECH, INC. PROJECT NO. 117-7502021-M11	DEPTH (FT BGS)	30 - 32.5	August 16, 2022
	SOIL BORING ID	SWFTS-BH29	

TETRA TECH, INC. PROJECT NO. 117-7502021-M11	**DEPTH (FT BGS)**	**32.5 - 35**	**August 16, 2022**
	SOIL BORING ID	**SWFTS-BH29**	

TETRA TECH, INC. PROJECT NO. 117-7502021-M11	**DEPTH (FT BGS)**	**35 - 37**	**August 16, 2022**
	SOIL BORING ID	**SWFTS-BH29**	

TETRA TECH, INC. PROJECT NO. 117-7502021-M11	DEPTH (FT BGS)	37 - 40	August 16, 2022
	SOIL BORING ID	SWFTS-BH29	

TETRA TECH, INC. PROJECT NO. 117-7502021-M11	DEPTH (FT BGS)	40 - 42.5	August 16, 2022
	SOIL BORING ID	SWFTS-BH29	

TETRA TECH, INC. PROJECT NO. 117-7502021-M11	**DEPTH (FT BGS)**	**42.5 - 45**	**August 16, 2022**
	SOIL BORING ID	**SWFTS-BH29**	

Core Photos
SWFTS-BH30

TETRA TECH, INC. PROJECT NO. 117-7502021-M11	**DEPTH (FT BGS)**	**0 - 5**	**August 16, 2022**
	SOIL BORING ID	**SWFTS-BH30**	

TETRA TECH, INC. PROJECT NO. 117-7502021-M11	**DEPTH (FT BGS)**	**5 - 8**	**August 16, 2022**
	SOIL BORING ID	**SWFTS-BH30**	

TETRA TECH, INC. PROJECT NO. 117-7502021-M11	DEPTH (FT BGS)	8 - 10	August 16, 2022
	SOIL BORING ID	SWFTS-BH30	

TETRA TECH, INC. PROJECT NO. 117-7502021-M11	DEPTH (FT BGS)	10 - 12.5	August 16, 2022
	SOIL BORING ID	SWFTS-BH30	

TETRA TECH, INC. PROJECT NO. 117-7502021-M11	DEPTH (FT BGS)	12.5 - 15	August 16, 2022
	SOIL BORING ID	SWFTS-BH30	

TETRA TECH, INC. PROJECT NO. 117-7502021-M11	DEPTH (FT BGS)	15 - 17.5	August 16, 2022
	SOIL BORING ID	SWFTS-BH30	

TETRA TECH, INC. PROJECT NO. 117-7502021-M11	DEPTH (FT BGS)	17.5 - 20	August 16, 2022
	SOIL BORING ID	SWFTS-BH30	

TETRA TECH, INC. PROJECT NO. 117-7502021-M11	DEPTH (FT BGS)	20 - 21	August 16, 2022
	SOIL BORING ID	SWFTS-BH30	

TETRA TECH, INC. PROJECT NO. 117-7502021-M11	DEPTH (FT BGS)	21 - 23.5	August 16, 2022
	SOIL BORING ID	SWFTS-BH30	

TETRA TECH, INC. PROJECT NO. 117-7502021-M11	DEPTH (FT BGS)	23.5 - 26	August 16, 2022
	SOIL BORING ID	SWFTS-BH30	

TETRA TECH, INC. PROJECT NO. 117-7502021-M11	DEPTH (FT BGS)	26 - 28.5	August 16, 2022
	SOIL BORING ID	SWFTS-BH30	

TETRA TECH, INC. PROJECT NO. 117-7502021-M11	DEPTH (FT BGS)	28.5 - 31	August 16, 2022
	SOIL BORING ID	SWFTS-BH30	

TETRA TECH, INC. PROJECT NO. 117-7502021-M11	DEPTH (FT BGS)	31 - 33.5	August 16, 2022
	SOIL BORING ID	SWFTS-BH30	

TETRA TECH, INC. PROJECT NO. 117-7502021-M11	DEPTH (FT BGS)	33.5 - 36	August 16, 2022
	SOIL BORING ID	SWFTS-BH30	

TETRA TECH, INC. PROJECT NO. 117-7502021-M11	DEPTH (FT BGS)	36 - 38	August 16, 2022
	SOIL BORING ID	SWFTS-BH30	

TETRA TECH, INC. PROJECT NO. 117-7502021-M11	DEPTH (FT BGS)	38 - 41	August 16, 2022
	SOIL BORING ID	SWFTS-BH30	

TETRA TECH, INC. PROJECT NO. 117-7502021-M11	DEPTH (FT BGS)	41 - 42.5	August 16, 2022
	SOIL BORING ID	SWFTS-BH30	

TETRA TECH, INC. PROJECT NO. 117-7502021-M11	DEPTH (FT BGS)	42.5 - 45	August 16, 2022
	SOIL BORING ID	SWFTS-BH30	

TETRA TECH, INC. PROJECT NO. 117-7502021-M11	DEPTH (FT BGS)	45 - 47.5	August 16, 2022
	SOIL BORING ID	SWFTS-BH30	

TETRA TECH, INC. PROJECT NO. 117-7502021-M11	DEPTH (FT BGS)	47.5 - 50	August 16, 2022
	SOIL BORING ID	SWFTS-BH30	

Appendix H
Performance Criteria Tables

Table H.1. **Performance Criteria**

Performance Criteria	Description	Primary or Secondary
Contaminant Reduction	Evaluate the feasibility and effectiveness of implementing ISB to reduce the perchlorate and chlorate mass flux in an area located east of the Seep Well Field (SWF); Determined by evaluating concentration trends of the primary contaminants of perchlorate and chlorate.	Primary
Distribution and Implementability	• Estimate the overall influence of substrate injection and biodegradation achievable in the areas downgradient of the injections during the treatability study. • Evaluate the distribution of electron donor in groundwater through evidence of contaminant reduction and reducing and changing geochemical conditions in downgradient monitoring wells.	Primary
Carbon Substrate Longevity and Frequency of Injections	Estimation or extrapolation of the longevity of the carbon substrate and frequency of carbon substrate replenishment required to reduce perchlorate contamination immediately downgradient of the treatability study injection transect.	Primary

Table H.1. **Performance Criteria**

Performance Criteria	Description	Primary or Secondary
Factors Affecting Technology Performance	Hydrogeologic characteristics including: • Presence of paleochannels in select areas, • Hydraulic gradients, • Presence of low-permeability lenses or layers that may affect the vertical and lateral distribution of injected substrates, • Variable lithological characteristics that may result in zones where limited treatment may occur for a while until gradual attainment of reducing conditions throughout the area is achieved or addition of more injection points in perceived “dead or disconnected” zones can be established, and • Potential upflux of perchlorate and chlorate contamination from the UMCf into the overlying alluvium Chemical and biogeochemical characteristics including: • Contaminant concentrations and distributions, • Relatively high concentrations of chlorate and presence of nitrate as competing electron acceptors, • Presence of high quantities of sulfate, resulting in sulfate reducing conditions and over consumption of the carbon substrate, and • Secondary mobilization of key metals, such as iron, manganese, and arsenic. • Abundance of calcium in soil and groundwater, which may precipitate with ISB by-products, thereby reducing aquifer permeability.	Primary
Operations and Maintenance	Tasks associated with operations and maintenance (O&M) of the system include: • Monitoring injection rates and pressures at each injection well. • Evaluate injectate solution consistency during carbon substrate injections. • Evaluation of batch and in-line mixing operations. • Periodic Injection Well Maintenance (as required) to maintain long-term injectability.	Primary

Table H.1. **Performance Criteria**

Performance Criteria	Description	Primary or Secondary
Adaptability	An ISB system has been previously tested within a paleochannel for remediation of perchlorate and chlorate. With this study, the technology is being examined for ISB within a different geologic setting within the alluvium where there is still considerable heterogeneity. This study coupled with other future or on-going studies being conducted in a source area, large paleochannel near the Las Vegas Wash, and the UMCf will attest to the potential versatility of the ISB technology for remediation purposes.	Secondary
Scale-Up Considerations	The treatability study was designed to treat a relatively small area within the alluvium. Scale-up to meet the requirements of full-scale site remediation would involve treatability and/or pilot studies performed for a variety of site conditions that are likely to be encountered during full-scale remediation, such as source areas, deep and wide paleochannels, varying lithology of alluvium and/or UMCf, and unique geochemical conditions (i.e., high TDS and sulfate concentrations). Due to the high level of heterogeneity at the site, on-going treatability and pilot studies are being performed to evaluate the effectiveness of ISB in a variety of these settings.	Secondary

Table H.2. **Performance Metrics and Demonstrations**

Performance Criteria	Performance Metric	Performance Confirmation Method	Performance Demonstration
Primary Criteria (Quantitative)			
Contaminant Reduction	<u>Perchlorate:</u> • Reductions observed in perchlorate concentrations in groundwater samples collected from monitoring wells located in between and downgradient of the injection well transects. Effectiveness monitoring results will compare post-injection concentrations to baseline concentrations prior to injections. • Evaluation of the ability of ISB to achieve a reduction in perchlorate concentrations to less the perchlorate federal preliminary remedial goal (PRG) of 15 micrograms per liter (µg/L).	• EPA Standard Method 314.0 (Perchlorate)	• Significant reduction in perchlorate concentrations in groundwater samples collected from downgradient monitoring wells was observed during the reporting period. • Groundwater concentrations below the perchlorate PRG of 15 µg/L were attained and sustained at multiple groundwater monitoring well locations. • The results from this reporting period illustrate that subsurface geochemistry have remained reducing since the last injection event, which was performed approximately 13 months before the final December 2022 sampling event. This indicates that bioremediation processes may continue beyond the 13 months evaluated in this study under select hydrogeologic conditions. In contrast, concentration rebound was observed to occur much more quickly in areas that are in close proximity to the paleochannel, where the required injection frequency may be closer to 4 to 7 months due to the higher groundwater flow rates present. • Mass estimates indicated that approximately 2,748 pounds of perchlorate were destroyed during the initial 14-month treatability study timeframe. Following the initial large mass reduction after the first injection event, the sustained average perchlorate mass flux treated was approximately 3 pounds per day. The mass destroyed during this reporting period of January through December 2022 was approximately 957 pounds (an average of 2.5 pounds per day). The perchlorate mass destroyed was higher during this reporting period than the 2021 reporting in part because the upgradient influx of perchlorate was significantly higher than the upgradient influx of perchlorate during the 2021 reporting period. The continuing effectiveness of the biologically active zone was clearly shown when the concentrations coming in from the south increased up to 100 percent above baseline in late 2021 and early 2022 due to the

Table H.2. **Performance Metrics and Demonstrations**

Performance Criteria	Performance Metric	Performance Confirmation Method	Performance Demonstration
			immense effluent releases to the Pond 13 area by CoH while the concentrations within the study area downgradient of the injection well transects remained low. Fluctuations in upgradient perchlorate concentrations are commonly observed within the study area and do not impact achieving the goals of the treatability study extension, which is focused on long-term operations and maintenance.
	<u>Chlorate and Nitrate:</u> • Reductions observed in chlorate concentrations in groundwater samples collected from monitoring wells located in between and downgradient of the injection well transects. Effectiveness monitoring results will compare post-injection concentrations to baseline concentrations prior to injections. • Reductions observed in nitrate concentrations in groundwater samples collected from monitoring wells located in between and downgradient of the injection well transects. Effectiveness monitoring results will compare post-injection concentrations to baseline concentrations prior to injections. Nitrate is evaluated throughout the study since it is the most likely competing electron acceptor and perchlorate and chlorate biodegradation generally commences when denitrification is complete.	• EPA Method 300.1 (Chlorate) • EPA Standard Method 300.0 (Nitrate-N)	• Chlorate concentration trends followed a similar reducing pattern as the perchlorate concentration trends (up to 99% reduction when compared to baseline concentrations in groundwater from several locations). Additionally, groundwater collected from six monitoring wells within the treatability study area indicated chlorate concentrations less than 100 μg/L during this reporting period. • Groundwater nitrate concentrations were observed at up to 18 milligrams per liter (mg/L) during baseline sampling. During this reporting period, nitrate concentrations in groundwater samples collected from 10 downgradient monitoring wells indicated a 50 percent reduction when compared to their baseline concentrations. Additionally, groundwater samples collected from 11 monitoring wells located in between or downgradient of the injection well transects nitrate concentrations less than 5 mg/L during this reporting period.

Table H.2. **Performance Metrics and Demonstrations**

Performance Criteria	Performance Metric	Performance Confirmation Method	Performance Demonstration
Distribution and Implementability	<u>Overall System Performance:</u> • Observe the overall influence of substrate injection and biodegradation achievable in the areas downgradient of the injection well transect through evidence of contaminant reduction and reducing conditions in downgradient monitoring wells. • Evaluate the distribution of electron donor in groundwater and coating of the EVO to the soil grains.	• Experience from demonstration • EPA Standard Method 314.0 (Perchlorate) • EPA Method 300.1 (Chlorate) • EPA Method 300.0 (Nitrate-N)	• Perchlorate, chlorate, and nitrate concentration reductions have been observed in groundwater samples collected from monitoring wells located between the injection well transects as well as monitoring wells located up to 600 feet downgradient of the injection well transect immediately following the first injection event. Groundwater samples collected from two different monitoring wells indicated perchlorate concentrations below the PRG of 15 µg/L during several sampling events during the reporting period. • Perchlorate concentrations in groundwater samples collected from monitoring wells located between the injection well transects have continued to be greatly reduced compared to baseline through most of the reporting period, with reductions ranging from 40 percent to greater than 99 percent reduction. • Groundwater samples collected from monitoring well SWFTS-MW15 have historically indicated a delayed and mediocre response to injections, likely due to subsurface lithological and geochemical heterogeneity, potential UMCf back diffusion, and/or insufficient injection coverage in this immediate area. Despite this, the perchlorate concentration in groundwater from SWFTS-MW15 reached its lowest concentration since injections began, with the groundwater sample collected during the June 2022 sampling event indicating a perchlorate concentration of 1,400 µg/L (represents an approximate 91 percent reduction compared to baseline concentrations). The groundwater sample collected from SWFTS-MW15 in December 2022 remained reduced at a concentration of 2,700 µg/L, which is the second lowest perchlorate concentration recorded to date in a groundwater sample collected from this location. • The soil sampling event that occurred in August 2022 indicated that residual organic carbon in various forms including observable biomass and by-products of EVO fermentation (VFAs such as acetic acid, formic acid, propionic acid, and lactic acid) were present in soil samples collected at several soil boring locations, indicating

Table H.2. **Performance Metrics and Demonstrations**

Performance Criteria	Performance Metric	Performance Confirmation Method	Performance Demonstration
			successful coating of the soil grains with the EVO and presence of a biologically active zone within the injection well transects long after the injections were complete. Additionally, soil samples analyzed for microbial parameters indicated a robust, diverse microbial community with low slowed growth ratios and decreased permeability ratios, indicating there was no apparent toxicity to microorganisms.
Carbon Substrate Longevity and Frequency of Injections	• Observe concentration rebounds following injection events to evaluate carbon substrate injection frequency to maintain a biologically active zone. • Monitor concentration reductions with varying injection quantities to determine optimal quantities of carbon substrate for subsequent injection events to maintain a biologically active zone.	• Experience from demonstration • EPA Standard Method 314.0 (Perchlorate) • EPA Method 300.0 (Nitrate) • EPA Method 300.1 (Chlorate) • SM5310B (TOC)	• The injection frequency has decreased over time (i.e., more months in between injection events) while still sustaining a biologically active zone that is degrading substantial perchlorate and chlorate in groundwater. Initial injections were spaced approximately four months apart but were approximately once every eight months during the treatability study extension. • The results from this reporting period illustrate that subsurface geochemistry can remain altered in select areas so that bioremediation processes may continue up to and potentially beyond 13 months under select hydrogeologic conditions. In contrast, concentration rebound was observed to occur much more quickly in areas that are in close proximity to the paleochannel, where the required injection frequency may be closer to 4 to 7 months due to the higher groundwater flow rates present.
Factors Affecting Technology Performance	<u>Minimal Impacts to Downgradient Groundwater Geochemistry:</u> • Observe concentrations of sulfate since it as an electron acceptor and potential carbon substrate consumer with goal of minimizing the creation of sulfate reducing conditions. • Observe concentrations of metals to evaluate potential secondary	• EPA Method 300.0 (Sulfate) • SW6010B/6020 (Dissolved Metals) • EPA Method 365.3 (Total Phosphorus)	• Limited sulfate reduction was observed in groundwater from downgradient monitoring wells during the reporting period. This is likely due to the employment of the slow release carbon substrate EOS, designed quantities of injectate, and relatively high groundwater flow rates that may not provide sufficient residence time for sulfate biodegradation to occur. Although sulfate reduction has been observed in groundwater from monitoring wells located in between the injection well transects, the level of sulfate reduction has decreased during the reporting period compared to previous reporting periods. • Minimal metals mobilization has occurred within the treatability study area and therefore, metals mobilization is unlikely to be a secondary

Table H.2. **Performance Metrics and Demonstrations**

Performance Criteria	Performance Metric	Performance Confirmation Method	Performance Demonstration
	mobilization of metals at downgradient locations. • Observe concentrations of phosphorus since it is added to the injectate mixture to serve as a micronutrient to confirm that it is used as a nutrient, absorbed to the soil, or combined with cations such as calcium, rather than increasing its concentration in groundwater.		issue during the implementation of ISB using EVO as the carbon substrate. During this reporting period, arsenic concentrations remain at or below the range of concentrations observed during baseline No significant trends were observed for iron, manganese, and selenium. • Dissolved phosphorus in groundwater was monitored during the reporting period because a phosphate solution is added to the injectate mixture to serve as a macronutrient for reduced acclimation time for the onset of perchlorate biodegradation. Dissolved phosphorus concentrations remained below the maximum baseline concentration of 0.77 mg/L during the 2022 reporting period.
Operation and Maintenance	<u>Injection Wells:</u> • Observe injection pressures and injection rates during subsequent injection events • Perform maintenance on select injection well(s) if required (objective to examine maintenance methods and frequencies)	Measurement of pressures and flow in injection wells during injection operations	• No injections or injection well maintenance activities were performed during the January to December 2022 reporting period. The eighth and final injection event was completed in November 2021 and was summarized in the 2021 Annual Progress Report (Tetra Tech, 2022) and the last injection well maintenance event was performed in February 2021. No maintenance activities were conducted during this reporting period due to the conclusion of injection activities. As discussed in previous annual progress reports, sufficient data were collected during the treatability study to meet the operations and maintenance performance criteria, which allowed the final year of the treatability study to focus on monitoring geochemical changes and contaminant rebound up to 13 months after the final injection event.
Secondary Criteria (Qualitative)			
Adaptability	• Use at other locations associated with the NERT site • Use with other lithological, chemical, and/or geochemical settings.	Experience from demonstration	This treatability study extension evaluated implementation, effectiveness, and long-term operation and maintenance of ISB in an alluvial environment (as described in previous performance criteria). Other on-going studies will evaluate adaptability of ISB as follows:

Table H.2. **Performance Metrics and Demonstrations**

Performance Criteria	Performance Metric	Performance Confirmation Method	Performance Demonstration
			• Unit 4 Source Area Bioremediation Treatability Study – ISB applied in a source area with high concentrations of perchlorate, chlorate, hexavalent chromium, and total dissolved solids. • Las Vegas Wash Bioremediation Pilot Study – Applied in large deep paleochannels and deep UMCf/UMCf-cg.
Scale-up Considerations	• Equipment; • Injection and monitoring well layout; • Injection activities; • Analytical sampling evaluation criteria.	Experience from demonstration	Based on the work performed associated with this treatability study and lessons learned to-date, the following items should be considered when scaling up the ISB technology: • Extent of areas selected for ISB treatment; • Depths and lithology targeted in each area selected for ISB treatment (i.e., different carbon dosing and injection frequencies for alluvium, paleochannels, UMCf, etc); • Presence of buildings or other surface structures in the selected areas which make the installation of and access to injection wells more difficult; • RAOs selected (i.e., source reduction or downgradient barrier treatment to achieve a specified cleanup goal such as the federal PRG of 15 µg/L); • Potential combination of ISB with other technologies; • Supply and demand to various technology components, such as EVO; • Potential cost efficiencies/discounts gained through Trust negotiations with consultants and/or vendors. • Potential back diffusion or upflux from the UMCf and understanding its impact; • Pros and cons of batch versus in-line mixing and finalizing operational aspects; • Long-term understanding of substrate injection well pressures and flows; and • Injection well maintenance techniques and frequency required to keep ISB systems operational at NERT.