Soil Flushing Treatability Study Report
Nevada Environmental Response Trust Site
Henderson, Nevada

PREPARED FOR

Nevada Environmental Response Trust
35 E. Wacker Drive, Suite 1550
Chicago, IL 60601

PRESENTED BY

Tetra Tech, Inc.
150 South Fourth Street, Unit A
Henderson, NV 89015

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LIST OF ACRONYMS/ABBREVIATIONS

Acronyms/Abbreviations	Definition
ASTM	ASTM International
BCL	Basic Comparison Levels
COD	Chemical oxidant demand
COPC	Chemical of potential concern
DO	Dissolved oxygen
EC	Electrical conductivity
EVS	Earth Volumetric Studio
FBR	Fluidized Bed Reactor
FS	Feasibility Study
gpm	Gallons per minute
GES	Geotechnical and Environmental Services, Inc.
GWETS	Groundwater extraction and treatment system
GWTP	Groundwater treatment plant
HDPE	High-density polyethylene
in/hr	inches per hour
IWF	Interceptor Well Field
mg/kg	milligram per kilogram
mg/L	milligrams per liter
mV	millivolts
NDEP	Nevada Division of Environmental Protection
NERT	Nevada Environmental Response Trust
NTU	Nephelometric turbidity unit
ORP	Oxidation-reduction potential
PVC	polyvinyl chloride
RI	Remedial Investigation
QAL	Quaternary alluvium
SLMW	stabilized Lake Mead water
SWF	Seep Well Field
TDS	total dissolved solids
Tetra Tech	Tetra Tech, Inc.
TOC	total organic carbon
UIC	Underground Injection Control
UMCf	Upper Muddy Creek formation

Acronyms/Abbreviations	Definition
UNLV	University of Nevada at Las Vegas

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.

Description of Services Provided: Preparation of a Soil Flushing Treatability Study Report for the Nevada Environmental Response Trust Site in Henderson, Nevada.

_____ **July 3, 2017**_____

Kyle Hansen, CEM Date
Field Operations Manager/Geologist
Tetra Tech, Inc.

Nevada CEM Certificate Number: 2167
Nevada CEM Expiration Date: September 18, 2018

EXECUTIVE SUMMARY

This report summarizes the results and findings of the Soil Flushing Treatability Study conducted at the Nevada Environmental Response Trust (NERT or Trust) site, located in Clark County, Nevada (the Site). The treatability study was performed between March 2015 and August 2016 in the Central Retention Basin at the Site, which is located upgradient of the Interceptor Well Field (IWF) and barrier wall. The primary objective of the study was to evaluate the feasibility of remediating contaminants, primarily perchlorate, in vadose zone soils using soil flushing. The treatability study was implemented in accordance with the Treatability Study Work Plan, Soil Flushing Pilot Test (Tetra Tech, 2014) approved by the Nevada Division of Environmental Protection (NDEP) on January 7, 2015.

Four test plots were constructed and operated during the treatability study. Each test plot was operated using a variation on water application rates and use of a carbon substrate added to enhance perchlorate biodegradation. During operation of the soil flushing test plots, the treatability study was monitored using several methods, including the following:

- Measuring flow to determine the water application rate.
- Measuring groundwater levels in nearby monitoring wells to evaluate groundwater mounding in response to water application.
- Collecting pore water samples from lysimeters installed in each test plot to monitor changes in the perchlorate and total dissolved solids (TDS) concentrations of the infiltrating solution during the study.
- Collecting groundwater samples from monitoring wells installed downgradient of the test plots to evaluate the effects of soil flushing on perchlorate and TDS concentrations in groundwater.

Treatment effectiveness was evaluated by collecting and analyzing soil samples before and after the treatability study. Five soil borings were drilled and sampled in each test plot prior to the start of the study to provide an estimate of baseline conditions. After treatment was completed, borings were drilled immediately adjacent to the baseline borings to evaluate changes in soil chemistry and perchlorate mass.

Baseline and post-treatment soil sampling data were used to estimate contaminant masses in the vadose zone before and after the treatability study. Comparison of the baseline and post-treatment masses provided an estimate of mass reduction. The results for perchlorate are summarized in the following table:

Perchlorate Mass Reduction Estimates

Test Plot	Baseline Mass (pounds)	Post-Treatment Mass (Pounds)	Mass Reduction
Test Plot 1	21	20	5%
Test Plot 2	6,300	66	98%
Test Plot 3	51	14	73%
Test Plot 4	30	17	43%

Perchlorate mass reduction was highest for Test Plot 2 (98%), where water was applied at the maximum rate and carbon substrate was added near the end of the test to induce biodegradation. A mass reduction of approximately 73% was observed in Test Plot 3, where water was applied at the maximum rate, but carbon substrate was not added. The difference in mass reduction between Test Plot 2 and Test Plot 3 may be due, at least in part, to *in situ* biodegradation occurring in Test Plot 2. The lowest mass reduction was observed in the two reduced flow test plots (Test Plots 1 and 4). The relatively low mass reduction in these test plots is attributed to preferential flow through relatively narrow pathways in the vadose zone due to the reduced water application rates.

Mass reductions for leachable solids are presented in the following table:

Leachable Solids Mass Reduction Estimates

Test Plot	Baseline Mass (pounds)	Post-Treatment Mass (Pounds)	Mass Reduction
Test Plot 1	5,600	5,800	-4%
Test Plot 2	20,000	9,600	52%
Test Plot 3	6,100	4,000	34%
Test Plot 4	6,200	6,300	-2%

Similar to perchlorate, the largest mass reductions were observed in Test Plots 2 and 3, where water was applied at the maximum rate. Negative mass reductions were calculated for Test Plots 1 and 4, which are likely due to a combination of uncertainty in the laboratory analyses as well as uncertainty in the mass estimates. The generally lower mass reductions observed for leachable solids relative to perchlorate may be due to differences in aqueous solubility.

Conclusions

The conclusions of the Soil Flushing Treatability Study are as follows:

- The mass reductions observed in Test Plot 2 (98%) and Test Plot 3 (73%) during the treatability study indicate that soil flushing is a viable technology for treatment of perchlorate in the vadose zone.
- To optimize mass reduction, water application rates during soil flushing should be at or near the maximum allowed by the local soils. The effectiveness of soil flushing is reduced at lower water application rates, likely due to preferential flow through the vadose zone.
- Although the supporting data is equivocal, the large mass reduction observed in Test Plot 2 suggests that biodegradation of perchlorate can be induced by adding a carbon substrate to the water used for soil flushing.
- The results suggest that 90% mass reduction can be achieved with application of as little as six pore volumes of water. However, these results should be confirmed in a larger-scale field application.
- Further field study is needed to optimize water and carbon substrate application rates and application methods.
- Large-scale implementation of soil flushing could have effects on the groundwater extraction and treatment system (GWETS) that may require management. These effects include groundwater mounding, which could impact plume capture; leaching of soluble salts from the soil, which could have an inhibitory effect on biodegradation if salt buildup occurs; hydraulic and chemical loading effects on the Groundwater Treatment Plant and Fluidized Bed Reactor treatment plant; and effluent pipeline carrying capacity.
- Depending on many factors discussed in Section 7.3, the unit costs for implementation of soil flushing are estimated at $100,000 to $400,000 per acre. These cost estimates are based on a conceptual design and are very preliminary in nature. Detailed cost estimates will be provided in the Feasibility Study if soil flushing is recommended as part of the Final Remedy for the Site.

The results of this soil flushing treatability study will be ultimately incorporated into the Feasibility Study (FS) to be prepared by NERT following completion of the Remedial Investigation (RI). The evaluation of the applicable remedial action alternatives completed in the FS will consider the findings of this treatability study, as well as any

others conducted, to prepare NERT's recommendation for remedial actions to address the remedial action objectives.

1.0 INTRODUCTION

At the direction of the Nevada Environmental Response Trust (NERT or Trust), Tetra Tech, Inc. (Tetra Tech) has prepared this Soil Flushing Treatability Study Report for the NERT site (the Site), located in Clark County, Nevada (Figure 1). This report is being submitted to the Nevada Division of Environmental Protection (NDEP) pursuant to the Interim Consent Agreement between NERT and NDEP effective February 14, 2011. The report presents the results of a soil flushing treatability study performed on the Site itself, upgradient of the Interceptor Well Field (IWF) and barrier wall (Figure 2). The treatability study was implemented in accordance with the Treatability Study Work Plan, Soil Flushing Pilot Test (Tetra Tech, 2014) approved by NDEP on January 7, 2015.

1.1 OBJECTIVE

The primary objective of the study was to evaluate the feasibility of remediating contaminants, primarily perchlorate, in vadose zone soils using soil flushing.

1.2 REPORT ORGANIZATION

This report is organized as follows:

- **Introduction (Section 1.0):** Summarizes the objectives of the treatability study and the organization of this report.
- **Technology Description (Section 2.0):** Provides a brief review of soil flushing as a remedial technology, and a description of the treatability study set-up.
- **Methodology (Section 3.0):** Summarizes the procedures used for field data collection.
- **Pre-Implementation Activities (Section 4.0):** Summarizes field and laboratory studies performed prior to implementation of the treatability study, including permitting, lysimeter and monitoring well installation, baseline soil sampling, baseline pore water and groundwater sampling, infiltration testing, laboratory microcosm studies, and design of the soil flushing systems.
- **Field Treatability Study (Section 5.0)**: Provides a brief narrative describing the field treatability study, including system startup and maintenance, pore water and groundwater monitoring, and post-treatment soil sampling.
- **Analysis of Results (Section 6.0):** Summarizes the results of the treatability study, including pore water, groundwater, and soil sampling results.
- **Summary of Key Findings (Section 7.0):** Expands on the results presented in Section 6.0 and presents a summary of pore water concentration reductions and mass removal and provides considerations for both cost and large-scale implementation of soil flushing.
- **Conclusions and Recommendations (Section 8.0):** Summarizes the major findings of the treatability study, and presents recommendations for future application of soil flushing at the NERT site.

2.0 TECHNOLOGY DESCRIPTION

The following sections provide an overview of soil flushing and general description of the treatability study.

2.1 SOIL FLUSHING

Perchlorate is the anionic component of ammonium and sodium perchlorate, the two highest production perchlorate salts formerly manufactured at the NERT Site. Perchlorate salts are very soluble in water (solubility limit is approximately 200,000 milligrams per liter (mg/L) for ammonium perchlorate; approximately 2,100,000 mg/L for sodium perchlorate) and do not adsorb very strongly to most soils. The high aqueous solubility of perchlorate compounds suggests that flushing the vadose zone with water could be a viable means of removing perchlorate from vadose zone soils. In concept, water infiltrated from the surface would mobilize and transport perchlorate compounds from the vadose zone to groundwater. Once in groundwater, the perchlorate can be collected by groundwater extraction and then treated.

This technology was conceptually investigated using soil collected from the Site in a series of column tests performed by Prima Environmental in 2010 and reviewed by ENVIRON (ENVIRON, 2014a). The column tests were initiated by Northgate Environmental on behalf of Tronox. The column testing results suggested that up to 99% of the perchlorate in soil could be removed by flushing with as little as two pore volumes of water. These results should be viewed with a degree of caution, because column tests are conducted under fully saturated rather than unsaturated conditions, and the natural structure of the soil is disrupted by homogenization and packing of the columns. Both of these factors are expected to increase flushing effectiveness. Nevertheless, the column test results suggested that soil flushing could be effective, although more than two pore volumes of water may be necessary to achieve results comparable to the column tests.

Groundwater monitoring data also suggest that soil flushing may be an effective means of mobilizing perchlorate to groundwater at the Site. Between August and October, 2012, a series of intense rain events occurred in the Las Vegas Valley, including a large event on August 22 which reportedly resulted in the accumulation of several feet of storm water in the newly-constructed Central Retention Basin. Between August and October 2012, the average perchlorate concentration in the effluent from the IWF increased by approximately 65 percent from 874 mg/L to 1,450 mg/L. The large increase in the average perchlorate concentration in the IWF has been attributed to flushing of perchlorate from the vadose zone to groundwater in response to infiltration of the ponded storm water (ENVIRON, 2013).

2.2 TREATABILITY STUDY SET-UP

The treatability study was designed to assess the feasibility of remediating perchlorate-impacted soil by infiltrating water through the vadose zone. As previously noted, the infiltrating water mobilizes perchlorate from the vadose zone to groundwater. From there, it can be extracted and treated by the existing groundwater extraction and treatment system (GWETS). The remediation process can potentially be enhanced by amending the water with an organic carbon substrate to induce perchlorate biodegradation in the vadose zone and saturated zone. This enhancement can potentially increase perchlorate removal efficiency and reduce perchlorate loading to groundwater and, ultimately, to the GWETS.

The treatability study area is shown in Figure 2. This area is located within the Central Retention Basin which was excavated during the Soil Removal Action performed in 2010 and 2011 (ENVIRON, 2012) and has residual perchlorate in the soil. This area was selected because it is within the capture zone of the IWF, the infrastructure needed for performing the treatability study was available nearby, and the area is outside of the designated excavation control areas and is not near any ongoing industrial or remediation activities. Four test plots were constructed and operated during the treatability study (Figure 2). Each test plot was operated using a variation on

water application rates and use of a carbon substrate added to enhance perchlorate biodegradation. The test plot setups were as follows:

Test Plot Setups

Test Plot	Water Application Rate	Carbon Substrate
1	Reduced (~5% of maximum)	Yes
2	Maximum allowed by soils	Yes
3	Maximum allowed by soils	No
4	Reduced (~13% of maximum)	No

The two maximum flow test plots consisted of infiltration galleries which were operated to maintain standing water throughout the study. By maintaining saturated conditions at the surface, the water applied to these test plots infiltrates at the maximum rate allowed by local soil conditions. Water was applied to the reduced flow test plots using micro-irrigation systems which were operated so that the soil was uniformly moistened, but not to the point where standing water was observed.

Approximately 2.5 weeks before water application was terminated, the water applied to one maximum flow test plot and one reduced flow test plot (Plots 1 and 2) was amended with glycerol, an organic carbon substrate. Glycerol was added near the end of the study to minimize potential reductions in infiltration rate caused by biomass buildup, which was observed during a similar treatability study performed at another site (Tetra Tech, 2013).

The treatability study was monitored using several techniques, including the following:

- Measuring flow on a daily basis during most of the study to determine the water application rate.
- Measuring groundwater levels in nearby monitoring wells to evaluate groundwater mounding in response to water application.
- Collecting and analyzing pore water samples from lysimeters installed in each test plot to monitor changes in the perchlorate and total dissolved solids (TDS) concentrations of the infiltrating solution during the study.
- Collecting and analyzing groundwater samples from monitoring wells installed downgradient of the test plots to evaluate the effects of soil flushing on perchlorate and TDS concentrations in groundwater.

Treatment effectiveness was evaluated by collecting and analyzing soil samples before and after the treatability study. Five soil borings were drilled and sampled in each test plot prior to the start of the study to provide an estimate of baseline conditions. After water application was completed, five additional borings were drilled in each test plot immediately adjacent to the baseline borings to evaluate changes in soil chemistry and perchlorate mass.

3.0 METHODOLOGY

The following subsections describe field procedures used during the treatability study.

3.1 SOIL BORINGS

Twenty soil borings (five borings per test plot) were drilled and sampled to establish baseline soil conditions prior to the start of the treatability study; 20 additional soil borings were drilled and sampled after infiltration was completed to evaluate changes in perchlorate and TDS mass due to soil flushing. All of the soil borings were drilled using the hollow stem auger method. Drilling was performed by Gregg Drilling and Testing, Inc. of Signal Hill, California (baseline borings) or Cascade Drilling, LLC of Phoenix, Arizona (post-infiltration borings). The locations of the baseline soil borings are shown on Figure 2.

Soil samples were collected from all of the soil borings at a depth of two feet and at approximately four-foot depth intervals thereafter using a two-inch inside diameter, 18-inch long Modified California split barrel sampler lined with three six-inch long, two-inch diameter stainless steel sleeves. Upon retrieval from the borehole, the lowermost sleeve was removed from the sampler and the ends of the sleeve were covered with Teflon sheets and tightly-fitting plastic caps. The sleeves were then labeled, placed in recloseable plastic bags, and stored in an ice chest cooled with ice pending delivery to the laboratory under chain-of-custody protocols. The chemical analyses were performed by Test America, Inc. of Irvine, California, a Nevada-certified analytical laboratory.

The soil borings were logged by a trained geologist or engineer in general accordance with ASTM International (ASTM) Standard D-2488-09 Standard Practice for Description and Identification of Soils (Visual-Manual Procedure) (ASTM, 2009). Copies of the soil boring logs are provided in Appendix A.

3.2 LYSIMETER INSTALLATION

A total of eight lysimeters (two per test plot) were installed by Gregg Drilling and Testing, Inc. The lysimeter locations are shown in Figure 2. Lysimeters TT-TP1-L2, TT-TP2-L2, TT-TP3-L2, and TT-TP4-L2 were installed at a depth of 20 feet in soil borings drilled for the baseline sampling described above. Lysimeters TT-TP1-L1, TT-TP2-L1, TT-TP3-L1, and TT-TP4-L1 were installed at a depth of 10 feet bgs in separate borings drilled approximately three feet west of the deep lysimeters. Due to the close proximity of the shallow and deep lysimeters, the shallow lysimeter borings were not sampled or logged during drilling.

The lysimeters installed for the treatability study were Soil Moisture Equipment, Inc. Model 1920F1 pressure-vacuum type lysimeters with 2-bar ceramic cups. Prior to installation, the lysimeter cups were saturated with distilled water for approximately two hours and the lysimeters were pressure tested in accordance with manufacturer's specifications. After pressure testing, the lysimeters were stored with the cups immersed in distilled water until installation.

Immediately prior to installation, ¼-inch high-density polyethylene (HDPE) pressure-vacuum and sample tubing was attached to compression fittings on the lysimeter bodies. The lysimeters were then fastened to a string of two-inch diameter flush-threaded polyvinyl chloride (PVC) blank casing using rubber pipe couplings. Centralizers were placed on the lysimeter body and blank casing to prevent the lysimeter cup from contacting the borehole wall during installation. The entire assembly was then suspended approximately six inches above the bottom of the soil boring, and approximately two feet of silica flour slurry was placed around the lysimeter cup using a tremie pipe. After confirming the depth to the top of the slurry, a seal consisting of approximately six feet of hydrated bentonite chips was placed above the silica flour. The remainder of the borehole was then backfilled with bentonite-cement grout.

Construction logs and a summary of construction details for the lysimeters are provided in Appendix A.

3.3 PORE WATER SAMPLING

Lysimeter sampling procedures are described in Appendix A of the Work Plan (Tetra Tech, 2014). Immediately prior to sampling, the lysimeters were pressurized to purge any residual water present in the porous cup. The lysimeters were then evacuated to approximately 0.65 bar using a hand-operated vacuum pump, and were subsequently allowed to sit for approximately two hours to allow water to accumulate in the lysimeter body. The water samples were then brought to the surface by pressurizing the lysimeter body through the pressure-vacuum tubing. The samples were collected directly from the sample tubing in laboratory-provided containers. The sample containers were then labeled, placed in recloseable plastic bags, and stored in an ice chest cooled with ice pending shipment to the laboratory under chain-of-custody protocols.

Copies of the lysimeter sampling field data sheets are provided in Appendix B.

3.4 MONITORING WELL INSTALLATION AND DEVELOPMENT

Ten groundwater monitoring wells were installed by Gregg Drilling and Testing, Inc. The monitoring well locations are shown in Figure 2. All of the monitoring wells were installed to a depth of approximately 32 feet.

The monitoring wells were installed in 8-inch diameter soil borings drilled using the hollow stem auger method. Soil sampling and lithologic logging was performed during drilling as described in Section 3.1. The monitoring wells were constructed inside the augers using 2-inch diameter Schedule 40 PVC blank casing and 0.010-inch machine slotted well screen. A filter pack consisting of #2/16 washed sand was placed from the bottom of the screen to approximately one foot above the top of the screen. The wells were then surged to settle the filter pack, and additional sand was added as necessary to maintain the height of the filter pack above the well screen. A well seal consisting of a minimuim of three feet of hydrated bentonite was placed above the filter pack, and the remainder of the borehole was backfilled with bentonite-cement grout. The wells were completed at the surface with above-grade monuments set in concrete.

The monitoring wells were developed using a combination of the surge-and-bail and pumping methods. Water quality parameters (temperature, pH, electrical conductivity [EC], and turbidity) were monitored periodically during development. Well development was continued until temperature, pH, and electrical conductivity readings had stabilized, turbidity readings were less than 5 nephelometric turbidity units (NTUs) or stable, and a minimum of three borehole volumes of groundwater were removed.

Copies of the well construction diagrams and a summary of well construction details are provided in Appendix A.

3.5 GROUNDWATER SAMPLING

Groundwater sampling was performed using low-flow methods with dedicated bladder-type sampling pumps. Prior to purging, the depth to groundwater was measured in each well with an electronic water level sounder. After one pump/discharge line volume of groundwater was removed from a well, water quality field parameters (temperature, pH, EC, dissolved oxygen [DO], oxidation-reduction potential [ORP], and turbidity) were measured at five-minute intervals during purging using a YSI multiparameter instrument mounted in an in-line flow cell. Purging was considered complete when three consecutive sets of field parameter measurements had stabilized to within the following values: temperature ±1 degrees celsius, pH ±0.1 pH unit, EC ±3%, DO ±0.3 mg/L, ORP ±10 millivolts, and turbidity <10 NTU or ±10% if >10 NTU.

After purging was complete, the flow cell was disconnected and samples were collected in laboratory-provided containers directly from the sample tubing. The sample containers were then labeled, placed in recloseable plastic bags, and stored in an ice chest cooled with ice pending shipment to the laboratory under chain-of-custody protocols.

Copies of the groundwater sampling field data sheets are provided in Appendix B.

3.6 EQUIPMENT DECONTAMINATION

Non-dedicated sampling items, such as soil sampling tools, reusable sample liners, and water quality meters, were decontaminated prior to first use, between each sample, and prior to demobilization from the Site by washing with a phosphate-free detergent solution, rinsing twice with distilled water, and air drying. Drilling equipment, such as auger sections, was decontaminated by pressure washing prior to first use, between each borehole, and prior to leaving the Site. Water used for equipment decontamination was contained in a portable tank pending disposal.

3.7 INVESTIGATION-DERIVED WASTE

Investigation-derived waste included soil cuttings, water from well development, water from lysimeter and monitoirng well purging and sampling, and water used for equipment decontamination. Wastes were managed consistent with the Field Sampling Plan (ENVIRON, 2014b). Soil cuttings were stored in roll-off bins or were placed in a covered stockpile. Based on analytical results for composite samples of the soil cuttings, the soil was profiled as non-hazardous waste and disposed at the Republic Services Apex landfill. Groundwater and equipment decontamination water was discharged to the GWETS for on-site treatment.

4.0 PRE-IMPLEMENTATION ACTIVITIES

Activities performed prior to startup of the field treatability study include the following:

- Permitting;
- Well and lysimeter installation;
- Baseline soil, groundwater, and pore water sampling;
- Laboratory microcosm tests, which were conducted to evaluate and select a carbon substrate;
- Infiltration tests, which were performed to estimate infiltration rates; and
- System design.

4.1 PERMITTING

Permits required to perform the treatability study included well permits and an Underground Injection Control (UIC) permit for surface application of water and amendments during the treatability study. A grading permit for construction of the test plots was not required by the Clark County Building Department, and a dust control permit was not required by the Clark County Department of Air Quality due to the small size of the area disturbed during implementation of the treatability study. However, dust emissions during drilling operations and construction of the test plots were mitigated by spraying with water.

4.1.1 Well Permits

A waiver for installation of 10 monitoring wells was obtained from the Nevada Division of Water Resources prior to drilling. A copy of the approved waiver is provided in Appendix C.

4.1.2 Underground Injection Control Permit

Prior to startup of the treatability study, Tetra Tech obtained a short-term UIC permit for the treatability study activities from the NDEP Bureau of Water Pollution Control. This permit allowed for the application of water and amendments during the treatability study. A copy of the approved permit is provided in Appendix C.

4.2 LYSIMETER AND MONITORING WELL INSTALLATION

A total of eight lysimeters and ten groundwater monitoring wells were installed in the treatability study area from March 20 to March 26, 2016. The locations of the lysimeters and monitoring wells are shown on Figure 2; copies of lysimeter and monitoring well construction diagrams and a summary table of lysimeter and well construction details are provided in Appendix A.

4.3 BASELINE SOIL SAMPLING

Baseline soil sampling was performed from March 17 to March 26, 2015. A total of 20 soil borings (five per test plot) were drilled and sampled during the baseline sampling event. This represents a relatively high sampling density of one boring per 180 square feet, given that each test plot is 30 by 30 feet in plan dimension.

All of the soil samples were analyzed for perchlorate using Method E314.1, with results reported on a dry weight basis. The water extracts prepared by the laboratory for the perchlorate analysis were also analyzed for TDS using Method SM2540C. The TDS data were reported by the laboratory in units of milligrams per liter of water extract; information on the weight of soil and volume of water used to prepare the extract were used to recalculate the TDS results in terms of milligrams per kilogram of soil.

In addition, soil samples collected at randomly selected depth intervals were analyzed for the following:

- Metals, including boron, iron, manganese, and titanium (Method SW6010B); antimony, arsenic, barium, beryllium, cadmium, chromium, cobalt, copper, lead, molybdenum, nickel, selenium, silver, and zinc (Method 6020); and mercury (Method SW7471A);
- Hexavalent chromium (Method SW7199);
- Total organic carbon (TOC) (Method SW9060);
- Soil pH (Method SW9045); and
- Soluble cations and anions via analysis of leachate [cations include calcium, magnesium, potassium, and sodium (Method SW6010B); anions include chloride, sulfate, and nitrate (Method E300.0), chlorate (USEPA Method E300.1), and carbonate alkalinity (Method SM2320B).

Complete analytical results for the baseline soil sampling are tabulated in Appendix D. A data validation summary report has been provided in Appendix E, which contains copies of the laboratory reports.

4.4 BASELINE PORE WATER AND GROUNDWATER SAMPLING

Baseline pore water and groundwater sampling was performed from December 9 to December 11, 2015. All eight lysimeters and ten monitoring wells installed for the treatability study were sampled during this event.

The pore water samples were analyzed for the following:

- Perchlorate (Method E314.1);
- TDS (Method SM2540C);
- Hexavalent chromium (Method SW7199);
- TOC (Method SM5310B); and
- Anions, including chloride, sulfate, and nitrate (Method E300.0); chlorate (USEPA Method E300.1B); and bicarbonate, hydroxide, and carbonate alkalinity (Method SM2320B).

The groundwater samples were analyzed for the following:

- Perchlorate (Method E314.1);
- TDS (Method SM2540C);
- Metals, including boron, iron, manganese, and titanium (Method SW6010B); silver, arsenic, barium, beryllium, cadmium, chromium, cobalt, copper, molybdenum, nickel, lead, antimony, selenium, and zinc (Method 6020), and mercury (Method SW7471A);
- Hexavalent chromium (Method SW7199);
- TOC (Method SM5310B); and
- Cations and anions, including sodium, potassium, calcium, and magnesium (Method SW6010B); chloride, sulfate, and nitrate (Method E300.0); chlorate (USEPA Method E300.1B); and bicarbonate, hydroxide, and carbonate alkalinity (Method SM2320B).

Complete analytical results for the baseline pore water and groundwater samples are summarized in Appendix D; and a data validation summary report has been provided in Appendix E, which contains copies of the laboratory reports. The results of the baseline are discussed in Section 6.0.

4.5 LABORATORY MICROCOSM TESTS

The following subsections summarize the results of laboratory microcosm tests performed at the University of Nevada, Las Vegas (UNLV) Environmental Engineering and Water Quality Laboratory to evaluate potential carbon substrates for the treatability study. The results of the microcosm tests are discussed in more detail in the UNLV report (Appendix F).

4.5.1 Objectives

The objectives of the microcosm testing were the following:

- Evaluate the use of three carbon substrates as potential electron donors for the biodegradation of perchlorate in vadose zone soils: EOS100 (a proprietary emulsified vegetable oil product produced by EOS Remediation, LLC), glycerol, and compost extract;
- Evaluate the need for macronutrient addition to support perchlorate biodegradation; and
- Evaluate the effect of soil/water ratios on perchlorate biodegradation kinetics.

4.5.2 Methodology

Batch microcosm tests were performed in 250-mL bottles containing Site soils and stabilized Lake Mead water collected from a nearby water supply line. The soil was collected from select baseline soil borings at depths between 2 and 22 feet bgs, and was blended and homogenized prior to use. The soil was analyzed for moisture content, nitrate, and perchlorate. In order to simulate field conditions in the laboratory, the bottles were not deoxygenated. The microcosm bottles were wrapped in black felt to inhibit algae growth, and were placed horizontally in a shaker to completely mix the soil and water.

The stoichiometric demand of electron donor added to each microcosm was determined using the contaminant concentrations in soil and chemical oxidant demand (COD) measurements for each electron donor. As nitrate concentrations in the soil were more than sufficient to support the microbial demand for biodegradation, no additional nitrogen-based macronutrients were added to the microcosms, with the exception of the nutrient control microcosm to which only phosphate was added to determine the need for this macronutrient. Microcosm bottles were sacrificed at predetermined time intervals and centrifuged at 4000 G for 20 minutes, and the extract was analyzed for perchlorate, nitrate, COD, and other parameters of interest, which are detailed in Appendix F.

Testing was performed in three stages to investigate the impact of substrate type, substrate dosage, soil/water ratios, and phosphate addition as a macronutrient. Stage 1 testing consisted of testing all three substrates for their ability to support the biodegradation of perchlorate and nitrate. Phosphate was also added to some bottles to investigate if this macronutrient would be needed to enhance biodegradation. A blank microcosm and abiotic control microcosm were utilized for quality control. Stage 2 testing consisted of evaluating the impacts of soil/water ratios and substrate dosing. Based on the results of Stage 2 testing, Stage 3 testing consisted of evaluating the impacts of higher substrate doses, as well as soil/water ratios.

4.5.3 Results

Testing of the homogenized soil indicated an average moisture content of 7.7%, a nitrate concentration of 340 milligrams per kilogram (mg/kg), and a perchlorate concentration of 180 mg/kg. Average COD concentrations for the compost extract solution, EOS100, and glycerol were 253 mg/L, 2,085,000 mg/L, and 1,210,000 mg/L, respectively.

Based on the stoichiometric demand and a safety factor of 100 given the uncertainty of electron donor distribution and availability due to the variability of local geology, 40 ml of compost extract, 0.5 mL of EOS100, and 7 mL of glycerol were added to the microcosms for Stage 1 testing. Although about the same amount of COD was added as glycerol and as EOS100, the measured COD for the EOS100 microcosms (122-164 mg/L) was about one order of magnitude lower than the glycerol microcosms (10,960-11,260 mg/L). It is believed that this was due to adsorption of EOS100 to the soil particles, in contrast to glycerol, which remained in solution. It was also observed that some of the EOS100 became insoluble with the addition of the soil (oil observed floating on top of the water had a white “curd-like” precipitate). The addition of EOS100 and glycerol promoted almost complete biodegradation of perchlorate and nitrate within 25 days, with slightly faster biodegradation rates observed initially for EOS100 compared to glycerol. The compost extract did not support significant biodegradation of nitrate or perchlorate, primarily because of the low COD of the extract. Based on these results, glycerol was chosen for

further testing because the difference in biodegradation kinetics between the EOS100 and glycerol was not believed to be significant. Glycerol was selected for the next stage of testing because of the ease with which it can be injected into the vadose zone.

In Stage 2 testing, the effects of low glycerol dosages and soil/water ratios on the biodegradation kinetics of perchlorate were investigated. Initially, glycerol dosages of 5- and 10-times the stoichiometric demand were used; however, the dosages were increased to 25- and 110-times the stoichiometric demand after 13 days, since no nitrate degradation was observed. Significant perchlorate degradation was not observed during the 40-day experimental period due to the lower initial dosages applied, which delayed nitrate biodegradation and consequently perchlorate biodegradation. Addition of phosphate promoted somewhat faster kinetics; however, the Stage 2 microcosm results suggest that glycerol dosages are a limiting factor on biodegradation. During the testing, the pH in the microcosm reduced from 8.3 to 7.15, as expected with biodegradation and the formation of acids. The change in only one pH unit is a positive finding and it is probably due to the high buffering capacities of the stabilized Lake Mead water and Site soils. The microcosm test results show a clear increase of hardness as the experiment progressed, indicating dissolution of calcium and magnesium from the soils. High hardness is a potential concern because it can decrease the availability of phosphate and oils.

In Stage 3, glycerol dosages of 50- and 100-times stoichiometric ratios were tested with and without phosphate addition. In addition, three soil/water ratios were tested to guide decision making regarding the amount of flushing water to be used in the field treatability study. Nitrate biodegradation progressed quickly and the rate was faster for microcosms with 100-times stoichiometric ratio of glycerol. The addition of phosphate increased biodegradation rates, independent of the glycerol concentration or the soil/water ratios. The results indicate that when less water is added, biodegradation rates decrease. This is likely due to the inhibitory effect of TDS at smaller soil/water ratios. Perchlorate biodegradation was observed at the end of the test period, after nitrate was biodegraded.

4.5.4 Microcosm Test Conclusions

The microcosm testing yielded the following conclusions:

- Vadose zone soils at NERT contain high concentrations of nitrate and perchlorate. The concentration of nitrate (340 mg/kg) in these soils is almost double that of perchlorate (180 mg/kg).
- Both EOS100 and glycerol can promote biodegradation of perchlorate and nitrate. The compost extract failed to promote biodegradation due to its low COD.
- For field testing, glycerol is the recommended carbon substrate.
- Glycerol dosages of 50-100 times stoichiometric demand yielded the highest biodegradation rates in the microcosms.
- Biodegradation rates decreased in the microcosms at soil/water ratios greater than 1:3, likely due to the inhibitory effect of TDS.
- The addition of 6 to 10 mg/L of phosphate enhances perchlorate biodegradation rates.

4.6 INFILTRATION TESTS

Four double-ring infiltration tests (one per test plot) were conducted to estimate infiltration rates prior to the field study. Prior to testing, approximately six inches of soil were hand excavated at each location to remove fine grain sediments deposited within the retention basin. The double-ring infiltration tests were conducted in general accordance with ASTM Standard D3385-09: Standard Test Method for Infiltration Rate of Soils in Field Using Double Ring Infiltrometer (ASTM, 2009). Testing was performed by Geotechnical and Environmental Services, Inc. (GES) of Las Vegas, Nevada. A copy of the GES report is provided in Appendix G.

The infiltration rates reported in Appendix G are the mean of all individual measurements taken during each double ring test. Review of the test data (Figure 3) shows that in all of the double ring tests, infiltration rates decreased from high early values to a relatively constant steady-state value. The infiltration rates presented in Figure 3 are time-weighted means for just the steady state portion of the tests, which are considered to be more representative of long-term infiltration rates than the mean of all of the data. Infiltration rates ranged from 0.10 inches per hour (in/hr) in Test Plot 2 to 1.84 in/hr in Test Plot 1, and vary across the treatability study area by well over an order of magnitude.

4.7 SYSTEM DESIGN

The following subsections describe the design and construction of the treatability study soil flushing systems. Process flow diagrams illustrating the systems are provided in Figure 4.

4.7.1 Water Conveyance

Stabilized Lake Mead water was conveyed to the treatability study area via a newly-constructed two-inch HDPE pipeline placed above ground. The pipeline was terminated with a two-inch ball valve; PVC piping was used to convey water to the individual test plots.

4.7.2 Maximum-Flow Test Plots

The two maximum-flow test plots (Test Plots 2 and 3; Figure 4) consisted of 1-foot deep gravel-filled infiltration galleries measuring 30 by 30 feet in plan dimension. Infiltration occurs at the maximum rate when the top of the soil column is maintained under saturated conditions; in this design, saturated conditions can be continously maintained over the entire area of the test plot by controlling the water depth within the gallery. The infiltration galleries contained perforated distribution piping with a riser to the surface, a six-inch diameter sump constructed from hand-perforated PVC piping, and were backfilled with crushed rock to match existing grade. The top of the gravel was then covered with a 20-mil fiber-reinforced PVC liner installed between two layers of geotextile to inhibit evaporation and isolate the gallery from the atmosphere. The soil excavated during gallery construction was placed over the geotextile to secure the liner in place.

Equipment and controls for the infiltration galleries included a pressure-reducing valve used to control water pressure, a totalizing flowmeter, a globe valve used to provide rough flow control, and a mechanical float valve used to control water level in the gallery. The float valve was positioned so that the float was immersed in the infiltration gallery sump; water passing through the float valve was introduced into the gallery via the distribution piping riser.

4.7.3 Reduced-Flow Test Plots

The two reduced-flow test plots (Test Plots 1 and 4; Figure 4) consisted of micro-irrigation systems measuring 30 by 30 feet in plan dimension. Micro-irrigation systems were used to provide control over flow rate and a relatively uniform water distribution across the entire area of the test plot. The micro-irrigation systems consisted of a 30-foot long PVC piping manifold placed along the centerline of the test plot; 15-foot lengths of soaker hose spaced 18-inches apart were attached to manifold. Soaker hose is designed to emit a constant volume of water per unit length of hose and is not pressure compensated, which allows the water application rate to be adjusted by varying the water pressure. The micro-irrigation system was then covered with polyethylene to inhibit evaporation and isolate the test plot from the atmosphere.

Equipment and controls for the micro-irrigation systems consisted of a pressure-reducing valve used to control flow rate, a totalizing flowmeter, and a globe valve used to provide rough flow control.

4.7.4 Carbon Substrate Addition System

Food-grade (United States Pharmacopeial) glycerol was introduced into Test Plots 1 and 2 (Figure 4) using a system consisting of a 500-gallon polyethylene storage tank and two manually-adjusted Pulsatron positive displacement metering pumps, which were powered by a portable generator. Fifteen 55-gallon drums (8,250 pounds) of glycerol were added to Test Plots 1 and 2 over a 10-day period starting June 10, 2016.

The glycerol quantity was estimated from stoichiometric calculations of the combined electron acceptor demand from nitrate, chlorate, perchlorate, and sulfate for Test Plots 1 and 2. The calculations were performed by estimating the initial masses of nitrate, chlorate, perchlorate, and sulfate beneath each test plot. Based on pore water sampling results which suggested that soil flushing had reduced pore water concentrations by at least 90% (Section 6.5), the required mass of glycerol was estimated by assuming that the remaining electron acceptor masses were 10% of the initial mass. A factor of safety of three was applied to the glycerol mass to account for uncertainty in the estimated amount of mass reduction. An additional factor of safety of seven was then applied to the resulting glycerol mass.

Half of the glycerol (412.5 gallons) was initially pumped into the storage tank and mixed with stabilized Lake Mead water to bring the total volume of the stock solution to 500 gallons. The remainder of the glycerol was used to mix a second batch of stock solution when the first batch was exhausted. The addition of water reduced the viscosity of the glycerol, thereby improving pumpability. The metering pumps were then set to give a combined flow of 100 gallons of stock solution per day (17 gallons per day for Test Plot 1, and 83 gallons per day for Test Plot 2) by adjusting the stroke length and stroke rate of the pumps. The glycerol feed rate was confirmed by pumping glycerol solution into a graduated cylinder. The glycerol solution was injected directly into the test plot piping systems downstream of the control valves. Check valves were placed in the glycerol feed lines to prevent backflow.

5.0 FIELD TREATABILITY STUDY

The following subsections briefly describe the activities performed as part of the field treatability study. The results of the study are discussed in Section 6.0.

5.1 SYSTEM STARTUP AND MAINTENANCE

The soil flushing systems were started up on December 31, 2015 (Test Plot 2), January 15, 2016 (Test Plot 1), and February 1, 2016 (Test Plots 3 and 4). Infiltration was terminated at all of the test plots on June 27, 2016, per the terms of the UIC permit.

Start-up activities for the maximum-flow test plots (Test Plots 2 and 3) included the following:

- Initial filling of the infiltration galleries;
- Adding approximately 0.5 pounds of fluorescein dye to the infiltration galleries as a tracer compound;
- Testing the function of system equipment; and
- Monitoring infiltration rates.

Start-up activities for the reduced-flow test plots (Test Plots 1 and 4) included the following:

- Initial adjustment of water pressure/water application rate to ensure that water was distributed relatively evenly across the test plot surface and that standing water was not present at the ground surface;
- Placing approximately 0.5 pounds of fluorescein dye directly to the ground surface beneath the soaker hoses; and
- Covering the test plots with polyethylene sheets to inhibit evaporation.

Following start-up, routine maintenance was performed for the duration of the treatability study. Routine system maintenance consisted of the following:

- Recording totalizing flow meter readings for each test plot;
- Observing the sumps in Test Plots 2 and 3 to confirm the presence of standing water in the infiltration galleries;
- Observing the ground surface at Test Plots 1 and 4 to confirm that standing water was not present; and
- Adjusting water flow to the individual test plots, as necessary.

Additional maintenance performed during carbon substrate addition included the following:

- Monitoring the level in the glycerol tank and replenishing the tank as needed; and
- Monitoring the glycerol addition rate.

5.2 PORE WATER AND GROUNDWATER MONITORING

Based on the relatively low infiltration rate noted during startup of Test Plot 2, pore water and groundwater monitoring were initially conducted at approximately two-week intervals. After it was confirmed that infiltration rates at Test Plot 3 were much higher than at Test Plot 2, the frequency of pore water and groundwater monitoring was increased to weekly starting on February 4, 2016. Weekly sampling continued through June 8, 2016; sampling was performed on a biweekly basis thereafter until monitoring was terminated on July 27, 2016, one month after infiltration was ceased.

The pore water monitoring program specified in the Work Plan included laboratory analysis of perchlorate, TDS, and TOC; hexavalent chromium if the lysimeters yielded sufficient water. Because carbon substrate was added to Test Plots 1 and 2 only at the end of the study, TOC was not a relevant parameters for most of the treatability study. Therefore, hexavalent chromium was analyzed in place of TOC.

5.3 POST-TREATMENT SOIL SAMPLING

Post-treatment soil sampling was performed from August 11 to August 16, 2016, to allow sufficient time for the water applied during soil flushing to migrate through the vadose zone. A total of 20 soil borings (five per test plot) were drilled and sampled immediately adjacent to the locations previously sampled during the baseline soil sampling event.

All of the soil samples were analyzed for perchlorate using Method E314.1. The water extracts prepared by the laboratory for the perchlorate analysis were also analyzed for TDS using Method SM2540C. The TDS data were reported by the laboratory in units of milligrams per liter of water extract; information on the weight of soil and volume of water used to prepare the extract were used to recalculate the TDS results in terms of milligrams per kilogram of soil.

In addition, soil samples collected at randomly-selected depth intervals were analyzed for the following:

- Metals, including boron, iron, manganese, and titanium (Method SW6010B); antimony, arsenic, barium, beryllium, cadmium, chromium, cobalt, copper, lead, molybdenum, nickel, selenium, silver, and zinc (Method 6020); and mercury (Method SW7471A);
- Hexavalent chromium (Method SW7199);
- TOC (Method SW9060);
- Soil pH (Method SW9045); and
- Soluble cations and anions (analysis of leachate), including calcium, magnesium, potassium, and sodium (Method SW6010B); chloride, sulfate, and nitrate (Method E300.0); chlorate (USEPA Method E300.1); and carbonate alkalinity (Method SM2320B).

6.0 ANALYSIS OF RESULTS

The following sections summarize the results of the soil flushing treatability study.

6.1 SOIL TYPES

The two major lithologic units at the Site are Quaternary alluvium (QAL) and the Upper Muddy Creek formation (UMCf). In general, the QAL is exposed at the surface over most of the Site. At the Site, the QAL consists of gravels, silty gravels, sands, and silty sands, and is quite heterogeneous, with no distinct bedding or laterally-continuous lithologic subunits (Ramboll Environ, 2016a). The UMCf consists of both fine- and coarse-grained facies. The upper fine-grained facies of the UMCf, which underlies the QAL in the treatability study area, consists mainly of clay and silt. Coarser-grained facies are present at greater depth within the UMCf (Ramboll Environ, 2016).

Soil boring logs are provided in Appendix A. In the treatability study area, the QAL unit extends from the ground surface to a depth of approximately 25 to 27 feet. The QAL generally consists of a fine- to medium-grained silty sand (USCS Class SM), containing from 5% to 30% fine gravel. The grain size of the sand fraction and the proportion of gravel vary both vertically and laterally, and it is difficult to correllate individual layers between borings with confidence. In the treatability study area, the UMCf extends from a depth of approximately 25 to 27 to at least 31.5 feet, the maximum depth explored. The UMCf consists primarily of silt (USCS Class ML) containing up to 30% clay and variable amounts of sand and occasional fine gravel.

The soils identified in the treatability study area would be classified by texture as sandy loams, which typically have infiltration rates between 0.4 and 0.8 inches per hour (Hillel, D., 1980). The measured infiltration rates in Test Plots 1, 3, and 4 (Figure 3) are similar to, or higher than, this range, consistent with the presence of gravel in the soils. The infiltration rate at Test Plot 2 is somewhat lower, which may be due to compaction in this area.

6.2 BASELINE SOIL SAMPLING

A summary of the baseline analytical results for perchlorate, leachable solids, and hexavalent chromium are presented in Table 1. Complete analytical results for all constituents analyzed during the baseline are tabulated in Appendix D. A data validation summary report has been provided in Appendix E, which contains copies of the laboratory reports.

6.2.1 Perchlorate

Results for perchlorate were as follows:

- Perchlorate was detected in all of the soil samples, at concentrations ranging from 0.24 to 28,000 mg/kg.
- Perchlorate concentrations greater than 1,000 mg/kg were detected in 19 of the 140 samples analyzed. All but one of these samples were found in Test Plot 2.

The perchlorate data was used to develop a three-dimensional model of the spatial distribution of perchlorate in the subsurface. The model was developed using Earth Volumetric Studio (EVS), a geostatistics and data visualization software package. The entire treatability study area was modeled as a single domain. Fence diagrams illustrating the modeled distribution of perchlorate are provided in Figure 5, which shows that the spatial distribution of perchlorate is very heterogeneous across the study area, and that perchlorate is concentrated mainly in the vicinity of Test Plot 2.

The EVS model was also used to develop an estimate of the perchlorate mass in the vadose zone beneath the footprint of each test plot. The results of the mass calculations are summarized in Table 2. The mass of

perchlorate beneath Test Plot 2 was estimated to be slightly greater than 6,000 pounds prior to the test, whereas the masses beneath Test Plots 1, 3, and 4 were estimated to be less than 50 pounds each.

6.2.2 Leachable Solids

Results for total leachable solids were as follows:

- Leachable solids were detected in all of the soil samples, at concentrations ranging from 560 to 48,000 mg/kg.
- Leachable solids concentrations greater than 10,000 mg/kg were detected in 15 of the 140 samples analyzed. All but two of these samples were found in Test Plot 2.

The leachable solids data were used to develop a three-dimensional EVS model of the spatial distribution of leachable solids in the subsurface, as described in Section 6.2.1. Fence diagrams illustrating the modeled distribution of leachable solids are provided in Figure 6, which shows that the Test Plot 2 area has higher concentrations of leachable solids than the other test plots. Leachable solids masses ranged from 5,600 pounds beneath Test Plot 1 to 20,000 pounds beneath Test Plot 2.

6.2.3 Hexavalent Chromium

In the Treatability Study Work Plan, hexavalent chromium was identified as a potential concern because hexavalent chromium compounds are water soluble and could potentially be mobilized during the treatability study. In general, hexavalent chromium concentrations in soil samples were relatively low, with 29 of the 40 soil samples analyzed having non-detectable concentrations and the concentrations detected in the remaining 11 samples ranged from 0.72 to 8.3 mg/kg. Using the geometric mean of the available hexavalent chromium data (0.39 mg/kg, calculated assuming that non-detectable results had a concentration of one-half of the detection limit), the total mass of hexavalent chromium beneath all four test plots was estimated to be less than four pounds, which could potentially be mobilized during the treatability study over a period of several weeks. For comparison, the average daily mass of hexavalent chromium treated by the GWETS chromium treatment system from July 2015 to June 2016 was approximately 5.8 pounds per day. This comparison indicates that potential mobilization of hexavalent chromium from soil during the treatability study is unlikely to be significant with respect to impacts to the GWETS. A comparison of baseline analytical data for total chromium and hexavalent chromium in test plot soils indicates that hexavalent chromium ranges from about 3% to 8% of the total chromium concentration.

6.2.4 Other Metals

Analytical results for metals (other than hexavalent chromium) are provided in Appendix D. Four metals (antimony, cadmium, selenium, and silver) had detection rates less than 25%. With a few exceptions, the remaining metals had mean concentrations in the Treatability Study area soils less than mean concentrations for NERT background soils (Ramboll Environ, 2016b). Exceptions include beryllium (0.51 mg/kg in the Treatability Study area vs. 0.47 mg/kg in the NERT background dataset), boron (11 mg/kg in the Treatability Study area vs. 10 mg/kg in the NERT background dataset), and arsenic (11 mg/kg in the Treatability Study area vs. 2.6 mg/kg in the NERT background dataset). The arsenic results show the greatest differences from the NERT background dataset; however, very high concentrations clearly indicative of contamination were not observed, and the samples with higher concentrations appear to be distributed at various depths throughout the Treatability Study area. Comparisons between the Basic Comparison Levels (BCLs) for the outdoor industrial/commercial worker and maximum concentrations measured in the soil flushing site soils indicate that no metals exceed their respective BCLs.

6.2.5 Leachable Cations and Anions

Analytical results for cations and anions in leachates prepared from soil samples are provided in Appendix D. In general, the predominant cations in the leachates were sodium and calcium; the predominant anions were sulfate and carbonate species.

6.3 WATER APPLICATION RATES

Water was applied nearly continuously to the test plots for the duration of the treatability study, except for two 24-hour maintenance shutdowns which occurred on April 10, 2016 and May 16, 2016. A summary of the water application data is provided in Table 3; the totalizing flowmeter readings for each test plot are plotted against time in Figure 7. The slope of the volume vs. time plots represents the flow rate. All of the volume vs. time plots are nearly linear, indicating that water application rates for all of the test plots were nearly constant for the duration of the study. The average water application rate for each test plot was estimated from the slope of the volume vs. time curve, and are summarized in Table 3. Average water application rates ranged from 0.84 gallons per minute (gpm) for Test Plot 1 to 11 gpm for Test Plot 3.

The maximum flow test plots (Test Plots 2 and 3) contained standing water on an essentially continuous basis during the treatability study. Assuming that infiltration was limited to the 30- by 30-foot gallery footprint, the average water application rates for these test plots can be used to estimate a long-term infiltration rate. Long-term infiltration rates for Test Plots 2 and 3 are summarized in Table 3. For Test Plot 2, the long-term infiltration rate of 0.17 in/hr is in reasonable agreement with the value of 0.10 in/hr obtained from the double-ring infiltrometer test (Figure 3). For Test Plot 3, the long-term infiltration rate of 1.2 in/hr is in excellent agreement with the double-ring infiltrometer rate of 1.2 in/hr (Figure 3).

The water application rates for Test Plots 1 and 4 cannot be used to estimate infiltration rates because the ground surface was not saturated during the treatability study. However, the water application rates can be compared with the double-ring infiltrometer data to constrain the application rates as a percentage of the maximum rate. For Test Plot 1, the average application rate was approximately 5% of the maximum rate; for Test Plot 4, the average application rate was approximately 13% of the maximum rate.

6.4 WATER LEVEL MONITORING

Groundwater elevation data for the treatability study monitoring wells are summarized in Table 4, and are plotted as a function of time in Figure 8. For reference, groundwater elevations measured on December 9, 2015 during the baseline groundwater sampling event are plotted at 0 days in Figure 8.

Figure 8 shows that groundwater elevations increased significantly during the treatability study in response to the application of water at the ground surface. For the monitoring wells located closest to the test plots (TT-TP1-M1, TT-TP2-M1, TT-TP3-M1, and TT-TP4-M1), the smallest groundwater elevation increase (2.45 feet) was observed in TT-TP1-M1, located immediately downgradient of Test Plot 1; the largest groundwater elevation increase was (4.55 feet) observed in TT-TP3-M1, immediately downgradient of Test Plot 3. The large increase in groundwater elevation adjacent to Test Plot 3 is consistent with the high water application rate at this test plot.

Test Plots 1 and 4 had similar water application rates (0.84 and 0.92 gpm, respectively), but the water level increases in wells TT-TP1-M1 and TT-TP4-M1 (2.45 and 3.49 feet, respectively) differed by more than one foot. While it is possible that this difference is due to local hydraulic factors, it is more likely Test Plot 4 (and Test Plot 2 as well) was affected by groundwater mounding from Test Plot 3. Test Plot 1 is located further from Test Plot 3, and is therefore expected to be less affected.

6.5 TRACER STUDY

Sodium fluorescein (uranine) dye was added to the flushing water during startup of each test plot and was monitored in the field during sampling of the lysimeters and monitoring wells. The purpose of the tracer study was to confirm the arrival of the wetting front induced by soil flushing. For that reason, analysis of the fluorescein breakthrough is focused on the lysimeter data. Fluorescein results for both pore water and groundwater are presented in the field data table summary presented in Appendix B. Fluorescein breakthrough was observed in the shallow lysimeter at Test Plot 3 almost immediaterly after startup. This is consistent with the relatively high infiltration rates measured and saturated flow condition in this test plot along with the rapid concentration response observed for TDS and perchlorate during pore water sampling. A delay in fluorescein breakthrough was found in the shallow lysimeter in Test Plot 2, which has a lower infiltration rate and a delayed concentration response for TDS during pore water sampling. A distinct fluorescein breakthrough in the shallow lysimeter was less obvious in data from Test Plots 1 and 4.

6.6 PORE WATER SAMPLING

Analytical results for perchlorate, TDS, hexavalent chromium, DO, and ORP in the pore water samples are summarized in Table 5; complete results for all analytes are provided in Appendix D.

6.6.1 Perchlorate

Pore water perchlorate concentrations are plotted as a function of time in Figure 9. For reference, the baseline sampling data are plotted at Day 0 in Figure 9. Note that an anomalously high perchlorate concentration of 340 mg/L was detected in the sample collected from lysimeter TT-TP3-L1 on Day 59. This sample appears to be an outlier, and was not included in the trendline for lysimeter TT-TP3-L1 in Figure 9.

General features of the data in Figure 9 include the following:

- Perchlorate concentrations in both the shallow and deep lysimeters in Test Plots 1, 3, and 4 show general decreasing trends with time.
- Perchlorate concentrations in the shallow and deep lysimeters in Test Plot 2 show initial concentration increases, followed by decreasing trends.
- In all of the test plots, the observed concentration decreases relative to the maximum concentrations were relatively large, ranging from 97% to greater than 99%.

The decreasing trends in perchlorate concentration observed in Test Plots 1, 3, and 4 are consistent with dilution of the initial ambient pore water by low-perchlorate water introduced during soil flushing. The initial increasing trend observed in Test Plot 2 is interpreted as due to solubilization and mobilization of perchlorate by the infiltrating water, which resulted in concentration buildup due to the large perchlorate mass present beneath Test Plot 2. The initial concentration buildup is followed by a decreasing trend, consistent with dilution. The large concentration decreases noted during the study show that soil flushing is effective for removing perchlorate from the vadose zone.

6.6.2 Total Dissolved Solids

Pore water TDS concentrations are plotted as a function of time in Figure 10. For reference, the baseline sampling data are plotted at Day 0 in Figure 10. General features of the data in Figure 10 include the following:

- TDS concentrations in all of the test plots show an initial concentration increase, followed by a decreasing trend with time, a pattern similar to that observed for perchlorate in Test Plot 2.
- In all of the test plots, the observed TDS concentration decreases relative to the maximum concentration ranges from 70% to 97%.

The initial increasing TDS concentration trend is also interpreted as being due to solubilization and mobilization of soluble salts during soil flushing. As noted in Section 6.2, the mass of leachable solids in the vadose zone is much higher than the mass of perchlorate, suggesting that the concentration buildup observed early in the test is related to the presence of relatively large leachable solids masses in the vadose zone.

6.6.3 Hexavalent Chromium

Pore water hexavalent chromium concentrations are plotted as a function of time in Figure 11, with non-detectable concentrations plotted at one-half of the detection limit. For reference, the baseline sampling data have also been included in this figure (plotted at Day 0). Results indicate the following:

- Hexavalent chromium concentrations in Test Plot 2 increased early in the test and then declined to very low or non-dectectable concentrations later in the test.
- Hexavalent chromium concentrations in both the shallow and deep lysimeters in Test Plots 1 and 4 may follow a similar pattern of concentration increase and decrease but these observations are based on relatively few detectable data and are considered to have a high uncertainty.
- Hexavalent chromium concentration trends in the shallow and deep lysimeters in Test Plot 3 are not well-defined.
- The trends in hexavalent chromium concentration observed in Test Plot 2, and potentially in Test Plots 1 and 4 as well, are consistent with an initial concentration buildup due to solubilization and mobilization of hexavalent chromium, followed by a concentration decline due to dilution.
- Comparison of total chromium to hexavalent chromium concentrations in pore water indicate that most of the total chromium is present as hexavalent chromium.

6.6.4 Dissolved Oxygen and Oxidation-Reduction Potential

Field DO and ORP measurements were made during purging of the lysimeters and are summarized in the field data summary presented in Appendix B. Changes in ORP were anticipated in response to the addition of carbon substrate to Test Plots 1 and 2 near the end of the study. The data shows that the expected decrease in ORP was observed in Test Plots 1 and 2. However, similar decreases were also observed in the Test Plot 3 and 4 lysimeters, even though carbon substrate was not added to these test plots. Therefore, the cause of the ORP decreases are not completely understood, but may be an instrumentation problem. In general, DO generally remained constant throughout the study at concentrations greater than 1.0 mg/L.

6.6.5 Other Analytes

The baseline pore water samples were also analyzed for selected anions (including chlorate, sulfate and nitrate), major cations (calcium, sodium, potassium and magnesium), and TOC. With the exception of carbonate, the relative abundances of anions in the pore water were similar to the baseline soil samples. Carbonate had a higher relative abundance in the soil samples compared with the pore water samples. Sodium was the major cation present in the pore waters followed by lower concentrations of calcium, magnesium and potassium. TOC concentrations in the pore water samples were relatively uniform, ranging from 2.0 to 6.3 mg/L.

6.7 GROUNDWATER SAMPLING

Analytical results for perchlorate, TDS, hexavalent chromium, DO, and ORP in the groundwater samples are summarized in Table 6; complete results for all analytes are provided in Appendix D.

6.7.1 Perchlorate

Perchlorate concentrations in groundwater are plotted as a function of time in Figure 12. For reference, the baseline sampling data are plotted at Day 0 in Figure 12. Note that two anomalously high perchlorate concentrations were detected in monitoring well TT-TP4-M1. These two samples appears to be outliers, and are not included in the trendline for well TT-TP4-M1 in Figure 12.

As discussed in Section 6.4, groundwater mounding at Test Plot 3 is believed to have affected conditions at Test Plots 2 and 4, which complicates interpretation of the groundwater results. Perchlorate concentrations in pore water at Test Plot 3 were always much lower than the initial perchlorate concentration in groundwater. The ground water perchlorate concentrations at Test Plot 3 show a rapid decline with time, consistent with dilution of higher-concentration ambient groundwater with lower-concentration water derived from soil flushing. A similar pattern was observed at Test Plot 4, but it is not clear whether this was due mainly to soil flushing at Test Plot 4, mounding effects from Test Plot 3, or a combination of both. Perchlorate concentrations in groundwater at Test Plot 2 show a more complex pattern of increasing and decreasing trends. Perchlorate concentrations in pore water at Test Plot 2 were higher than the initial groundwater concentration for roughly the first half of the test. The combination of increasing and decreasing trends may be a result of mixing of higher-concentration water from soil flushing at Test Plot 2, lower-concentration water from soil flushing at Test Plot 3, and ambient groundwater. The data for Test Plot 1 do not show a discernable trend on the time series plots.

6.7.2 Total Dissolved Solids

TDS concentrations in groundwater are plotted as a function of time in Figure 13. For reference, the baseline sampling data are plotted at Day 0 in Figure 13. TDS concentrations in groundwater at Test Plot 3 decrease with time, consistent with dilution of higher concentration ambient groundwater with infiltrating water with relatively low TDS concentrations. TDS concentrations in groundwater at Test Plot 4 decline with time, and TDS concentrations at Test Plot 2 appear to decline slightly over time. However, it is not clear to what extent these patterns are influenced by groundwater mounding at Test Plot 3. The data for Test Plot 1 do not show a discernable trend.

6.7.3 Hexavalent Chromium

Hexavalent chromium concentrations in groundwater are plotted as a function of time in Figure 14, with non-detectable cocnentrations plotted at one-half of the detection limit. For reference, the baseline sampling data are plotted at Day 0. As observed in Figure 14, Hexavalent chromium concentrations in groundwater at Test Plots 2, 3, and 4 decline with time, which is consistent with dilution of higher concentration ambient groundwater with low concentration water added during flushing. The data for Test Plot 1 do not show a discernable trend. Comparison of total chromium to hexavalent chromium concentrations in groundwater indicate that most of the total chromium is present as hexavalent chromium.

6.7.4 Other Metals

Iron, manganese, arsenic, and molybdenum are all metals with multiple valence states which can potentially be rendered soluble in water under reducing conditions, such as when an electron donor is introduced into the environment. Elevated concentrations of these metals may be produced in groundwater as a secondary effect of bioremediation.

Iron was detected in only 8 of the 70 samples analyzed, and manganese was detected in only 4 of the 70 samples analyzed. Because of the very low detection rates, no conclusions are drawn with respect to iron and manganese.

Arsenic concentrations in groundwater are plotted as a function of time in Figure 15. For reference, the baseline sampling data are plotted at Day 0. Test Plot 3 shows an initial arsenic concentration increase, followed by a concentration decline to below the initial ambient arsenic concentration. Because electron donor was not

introduced at Test Plot 3, these effects are attributed to minor leaching and dilution of arsenic rather than a secondary effect of bioremediation. No discernable trends were found for Test Plots 1, 2, and 4.

Molybdenum concentrations in groundwater are plotted as a function of time in Figure 16. For reference, the baseline sampling data are plotted at Day 0. Test Plot 3 shows a declining trend in molybdenum concentrations, which is attributed to dilution of ambient groundwater. No discernable trends were found for Test Plots 1, 2, and 4.

Based on the above results, no evidence for significant secondary effects related to iron, manganese, arsenic, or molybdenum were found during the treatability study. Concentrations of other metals were either largely non-detectable or did not vary systematically during the treatability study.

6.7.5 Dissolved Oxygen and Oxidation-Reduction Potential

Field DO and ORP measurements were made during purging of the monitoring wells and are summarized in the field data summary presented in Appendix B. Changes in ORP were anticipated in response to the addition of carbon substrate to Test Plots 1 and 2 near the end of the study. The data shows DO concentrations consistently less than 1 mg/L in most groundwater samples. Several wells had slightly higher DO concentrations at the beginning of the study with concentrations exceeding 2 mg/L. However, as the soil flushing progressed, the DO values remained below 1 mg/L. There was no noticeable change in DO concentrations at the first monitoring well downgradient of TP1 or TP2 corresponding to the application of glycerol. As noted in Section 6.7.6, there was also no noticeable change in TOC in the groundwater samples that would indicate the arrival of the added carbon.

ORP values did not exhibit any consistent trend over the course of the study. ORP values generally varied within a range of +200 to ~0 millivolts (mV). Negative ORP values were not observed very often in any of the groundwater samples. The variability of the ORP values were not consistent with the generally low DO concentrations suggesting possible error in one or both measurements.

6.7.6 Other Analytes

Data for cations (e.g., sodium and calcium) and anions (e.g., chlorate, sulfate and nitrate) are summarized in Appendix D. Overall, trends for these compounds are similar to those observed for perchlorate and hexavalent chromium, and are generally consistent with progressive dilution of relatively high concentration groundwater with lower-concentration infiltrating water.

Data for TOC in groundwater is also summarized in Appendix D. TOC concentrations did not vary significantly over the course of the treatability study, and high TOC concentrations, suggestive of substrate breakthrough to groundwater, were not observed.

6.8 POST-TREATMENT SOIL SAMPLING

Analytical results for perchlorate and leachable solids in the post-treatment soil samples are summarized in Table 1; complete analytical results are tabulated in Appendix D. A data validation summary report has been provided in Appendix E, which contains copies of the laboratory reports. Results for perchlorate and leachable solids were as follows:

- Perchlorate was detected in all of the soil samples, at concentrations ranging from 0.017 to 780 mg/kg.
- Leachable solids were detected in all of the soil samples, at concentrations ranging from 220 to 24,000 mg/kg.
- Both the maximum and minimum perchlorate and leachable solids concentrations decreased relative to baseline concentrations.

EVS was used to develop post-treatment models of the spatial distribution of perchlorate and leachable solids in the subsurface. The post-treatment models were developed using the same modelling parameters and software settings as the baseline model. The baseline and post-treatment EVS models were then used to estimate

perchlorate and leachable solids mass in the vadose zone beneath the footprint of each test plot. Cross-section locations are shown in Figure 17, while concentration cross sections for the baseline and post-treatment perchlorate models for each test plot are shown in Figure 18 (Test Plot 1), Figure 19 (Test Plot 2), Figure 20 (Test Plot 3), and Figure 21 (Test Plot 4). The results of the baseline and post-treatment mass estimates and estimates of overall mass reduction are summarized in Table 2.

Since the baseline and post-treatment soil samples were collected from adjacent borings, the perchlorate and leachable solids concentrations can be very different in the absence of treatment. This introduces an unknown but potentially significant uncertainty in the EVS baseline and post-treatment mass and mass reduction estimates presented in Table 2. Small-scale spatial heterogeneity may be the reason that small increases in perchlorate concentration were observed at shallow depths in Figures 18 and 20. However, the overall impact of heterogeneity is partially mitigated by the relatively high sampling density used in this study (30 samples per test plot). In spite of the uncertainty for individual samples, the mass estimates are considered to be relatively robust indicators of the effects of soil flushing. Table 2 shows that perchlorate mass reduction was highest for Test Plot 2 (98%), where water was applied at the maximum rate and carbon substrate was added to induce biodegradation. A mass reduction of approximately 73% was observed in Test Plot 3, where water was applied at the maximum rate, but carbon substrate was not added. The difference in mass reduction between Test Plot 2 and Test Plot 3 may be partially due to in situ biodegradation occurring in Test Plot 2. The lowest mass reductions (5% and 43%) were observed in the two reduced flow test plots (Test Plots 1 and 4, respectively).

The mass removal indicated by the soil sampling results (5% and 98%; Table 2) is lower than suggested by pore water concentration data, which show concentration reductions on the order of 97% to 99% for all of the test plots. This difference is larger for the reduced flow test plots (Test Plots 1 and 4), and is attributed to preferential flow through the vadose zone. Unsaturated flow largely occurs through higher-permeability preferential pathways, which result from differences in soil types, the presence or absence of macrostructures, differences in moisture content, and other factors.

7.0 SUMMARY OF KEY FINDINGS

Expanding on the results presented in Section 6.0, this section presents a summary of pore water concentration reductions and mass removal and also provides considerations for large-scale implementation of soil flushing.

7.1 PORE WATER CONCENTRATION REDUCTION AND MASS REMOVAL

The pore water sampling results (Figure 9) show that large perchlorate concentration reductions (97% to greater than 99%) occurred in the pore water in every test plot during the treatability study. In contrast, the estimated mass of perchlorate removed from the vadose zone (Table 2) ranged from a low of 5% in Test Plot 1 to a high of 98% in Test Plot 2. The largest mass removals (98% and 74%) were found in Test Plots 2 and 3, where water was applied using infiltration galleries at the maximum infiltration rate allowed by the surface soils. Smaller mass removals (5% and 43%) were found in Test Plots 1 and 4, where water was applied at a reduced rate.

When water is applied at less than the maximum infiltration rate allowed by the surface soil, flow is unsaturated. Unsaturated flow has a higher tendency to occur through preferential pathways, such as fractures, rootholes, or fingers with enhanced moisture content. In the low-flow test plots, the large perchlorate concentration reductions observed in the pore water samples may have been associated with the preferential pathways, while the low overall perchlorate mass removal may reflect the small volume of soil occupied by the preferential pathways. When saturated conditions are maintained during infiltration, saturated or near-saturated plug flow can more readily be induced in the shallow subsurface. The higher mass removals encountered in the maximum flow test plots are believed to be related to the greater degree of saturation of the soil during flushing.

Table 7 summarizes the time, water volume, and number of pore volumes of water needed to achieve a 90% reduction in perchlorate concentration in pore water. The amount of flushing needed to achieve the 90% reduction was greatest for Test Plot 2 (5.3 pore volumes) and Test Plot 3 (12 pore volumes), and is much smaller for the Test Plot 1 (1.6 pore volumes) and Test Plot 4 (2.5 pore volumes). However, these pore volume calculations consider the total volume of soil beneath the test plots, not the volume of the preferential pathways. The volume of soil occupied by preferential pathways cannot be readily estimated without additional information, but is likely to be fairly small for Test Plots 1 and 4. The greater flushing efficiency implied by the lower number of pore volumes of water needed to reduce pore water concentrations by 90% in Test Plots 1 and 4 is likely not consistent with the overall larger mass removals achieved in Test Plots 2 and 3. This illustrates the importance of avoiding preferential pathways by saturating the vadose zone through the application of flush water at the maximum infiltration rate allowed by the soils.

7.2 CONSIDERATIONS FOR LARGE-SCALE IMPLEMENTATION

Considerations for large-scale implementation of soil flushing at the Site include the following:

- **Water Use**: Large-scale implementation of soil flushing is likely to involve application of large amounts of water. Based on the long-term average infiltration rates measured at Test Plots 2 and 3 (Table 3), temporary application of approximately 75 to 500 gpm of water could be needed to achieve saturated conditions over each one acre flushing area. For example, if a soil flushing program were designed around a 400 gpm application rate, in some areas 5 acres might be able to be flushed at one time, while in other areas, possibly 0.8 acres could be flushed at one time.
- **Water Source**: The source of the water used for the Soil Flushing Treatability Study was stabilized Lake Mead water (SLMW) obtained from a hydrant onsite and purchased from Basic Water at a rate of $400 per acre-foot. This is the 2017 rate for SLMW, which is only available at the Site and is subject to change in future years. Preliminary estimates indicate that SLMW could amount to 10% to 20% of the cost of soil flushing. As part of the FS or subsequent remedial design, the option to use GWETS effluent for some

portion of the soil flushing water should be evaluated. Using GWETS effluent would entail capital and operating costs to deliver the water where needed, but would avoid the $400 per acre-foot charge by Basic Water. The high TDS of GWETS effluent might reduce its effectiveness in soil flushing and might restrict the proportion of GWETS effluent that could be blended with SLWM without adverse impacts.

- **Plume Capture**: Soil flushing will recharge the alluvial aquifer, and therefore could affect capture of the groundwater plume by the IWF. Groundwater modeling may be necessary to evaluate these potential effects.
- **Effects on the GWETS**: Increased groundwater extraction at the IWF and/or from supplemental extraction wells installed upgradient to the IWF to maintain plume capture during soil flushing would exceed the hydraulic capacity of the existing chromium treatment plant, and potentially the fluidized bed reactor (FBR) treatment plant. Leaching of TDS during soil flushing is also a potential issue, particularly if GWETS effluent is considered as a potential source of water for soil flushing.
- **Heterogeneity**: The data for Test Plots 2 and 3 indicate that infiltration rates can vary by a factor of 7 or more over a distance of 100 feet, which could potentially result in preferential flushing through pathways with higher infiltration rates. Water application may need to be controlled spatially to avoid these effects.

7.3 COST AND DURATION CONSIDERATIONS FOR IMPLEMENTATION

The Soil Flushing Treatability Study provided information useful for developing preliminary indications of the cost and duration of future implementation. These preliminary indications are presented in the following subsections but are subject to significant revision during the Feasibility Study. During the Feasibility Study, NERT will evaluate the applicability of a variety of remedial technologies in order to achieve the Remedial Action Objectives established for the Site. If soil flushing is selected as a component of the Final Remedy, then a detailed cost estimate will be prepared. Accordingly the preliminary indications of the costs provided in this section should not be considered highly accurate remediation cost estimates.

Detailed costs and soil flushing durations will vary significantly depending on the remedial action objectives for soil (i.e., the target soil concentration at the end of soil flushing) and other variables of the final remedy that have not yet been defined. These include, but are not limited to, the following:

- Total area selected for soil flushing and the actual locations of the area(s);
- Improvements to the GWETS necessary for capture and treatment of the flushed water and chemicals of potential concern (COPCs), which vary depending on the extent of contamination (which has not been fully defined yet), characteristics of the soils to be flushed, and the target soil flushing flow rate); and
- Variabilities in infiltration rates and subsurface heterogeneities in permeability.

These cost variables are discussed below.

7.3.1 Total Area and Locations of Soil Flushing

The cost and duration of soil flushing will be highly dependent on the areal extent over which soil flushing is applied. Since the Remedial Investigation is still underway, the full extent of constituents amenable to soil flushing has not been determined. This dependence works in two opposite ways. Applying soil flushing over larger areas will achieve economies of scale which tend to reduce operating costs, but will also tend to increase capital costs to improve the GWETS sufficiently to capture and treat a larger volume of water used for soil flushing.

The economies of scale for increased acreage apply to the design, permitting, construction, and operation of the flushing system. Water usage and costs will be generally proportional to acreage, but may also be influenced by COPC mass, remedial action objectives, and possibly localized heterogeneity of the subsurface conditions. Water costs are estimated at approximately $20,000 to $30,000 per acre, based on the current $400/acre-foot cost of SLMW and application of six pore volumes of water.

The area selected for soil flushing will be influenced by current and future site characterization results, remedial action objectives, comparison of costs with alternatives such as excavation and disposal, and many other factors that will be evaluated in the FS. For reference purposes, the area overlying the groundwater plume on the NERT site is roughly 150 to 200 acres, of which approximately two-thirds is upgradient of the IWF. The locations of the areas selected for soil flushing can impact costs because it is less expensive to deliver water to areas near a water source. On the other hand, it is more expensive to flush areas that are steeply sloped or covered by utilities, pavement, or buildings.

7.3.2 Variability in Infiltrations Rates

The Soil Flushing Treatability Study found large variations in infiltration rates among its four test plots. However, the variability in infiltration rates that might be encountered across the NERT site will probably be greater than that found during the Soil Flushing Treatability Study. The four test plots together amount to approximately one tenth of one acre, which is a very small percentage of the NERT site. While the boring logs from investigations around the NERT site indicate general similarities in the sandy soils in the vadose zone, significant variations in infiltrations rates will need to be expected and managed. One means of management will be to segment the selected area for soil flushing such that each area receives an appropriate volume of water. Another important aspect of managing the variabilities in infiltration rates will be achieving saturated or near-saturated conditions at the surface during flushing, which will tend to reduce the potential for preferential flow through the vadose zone.

7.3.3 Preliminary Indications of Cost and Duration for Soil Flushing

As discussed above, there are many factors that require further analysis in order to accurately estimate the cost of implementing soil flushing at the NERT site. NERT is still conducting the Remedial Investigation and the Feasibility Study has not begun. During the FS, NERT will evaluate the applicability of a variety of remedial technologies in order to achieve the Remedial Action Objectives established for the Site. If soil flushing is selected as a component of the Final Remedy, a detailed cost estimate will be prepared. Accordingly the cost estimates provided in this section are subject to significant revision during the FS. Unit costs for implementation of soil flushing are estimated at $100,000 to $400,000 per acre, which reflects the -50%/+100% accuracy range typical of conceptual-level estimates. The cost estimate is based on the following design concept and assumptions:

- Water is applied to the surface over each acre of area consisting of sixteen 50-foot by 50-foot basins separated by three-foot wide berms. Each of the basins is graded to a depth of 1.5 feet, which will allow soil flushing to be performed on slopes of up to 2%, while maintaining a minimum freeboard of 0.5 feet in each basin. The basins will not be covered or backfilled during soil flushing; evaporative water loss (based on an annual evaporation rate of 120 inches per year) is accounted for in the estimated cost. The assumption of using graded basins results from the lessons learned from the Soil Flushing and the ongoing AP Area Soil Flushing Treatability Studies. Specifically, maintaining saturated conditions in the vadose zone improves perchlorate removal and basins will tend to be more cost-effective than drip-tape in achieving saturated conditions for most areas of the Site. Drip-tape or other application methods could be used on sloped areas that cannot readily be graded to form basins.
- Stabilized Lake Mead water, which is available at several locations at the Site, is assumed to be the source of water.
- Water is applied to each one-acre flushing area at a rate of 200 gpm, and flushing is terminated after six pore volumes of water have been applied.
- Water supply is brought to each one-acre flushing area by extending an existing HDPE pipeline approximately 225 feet. Water is distributed to the individual basins via PVC piping. All piping is sized based on assumed total flow (e.g.: 400 gpm), and is assumed to be placed on the ground surface.
- Water usage at each basin is monitored using a mechanical totalizing flowmeter; water depth in each basin is controlled using a mechanical float valve.

- No pore water or groundwater sampling is performed to monitor performance, but Site-wide quarterly groundwater monitoring and spot-check confirmation soil borings are used to gauge soil flushing performance.
- No surface obstructions are present that must be removed to access the surface soils to allow soil flushing to proceed.

The unit costs above do not include costs for infrastructure improvements, including expansion of the IWF to maintain capture of the on-Site groundwater plume during soil flushing, upgrading or replacing the groundwater treatment plant (GWTP) to handle an increased volume of influent, and installing pipelines to bring water to the areas being flushed. As described above, many factors will have to be evaluated and determined during the FS and/or remedial design phases before accurate scopes and costs can be developed for infrastructure improvements. At this time, capital improvements cannot be estimated.

The duration of soil flushing is strongly dependent on the areal extent selected for flushing, overall soil flushing flow rate, and number of pore volumes of water applied during soil flushing, all of which are poorly constrained at this time because the RI/FS has not be completed. This issue will be resolved in the FS after the full extent of contamination is understood and additional data is collected regarding physical properties of the soil in the unsaturated zone.

8.0 CONCLUSIONS AND RECOMMENDATIONS

The following are the major conclusions of the soil flushing treatability study.

- The mass reduction observed in Test Plot 2 (98%) and Test Plot 3 (73%) indicate that soil flushing is a viable technology for reducing perchlorate in vadose zone soils.
- To optimize mass reduction, water application rates during soil flushing should be near the maximum allowed by local soils. The effectiveness of soil flushing appears to be reduced at lower application rates, most likely due to preferential flow through the vadose zone.
- Although the supporting data is equivocal, the large mass reduction observed in Test Plot 2 suggests that biodegradation of perchlorate can be induced by adding a carbon substrate to the water used for soil flushing.
- The results suggest that 90% mass reduction can be achieved with application of as little as six pore volumes of water.
- Large-scale implementation of soil flushing could have effects on the GWETS that may require management. These effects include groundwater mounding, which could impact plume capture; leaching of soluble salts from the soil, which could have an inhibitory effect on biodegradation if salt buildup occurs; hydraulic and chemical loading effects on the GWTP and FBR treatment plant; and effluent pipeline carrying capacity. All of these issues will be addressed after the RI has been completed and NERT is preparing the FS.
- Depending on many factors discussed in Section 7.3, the unit costs for implementation of soil flushing are estimated at $100,000 to $400,000 per acre. These cost estimates are based on a conceptual design and are very preliminary in nature. Detailed cost estimates will be provided in the FS if soil flushing is recommended as part of the Final Remedy for the Site.

The results of this soil flushing treatability study will be ultimately incorporated into the FS to be prepared by NERT following completion of the RI. The evaluation of the applicable remedial action alternatives completed in the FS will consider the findings of this treatability study, as well as any others conducted, to prepare NERT's recommendation for remedial actions to address the remedial action objectives.

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Tables

Table 1 Summary of Analytical Results: Soil Samples

Test Plot	Baseline					Post-Treatment				
	Boring ID	Sample Depth (feet)	Perchlorate (mg/kg)	Hexavalent Chromium (mg/kg)	Leachable Solids (mg/kg)	Boring ID	Sample Depth (feet)	Perchlorate (mg/kg)	Hexavalent Chromium (mg/kg)	Leachable Solids (mg/kg)
1	Tt-TP1-B1	2	0.81	--	820	Tt-TP1-B1A	2	23	--	890
		6	2.0	--	690		6	0.53	--	1,200
		10	2.4	ND	2,100		10	1	ND	1,800
		14	3.7	--	3,100		14	0.35	--	2,200
		18	7.4	ND	3,400		18	0.41	ND	2,500
		22	44	--	2,100		22	10	--	4,900
		26	210	--	7,400		26	430	--	3,500
	Tt-TP1-B2	2	2.3	--	1,400	Tt-TP1-B2A	2	6.4	--	1,100
		6	4.2	ND	2,400		6	0.096	ND	1,000
		10	2.6	--	2,800		10	5.9	--	2,200
		14	2.3	--	1,500		14	0.22	--	2,200
		18	5.6	--	2,500		18	0.62	--	3,800
		22	15	ND	1,700		22	17	ND	2,100
		26	610	--	4,200		--	--	--	--
	Tt-TP1-B3	2	1.4	--	670	Tt-TP1-B3A	2	0.15	--	630
		6	11	ND	3,300		6	0.066	ND	2,100
		10	15	--	5,800		10	0.54	--	2,500
		14	4.6	--	3,200		14	0.71	--	5,600
		18	4.7	--	2,300		18	0.057	ND	3,600
		22	38	--	2,200		-	--	--	--
		26	310	--	4,700		26	420	--	5,000
	Tt-TP1-B4	2	1.9	1.0	580	Tt-TP1-B4A	2	0.19	ND	620
		6	0.77	--	720		6	0.12	--	720
		10	1.3	--	2,000		10	0.16	--	1,700
		14	1.4	--	2,300		14	0.15	--	1,400
		18	1.3	--	2,600		18	0.2	--	1,800
		22	3.8	--	2,800		22	57	--	1,900
		26	440	7.4	4,400		26	780	5.2	4,400
	Tt-TP1-L2	2	1.1	--	680	Tt-TP1-L2A	2	77	--	1,400
		6	1.0	ND	800		6	1.3	ND	910
		10	1.6	--	2,500		10	0.31	--	1,900
		14	1.3	--	2,200		14	0.9	--	3,300
		18	1.9	ND	2,100		18	24	0.27	1,300
		22	46	--	11,000		22	50	--	14,000
		26	420	--	4,600		26	380	--	6,800

Table 1 Summary of Analytical Results: Soil Samples

Test Plot	Baseline					Post-Treatment				
	Boring ID	Sample Depth (feet)	Perchlorate (mg/kg)	Hexavalent Chromium (mg/kg)	Leachable Solids (mg/kg)	Boring ID	Sample Depth (feet)	Perchlorate (mg/kg)	Hexavalent Chromium (mg/kg)	Leachable Solids (mg/kg)
2	Tt-TP2-B1	2	2,100	0.72	5,500	Tt-TP2-B1A	2	13	0.34	2,200
		6	20,000	--	48,000		6	12	--	3,200
		10	19,000	--	47,000		10	110	--	3,200
		14	12,000	ND	17,000		14	21	ND	220
		18	7,200	--	11,000		18	1.1	--	2,400
		22	520	--	6,000		22	22	--	17,000
		26	390	--	4,800		26	260	--	3,500
	Tt-TP2-B2	2	1,500	--	6,600	Tt-TP2-B2A	2	2.3	--	1,400
		6	260	--	3,500		6	2.5	--	1,800
		10	130	ND	2,500		10	40	ND	1,900
		14	140	--	2,400		14	0.52	--	1,600
		18	570	--	4,100		18	0.37	--	2,500
		22	260	--	4,200		22	320	--	3,200
		26	71	1.8	1,600		26	400	2.0	6,200
	Tt-TP2-B3	2	2,100	1.2	8,500	Tt-TP2-B3A	2	1.5	0.25	1,400
		6	6,700	--	13,000		6	20	--	2,500
		10	8,700	--	15,000		10	8.3	--	2,500
		14	5,600	1.2	24,000		14	4.1	0.28	18,000
		18	1,700	--	14,000		18	28	--	24,000
		22	2,300	--	6,200		22	240	--	7,000
		26	86	--	3,700		26	77	--	7,400
	Tt-TP2-B4	2	1,100	--	6,300	Tt-TP2-B4A	2	210	--	1,400
		6	28,000	ND	21,000		6	4.3	ND	1,900
		10	13,000	--	18,000		10	42	--	5,700
		14	10,000	--	16,000		14	22	--	17,000
		18	13,000	--	19,000		18	45	--	6,700
		22	320	2.4	5,000		22	1.2	ND	3,400
		26	71	--	2,400		26	38	--	2,900
	Tt-TP2-L2	2	2,200	0.99	5,300	Tt-TP2-L2A	2	23	0.48	560
		6	29	--	1,300		6	170	--	1,800
		10	15	--	1,900		10	94	--	3,000
		14	240	--	1,600		14	37	--	5,900
		18	990	--	4,200		18	1.8	--	3,500
		22	91	--	1,900		22	22	--	1,600
		26	74	2.1	4,200		26	62	0.63	2,700

Table 1 Summary of Analytical Results: Soil Samples

Test Plot	Baseline					Post-Treatment				
	Boring ID	Sample Depth (feet)	Perchlorate (mg/kg)	Hexavalent Chromium (mg/kg)	Leachable Solids (mg/kg)	Boring ID	Sample Depth (feet)	Perchlorate (mg/kg)	Hexavalent Chromium (mg/kg)	Leachable Solids (mg/kg)
3	Tt-TP3-B1	2	29	--	1,700	Tt-TP3-B1A	2	15	--	1,000
		6	430	--	2,300		6	1.5	--	930
		10	160	ND	2,700		10	0.16	ND	1,900
		14	70	--	2,100		14	0.017	--	1,500
		18	150	ND	3,100		18	0.073	ND	2,200
		22	200	--	2,400		22	140	--	2,600
		26	130	--	4,300		28	110	--	3,000
	Tt-TP3-B2	2	6.9	--	2,800	Tt-TP3-B2A	2	0.15	--	1,100
		6	1.2	ND	2,400		6	0.19	ND	670
		10	2.3	--	1,700		10	0.018	--	1,400
		14	3.7	ND	3,200		14	0.058	ND	2,500
		18	9.4	--	2,100		18	0.66	--	2,200
		22	4.6	--	2,400		22	3.6	--	1,900
		26	3,100	--	5,500		--	--	--	--
	Tt-TP3-B3	2	1.8	--	770	Tt-TP3-B3A	2	0.18	--	900
		6	1.4	--	3,400		6	0.11	--	560
		10	1.2	ND	2,400		10	0.31	ND	1,700
		14	0.75	--	1,900		14	0.096	--	2,900
		18	7.0	--	4,100		18	0.075	--	1,300
		22	40	--	3,900		22	4.3	--	2,100
		26	330	8.3	5,100		26	230	3.8	2,800
	Tt-TP3-B4	2	2.1	ND	1,100	Tt-TP3-B4A	2	6.6	ND	650
		6	0.98	--	1,900		6	2.5	--	790
		10	0.68	--	3,000		10	24	--	1,000
		14	0.49	--	1,600		14	0.12	--	1,100
		18	2.8	ND	2,800		18	0.028	ND	3,800
		22	110	--	3,200		22	7.3	--	1,400
		26	300	--	4,100		--	--	--	--
	Tt-TP3-L2	2	0.78	--	880	Tt-TP3-L2A	2	36	--	1,000
		6	0.83	ND	2,000		6	88	ND	1,700
		10	1.1	--	5,000		10	26	--	1,000
		14	2.7	ND	5,000		14	2.5	ND	2,100
		18	0.81	--	3,000		18	0.045	--	2,300
		22	31	--	2,600		22	59	--	3,800
		26	320	--	6,500		26	190	--	3,300

Table 1 Summary of Analytical Results: Soil Samples

Test Plot	Baseline					Post-Treatment				
	Boring ID	Sample Depth (feet)	Perchlorate (mg/kg)	Hexavalent Chromium (mg/kg)	Leachable Solids (mg/kg)	Boring ID	Sample Depth (feet)	Perchlorate (mg/kg)	Hexavalent Chromium (mg/kg)	Leachable Solids (mg/kg)
4	Tt-TP4-B1	2	0.82	--	560	Tt-TP4-B1A	2	3.2	--	800
		6	0.97	ND	1,100		6	0.89	ND	1,000
		10	1.0	--	1,500		10	2.1	--	3,400
		14	2.0	ND	3,300		14	3.3	ND	4,100
		18	1.6	--	1,900		18	5.3	--	6,000
		22	150	--	2,400		24	21	--	16,000
		26	220	--	4,200		26	110	--	9,800
	Tt-TP4-B2	2	2.9	--	1,900	Tt-TP4-B2A	2	2.1	--	1,700
		6	3.0	--	1,500		6	0.077	--	2,400
		10	31	ND	4,000		10	0.22	ND	2,200
		14	6.9	--	1,900		14	0.067	--	2,800
		18	15	--	2,200		18	0.061	--	1,500
		22	34	ND	3,200		22	3.8	ND	7,700
		26	310	--	3,400		26	73	--	4,900
	Tt-TP4-B3	2	0.24	ND	2,000	Tt-TP4-B3A	2	9.9	ND	1,600
		6	1.3	--	890		6	18	--	890
		10	2.6	--	1,400		10	6.1	--	1,100
		14	1.6	--	1,600		14	0.83	--	1,700
		18	1.6	--	15,000		18	0.032	--	1,600
		22	170	ND	5,000		22	120	2.4	7,300
		26	300	--	4,000		26	76	--	4,300
	Tt-TP4-B4	2	1.9	--	990	Tt-TP4-B4A	2	150	--	2,700
		6	3.2	--	960		6	47	--	1,600
		10	3.8	ND	4,000		10	6.4	ND	2,000
		14	2.1	--	3,600		14	3.6	--	3,800
		18	2.8	--	8,900		18	0.054	--	2,700
		22	78	--	2,400		22	25	--	7,200
		26	24	ND	15,000		26	43	1.1	4,900
	Tt-TP4-L2	2	4.2	--	1,000	Tt-TP4-L2A	2	0.78	--	650
		6	2.3	--	1,700		6	0.56	--	3,500
		10	2.0	ND	2,000		10	7.7	ND	1,800
		14	1.2	--	2,400		14	0.41	--	3,900
		18	1.5	--	3,500		18	0.58	--	1,900
		22	83	1.0	2,400		22	25	ND	1,300
		26	380	--	6,700		26	170	--	14,000

Notes:
mg/kg: milligrams per kilogram
--: not analyzed
ND: analyte not detected

Table 2 Mass Estimate Summary

Test Plot	Perchlorate				Leachable Solids			
	Baseline Mass (pounds)	Post-Treatment Mass (pounds)	Mass Difference (pounds)	% Change in Mass	Baseline Mass (pounds)	Post-Treatment Mass (pounds)	Mass Difference (pounds)	% Change in Mass
1	21	20	1	5	5,600	5,800	-200	-4
2	6,300	66	6,200	98	20,000	9,600	10,400	52
3	51	14	37	73	6,100	4,000	2,100	34
4	30	17	13	43	6,200	6,300	-100	-2

Table 3 Water Application Data

Test Plot	Startup Date	Final Volume (gallons)	Number of Pore Volumes[1]	Average Application Rate (gpm)	Average Application Rate (% of Maximum)	Long-Term Infiltration Rate (in/hr)
1	01/15/16	197,685	3.5	0.84	5%	N/A
2	12/31/15	368,112	6.5	1.6	100%	0.17
3	02/01/16	2,357,148	42	11	100%	1.2
4	02/01/16	198,047	3.5	0.92	13%	N/A

Notes:
gpm: gallons per minute
in/hr: inches per hour
1. Pore volume calculation assumes 35% porosity. Reference: Northgate (2010)
N/A – not applicable

Reference: Northgate Environmental Management, Inc. (Northgate), 2010. Site-Wide Soil Gas Human Health Risk Assessment, Tronox LLC, Henderson, Nevada. November 22.

Table 4 Groundwater Elevation Data

TT-TP1-M1			TT-TP1-M2			TT-TP1-M3			TT-TP2-M1			TT-TP2-M2		
Date	Depth to Groundwater (feet TOC)	Groundwater Elevation (feet MSL)	Date	Depth to Groundwater (feet TOC)	Groundwater Elevation (feet MSL)	Date	Depth to Groundwater (feet TOC)	Groundwater Elevation (feet MSL)	Date	Depth to Groundwater (feet TOC)	Groundwater Elevation (feet MSL)	Date	Depth to Groundwater (feet TOC)	Groundwater Elevation (feet MSL)
12/09/15	26.64	1733.62	12/09/15	27.26	1732.96	12/09/15	27.03	1733.30	12/09/15	26.28	1734.15	12/09/15	26.65	1733.37
--	--	--	--	--	--	--	--	--	01/03/16	26.22	1734.21	01/03/16	26.63	1733.39
01/20/16	26.50	1733.76	01/20/16	--	1760.22	--	--	--	01/20/16	25.96	1734.47	01/20/16	26.45	1733.57
02/03/16	25.92	1734.34	02/03/16	26.88	1733.34	02/03/16	26.73	1733.60	02/03/16	25.40	1735.03	02/03/16	26.00	1734.02
02/10/16	25.52	1734.74	02/10/16	26.54	1733.68	02/10/16	26.50	1733.83	02/10/16	24.82	1735.61	02/10/16	25.44	1734.58
02/17/16	25.16	1735.10	02/17/16	26.22	1734.00	02/17/16	26.34	1733.99	02/17/16	24.38	1736.05	02/17/16	25.02	1735.00
02/24/16	25.00	1735.26	02/24/16	26.05	1734.17	02/24/16	26.20	1734.13	02/24/16	24.10	1736.33	02/24/16	24.72	1735.30
03/02/16	24.77	1735.49	03/02/16	25.86	1734.36	03/02/16	26.03	1734.30	03/02/16	23.86	1736.57	03/02/16	24.54	1735.48
03/09/16	24.68	1735.58	03/09/16	25.77	1734.45	03/09/16	25.95	1734.38	03/09/16	23.69	1736.74	03/09/16	24.35	1735.67
03/16/16	24.59	1735.67	03/16/16	25.67	1734.55	03/16/16	25.85	1734.48	03/16/16	23.52	1736.91	03/16/16	24.20	1735.82
03/23/16	24.55	1735.71	03/23/16	25.60	1734.62	03/23/16	25.80	1734.53	03/23/16	23.43	1737.00	03/23/16	24.09	1735.93
03/30/16	24.48	1735.78	03/30/16	25.50	1734.72	03/30/16	25.78	1734.55	03/30/16	23.39	1737.04	03/30/16	24.05	1735.97
04/04/16	24.53	1735.73	04/04/16	25.45	1734.77	04/04/16	25.77	1734.56	04/04/16	23.23	1737.20	04/04/16	23.99	1736.03
04/13/16	24.20	1736.06	04/13/16	25.34	1734.88	04/13/16	25.60	1734.73	04/14/16	23.62	1736.81	04/14/16	24.24	1735.78
04/19/16	24.55	1735.71	04/19/16	25.55	1734.67	04/19/16	25.73	1734.60	04/19/16	24.61	1735.82	04/19/16	24.23	1735.79
04/27/16	24.40	1735.86	04/27/16	25.44	1734.78	04/27/16	25.89	1734.44	04/27/16	23.43	1737.00	04/27/16	24.05	1735.97
05/04/16	24.19	1736.07	05/04/16	25.18	1735.04	05/04/16	25.59	1734.74	05/04/16	23.05	1737.38	05/05/16	23.75	1736.27
05/10/16	24.29	1735.97	05/10/16	25.27	1734.95	05/10/16	25.60	1734.73	05/11/16	23.19	1737.24	05/11/16	24.84	1735.18
05/19/16	24.61	1735.65	05/19/16	25.55	1734.67	05/19/16	25.69	1734.64	05/19/16	23.24	1737.19	05/19/16	24.28	1735.74
05/24/16	24.55	1735.71	05/24/16	25.54	1734.68	05/24/16	25.70	1734.63	05/26/16	23.38	1737.05	05/26/16	24.00	1736.02
06/01/16	24.38	1735.88	06/01/16	25.38	1734.84	06/01/16	26.07	1734.26	06/01/16	23.22	1737.21	06/01/16	23.88	1736.14
06/08/16	24.27	1735.99	06/08/16	25.28	1734.94	06/08/16	25.57	1734.76	06/08/16	23.05	1737.38	06/08/16	23.71	1736.31
06/21/16	24.23	1736.03	06/21/16	25.20	1735.02	06/21/16	25.50	1734.83	06/22/16	23.00	1737.43	06/22/16	23.61	1736.41
07/05/16	24.98	1735.28	07/05/16	25.83	1734.39	07/05/16	25.81	1734.52	07/05/16	24.33	1736.10	07/05/16	24.75	1735.27
07/27/16	25.61	1734.65	07/27/16	26.50	1733.72	07/27/16	26.10	1734.23	07/27/16	24.95	1735.48	07/28/16	25.47	1734.55

TT-TP3-M1			TT-TP3-M2			TT-TP4-M1			TT-TP4-M2			TT-TP4-M3		
Date	Depth to Groundwater (feet TOC)	Groundwater Elevation (feet MSL)	Date	Depth to Groundwater (feet TOC)	Groundwater Elevation (feet MSL)	Date	Depth to Groundwater (feet TOC)	Groundwater Elevation (feet MSL)	Date	Depth to Groundwater (feet TOC)	Groundwater Elevation (feet MSL)	Date	Depth to Groundwater (feet TOC)	Groundwater Elevation (feet MSL)
12/09/15	26.30	1733.87	12/09/15	26.73	1733.40	12/09/15	26.78	1733.68	12/09/15	26.85	1733.29	12/09/15	26.10	1733.81
02/03/16	24.90	1735.27	02/04/16	25.77	1734.36	02/04/16	26.20	1734.26	02/04/16	26.14	1734.00	02/04/16	25.81	1734.10
02/11/16	23.95	1736.22	02/10/16	25.07	1735.06	02/11/16	25.42	1735.04	02/11/16	25.38	1734.76	02/11/16	25.28	1734.63
02/18/16	23.30	1736.87	02/18/16	24.54	1735.59	02/18/16	24.95	1735.51	02/18/16	24.93	1735.21	02/18/16	24.93	1734.98
02/25/16	22.87	1737.30	02/25/16	24.20	1735.93	02/25/16	24.61	1735.85	02/25/16	24.61	1735.53	02/25/16	24.64	1735.27
03/03/16	22.56	1737.61	03/03/16	23.94	1736.19	03/03/16	24.39	1736.07	03/03/16	24.38	1735.76	03/03/16	24.46	1735.45
03/10/16	22.37	1737.80	03/10/16	23.75	1736.38	03/10/16	24.21	1736.25	03/10/16	24.20	1735.94	03/10/16	24.28	1735.63
03/16/16	22.18	1737.99	03/16/16	23.60	1736.53	03/17/16	24.07	1736.39	03/17/16	24.07	1736.07	03/17/16	24.12	1735.79
03/23/16	22.10	1738.07	03/23/16	23.50	1736.63	03/24/16	23.95	1736.51	03/24/16	23.94	1736.20	03/24/16	24.04	1735.87
03/31/16	22.06	1738.11	03/31/16	23.42	1736.71	03/31/16	23.90	1736.56	03/31/16	23.88	1736.26	03/31/16	24.05	1735.86
04/05/16	21.97	1738.20	04/05/16	23.35	1736.78	04/05/16	23.84	1736.62	04/05/16	23.84	1736.30	04/05/16	23.94	1735.97
04/14/16	22.85	1737.32	04/14/16	23.83	1736.30	04/14/16	24.02	1736.44	04/14/16	24.10	1736.04	04/14/16	23.96	1735.95
04/20/16	22.60	1737.57	04/20/16	23.71	1736.42	04/20/16	24.06	1736.40	04/20/16	24.09	1736.05	04/20/16	23.99	1735.92
04/27/16	22.24	1737.93	04/27/16	23.42	1736.71	04/27/16	23.90	1736.56	04/27/16	23.90	1736.24	04/27/16	23.86	1736.05
05/05/16	21.95	1738.22	05/05/16	23.20	1736.93	05/05/16	23.60	1736.86	05/05/16	23.63	1736.51	05/05/16	23.72	1736.19
05/11/16	21.90	1738.27	05/11/16	23.15	1736.98	05/11/16	23.58	1736.88	05/11/16	23.61	1736.53	05/11/16	23.68	1736.23
05/19/16	23.17	1737.00	05/19/16	23.94	1736.19	05/19/16	23.73	1736.73	05/19/16	23.80	1736.34	05/19/16	23.64	1736.27
05/26/16	22.45	1737.72	05/26/16	23.60	1736.53	05/26/16	23.80	1736.66	05/26/16	23.90	1736.24	05/26/16	23.76	1736.15
06/01/16	22.10	1738.07	06/02/16	23.18	1736.95	06/02/16	23.63	1736.83	06/02/16	23.65	1736.49	06/02/16	23.84	1736.07
06/08/16	21.82	1738.35	06/08/16	22.97	1737.16	06/09/16	23.46	1737.00	06/09/16	23.48	1736.66	06/09/16	23.61	1736.30
06/22/16	21.75	1738.42	06/22/16	22.85	1737.28	06/22/16	23.29	1737.17	06/22/16	23.30	1736.84	06/22/16	23.44	1736.47
07/05/16	24.26	1735.91	07/05/16	24.71	1735.42	07/06/16	24.90	1735.56	07/06/16	24.83	1735.31	07/06/16	24.46	1735.45
07/28/16	25.15	1735.02	07/28/16	25.57	1734.56	07/28/16	25.60	1734.86	07/28/16	25.63	1734.51	07/28/16	25.00	1734.91

Notes:
TOC: depth, relative to top of well casing measuring point -- data not collected
MSL: elevation relative to mean sea level

Table 5 Summary of Analytical Results: Pore Water Samples

Test Plot	Lysimeter ID	Date	Perchlorate (mg/L)	TDS (mg/L)	Hexavalent Chromium (ug/L)
1	TT-TP1-L1	12/10/15	25	22,000	ND
		01/20/16	24	24,000	ND
		02/04/16	16	6,200	37
		02/11/16	11	--	--
		02/18/16	7.3	--	0.023*
		02/25/16	6	8,000	ND
		03/03/16	4.4	6,100	ND
		03/10/16	2.8	4,700	ND
		03/17/16	3	4,100	ND
		03/23/16	2.6	3,800	ND
		03/31/16	2.2	3,400	ND
		04/04/16	--	--	--
		04/05/16	1.9	3,200	ND
		04/14/16	2.3	--	--
		04/20/16	1.9	--	ND
		04/28/16	1.6	2,100	ND
		05/04/16	--	--	--
		05/05/16	1.2	2,400	ND
		05/11/16	1.2	2,300	ND
		05/19/16	1.4	2,000	ND
		05/25/16	1.6	2,100	ND
		06/02/16	0.89	--	ND
		06/08/16	0.8	--	ND
		06/22/16	0.79	1,900	ND
		07/05/16	0.14	2,000	ND
		07/27/16	0.025	2,500	ND
	TT-TP1-L2	12/10/15	82	15,000	ND
		01/20/16	81	18,000	ND
		02/04/16	37	22,000	ND
		02/11/16	38	22,000	0.056*
		02/18/16	45	23,000	0.111*
		02/25/16	35	22,000	ND
		03/03/16	30	20,000	ND
		03/10/16	21	17,000	ND
		03/17/16	20	13,000	ND
		03/23/16	17	12,000	ND
		03/31/16	12	9,300	ND
		04/04/16	--	--	--
		04/05/16	10	8,000	ND
		04/14/16	6.3	--	--
		04/20/16	5.3	--	2.3
		04/28/16	4.8	3,800	ND
		05/04/16	--	--	--
		05/05/16	2.9	3,300	ND
		05/11/16	3.3	--	--
		05/19/16	3	2,900	ND
		05/25/16	2.7	2,400	ND
		06/02/16	1.7	--	ND
		06/08/16	1.9	--	--
		06/22/16	1.5	2,000	ND
		07/05/16	1.5	2,000	ND
		07/27/16	1.2	1,800	ND

Table 5 Summary of Analytical Results: Pore Water Samples

Test Plot	Lysimeter ID	Date	Perchlorate (mg/L)	TDS (mg/L)	Hexavalent Chromium (ug/L)
2	TT-TP2-L1	12/10/15	170	1,800	1.5
		01/03/16	180	2,100	4.4
		01/20/16	300	2,500	5.8
		02/04/16	880	4,400	0.012*
		02/11/16	2,200	--	0.022*
		02/18/16	2,600	6,600	25
		02/25/16	1,700	5,700	25
		03/03/16	1,100	4,800	19
		03/10/16	780	4,100	18
		03/17/16	700	3,600	16
		03/23/16	500	3,400	18
		03/31/16	--	--	--
		04/04/16	--	--	--
		04/05/16	310	2,700	17
		04/14/16	210	--	--
		04/20/16	190	--	7.9
		04/28/16	220	2,500	8.2
		05/04/16	--	--	--
		05/05/16	140	2,500	7.5
		05/11/16	150	2,600	7
		05/19/16	130	2,300	6.8
		05/25/16	120	2,200	6.7
		06/02/16	110	--	6.1
		06/08/16	110	--	5.2
		06/22/16	96	2,100	2.8
		07/05/16	90	2,100	0.5
		07/27/16	77	2,200	ND
	TT-TP2-L2	12/10/15	1,800	8,100	1800
		01/03/16	1,800	9,900	--
		01/20/16	1,900	10,000	2800
		02/04/16	2,500	13,000	4600
		02/11/16	2,900	13,000	3.47
		02/18/16	2,800	12,000	2.8
		02/25/16	2,900	9,100	1700
		03/03/16	3,700	11,000	1400
		03/10/16	2,800	11,000	1100
		03/17/16	3,000	8,800	800
		03/23/16	2,400	9,000	630
		03/31/16	2,100	7,900	520
		04/04/16	--	--	--
		04/05/16	1,600	7,300	420
		04/14/16	1,200	--	--
		04/20/16	970	--	190
		04/28/16	950	4,800	120
		05/04/16	--	--	--
		05/05/16	620	4,500	71
		05/11/16	570	4,100	63
		05/19/16	360	3,200	29
		05/25/16	370	3,100	14
		06/02/16	300	--	5.5
		06/08/16	250	--	3.8
		06/22/16	210	2,400	1.5
		07/05/16	180	--	--
		07/27/16	170	2,100	0.58

Table 5 Summary of Analytical Results: Pore Water Samples

Test Plot	Lysimeter ID	Date	Perchlorate (mg/L)	TDS (mg/L)	Hexavalent Chromium (ug/L)
3	TT-TP3-L1	12/10/15	4	4,800	ND
		02/04/16	5.6	17,000	ND
		02/11/16	1.6	--	0.009*
		02/18/16	0.86	--	0.004*
		02/25/16	0.59	1,600	1.7
		03/03/16	0.42	1,400	1.4
		03/10/16	0.32	1,300	1.4
		03/17/16	0.36	--	--
		03/23/16	0.32	1,300	1.3
		03/29/16	340	2,900	--
		03/31/16	--	--	--
		04/04/16	--	--	--
		04/05/16	0.21	--	--
		04/14/16	0.17	--	--
		04/20/16	0.12	--	--
		04/28/16	0.09	--	--
		05/05/16	0.028	910	1.2
		05/11/16	0.044	--	--
		05/19/16	0.058	930	1.9
		05/25/16	0.072	960	1.9
		06/02/16	0.029	--	1.4
		06/08/16	0.014	--	1.2
		06/09/16	--	--	--
		06/22/16	0.022	840	1.7
		07/05/16	0.019	900	4.1
		07/27/16	0.02	940	4.6
	TT-TP3-L2	12/10/15	62	5,400	ND
		02/04/16	42	4,200	2
		02/11/16	32	--	--
		02/18/16	24	--	--
		02/25/16	14	4,800	5.3
		03/03/16	12	3,400	2.7
		03/10/16	7.2	3,300	3.2
		03/17/16	5.4	2,900	2.4
		03/26/16	--	--	--
		03/23/16	4.4	3,000	1.3
		03/31/16	3	2,600	1.4
		04/04/16	--	--	--
		04/05/16	2.2	2,500	1.1
		04/14/16	1.1	--	--
		04/20/16	1.1	--	0.78
		04/28/16	0.77	1,900	0.83
		05/04/16	--	--	--
		05/05/16	0.54	1,800	0.65
		05/11/16	0.45	1,700	0.56
		05/19/16	0.38	1,700	0.37
		05/25/16	0.49	1,600	ND
		06/02/16	0.26	--	0.37
		06/08/16	0.3	--	0.28
		06/09/16	--	--	--
		06/22/16	1.3	1,300	11
		07/05/16	0.5	1,300	0.46
		07/27/16	0.3	1,100	ND

Table 5 Summary of Analytical Results: Pore Water Samples

Test Plot	Lysimeter ID	Date	Perchlorate (mg/L)	TDS (mg/L)	Hexavalent Chromium (ug/L)
4	TT-TP4-L1	12/10/15	10	13,000	ND
		02/04/16	8.7	13,000	ND
		02/11/16	8.4	--	0.071*
		02/18/16	7.3	17,000	0.068*
		02/25/16	12	30,000	ND
		03/03/16	15	32,000	ND
		03/10/16	8.1	22,000	ND
		03/17/16	6.6	13,000	ND
		03/23/16	5	--	--
		03/31/16	4	8,900	ND
		04/04/16	--	--	--
		04/05/16	3.8	8,400	8.9
		04/14/16	3.8	--	--
		04/20/16	3.5	--	ND
		04/28/16	0.98	1,500	ND
		05/04/16	--	--	--
		05/05/16	0.43	1,500	ND
		05/11/16	0.62	1,500	ND
		05/19/16	0.42	1,400	ND
		05/25/16	0.25	1,200	ND
		06/02/16	0.18	--	0.26
		06/08/16	0.13	--	ND
		06/09/16	--	--	--
		06/22/16	0.25	1,000	ND
		07/05/16	0.22	1,200	ND
		07/27/16	0.31	1,400	ND
	TT-TP4-L2	12/10/15	120	6,500	3.3
		02/04/16	120	6,600	1.1
		02/11/16	110	--	0.006*
		02/18/16	110	6,100	0.006*
		02/25/16	72	5,600	15
		03/03/16	66	5,600	20
		03/10/16	49	6,000	12
		03/17/16	58	6,100	7.7
		03/23/16	51	5,900	ND
		03/31/16	40	--	--
		04/04/16	--	--	--
		04/05/16	37	5,800	8
		04/14/16	28	--	--
		04/20/16	27	--	ND
		04/28/16	24	4,400	ND
		05/04/16	--	--	--
		05/11/16	15	3,900	0.83
		05/19/16	10	3,300	ND
		05/25/16	8.9	2,900	1.8
		06/02/16	6.9	--	0.27*
		06/08/16	6.7	--	ND
		06/22/16	5.1	2,200	ND
		07/05/16	4.1	2,000	ND
		07/27/16	3.3	2,000	ND

Notes:
mg/L: milligrams per liter
ug/L: microgram per liter
ND: analyte not detected
--: not analyzed
*: value reported in mg/L

Table 6 Summary of Analytical Results: Groundwater Samples

Test Plot	Well ID	Date	Perchlorate (mg/L)	TDS (mg/L)	Hexavalent Chromium (ug/L)
1	TT-TP1-M1	12/10/15	740	10,000	15,000
		01/20/16	800	9,900	15,000
		02/03/16	580	12,000	9,200
		02/10/16	590	10,000	8.67
		02/17/16	1,200	8,200	3.1
		02/24/16	430	6,200	2,800
		03/02/16	360	5,300	2,900
		03/09/16	490	5,400	4,700
		03/16/16	560	5,700	5,200
		03/23/16	880	6,700	4,800
		03/30/16	980	7,600	6,300
		04/04/16	1,500	7,300	--
		04/13/16	3.5	1,500	10
		04/27/16	500	4,000	2,900
		05/04/16	210	2,400	1,200
		05/10/16	460	4,600	2,900
		05/19/16	1,600	12,000	14,000
		05/24/16	470	3,500	2,200
		06/01/16	680	5,100	3,400
		06/08/16	770	4,900	3,800
		06/21/16	880	5,200	3,700
		07/05/16	740	5,100	3,300
		07/27/16	850	5,800	3,900
	TT-TP1-M2	12/10/15	1,400	11,000	16,000
		01/20/16	1,300	11,000	16,000
		02/03/16	1,200	12,000	15,000
		02/10/16	1,300	11,000	15.6
		02/17/16	1,600	11,000	15.1
		02/24/16	1,300	11,000	--
		03/02/16	1,400	12,000	16,000
		03/09/16	1,400	11,000	15,000
		03/16/16	1,400	11,000	15,000
		03/23/16	1,400	12,000	13,000
		03/30/16	1,000	12,000	10,000
		04/04/16	1,900	12,000	--
		04/13/16	1,300	9,800	8,800
		04/16/17	--	--	--
		04/27/16	1,400	11,000	12,000
		05/04/16	1,400	10,000	13,000
		05/10/16	1,300	12,000	10,000
		05/19/16	330	3,100	1,800
		05/24/16	1,500	9,400	12,000
		06/01/16	1,600	10,000	11,000
		06/08/16	1,400	11,000	12,000
		06/21/16	1,000	9,500	7,500
		07/05/16	1,200	9,500	11,000
		07/27/16	1,800	11,000	9,100

Table 6 Summary of Analytical Results: Groundwater Samples

Test Plot	Well ID	Date	Perchlorate (mg/L)	TDS (mg/L)	Hexavalent Chromium (ug/L)
1	TT-TP1-M3	12/10/15	940	9,600	15,000
		02/03/16	820	10,000	14,000
		02/10/16	810	9,900	11.9
		02/17/16	810	10,000	13.3
		02/24/16	750	10,000	--
		03/02/16	780	11,000	13,000
		03/09/16	810	11,000	11,000
		03/16/16	670	9,900	11,000
		03/23/16	840	10,000	8,300
		03/30/16	830	11,000	9,600
		04/04/16	840	10,000	--
		04/13/16	840	11,000	10,000
		04/19/17	--	--	--
		04/27/16	810	9,700	9,000
		05/04/16	770	9,400	7,600
		05/10/16	700	9,400	7,100
		05/19/16	1,100	8,500	7,300
		05/24/16	750	8,500	6,800
		06/01/16	760	8,500	6,400
		06/08/16	720	8,100	5,800
		06/21/16	830	8,000	5,500
		07/05/16	970	8,300	5,500
		07/27/16	910	7,900	5,900
2	TT-TP2-M1	12/10/15	480	9,100	16,000
		01/03/16	510	9,900	--
		01/20/16	3,100	11,000	11,000
		02/03/16	2,300	9,500	9,200
		02/10/16	2,100	9,000	9.27
		02/17/16	2,300	9,200	10.5
		02/24/16	2,400	9,300	--
		03/02/16	1,800	8,100	7,800
		03/09/16	2,200	8,500	6,100
		03/16/16	2,100	7,400	5,900
		03/23/16	1,700	7,200	3,600
		03/30/16	1,700	7,000	4,400
		04/04/16	1,900	7,200	--
		04/14/16	--	--	--
		04/19/17	--	--	--
		04/27/16	3,000	7,900	2,600
		05/04/16	2,900	8,300	2,400
		05/11/16	3,300	9,100	2,200
		05/19/16	3,200	9,500	1,900
		05/26/16	3,700	10,000	1,800
		06/01/16	3,600	9,300	1,500
		06/08/16	3,100	7,900	1,300
		06/22/16	2,700	7,700	1,100
		07/05/16	3,300	8,500	1,300
		07/27/16	1,400	6,200	3,000

Table 6 Summary of Analytical Results: Groundwater Samples

Test Plot	Well ID	Date	Perchlorate (mg/L)	TDS (mg/L)	Hexavalent Chromium (ug/L)
2	TT-TP2-M2	12/10/15	510	9,300	15,000
		01/03/16	440	9,900	--
		01/20/16	1,800	11,000	14,000
		02/03/16	1,500	9,700	11,000
		02/10/16	1,700	9,200	12.7
		02/17/16	1,700	9,400	11.9
		02/24/16	1,600	9,900	--
		03/02/16	1,500	9,500	10,000
		03/09/16	1,600	9,200	9,400
		03/16/16	1,700	8,400	10,000
		03/23/16	1,600	8,700	7,200
		03/30/16	1,700	9,000	8,400
		04/04/16	2,100	8,300	--
		04/14/16	--	--	--
		04/19/17	--	--	--
		04/27/16	2,300	8,600	5,000
		05/05/16	2,200	8,400	4,500
		05/11/16	2,500	8,400	4,200
		05/19/16	2,400	8,300	3,700
		05/26/16	2,800	8,600	3,500
		06/01/16	2,900	8,700	3,200
		06/08/16	2,400	8,600	2,800
		06/22/16	2,500	7,900	2,500
		07/05/16	2,600	7,700	2,100
		07/28/16	2,000	7,000	2,300
3	TT-TP3-M1	12/10/15	610	11,000	19,000
		02/03/16	730	11,000	9,500
		02/11/16	350	5,900	0.93
		02/18/16	4.9	1,300	0.026
		02/25/16	1.4	1,100	14
		03/03/16	0.69	1,000	6.1
		03/10/16	0.43	940	6.7
		03/16/16	0.37	860	3.4
		03/23/16	0.42	850	2.7
		03/31/16	0.4	860	3.3
		04/05/16	0.4	850	3.3
		04/14/16	--	--	--
		04/20/16	--	--	3
		04/27/16	0.28	820	3.5
		05/05/16	0.23	850	3.2
		05/11/16	0.21	790	2.3
		05/19/16	0.86	900	--
		05/26/16	1.6	880	25
		06/01/16	0.43	810	3.7
		06/08/16	0.18	770	3.2
		06/22/16	0.14	780	2.5
		07/05/16	1.8	930	53
		07/28/16	200	3,800	3,900

Table 6 Summary of Analytical Results: Groundwater Samples

Test Plot	Well ID	Date	Perchlorate (mg/L)	TDS (mg/L)	Hexavalent Chromium (ug/L)
3	TT-TP3-M2	12/10/15	550	10,000	18,000
		02/04/16	590	11,000	17,000
		02/10/16	430	8,700	41.7
		02/18/16	170	4,700	5.2
		02/25/16	71	2,800	2,100
		03/03/16	38	2,000	1,100
		03/10/16	20	1,700	710
		03/16/16	16	1,500	510
		03/23/16	9.9	1,400	350
		03/31/16	8.7	1,300	290
		04/05/16	8.7	1,300	140
		04/14/17	--	--	--
		04/20/16	--	--	330
		04/27/16	9.2	1,300	250
		05/05/16	6.4	1,300	210
		05/11/16	5.7	1,200	200
		05/19/16	9.6	1,200	310
		05/26/16	7.9	1,200	210
		06/02/16	5.8	1,100	190
		06/08/16	5.2	1,000	160
		06/22/16	4	950	130
		07/05/16	23	1,300	630
		07/28/16	230	4,700	6,100
4	TT-TP4-M1	12/10/15	750	11,000	19,000
		02/04/16	970	11,000	19,000
		02/11/16	1,100	12,000	18.4
		02/18/16	910	11,000	8.4
		02/25/16	690	11,000	13,000
		03/03/16	1,000	10,000	11,000
		03/10/16	3,400	13,000	7,400
		03/17/16	800	8,300	11,000
		03/24/16	550	8,200	11,000
		03/31/16	440	6,500	7,900
		04/05/16	520	7,500	9,800
		04/14/17	--	--	--
		04/20/16	--	--	6,600
		04/27/16	370	5,900	7,100
		05/05/16	220	4,900	4,900
		05/11/16	340	5,500	5,700
		05/19/16	76	3,100	2,200
		05/26/16	170	4,100	3,200
		06/02/16	2,000	4,300	3,500
		06/09/16	230	4,200	3,500
		06/22/16	66	2,700	1,000
		07/06/16	62	2,400	1,100
		07/28/16	200	5,100	4,700

Table 6 Summary of Analytical Results: Groundwater Samples

Test Plot	Well ID	Date	Perchlorate (mg/L)	TDS (mg/L)	Hexavalent Chromium (ug/L)
4	TT-TP4-M2	12/10/15	890	11,000	18,000
		02/04/16	870	11,000	18,000
		02/11/16	940	11,000	18.2
		02/18/16	920	11,000	17
		02/25/16	860	11,000	18,000
		03/03/16	770	11,000	15,000
		03/10/16	540	9,600	13,000
		03/17/16	530	7,800	10,000
		03/24/16	370	6,800	7,800
		03/31/16	370	5,800	6,300
		04/05/16	300	5,200	8,400
		04/14/17	--	--	--
		04/20/16	--	--	4,300
		04/27/16	190	3,800	3,600
		05/05/16	140	3,400	2,900
		05/11/16	120	3,100	3,000
		05/19/16	110	3,200	2,800
		05/26/16	85	2,700	1,800
		06/02/16	79	2,400	1,700
		06/08/16	70	2,300	1,500
		06/22/16	51	2,100	1,100
		07/05/16	63	2,200	950
		07/28/16	93	3,500	2,100
	TT-TP4-M3	12/09/15	760	10,000	18,000
		02/04/16	800	11,000	19,000
		02/11/16	820	11,000	19.7
		02/18/16	780	11,000	18.7
		02/25/16	620	12,000	20,000
		03/03/16	680	11,000	19,000
		03/10/16	620	11,000	18,000
		03/17/16	780	11,000	20,000
		03/24/16	580	11,000	17,000
		03/31/16	600	11,000	16,000
		04/05/16	570	11,000	15,000
		04/14/17	--	--	--
		04/20/16	--	--	13,000
		04/27/16	370	8,600	11,000
		05/05/16	310	7,700	7,400
		05/11/16	270	7,100	6,400
		05/19/16	270	6,300	6,300
		05/26/16	240	6,200	6,000
		06/02/16	200	5,800	5,100
		06/09/16	190	5,000	4,700
		06/22/16	170	5,300	3,900
		07/06/16	250	6,400	5,600
		07/28/16	370	8,400	10,000

Notes:
mg/L: milligrams per liter
ug/L: microgram per liter
--: not analyzed

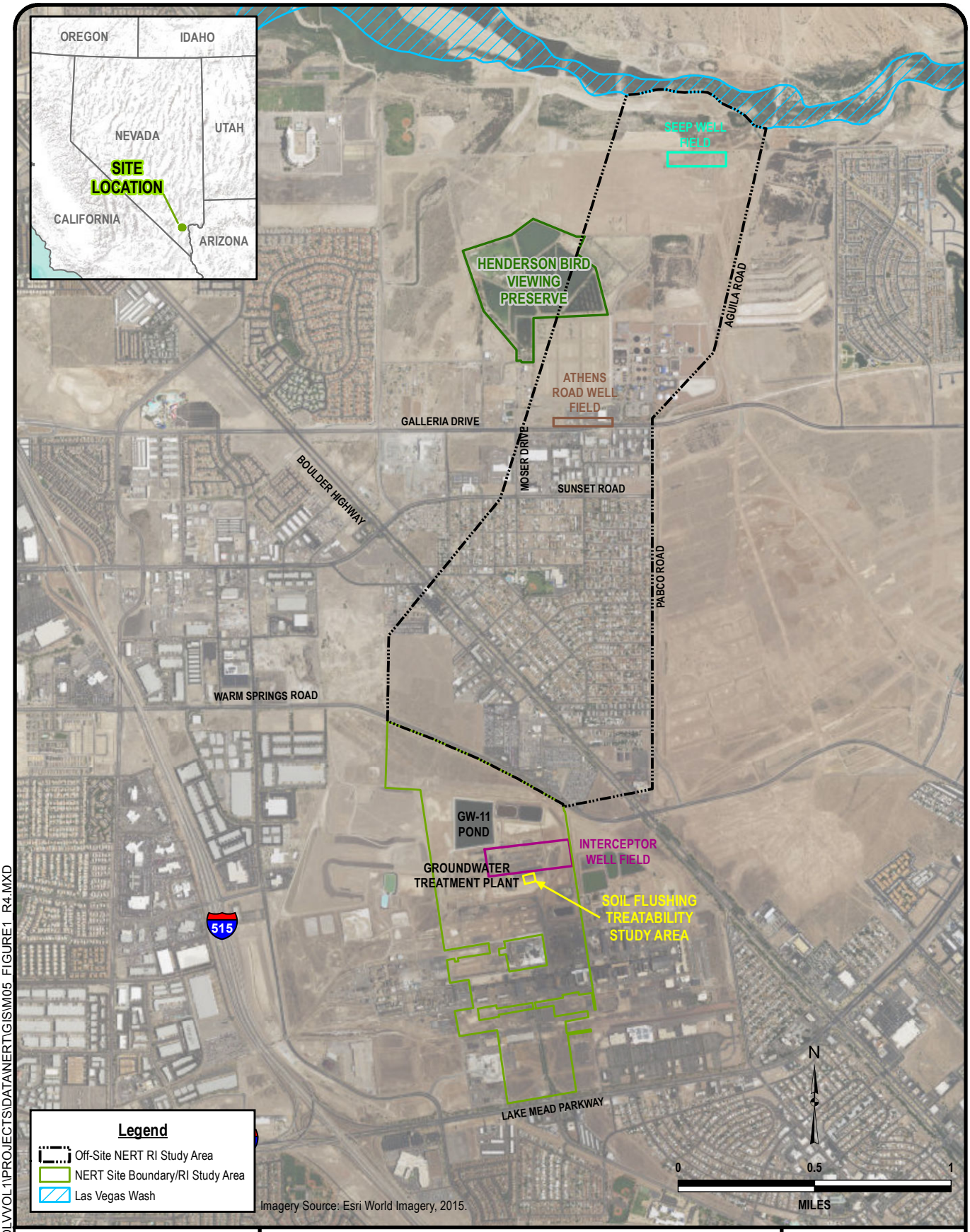
Table 7 Time and Volume for 90% Flushing

Test Plot	Time to 90% Concentration Reduction (days)	Water Volume at 90% Concentration Reduction (gallons)	Number of Pore Volumes[1]
1	85	93,000	1.6
2	146	300,000	5.3
3	45	680,000	12
4	108	140,000	2.5

Notes:
1. Pore volume calculation assumes 35% porosity. Reference: Northgate (2010)

Reference: Northgate Environmental Management, Inc. (Northgate), 2010. Site-Wide Soil Gas Human Health Risk Assessment, Tronox LLC, Henderson, Nevada. November 22.

Figures



\\GEOS051FS1\GEOLVVOL1\PROJECTS\DATA\NERT\GIS\M05_FIGURE1_R4.MXD

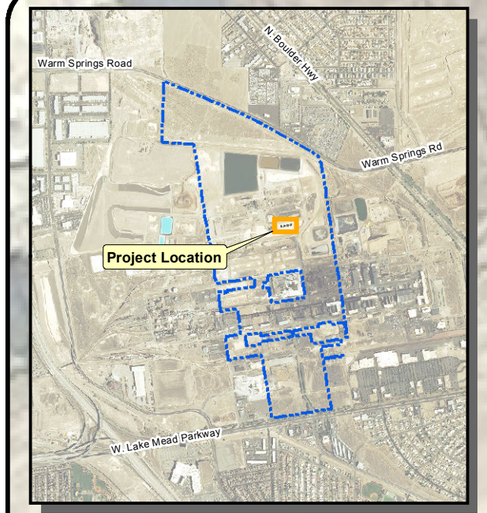
TETRA TECH
www.tetratech.com
1489 West Warm Springs Road, Suite 110
Henderson, Nevada 89014
Phone: (702) 966-8340

NEVADA ENVIRONMENTAL RESPONSE TRUST

GROUNDWATER BIOREMEDIATION TREATABILITY STUDY RESULTS REPORT

TREATABILITY STUDY LOCATION MAP

Project No.:	114-520225
Date:	FEBRUARY 14, 2017
Designed By:	LAD
Figure No.	1



TT-TP4-M2
TT-TP3-M2
TT-TP2-M2
TT-TP1-M2
TT-TP4-M1
TT-TP3-M1
TT-TP4-M3
TT-TP2-M1
TT-TP1-M1
TT-TP1-M3

TT-TP1-B1 TT-TP1-B2 TT-TP1-L1 TT-TP1-L2 TT-TP1-B3 TT-TP1-B4
PLOT 1

TT-TP2-B1 TT-TP2-B2 TT-TP2-L1 TT-TP2-L2 TT-TP2-B3 TT-TP2-B4
PLOT 2

TT-TP3-B1 TT-TP3-B2 TT-TP3-L1 TT-TP3-L2 TT-TP3-B3 TT-TP3-B4
PLOT 3

TT-TP4-B1 TT-TP4-B2 TT-TP4-L1 TT-TP4-L2 TT-TP4-B3 TT-TP4-B4
PLOT 4

N

0 15 30 Feet

Well
Lysimeter
Boring
Test Plot Location
Site Boundary

Source:
Google Earth 2013 aerial photograph.

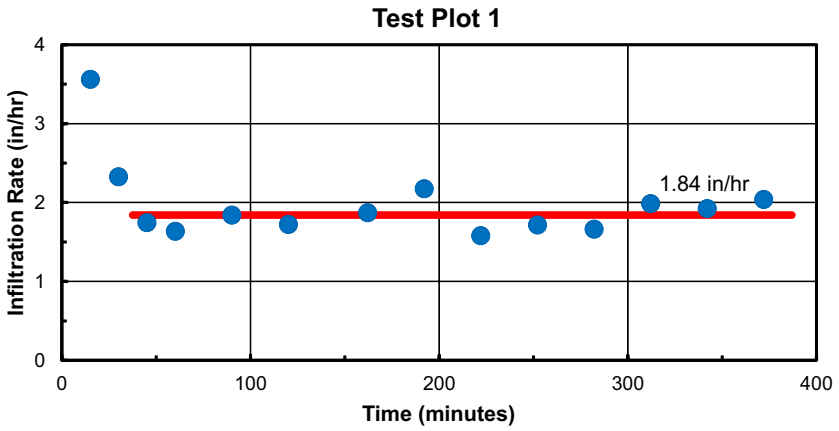
P:\GIS\35000_NERT\Soil_Flushing_Locs.mxd

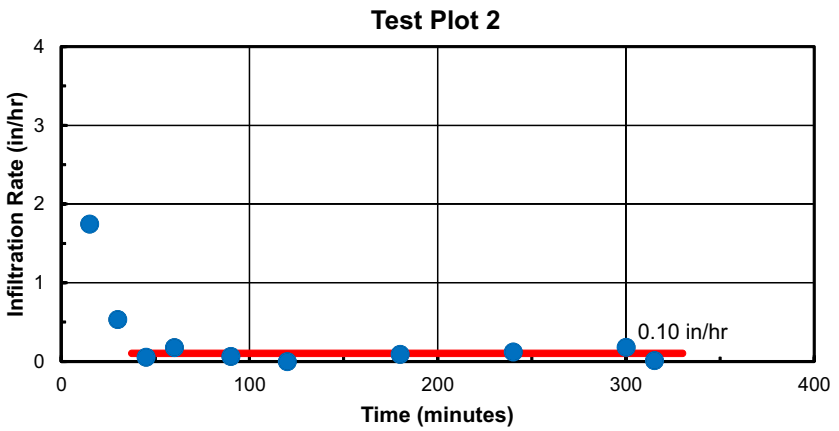
TETRA TECH
www.tetratech.com
1489 West Warm Springs Road, Suite 110
Henderson, Nevada 89014
PHONE: (702) 966-8340

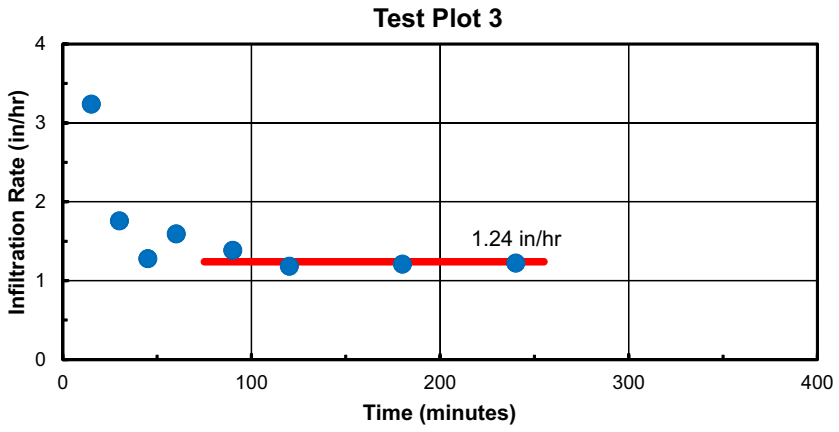
NEVADA ENVIRONMENTAL RESPONSE TRUST

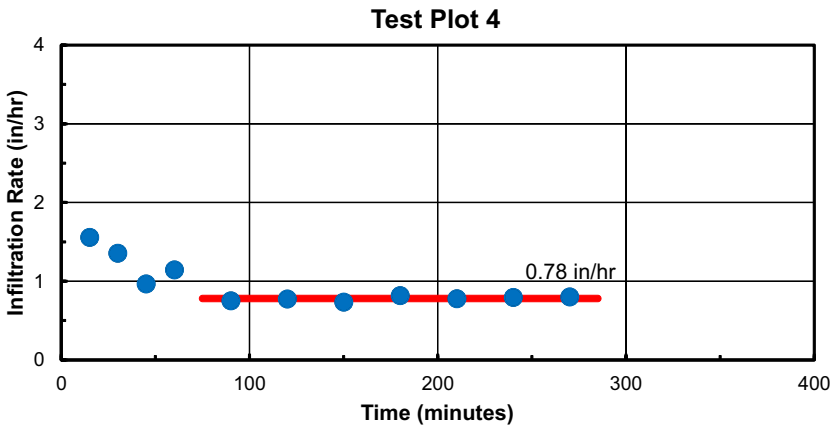
TREATABILITY STUDY LAYOUT

Project No.:	35000-2016-M05
Date:	NOV 2016
Designed By:	SH
Figure No.	2









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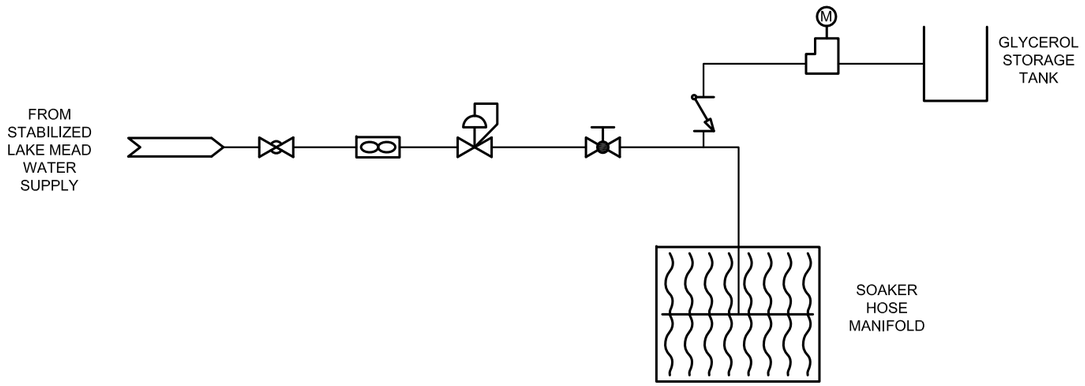
NEVADA ENVIRONMENTAL RESPONSE TRUST

DOUBLE RING INFILTROMETER TEST RESULTS

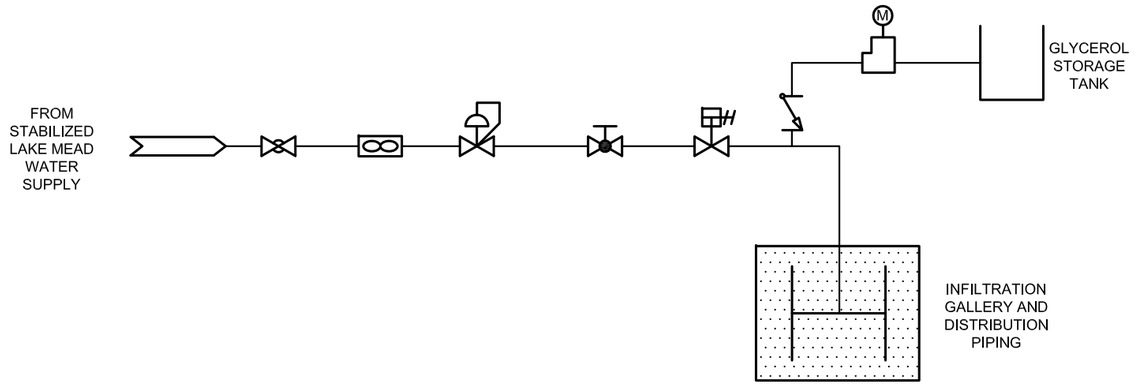
Project No.:	35000-2016-M05
Date:	NOV 2016
Designed By:	SPH

Figure No.
3

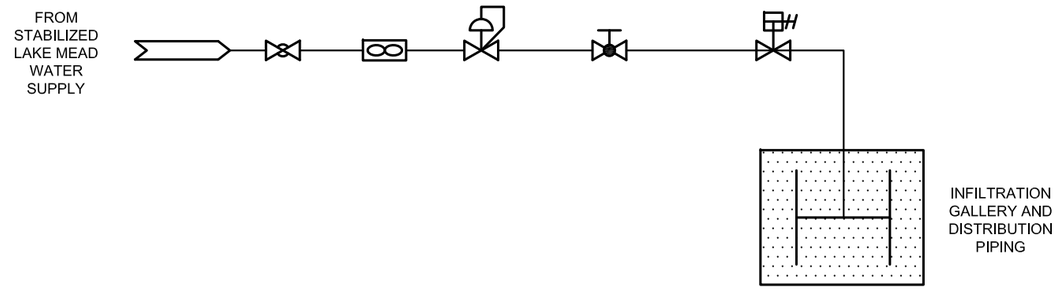
TEST PLOT 1



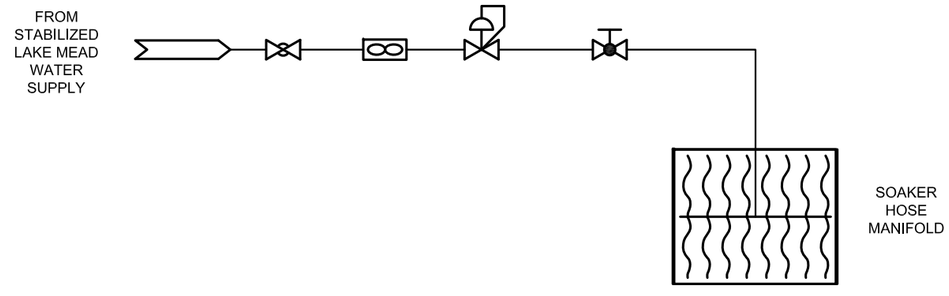
TEST PLOT 2



TEST PLOT 3



TEST PLOT 4



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LEGEND

- BALL VALVE
- SWING CHECK VALVE
- MANUAL GLOBE VALVE
- TOTALIZING FLOW METER
- FLOAT ACTUATED VALVE
- METERING PUMP
- PRESSURE REDUCING VALVE

NEVADA ENVIRONMENTAL RESPONSE TRUST

PROCESS FLOW DIAGRAMS

Project No.	35000-2017-M.05
Date:	JANUARY 2017
Designed By:	SH

Figure No. **4**

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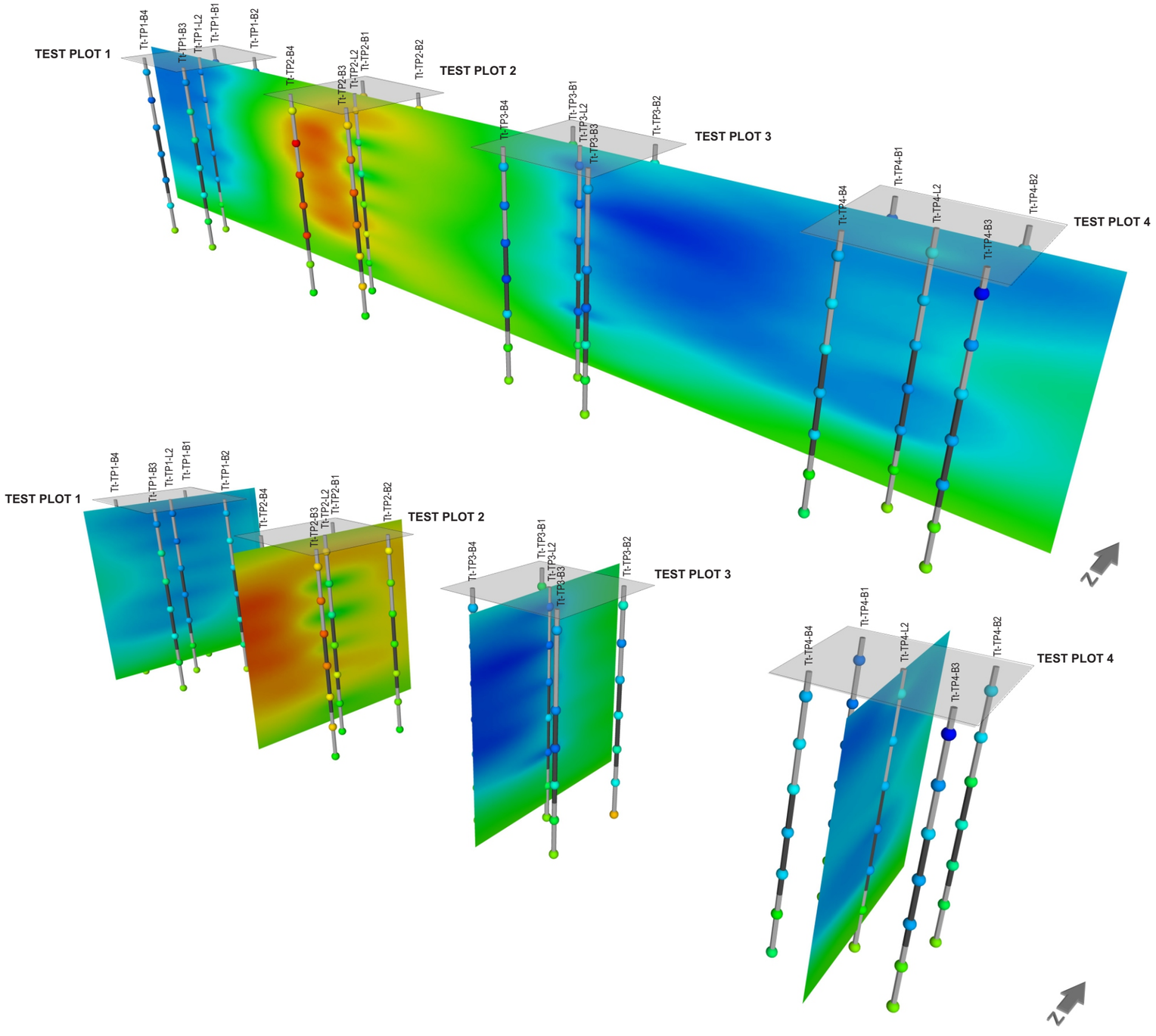

PERCHLORATE CONCENTRATION (mg/kg)

- 28,000
- 10,000
- 3,000
- 1,000
- 300
- 100
- 30
- 10
- 3
- 1
- 0.3

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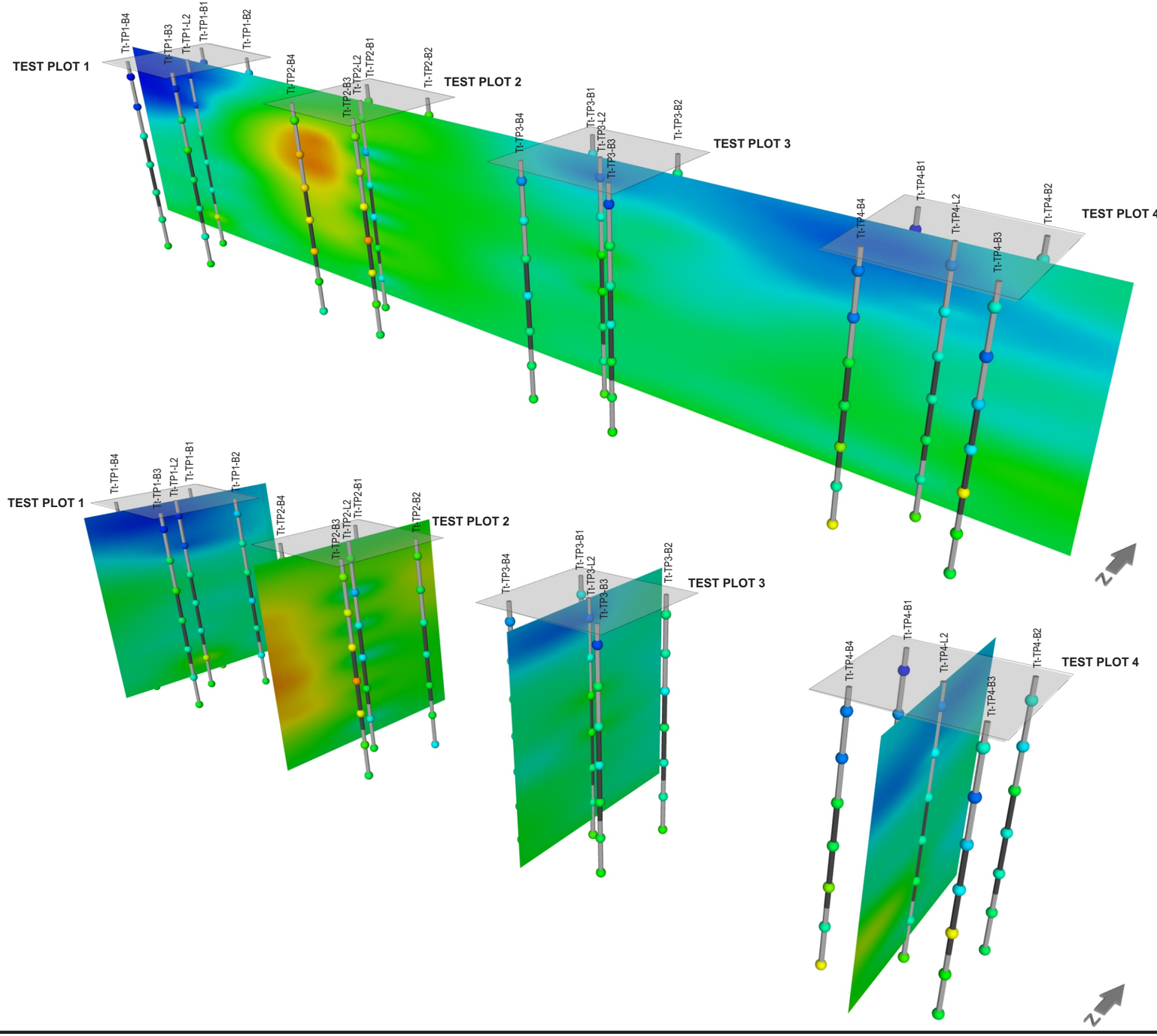
NEVADA ENVIRONMENTAL RESPONSE TRUST

PERCHLORATE CONCENTRATIONS IN SOIL
BASELINE SAMPLING

Project No.:	35000-2016-M05
Date:	NOV 2016
Designed By:	SPH

Figure No.
5



TOTAL DISSOLVED SOLIDS CONCENTRATION (mg/kg)

48,000
20,000
10,000
5,000
2,000
1,000

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NEVADA ENVIRONMENTAL RESPONSE TRUST

LEACHABLE SOLIDS CONCENTRATIONS IN SOIL
BASELINE SAMPLING

Project No.:	35000-2016-M05
Date:	NOV 2016
Designed By:	SPH

Figure No.
6

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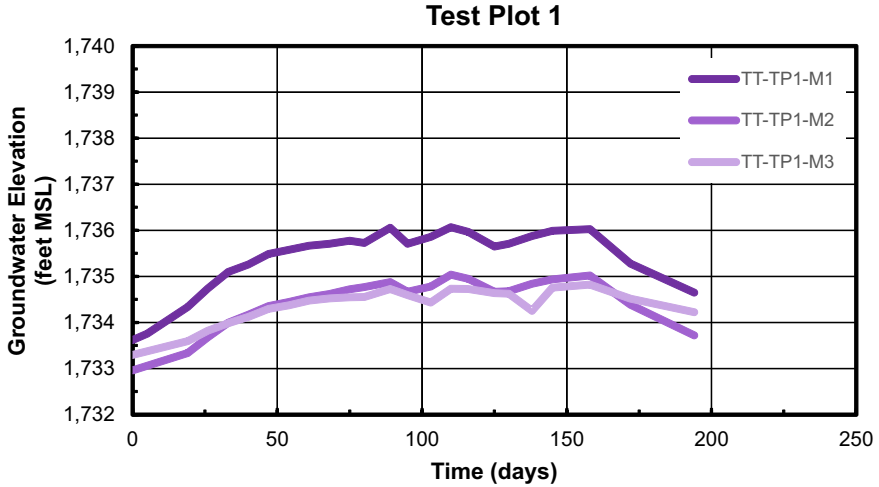
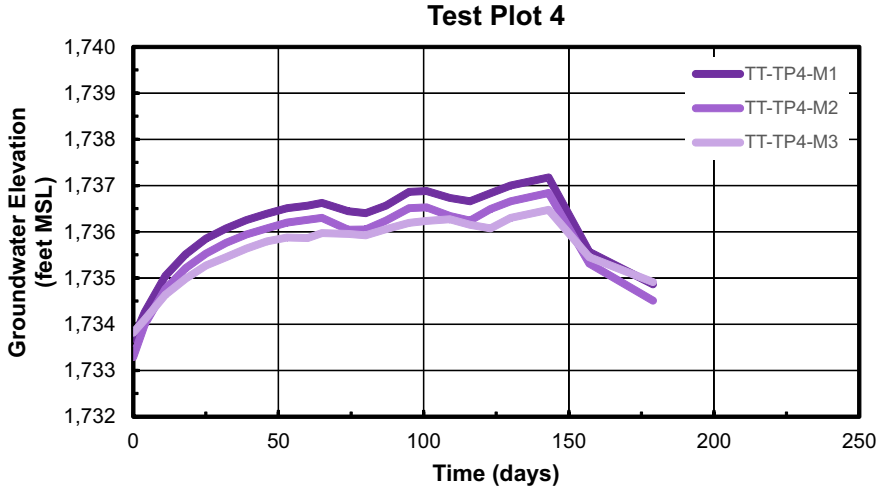
NEVADA ENVIRONMENTAL RESPONSE TRUST

FLUSHING VOLUMES vs. TIME PLOTS

Project No.:	35000-2017-M05
Date:	JUNE 2017
Designed By:	SPH

Figure No.
7





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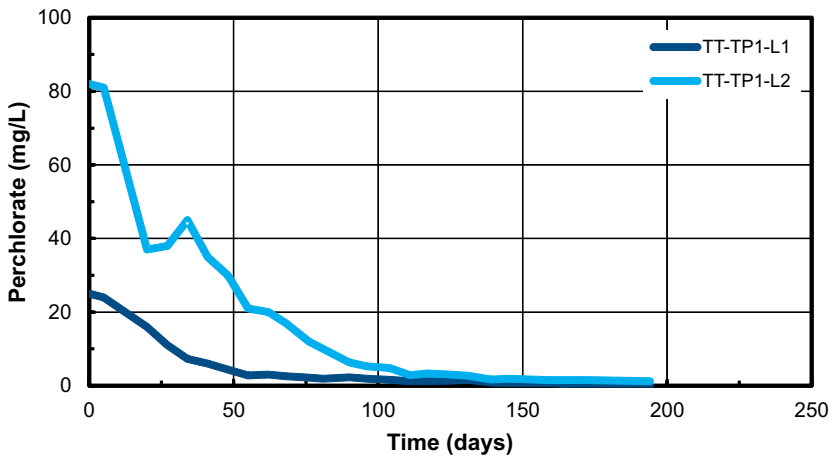
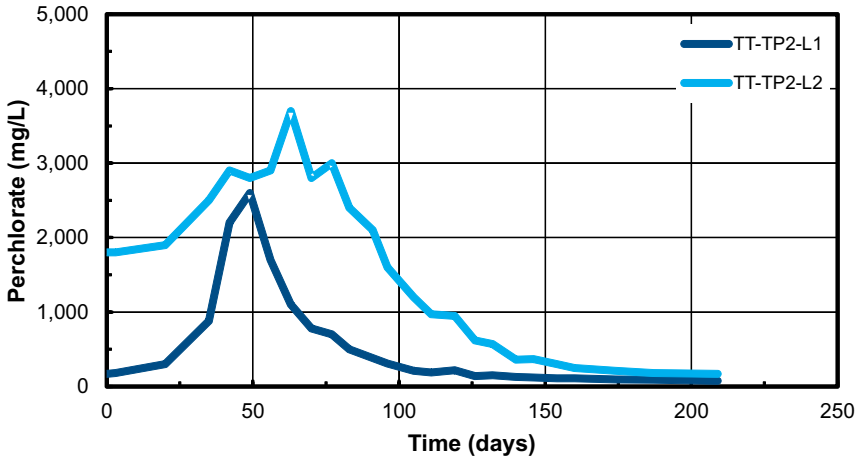
NEVADA ENVIRONMENTAL RESPONSE TRUST

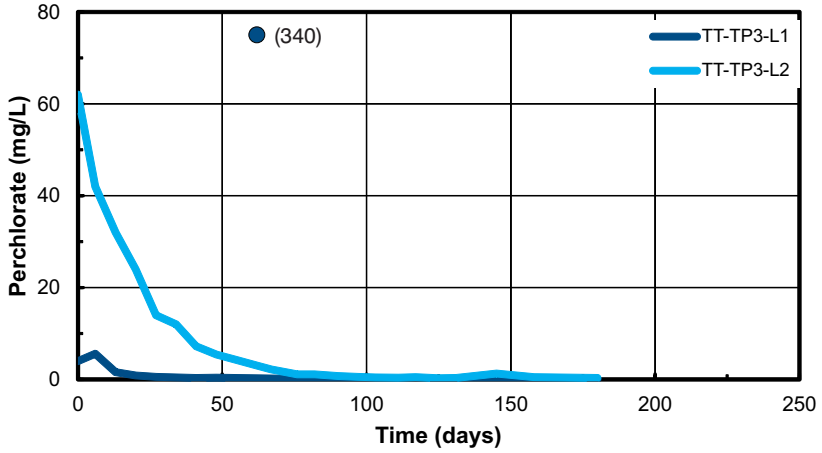
WATER LEVEL vs. TIME PLOTS

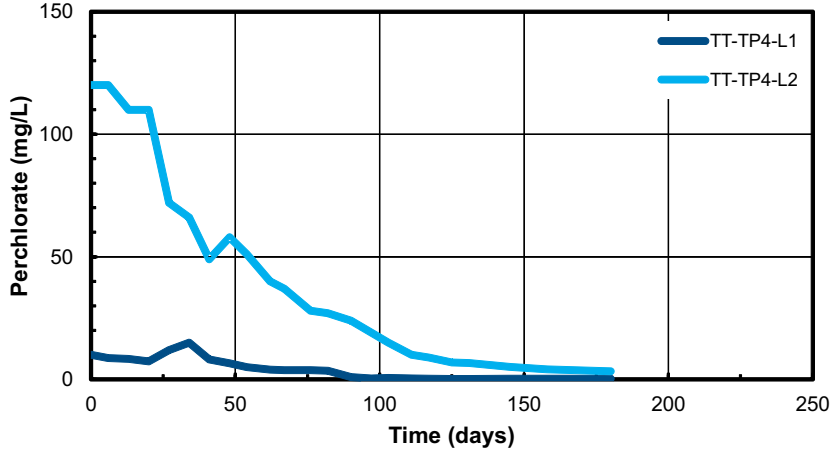
Project No.:	35000-2017-M05
Date:	JUNE 2017
Designed By:	SPH

Figure No.
8









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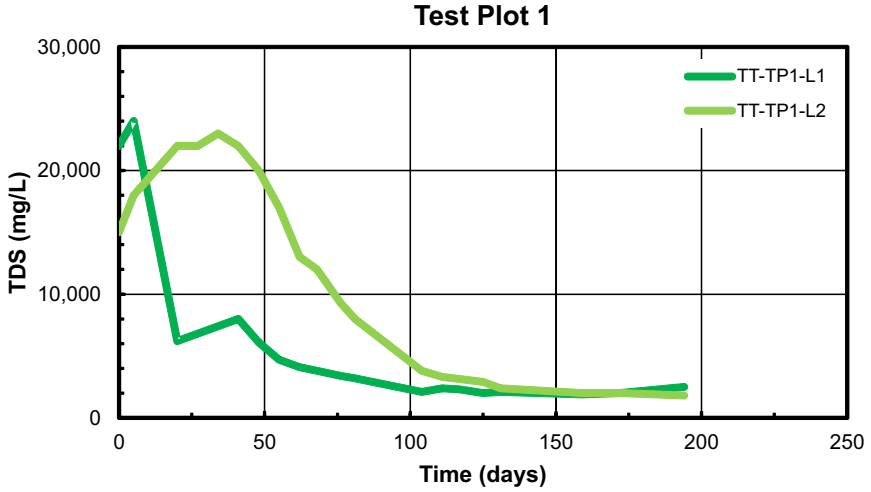
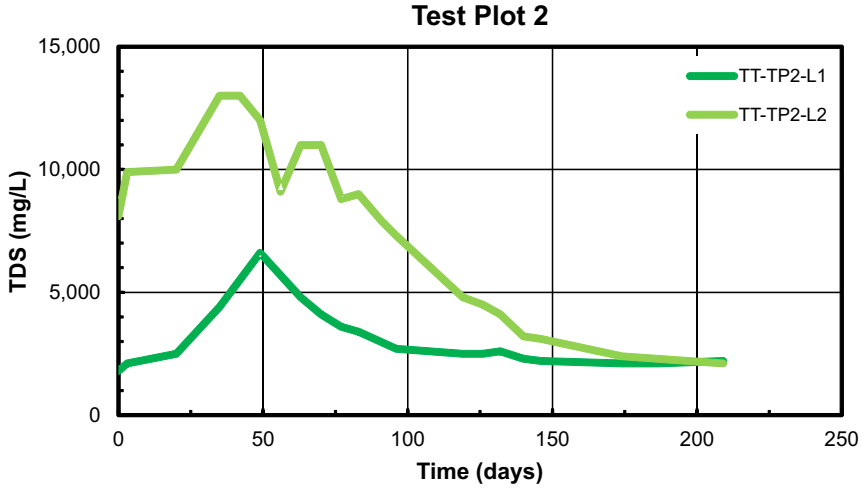
NEVADA ENVIRONMENTAL RESPONSE TRUST

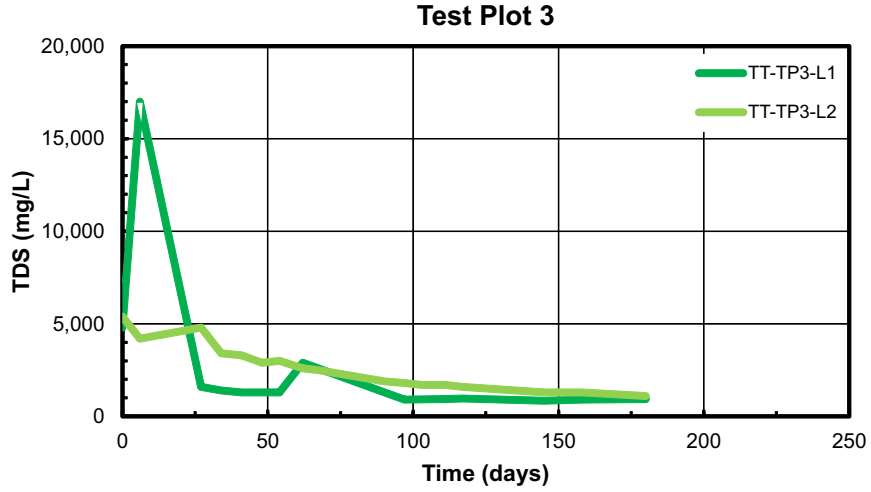
PORE WATER PERCHLORATE vs. TIME PLOTS

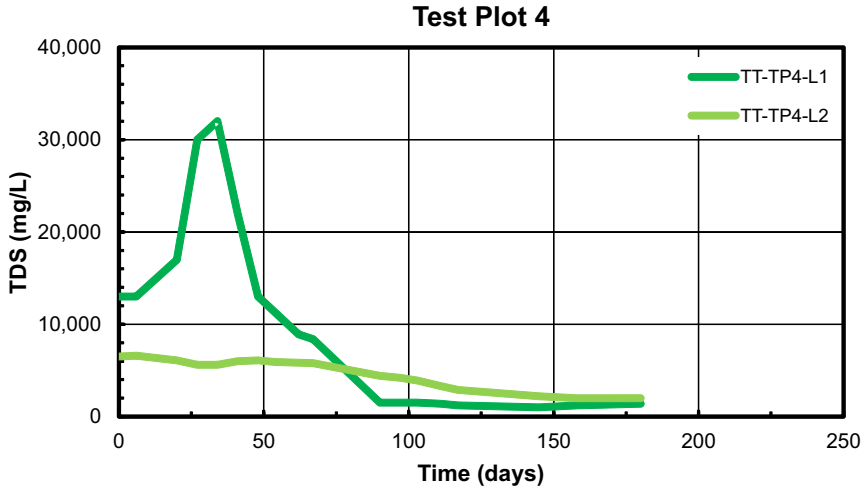
Project No.:	35000-2017-M05
Date:	JUNE 2017
Designed By:	SPH

Figure No.
9









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NEVADA ENVIRONMENTAL RESPONSE TRUST

PORE WATER TDS vs. TIME PLOTS

Project No.:	35000-2017-M05
Date:	JUNE 2017
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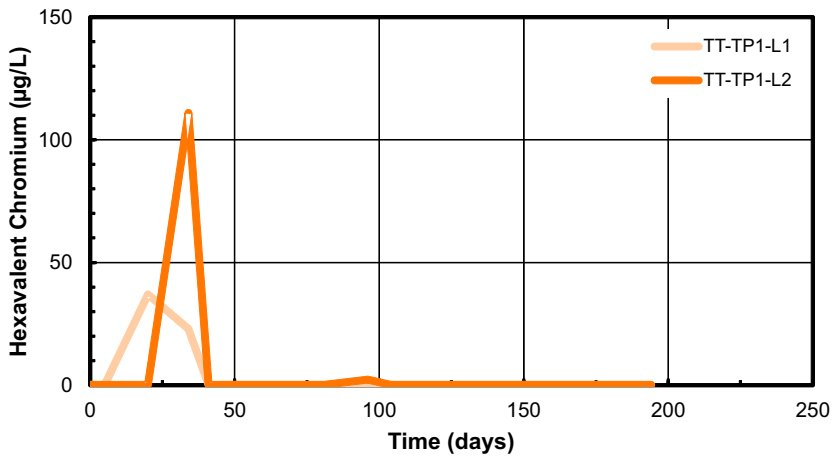
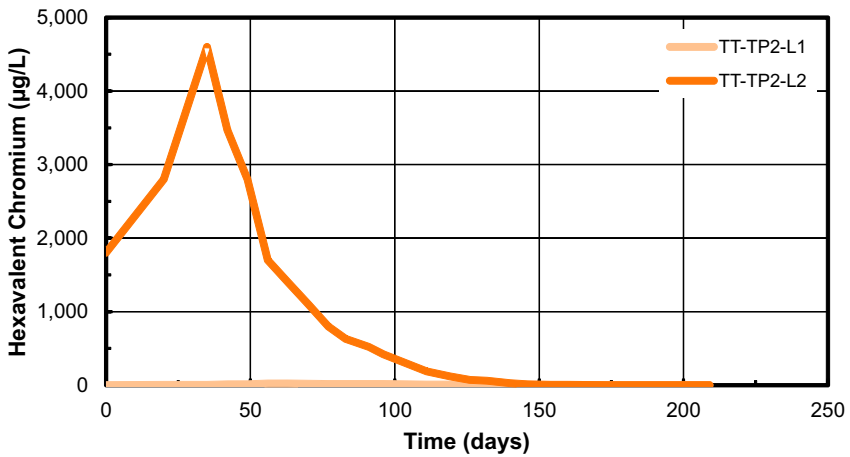
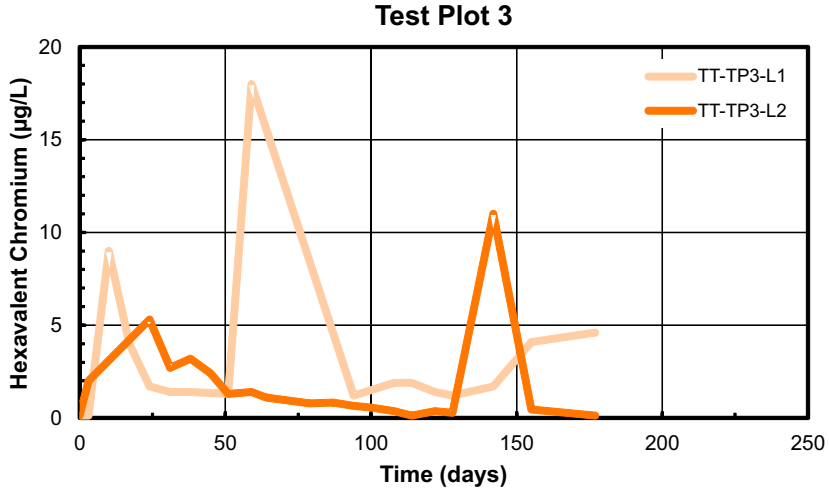
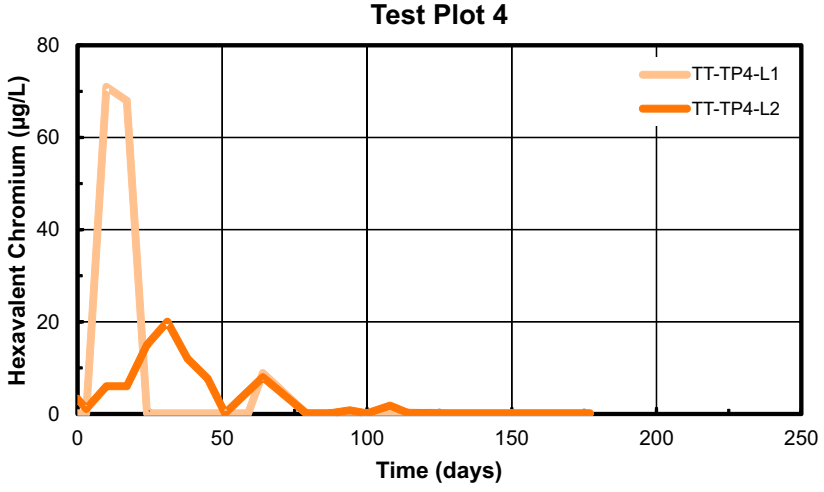
Figure No.
10









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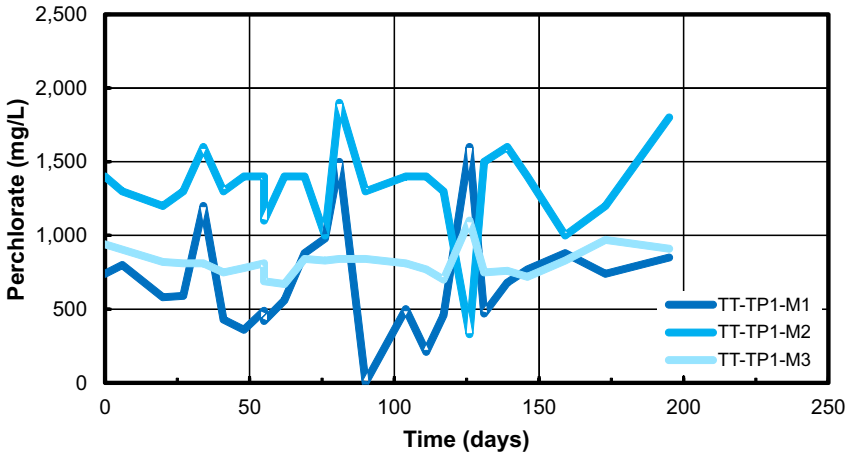
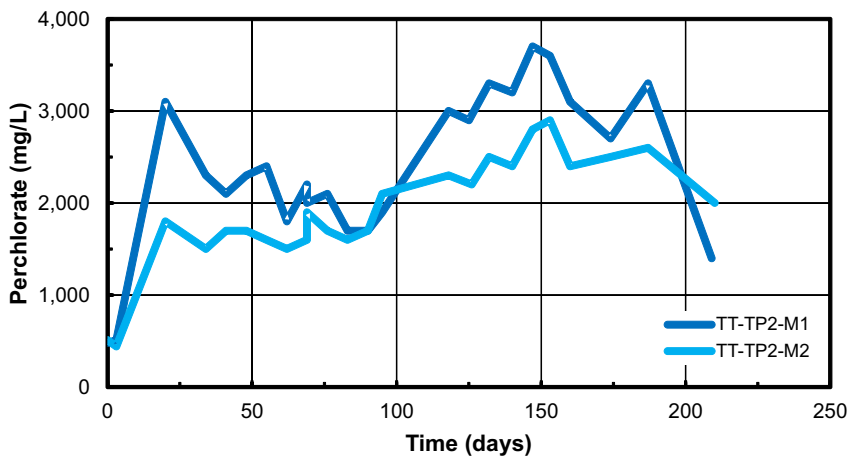
NEVADA ENVIRONMENTAL RESPONSE TRUST

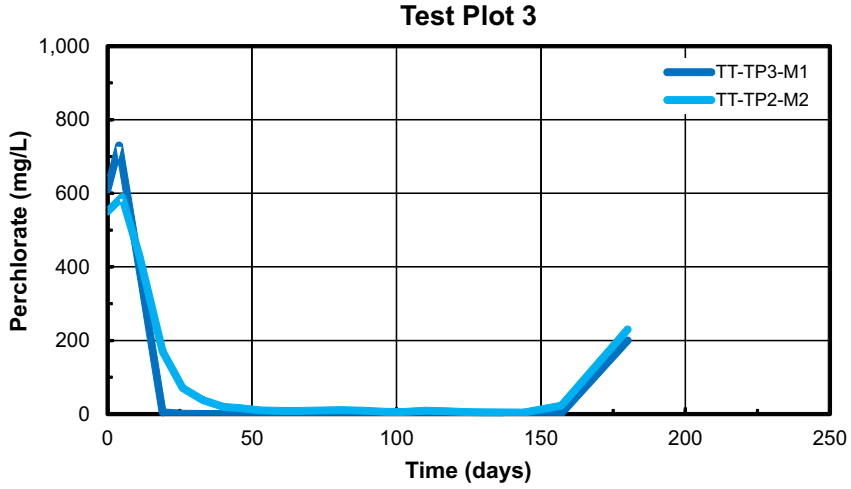
PORE WATER HEXAVALENT CHROMIUM vs. TIME PLOTS

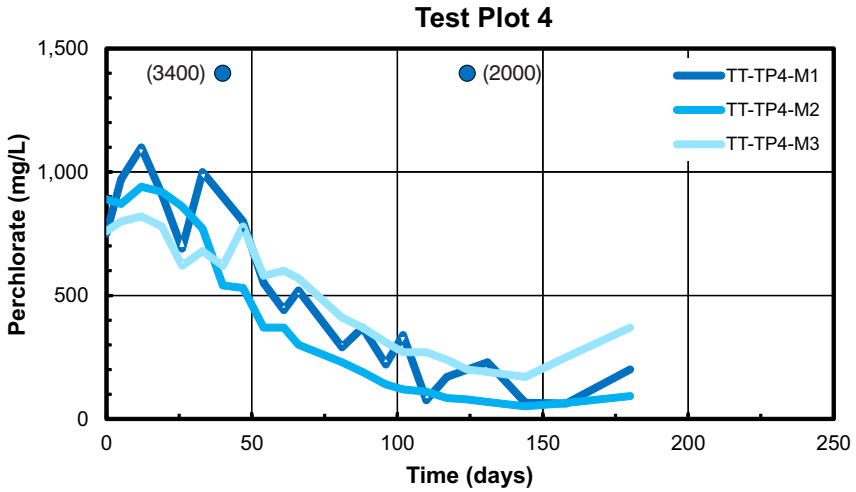
Project No.:	35000-2017-M05
Date:	JUNE 2017
Designed By:	SPH

Figure No.
11









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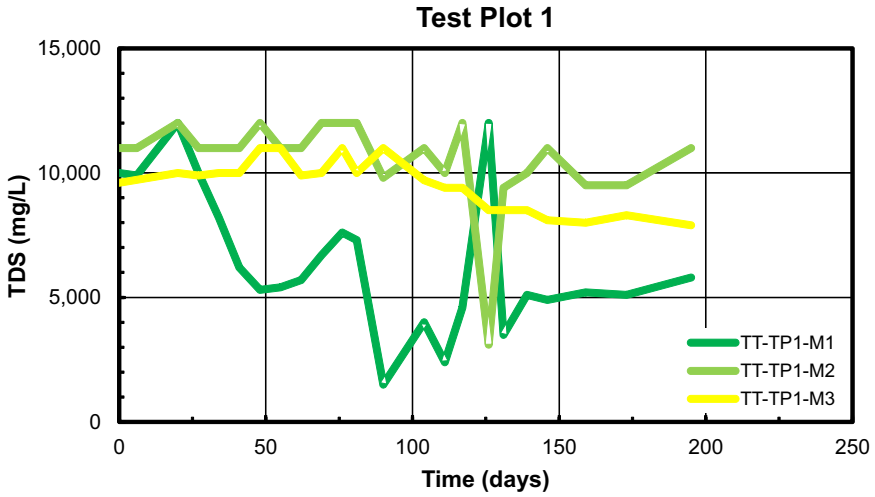
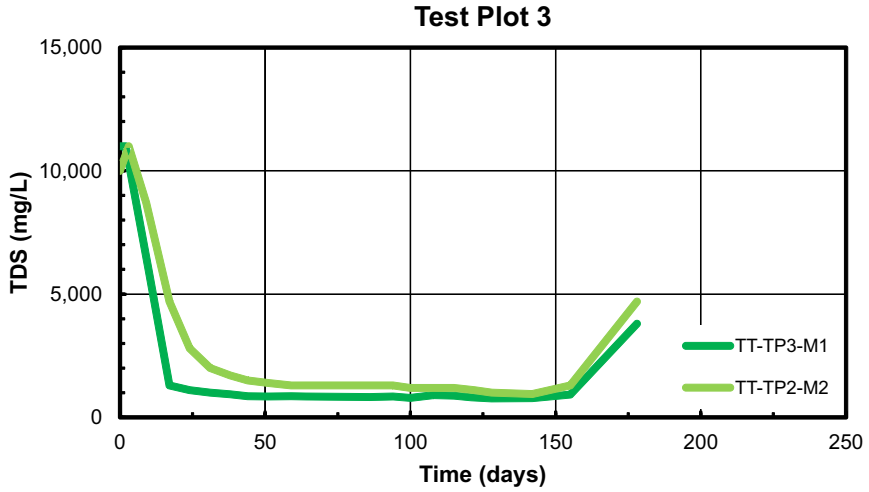
NEVADA ENVIRONMENTAL RESPONSE TRUST

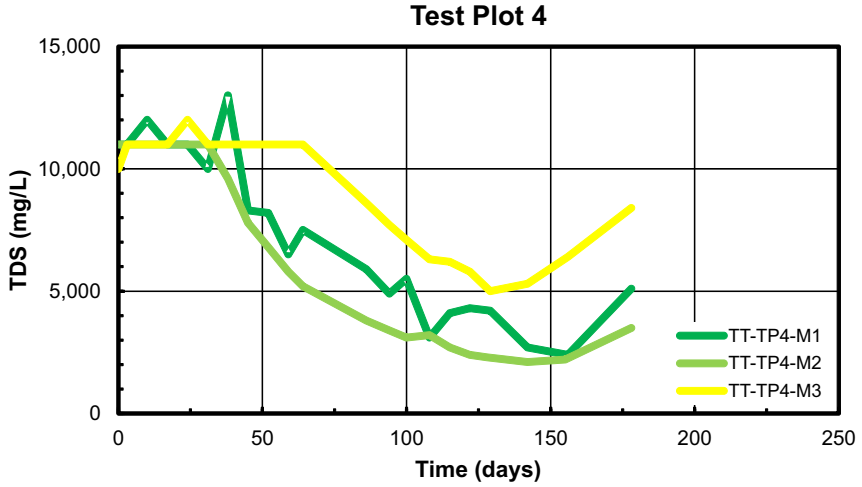
GROUNDWATER PERCHLORATE vs. TIME PLOTS

Project No.:	35000-2017-M05
Date:	JUNE 2017
Designed By:	SPH

Figure No.
12







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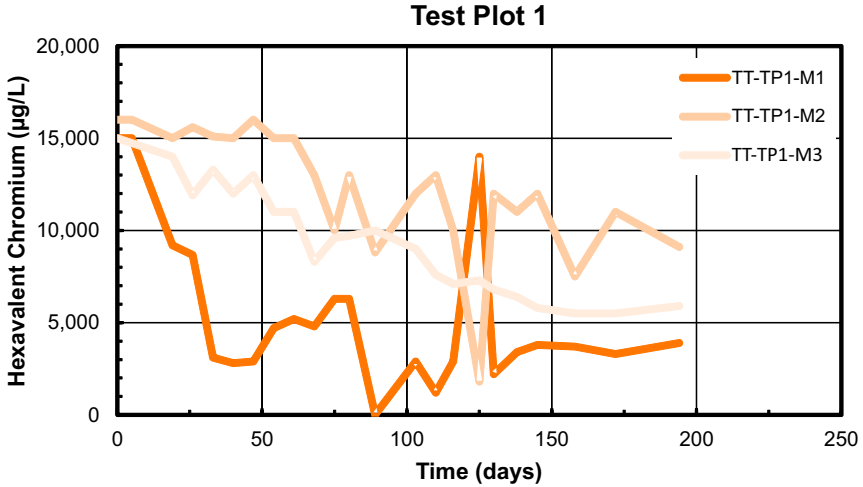
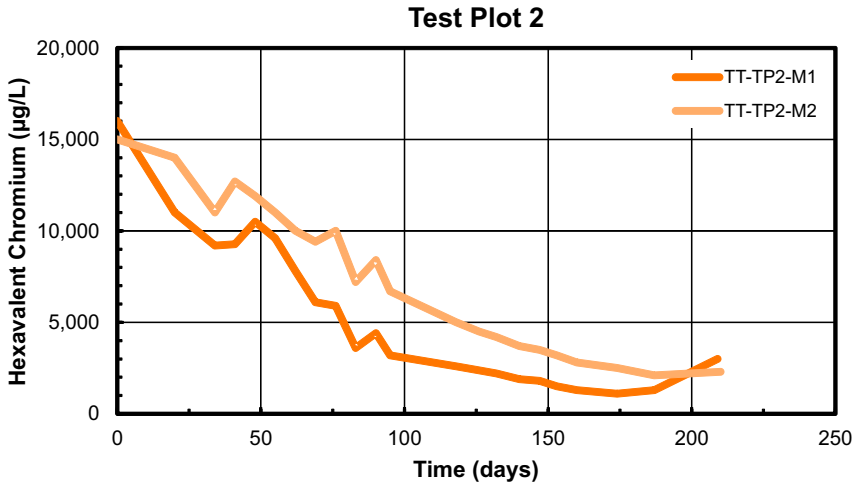
NEVADA ENVIRONMENTAL RESPONSE TRUST

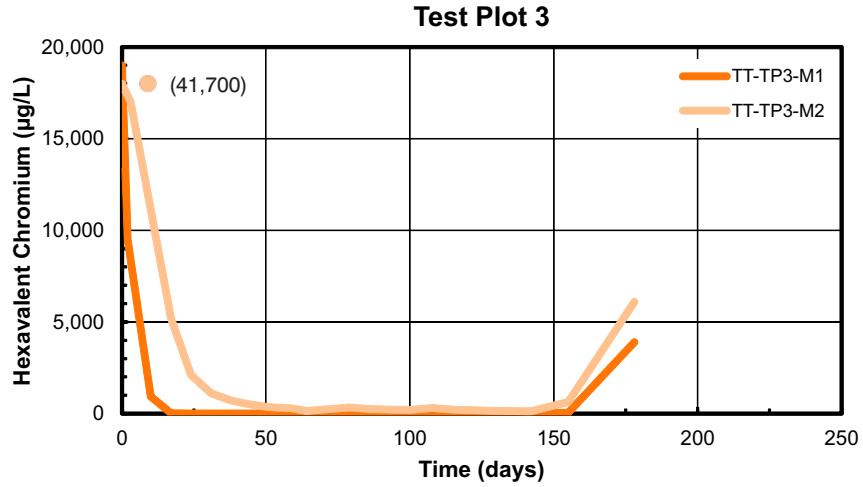
GROUNDWATER TDS vs. TIME PLOTS

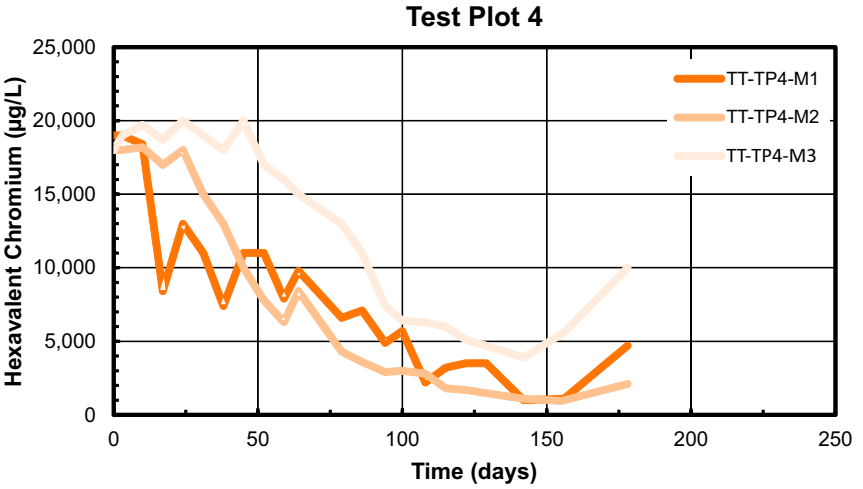
Project No.:	35000-2017-M05
Date:	JUNE 2017
Designed By:	SPH

Figure No.
13









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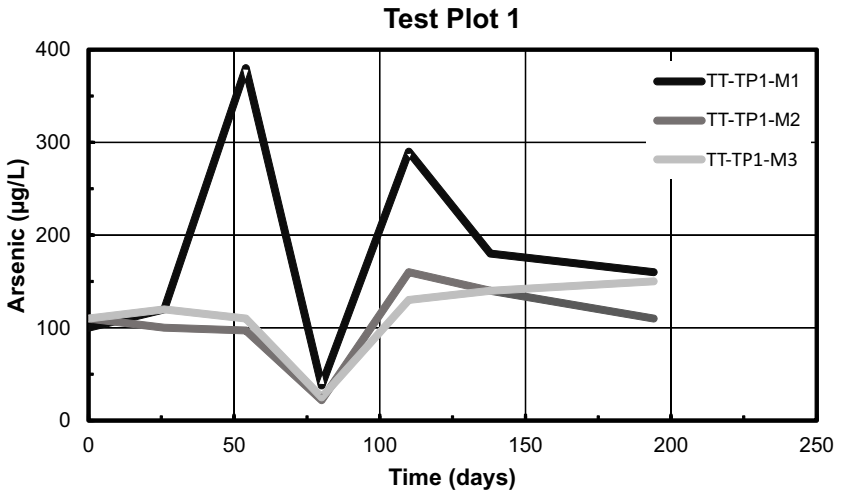
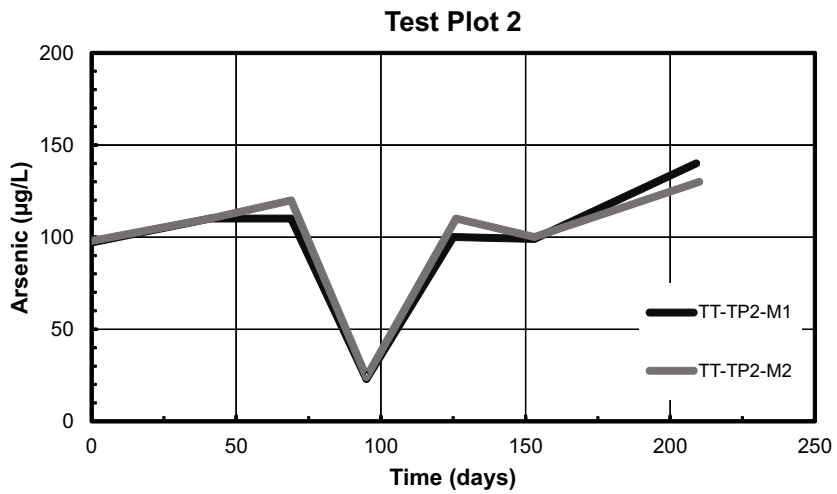
NEVADA ENVIRONMENTAL RESPONSE TRUST

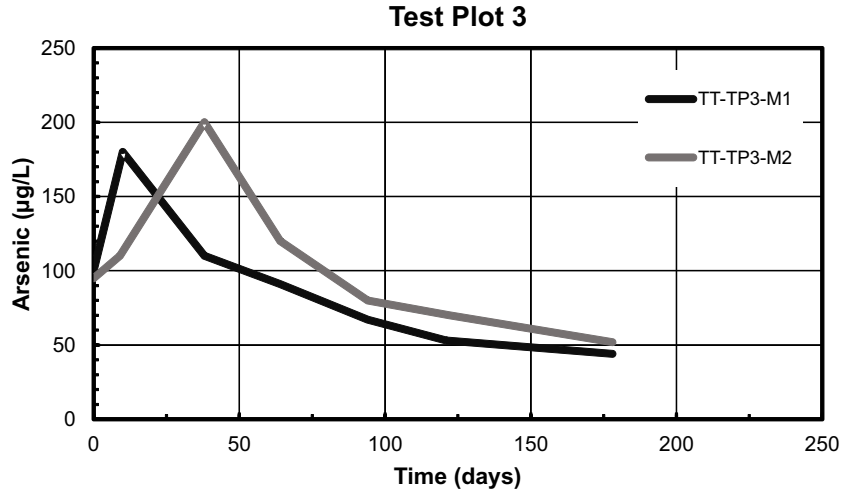
GROUNDWATER HEXAVALENT CHROMIUM vs. TIME PLOTS

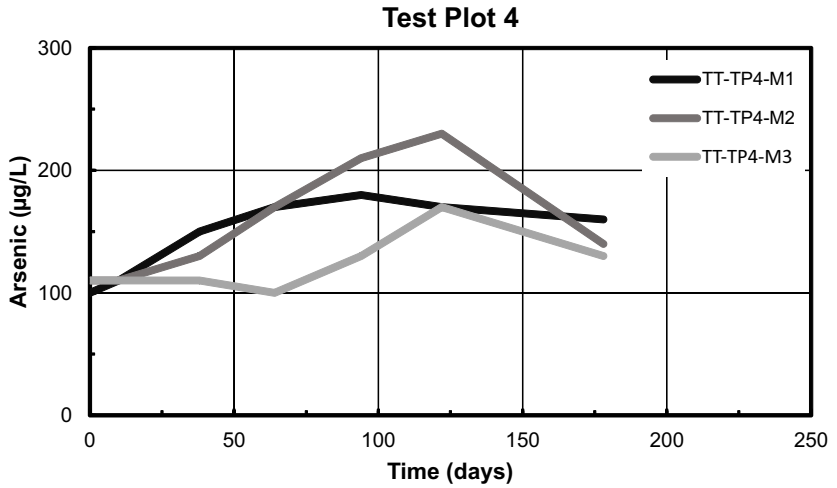
Project No.:	35000-2017-M05
Date:	JUNE 2017
Designed By:	SPH

Figure No.
14









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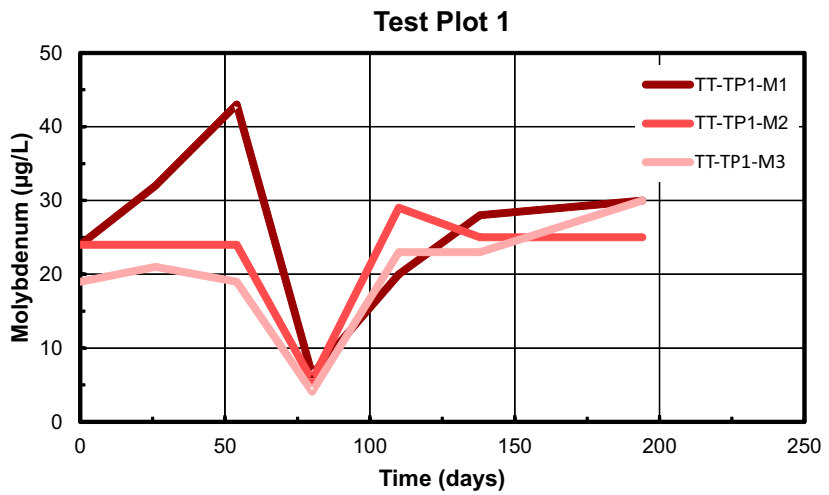
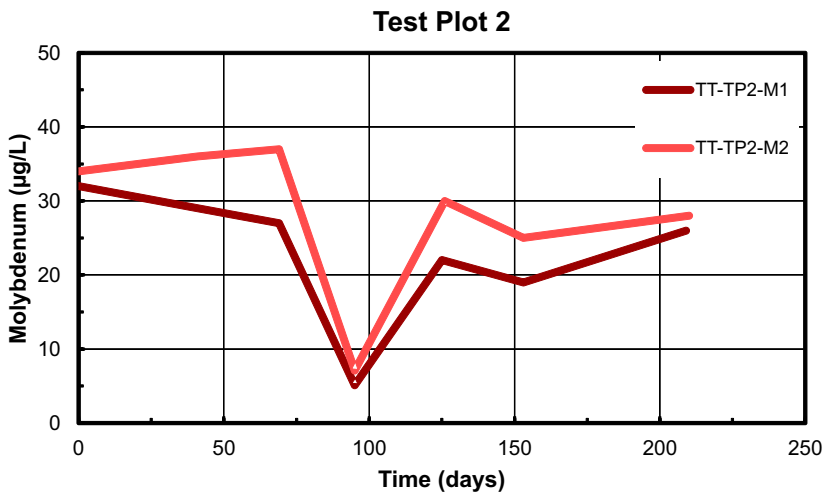
NEVADA ENVIRONMENTAL RESPONSE TRUST

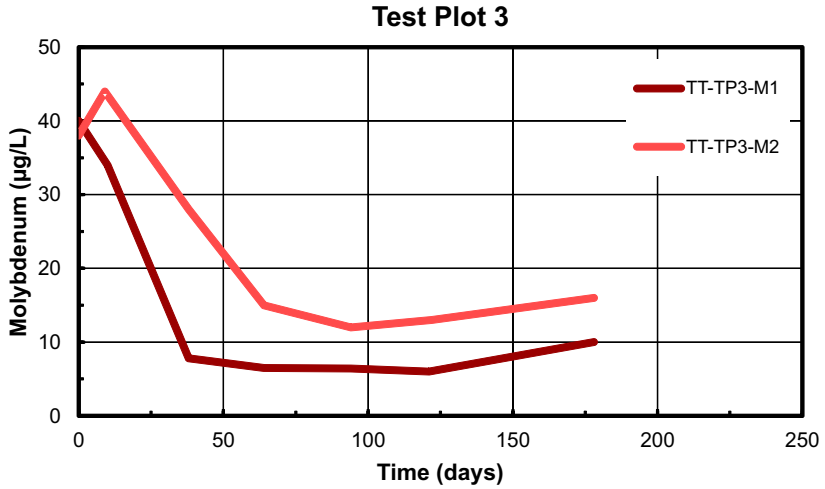
GROUNDWATER ARSENIC vs. TIME PLOTS

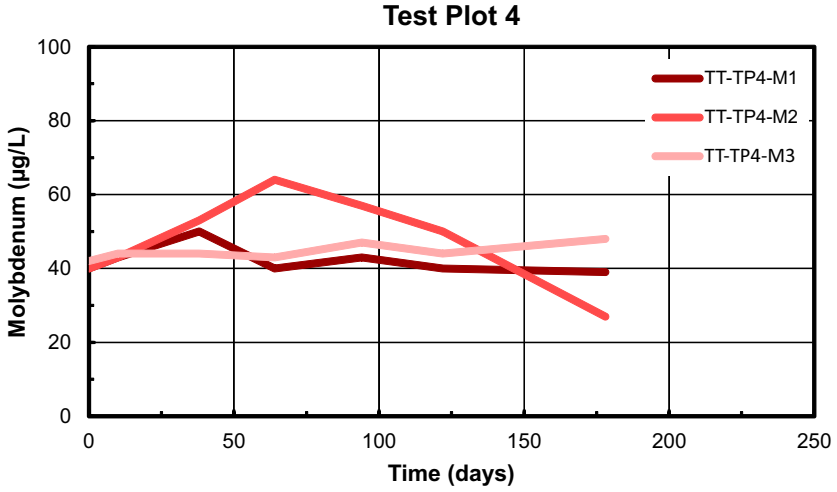
Project No.:	35000-2017-M05
Date:	JUNE 2017
Designed By:	SPH

Figure No.
15









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NEVADA ENVIRONMENTAL RESPONSE TRUST

GROUNDWATER MOLYBDENUM vs. TIME PLOTS

Project No.:	35000-2017-M05
Date:	JUNE 2017
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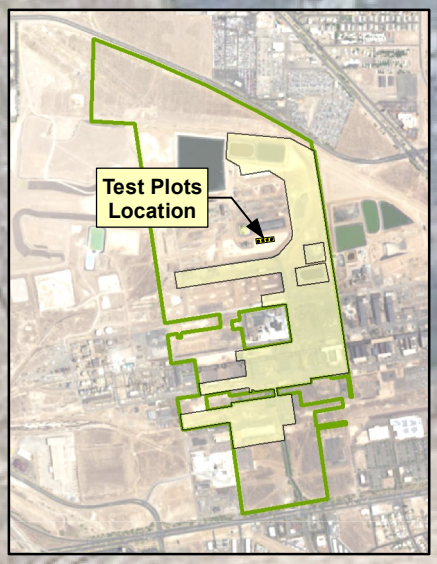
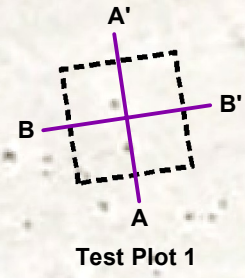
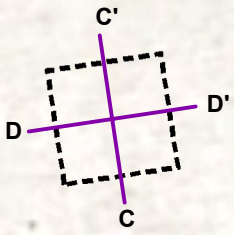
Figure No.

16

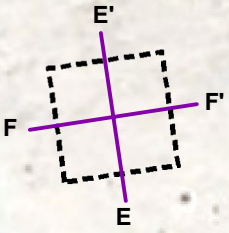




Test Plot 1



Test Plot 2



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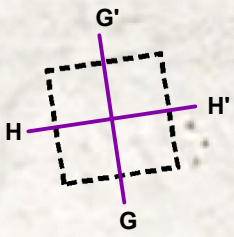

Test Plot 4

LEGEND

- Cross Section Location
- Test Plot Boundary
- Tronox Leasehold Area
- NERT Site Boundary

N

0 25 50

Feet

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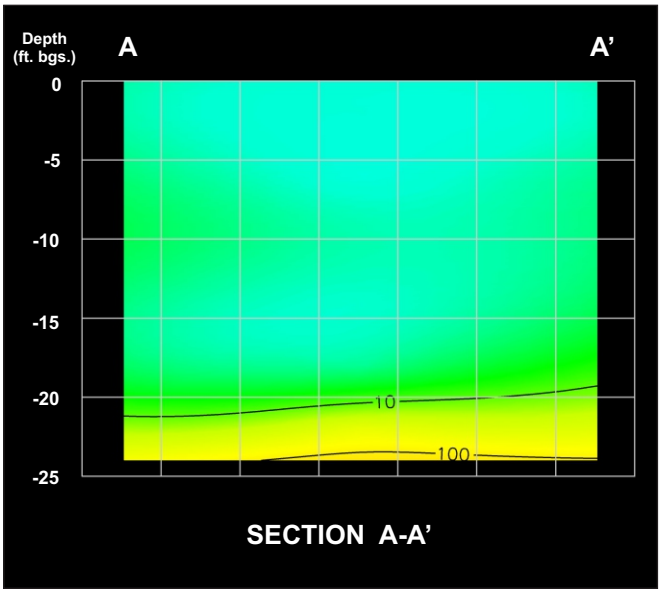
NEVADA ENVIRONMENTAL RESPONSE TRUST

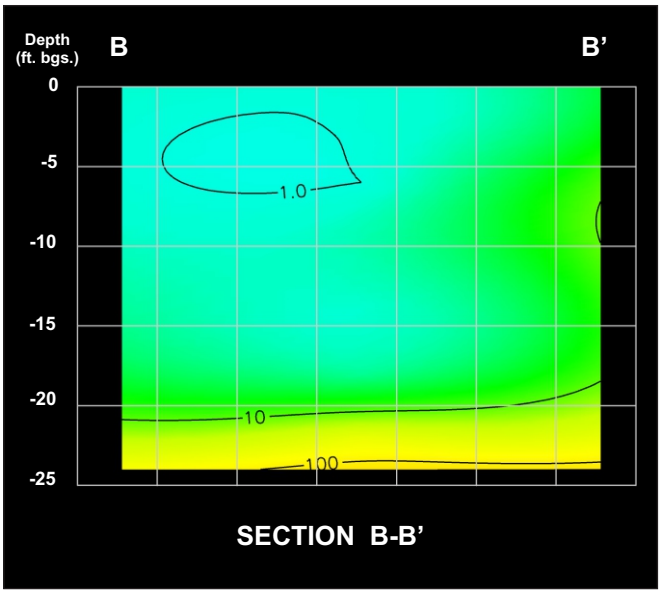
CROSS SECTION LOCATIONS

Project No.:	35000-2017-M05
Date:	JUN 2017
Designed By:	SH

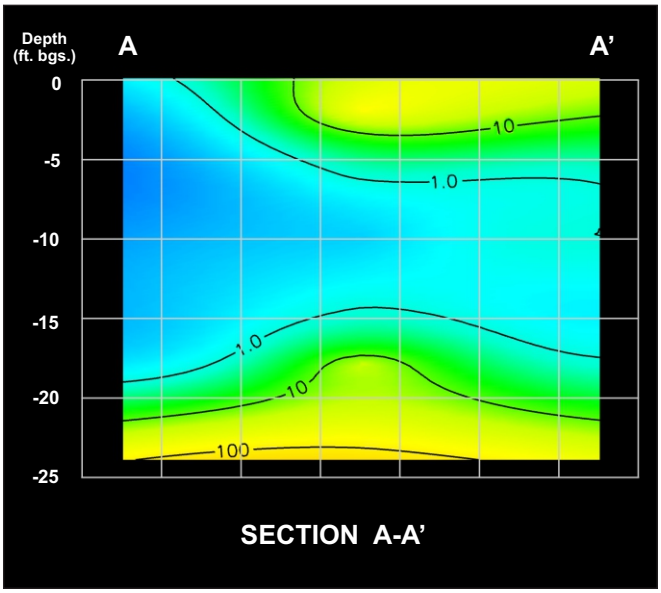
Figure No.
17

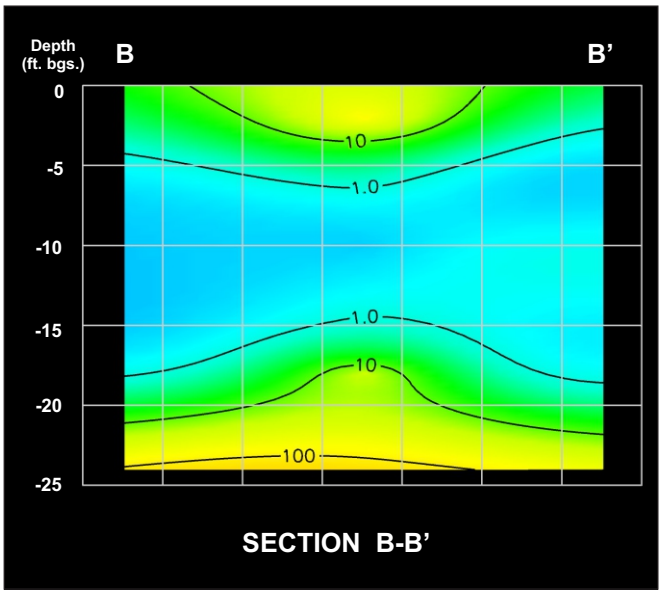
BASELINE





POST-TREATMENT





Perchlorate Concentration (mg/kg)

0.1 1 10 100 1,000 10,000

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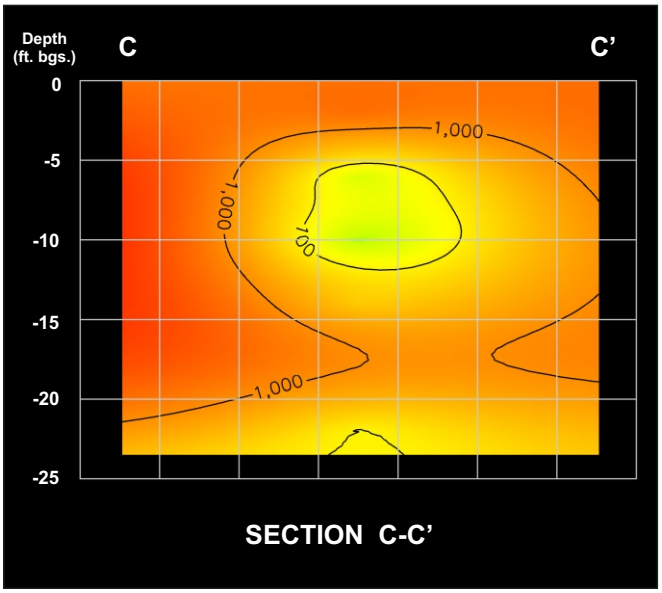
NEVADA ENVIRONMENTAL RESPONSE TRUST

PERCHLORATE CONCENTRATION CROSS SECTIONS TEST PLOT 1

Project No.:	35000-2017-M05
Date:	JUNE 2017
Designed By:	SPH

Figure No.
18

BASELINE



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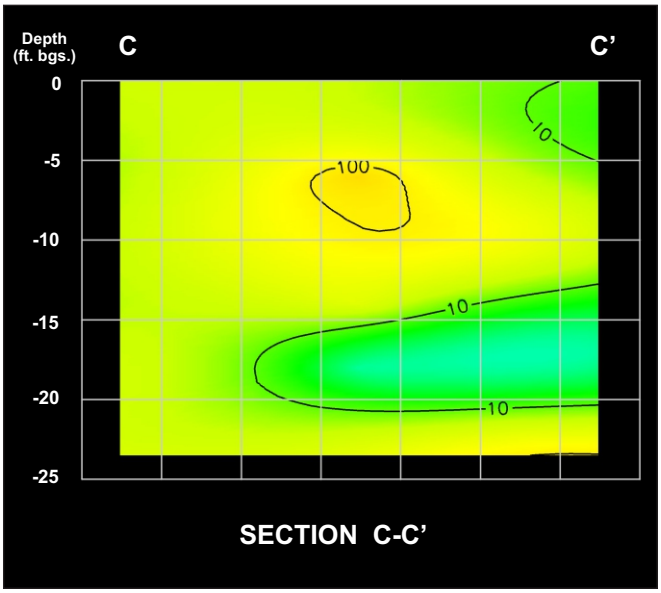

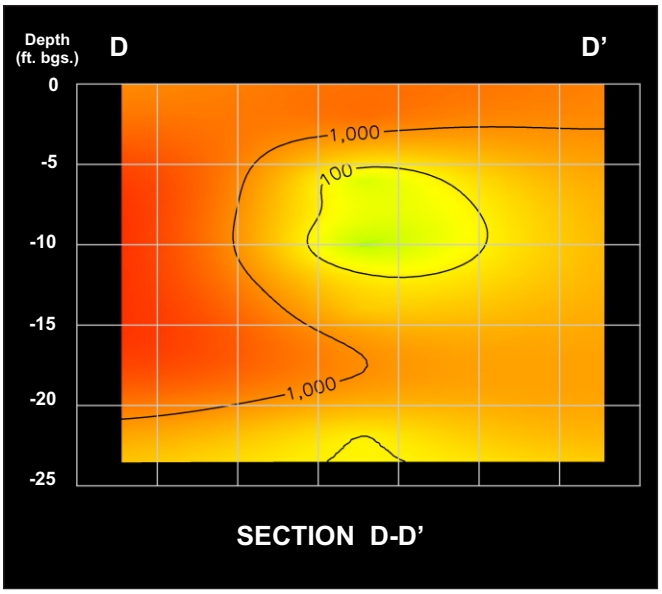

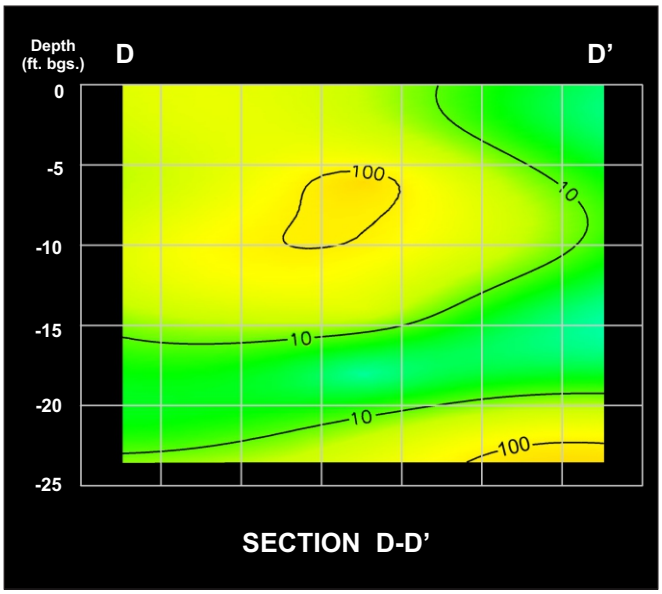

Perchlorate Concentration (mg/kg)

0.1 1 10 100 1,000 10,000

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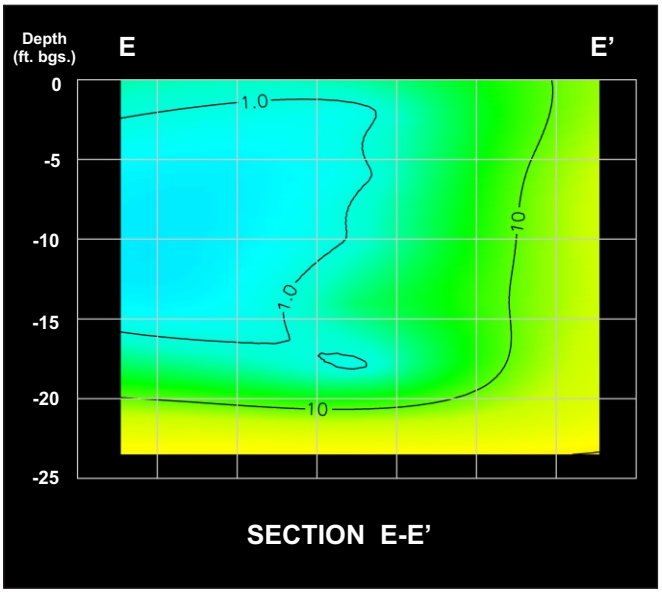
NEVADA ENVIRONMENTAL RESPONSE TRUST

PERCHLORATE CONCENTRATION CROSS SECTIONS TEST PLOT 2

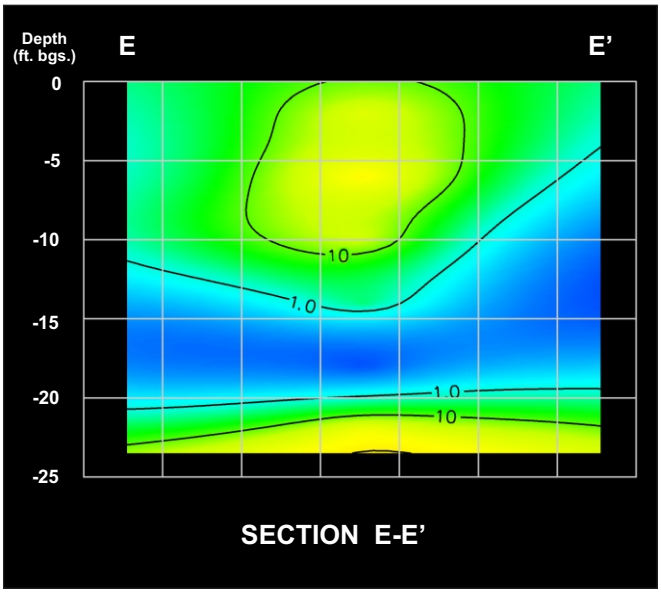
Project No.:	35000-2017-M05
Date:	JUNE 2017
Designed By:	SPH

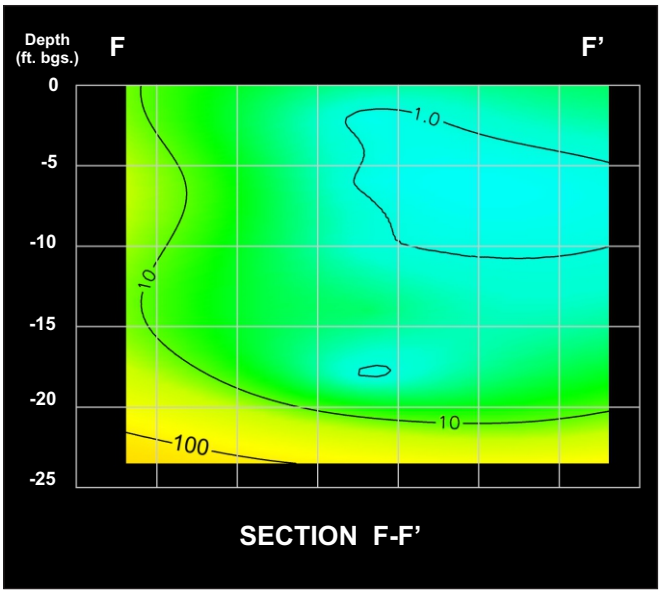
Figure No.
19

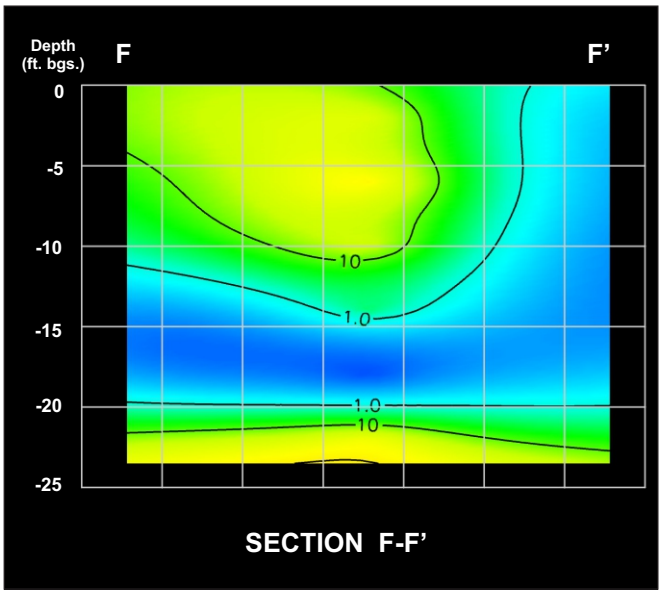
BASELINE



POST-TREATMENT







Perchlorate Concentration (mg/kg)

0.1 1 10 100 1,000 10,000

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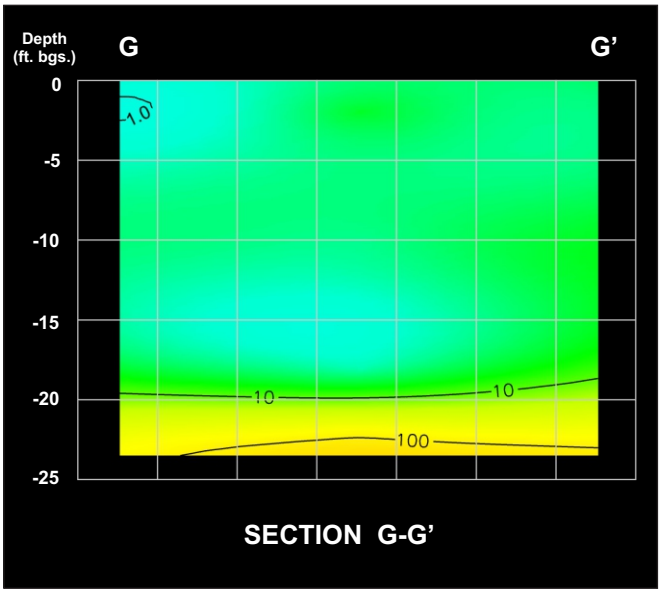
PERCHLORATE CONCENTRATION CROSS SECTIONS TEST PLOT 3

Project No.:	35000-2017-M05
Date:	JUNE 2017
Designed By:	SPH

Figure No.

20

BASELINE



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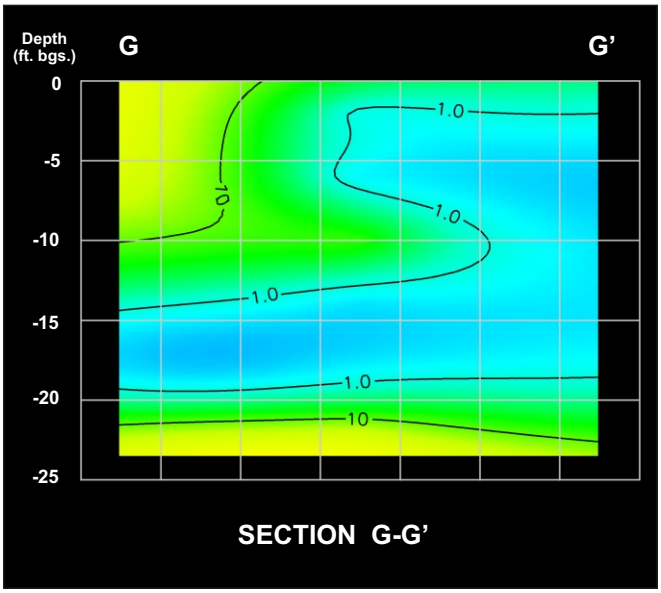

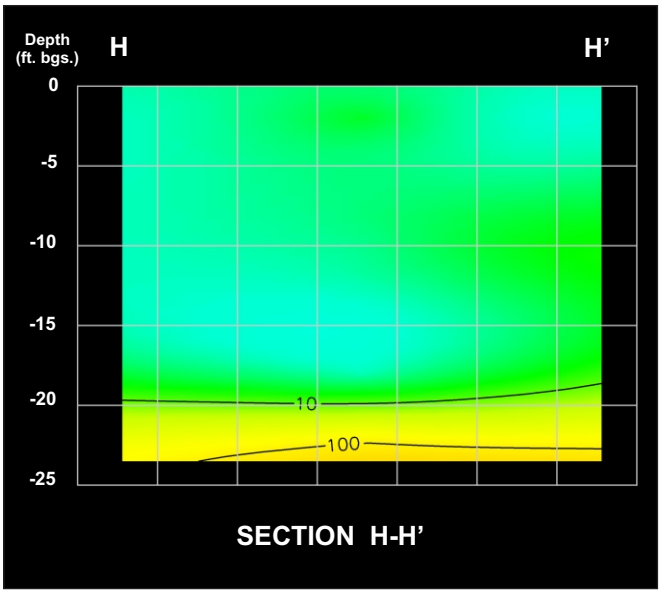

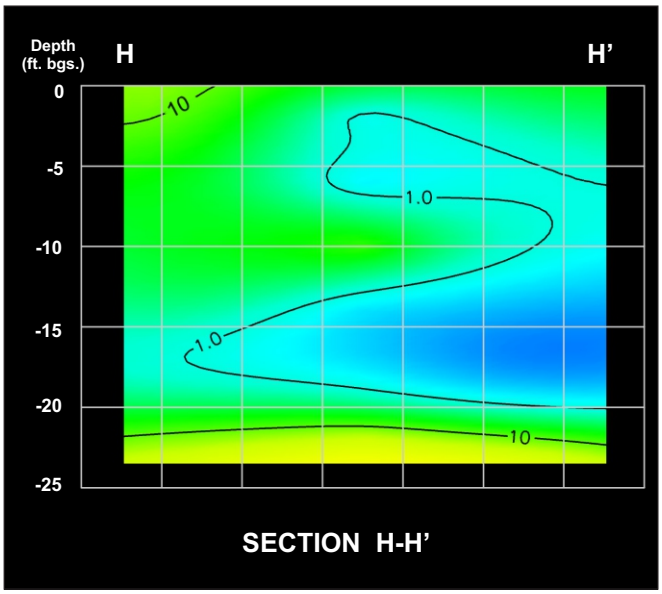

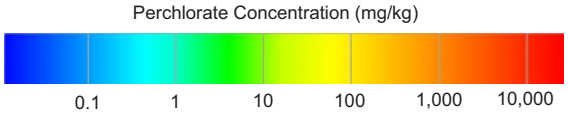

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NEVADA ENVIRONMENTAL RESPONSE TRUST

PERCHLORATE CONCENTRATION CROSS SECTIONS
TEST PLOT 4

Project No.:	35000-2017-M05
Date:	JUNE 2017
Designed By:	SPH

Figure No.
21

Appendix A
Boring Logs

Lysimeter and Well Construction Details

Lysimeter/Well ID	Date Installed	Easting (feet)	Northing (feet)	Top of Casing Elevation (feet msl)	Boring Depth (feet bgs)	Well Casing Type	Cup or Well Screen Type	Cup or Screen Interval (feet bgs)	Filter Pack Material	Filter Pack Interval (feet bgs)	Dedicated Pump Inlet Depth (feet)
TT-TP1-L1	03/27/15	827838.3	26719194.40	--	10.5	2" Sch 40 PVC	Ceramic Cup	9.75-10.0	Silica Flour	9.0-10.5	--
TT-TP1-L2	03/26/15	827841.28	26719194.42	--	27.5	2" Sch 40 PVC	Ceramic Cup	19.75-20.0	Silica Flour	19.0-20.5	--
TT-TP2-L1	03/27/15	827907.5	26719204.80	--	10.5	2" Sch 40 PVC	Ceramic Cup	9.75-10.0	Silica Flour	9.0-10.5	--
TT-TP2-L2	03/26/15	827910.50	26719204.81	--	27.5	2" Sch 40 PVC	Ceramic Cup	19.75-20.0	Silica Flour	19.0-20.5	--
TT-TP3-L1	03/27/15	827976.7	26719215.20	--	10.5	2" Sch 40 PVC	Ceramic Cup	9.75-10.0	Silica Flour	9.0-10.5	--
TT-TP3-L2	03/26/15	827979.73	26719215.21	--	27.5	2" Sch 40 PVC	Ceramic Cup	19.75-20.0	Silica Flour	19.0-20.5	--
TT-TP4-L1	03/27/15	828046.0	26719225.60	--	10.5	2" Sch 40 PVC	Ceramic Cup	9.75-10.0	Silica Flour	9.0-10.5	--
TT-TP4-L2	03/25/15	828048.95	26719225.60	--	27.5	2" Sch 40 PVC	Ceramic Cup	19.75-20.0	Silica Flour	19.0-20.5	--
TT-TP1-M1	03/24/15	827834.47	26719221.02	1,760.26	32.5	2" Sch 40 PVC	2" Sch 40 PVC, 0.020" Slot	22.0-32.0	2/16 Sand	21.0-32.5	27.0
TT-TP1-M2	03/23/15	827831.24	26719250.84	1,760.22	32.5	2" Sch 40 PVC	2" Sch 40 PVC, 0.020" Slot	22.0-32.0	2/16 Sand	21.0-32.5	27.0
TT-TP1-M3	03/24/15	827783.62	26719188.31	1,760.33	32.5	2" Sch 40 PVC	2" Sch 40 PVC, 0.020" Slot	22.0-32.0	2/16 Sand	21.0-32.5	27.0
TT-TP2-M1	03/24/15	827903.40	26719231.52	1,760.43	32.5	2" Sch 40 PVC	2" Sch 40 PVC, 0.020" Slot	22.0-32.0	2/16 Sand	21.0-32.5	27.0
TT-TP2-M2	03/23/15	827900.40	26719261.32	1,760.02	32.5	2" Sch 40 PVC	2" Sch 40 PVC, 0.020" Slot	22.0-32.0	2/16 Sand	21.0-32.5	27.0
TT-TP3-M1	03/25/15	827971.63	26719242.10	1,760.17	32.5	2" Sch 40 PVC	2" Sch 40 PVC, 0.020" Slot	22.0-32.0	2/16 Sand	21.0-32.5	27.0
TT-TP3-M2	03/23/15	827969.57	26719272.01	1,760.13	32.5	2" Sch 40 PVC	2" Sch 40 PVC, 0.020" Slot	22.0-32.0	2/16 Sand	21.0-32.5	27.0
TT-TP4-M1	03/25/15	828041.89	26719251.92	1,760.46	32.5	2" Sch 40 PVC	2" Sch 40 PVC, 0.020" Slot	22.0-32.0	2/16 Sand	21.0-32.5	27.0
TT-TP4-M2	03/23/15	828038.90	26719282.23	1,760.14	32.5	2" Sch 40 PVC	2" Sch 40 PVC, 0.020" Slot	22.0-32.0	2/16 Sand	21.0-32.5	27.0
TT-TP4-M3	03/20/15	828099.63	26719235.68	1,759.91	32.5	2" Sch 40 PVC	2" Sch 40 PVC, 0.020" Slot	22.0-32.0	2/16 Sand	21.0-32.5	27.0

Notes:
msl: mean sea level
bgs: below ground surface
2" Sch 40 PVC: 2-inch diameter schedule 40 polyvinyl chloride
0.020" slot: 0.020-inch machine skitted well screen

BORING LOG Tt-TP1-B1/B1A

Project	: NERT-Soil Flushing Pilot	Borehole Depth	: 31.5 ft.	Sampling Method	: Split Spoon
Location	: Henderson, NV	Borehole Diameter	: 8 in.	Northing Coord. (ft)	: TBA
Project No.	: 100-SBO-T35000.M05	Drilling Contractor	: Gregg Drilling	Easting Coord. (ft)	: TBA
Logged By	: D. Manriquez	Drilling Method	: HSA	Surface Elev. (ft MSL)	: TBA
Date Boring Started	: 3/17/2015	Date Completed	: 3/17/2015	TOC Elev. (ft MSL)	: TBA

Depth (feet bgs)	Sample Interval	Blow Count	Recovery (%)	Time	Lab No.	USCS	GRAPHIC	DESCRIPTION	PID (ppm)
0								SILTY SAND: About 10% fine gravel (~1/4"); 60% sand, mostly fine grained with little medium and coarse grained; about 30% silt. Brown (7.5 YR 5/4), poorly graded, dense, moist. (ALLUVIUM)	
2	☒	--	100	1030	Tt-TP1-B1-2			Sample collected using a hand auger. Trace coarse gravel (1").	0.0
4									
6	☒	33 50/5	90	1047	Tt-TP1-B1-6			No coarse gravel, very dense.	0.0
8									
10	☒	39 50	100	1108	Tt-TP1-B1-10	SM		About 5% fine gravel (~1/4 to 1/2"); 75% sand, mostly fine grained with little medium and coarse grained; about 20% silt. Brown (7.5 YR 5/4), poorly graded, dense, moist. About 5% fine gravel; 60% sand; 35% silt at 10.5 feet.	6.9
12									
14	☒	17 41 50	100	1117	Tt-TP1-B1-14			Color change to brown (7.5 YR 4/4)	1.9
16									
18	☒	23 43 50	100	1125	Tt-TP1-B1-18			About 10% fine gravel (~1/4 to 1/2"); 60% sand; 20% silt. Brown (7.5 YR 5/3). About 5% fine gravel (~1/4"); 65% sand; 30% silt. Brown (7.5 YR 4/4)	3.1
20									

Lysimeter:
Elev.:

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BORING LOG Tt-TP1-B1/B1A

Project	: NERT-Soil Flushing Pilot	Borehole Depth	: 31.5 ft.	Sampling Method	: Split Spoon
Location	: Henderson, NV	Borehole Diameter	: 8 in.	Northing Coord. (ft)	: TBA
Project No.	: 100-SBO-T35000.M05	Drilling Contractor	: Gregg Drilling	Easting Coord. (ft)	: TBA
Logged By	: D. Manriquez	Drilling Method	: HSA	Surface Elev. (ft MSL)	: TBA
Date Boring Started	: 3/17/2015	Date Completed	: 3/17/2015	TOC Elev. (ft MSL)	: TBA

Depth (feet bgs)	Sample Interval	Blow Count	Recovery (%)	Time	Lab No.	USCS	GRAPHIC	DESCRIPTION	PID (ppm)
22	☒	48 50	100	1132	Tt-TP1-B1-22	SM		About 5% fine gravel (~1/4"); 60% sand, mostly fine grained with few medium and some coarse grained; about 35% silt. Brown (7.5 YR 4/3), poorly graded, very dense, moist.	8.8
26	☒	37 50	100	1158	Tt-TP1-B1-26			No gravel, about 55% sand; 45% silt. Brown (7.5 YR 5/3), very moist.	13.9
28						ML		SILT: About 75% silt and 25% clay. Brown (7.5 YR 5/4), medium to high plasticity, hard, wet. (UPPER MUDDY CREEK FORMATION)	
30	☒	9 8 22	100	1218	Tt-TP1-B1-30				0.0

Lysimeter:
Elev.:

Total Depth: 31.5 ft.

BORING LOG Tt-TP1-B2/B2A

Project	: NERT-Soil Flushing Pilot	Borehole Depth	: 27.5 ft.	Sampling Method	: Split Spoon
Location	: Henderson, NV	Borehole Diameter	: 8 in.	Northing Coord. (ft)	: TBA
Project No.	: 100-SBO-T35000.M05	Drilling Contractor	: Gregg Drilling	Easting Coord. (ft)	: TBA
Logged By	: D. Manriquez	Drilling Method	: HSA	Surface Elev. (ft MSL)	: TBA
Date Boring Started	: 3/17/2015	Date Completed	: 3/17/2015	TOC Elev. (ft MSL)	: TBA

Depth (feet bgs)	Sample Interval	Blow Count	Recovery (%)	Time	Lab No.	USCS	GRAPHIC	DESCRIPTION	PID (ppm)
0						SM		SILTY SAND: About 5% fine gravel (~1/4"); 60% sand, mostly fine grained with little medium and coarse grained; about 35% silt. Brown (7.5 YR 4/4), poorly graded, dense, moist. (ALLUVIUM)	
2	☒	--	100	1400	Tt-TP1-B2-2			Sample collected using a hand auger.	0.0
4									
6	☒	17 23 34	90	1418	Tt-TP1-B2-6			About 10% fine gravel (~1/4 to 1/2"); 60% sand; 30% silt. Very dense. Trace of caliche (1/2")	0.0
8									
10	☒	38 50	100	1423	Tt-TP1-B2-10	SM		SILTY SAND WITH GRAVEL: About 5% fine gravel (~1/4"); 60% sand, mostly fine grained with little medium and some coarse grained; about 25% silt. Brown (7.5 YR 4/4), poorly graded, very dense, moist.	0.0
12									
14	☒	26 50	100	1427	Tt-TP1-B2-14			Trace coarse gravel (1")	2.9
16									
18	☒	39 50	100	1432	Tt-TP1-B2-18				4.3
20						SM		SILTY SAND: About 60% sand, fine grained; about 40% silt. Brown (7.5 YR 5/3), poorly graded, dense, moist.	

Lysimeter:
Elev.:

BORING LOG Tt-TP1-B2/B2A

Project	: NERT-Soil Flushing Pilot	Borehole Depth	: 27.5 ft.	Sampling Method	: Split Spoon
Location	: Henderson, NV	Borehole Diameter	: 8 in.	Northing Coord. (ft)	: TBA
Project No.	: 100-SBO-T35000.M05	Drilling Contractor	: Gregg Drilling	Easting Coord. (ft)	: TBA
Logged By	: D. Manriquez	Drilling Method	: HSA	Surface Elev. (ft MSL)	: TBA
Date Boring Started	: 3/17/2015	Date Completed	: 3/17/2015	TOC Elev. (ft MSL)	: TBA

Depth (feet bgs)	Sample Interval	Blow Count	Recovery (%)	Time	Lab No.	USCS	GRAPHIC	DESCRIPTION	PID (ppm)
20									
22	X	50 50	100	1438	Tt-TP1-B2-22	SM		About 5% fine gravel (~1/4); about 60% sand, mostly fine grained with little medium and fine grained; about 35% silt. Brown (7.5 YR 5/3), poorly graded, very dense, moist.	4.6
24									
26	X	28 31 50	100	1448	Tt-TP1-B2-26	ML		SILT: About 75% Silt and 25% Clay. Brown (7.5 YR 5/4), medium to high plasticity, hard, wet. (UPPER MUDDY CREEK FORMATION)	0.0
28								Total Depth: 27.5 ft.	
30									
32									
34									
36									
38									
40									

Lysimeter:
Elev.: ▽

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BORING LOG Tt-TP1-B3/B3A

Project	: NERT-Soil Flushing Pilot	Borehole Depth	: 27.5 ft.	Sampling Method	: Split Spoon
Location	: Henderson, NV	Borehole Diameter	: 8 in.	Northing Coord. (ft)	: TBA
Project No.	: 100-SBO-T35000.M05	Drilling Contractor	: Gregg Drilling	Easting Coord. (ft)	: TBA
Logged By	: D. Manriquez	Drilling Method	: HSA	Surface Elev. (ft MSL)	: TBA
Date Boring Started	: 3/18/2015	Date Completed	: 3/18/2015	TOC Elev. (ft MSL)	: TBA

Lysimeter:
Elev.:

Depth (feet bgs)	Sample Interval	Blow Count	Recovery (%)	Time	Lab No.	USCS	GRAPHIC	DESCRIPTION	PID (ppm)
0								SILTY SAND: About 5% fine gravel (~1/4"); 65% sand, mostly fine grained with little medium and coarse grained; about 30% silt. Brown (7.5 YR 4/4), poorly graded, dense, moist. (ALLUVIUM)	
2	☒	--	100	0755	Tt-TP1-B3-2			Sample collected using a hand auger.	0.0
4									
6	☒	29 50	100	0806	Tt-TP1-B3-6			Trace gravel; about 65% sand, mostly fine and some coarse grained; about 35% silt. Very dense.	0.0
8									
10	☒	32 50	100	0810	Tt-TP1-B3-10	SM		About 10% fine gravel (~1/4 to 1/2"); 60% sand; 30% silt.	0.2
12									
14	☒	27 50	90	0814	Tt-TP1-B3-14			Sand mostly fine grained with little medium and coarse grained sand.	0.6
16									
18	☒	34 50	100	0820	Tt-TP1-B3-18			Sand mostly fine grained with little medium and some coarse grained sand.	0.2
20									

TETRA TECH

BORING LOG Tt-TP1-B3/B3A

Project	: NERT-Soil Flushing Pilot	Borehole Depth	: 27.5 ft.	Sampling Method	: Split Spoon
Location	: Henderson, NV	Borehole Diameter	: 8 in.	Northing Coord. (ft)	: TBA
Project No.	: 100-SBO-T35000.M05	Drilling Contractor	: Gregg Drilling	Easting Coord. (ft)	: TBA
Logged By	: D. Manriquez	Drilling Method	: HSA	Surface Elev. (ft MSL)	: TBA
Date Boring Started	: 3/18/2015	Date Completed	: 3/18/2015	TOC Elev. (ft MSL)	: TBA

Depth (feet bgs)	Sample Interval	Blow Count	Recovery (%)	Time	Lab No.	USCS	GRAPHIC	DESCRIPTION	PID (ppm)
20									
22	☒	50	100	0827	Tt-TP1-B3-22	SM			0.6
24									
26	☒	22 33 50	100	0831	Tt-TP1-B3-26	ML		SILT WITH SAND: About 20% sand, mostly fine grained and little coarse grained; about 80% silt. Light brown (7.5 YR 6/4), low plasticity, hard, wet. (UPPER MUDDY CREEK FORMATION)	0.2
28									
30									
32									
34									
36									
38									
40									

Lysimeter:
Elev.: ▽

Total Depth: 27.5 ft.

BORING LOG Tt-TP1-B4/B4A

Project	: NERT-Soil Flushing Pilot	Borehole Depth	: 27.5 ft.	Sampling Method	: Split Spoon
Location	: Henderson, NV	Borehole Diameter	: 8 in.	Northing Coord. (ft)	: TBA
Project No.	: 100-SBO-T35000.M05	Drilling Contractor	: Gregg Drilling	Easting Coord. (ft)	: TBA
Logged By	: D. Manriquez	Drilling Method	: HSA	Surface Elev. (ft MSL)	: TBA
Date Boring Started	: 3/18/2015	Date Completed	: 3/18/2015	TOC Elev. (ft MSL)	: TBA

Depth (feet bgs)	Sample Interval	Blow Count	Recovery (%)	Time	Lab No.	USCS	GRAPHIC	DESCRIPTION	PID (ppm)
0								SILTY SAND: About 10% fine gravel (~1/4 to 1/2"); about 55% sand, mostly fine grained with few medium and some coarse grained; about 35% silt. Brown (7.5 YR 5/4), poorly graded, dense, moist. (ALLUVIUM)	
2	☒	--	100	0910	Tt-TP1-B4-2			Sample collected using a hand auger.	0.0
4									
6	☒	21 38 45	100	0922	Tt-TP1-B4-6			About 10% fine gravel; 50% sand, mostly fine grained with few medium and some coarse grained; about 40% silt. Very dense.	0.0
8									
10	☒	50	100	0926	Tt-TP1-B4-10	SM		Trace coarse gravel (~1.5")	0.0
12									
14	☒	39 50	90	0930	Tt-TP1-B4-14			About 10% fine gravel (~1/4"); about 70% sand, mostly coarse grained with little medium and some fine grained; about 20% silt. Brown (7.5 YR 4/3).	0.4
16									
18	☒	41 50	100	0936	Tt-TP1-B4-18			Fine gravel size ranges from 1/4 to 1/2"	0.6
20									

Lysimeter:
Elev.:

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BORING LOG Tt-TP1-B4/B4A

Project	: NERT-Soil Flushing Pilot	Borehole Depth	: 27.5 ft.	Sampling Method	: Split Spoon
Location	: Henderson, NV	Borehole Diameter	: 8 in.	Northing Coord. (ft)	: TBA
Project No.	: 100-SBO-T35000.M05	Drilling Contractor	: Gregg Drilling	Easting Coord. (ft)	: TBA
Logged By	: D. Manriquez	Drilling Method	: HSA	Surface Elev. (ft MSL)	: TBA
Date Boring Started	: 3/18/2015	Date Completed	: 3/18/2015	TOC Elev. (ft MSL)	: TBA

Depth (feet bgs)	Sample Interval	Blow Count	Recovery (%)	Time	Lab No.	USCS	GRAPHIC	DESCRIPTION	PID (ppm)
20									
22	☒	50	100	0943	Tt-TP1-B4-22	SM		About 10% fine gravel; 60% sand; 30% silt. Brown (7.5 YR 5/4). Trace coarse gravel (1.5") at 22.5 feet.	1.3
24									
26	☒	26 31 37	100	0949	Tt-TP1-B4-26	ML		SILT: About 5% sand, mostly fine grained; about 70% silt and 25% clay. Brown (7.5 YR 5/4), medium to high plasticity, hard, wet. (UPPER MUDDY CREEK FORMATION)	0.1
28									
30									
32									
34									
36									
38									
40									

Lysimeter:
Elev.: ▽

Total Depth: 27.5 ft.

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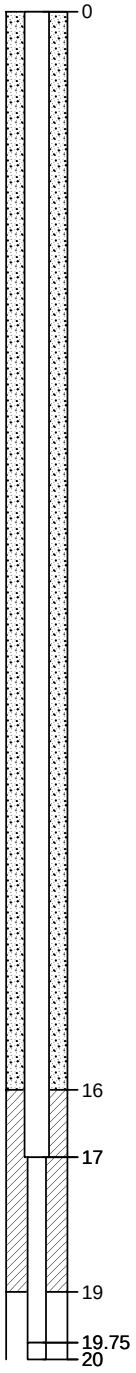
BORING LOG Tt-TP1-L2/L2A

Project	: NERT-Soil Flushing Pilot	Borehole Depth	: 27.5 ft.	Sampling Method	: Split Spoon
Location	: Henderson, NV	Borehole Diameter	: 8 in.	Northing Coord. (ft)	: TBA
Project No.	: 100-SBO-T35000.M05	Drilling Contractor	: Gregg Drilling	Easting Coord. (ft)	: TBA
Logged By	: D. Manriquez	Drilling Method	: HSA	Surface Elev. (ft MSL)	: TBA
Date Boring Started	: 3/26/2015	Date Completed	: 3/26/2015	TOC Elev. (ft MSL)	: TBA

Depth (feet bgs)	Sample Interval	Blow Count	Recovery (%)	Time	Lab No.	USCS	GRAPHIC	DESCRIPTION	PID (ppm)
0									
2	☒	--	100	1142	Tt-TP1-L2-2			SILTY SAND: About 10% fine gravel (~1/4 to 1/2"); about 60% sand, mostly fine grained with some medium and little coarse grained; about 30% silt. Brown (7.5 YR 5/4), poorly graded, dense, moist. (ALLUVIUM) Sample collected using a hand auger	0.0
4									
6	☒	18 50	83	1147	Tt-TP1-L2-6	SM		Very dense	0.4
8									
10	☒	28 50	92	1154	Tt-TP1-L2-10			Trace coarse gravel (~2")	0.8
12									
14	☒	18 29 50	100	1203	Tt-TP1-L2-14			SILTY SAND WITH GRAVEL: About 20% fine gravel (~1/4"); about 60% sand, mostly coarse grained with some fine grained and little medium grained; about 20% silt. Brown (7.5 YR 4/4), poorly graded, very dense, moist.	1.3
16						SM			
18	☒	34 50	100	1209	Tt-TP1-L2-18			Fine gravel (~1/4 to 1/2"). Color change to brown (7.5 YR 5/4).	0.0
20									

Lysimeter:
Elev.:

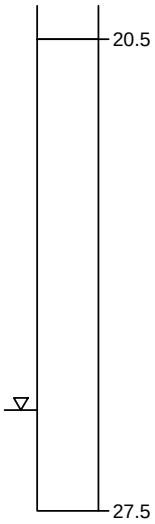


BORING LOG Tt-TP1-L2/L2A

Project	: NERT-Soil Flushing Pilot	Borehole Depth	: 27.5 ft.	Sampling Method	: Split Spoon
Location	: Henderson, NV	Borehole Diameter	: 8 in.	Northing Coord. (ft)	: TBA
Project No.	: 100-SBO-T35000.M05	Drilling Contractor	: Gregg Drilling	Easting Coord. (ft)	: TBA
Logged By	: D. Manriquez	Drilling Method	: HSA	Surface Elev. (ft MSL)	: TBA
Date Boring Started	: 3/26/2015	Date Completed	: 3/26/2015	TOC Elev. (ft MSL)	: TBA

Depth (feet bgs)	Sample Interval	Blow Count	Recovery (%)	Time	Lab No.	USCS	GRAPHIC	DESCRIPTION	PID (ppm)
20									
22	☒	31 50	100	1215	Tt-TP1-L2-22	SM		About 15% fine gravel (~1/4 to 3/4"); about 65% sand, mostly coarse grained with some medium grained and little fine grained; about 20% silt. Brown (7.5 YR 5/3), poorly graded, very dense, moist.	0.0
24									
26	☒	19 27 50	100	1222	Tt-TP1-L2-26	ML		SILT: About 70% silt; 30% clay. Brown (7.5 YR 5/4), high to medium plasticity, hard, wet. (UPPER MUDDY CREEK FORMATION)	0.0
28									
30									
32									
34									
36									
38									
40									

Total depth: 27.5 ft.



BORING LOG Tt-TP2-B1/B1A

Project	: NERT-Soil Flushing Pilot	Borehole Depth	: 27.0 ft.	Sampling Method	: Split Spoon
Location	: Henderson, NV	Borehole Diameter	: 8 in.	Northing Coord. (ft)	: TBA
Project No.	: 100-SBO-T35000.M05	Drilling Contractor	: Gregg Drilling	Easting Coord. (ft)	: TBA
Logged By	: D. Manriquez	Drilling Method	: HSA	Surface Elev. (ft MSL)	: TBA
Date Boring Started	: 3/18/2015	Date Completed	: 3/18/2015	TOC Elev. (ft MSL)	: TBA

Lysimeter:
Elev.:

Depth (feet bgs)	Sample Interval	Blow Count	Recovery (%)	Time	Lab No.	USCS	GRAPHIC	DESCRIPTION	PID (ppm)
0								SILTY SAND: About 10% fine gravel (~1/4 to 1/2"); about 60% sand, mostly fine grained with some coarse grained; about 30% silt. Brown (7.5 YR 4/4), poorly graded, dense, moist. (ALLUVIUM)	
2	⊠	--	100	1040	Tt-TP2-B1-2			sample collected using a hand auger.	0.0
4									
6	⊠	50	100	1045	Tt-TP2-B1-6			Very dense.	0.0
8									
10	⊠	50	100	1049	Tt-TP2-B1-10	SM		Mostly fine grained with little medium and some coarse grained sand.	0.0
12									
14	⊠	32 50	100	1053	Tt-TP2-B1-14			Some fine to coarse grained sand.	0.4
16									
18	⊠	37 50	100	1056	Tt-TP2-B1-18			About 3% fine gravel (~1/4"); about 60% sand, mostly fine grained with little medium and few coarse grained; about 37% silt. Brown (7.5 YR 5/4).	0.6
20									

BORING LOG Tt-TP2-B1/B1A

Project	: NERT-Soil Flushing Pilot	Borehole Depth	: 27.0 ft.	Sampling Method	: Split Spoon
Location	: Henderson, NV	Borehole Diameter	: 8 in.	Northing Coord. (ft)	: TBA
Project No.	: 100-SBO-T35000.M05	Drilling Contractor	: Gregg Drilling	Easting Coord. (ft)	: TBA
Logged By	: D. Manriquez	Drilling Method	: HSA	Surface Elev. (ft MSL)	: TBA
Date Boring Started	: 3/18/2015	Date Completed	: 3/18/2015	TOC Elev. (ft MSL)	: TBA

Depth (feet bgs)	Sample Interval	Blow Count	Recovery (%)	Time	Lab No.	USCS	GRAPHIC	DESCRIPTION	PID (ppm)
20									
22	☒	41 50	90	1101	Tt-TP2-B1-22	SM		About 10% fine gravel (~1/4"); about 55% sand, mostly fine grained with little medium and some coarse grained; about 35% silt. Brown (7.5 YR 4/3), wet.	1.3
24									
26	☒	37 50	100	1128	Tt-TP2-B1-26	ML		SILT: About 2% sand, mostly medium grained; about 63% silt and 35% clay. Brown (7.5 YR 5/4), medium plasticity, hard, wet. (UPPER MUDDY CREEK FORMATION)	0.1
28								Total Depth: 27.0 ft.	
30									
32									
34									
36									
38									
40									

Lysimeter:
Elev.: ▽

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BORING LOG Tt-TP2-B2/B2A

Project	: NERT-Soil Flushing Pilot	Borehole Depth	: 27.5 ft.	Sampling Method	: Split Spoon
Location	: Henderson, NV	Borehole Diameter	: 8 in.	Northing Coord. (ft)	: TBA
Project No.	: 100-SBO-T35000.M05	Drilling Contractor	: Gregg Drilling	Easting Coord. (ft)	: TBA
Logged By	: D. Manriquez	Drilling Method	: HSA	Surface Elev. (ft MSL)	: TBA
Date Boring Started	: 3/18/2015	Date Completed	: 3/18/2015	TOC Elev. (ft MSL)	: TBA

Lysimeter:
Elev.:

Depth (feet bgs)	Sample Interval	Blow Count	Recovery (%)	Time	Lab No.	USCS	GRAPHIC	DESCRIPTION	PID (ppm)
0								SILTY SAND: About 5% fine gravel (~1/4 to 3/4"); about 55% sand, mostly fine grained with some medium and coarse grained; about 40% silt. Brown (7.5 YR 5/4), poorly graded, dense, moist. (ALLUVIUM)	
2	☒	--	100	1257	Tt-TP2-B2-2			Sample collected using a hand auger.	0.0
4									
6	☒	50	100	1305	Tt-TP2-B2-6			Fine gravel (~1/4")	0.0
8									
10	☒	43 50	100	1310	Tt-TP2-B2-10	SM			0.0
12									
14	☒	50	100	1314	Tt-TP2-B2-14			About 10% fine gravel; about 50% sand, mostly fine grained with little medium and coarse grained; about 40% silt.	0.0
16									
18	☒	32 50	100	1319	Tt-TP2-B2-18			Sand mostly fine grained with little medium and some coarse grained sand.	0.0
20									

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BORING LOG Tt-TP2-B2/B2A

Project	: NERT-Soil Flushing Pilot	Borehole Depth	: 27.5 ft.	Sampling Method	: Split Spoon
Location	: Henderson, NV	Borehole Diameter	: 8 in.	Northing Coord. (ft)	: TBA
Project No.	: 100-SBO-T35000.M05	Drilling Contractor	: Gregg Drilling	Easting Coord. (ft)	: TBA
Logged By	: D. Manriquez	Drilling Method	: HSA	Surface Elev. (ft MSL)	: TBA
Date Boring Started	: 3/18/2015	Date Completed	: 3/18/2015	TOC Elev. (ft MSL)	: TBA

Depth (feet bgs)	Sample Interval	Blow Count	Recovery (%)	Time	Lab No.	USCS	GRAPHIC	DESCRIPTION	PID (ppm)
20									
22	X	8 20 50	100	1324	Tt-TP2-B2-22	SM		About 55% sand, mostly fine grained with little coarse grained; about 45% silt. Brown (7.5 YR 4/4), poorly graded, very dense, moist. Trace gravel and caliche at 23 feet.	0.0
24									
26	X	6 18 24	100	1331	Tt-TP2-B2-26			About 10% fine gravel (~1/4 to 1/2"); about 60% sand, mostly fine grained with some medium and few coarse grained; about 30% silt. Brown (7.5 YR 5/4), poorly graded, very dense, wet.	0.0
28						SP		POORLY GRADED SAND: About 10% fine gravel (~1/4 to 1/2"); about 90% sand, mostly coarse grained with little medium grained. Brown (7.5 YR 3/4), poorly graded, very dense, wet.	
30								Total Depth: 27.5 ft.	
32									
34									
36									
38									
40									

Lysimeter:
Elev.: ▽

BORING LOG Tt-TP2-B3/B3A

Project	: NERT-Soil Flushing Pilot	Borehole Depth	: 27.5 ft.	Sampling Method	: Split Spoon
Location	: Henderson, NV	Borehole Diameter	: 8 in.	Northing Coord. (ft)	: TBA
Project No.	: 100-SBO-T35000.M05	Drilling Contractor	: Gregg Drilling	Easting Coord. (ft)	: TBA
Logged By	: D. Manriquez	Drilling Method	: HSA	Surface Elev. (ft MSL)	: TBA
Date Boring Started	: 3/18/2015	Date Completed	: 3/18/2015	TOC Elev. (ft MSL)	: TBA

Lysimeter:
Elev.:

Depth (feet bgs)	Sample Interval	Blow Count	Recovery (%)	Time	Lab No.	USCS	GRAPHIC	DESCRIPTION	PID (ppm)
0								SILTY SAND: About 5% fine gravel (~1/4"); about 55% sand, mostly fine grained with little medium and coarse grained; about 40% silt. Brown (7.5 YR 4/4), poorly graded, dense, moist. (ALLUVIUM)	
2	☒	--	100	1412	Tt-TP2-B3-2			Sample collected using a hand auger.	0.0
4									
6	☒	19 50	100	1425	Tt-TP2-B3-6			Fine gravel (~1/4 to 1/2"). Very dense.	0.0
8									
10	☒	50	100	1429	Tt-TP2-B3-10	SM		Brown (7.5 YR 5/4).	0.0
12									
14	☒	19 29 50	100	1436	Tt-TP2-B3-14			About 10% fine gravel (~1/4"); about 65% sand, mostly fine grained with few medium and some coarse grained; about 25% silt. Brown (7.5 YR 5/4), poorly graded, very dense, moist.	0.0
16								Trace fine gravel (~1/4"); about 55% sand, mostly fine grained with little coarse grained; about 45% silt. Brown (7.5 YR 5/3).	
18	☒	39 50	100	1442	Tt-TP2-B3-18			Trace fine gravel; about 60% sand, mostly fine grained with few medium and some coarse grained.	0.0
20									

BORING LOG Tt-TP2-B3/B3A

Project	: NERT-Soil Flushing Pilot	Borehole Depth	: 27.5 ft.	Sampling Method	: Split Spoon
Location	: Henderson, NV	Borehole Diameter	: 8 in.	Northing Coord. (ft)	: TBA
Project No.	: 100-SBO-T35000.M05	Drilling Contractor	: Gregg Drilling	Easting Coord. (ft)	: TBA
Logged By	: D. Manriquez	Drilling Method	: HSA	Surface Elev. (ft MSL)	: TBA
Date Boring Started	: 3/18/2015	Date Completed	: 3/18/2015	TOC Elev. (ft MSL)	: TBA

Depth (feet bgs)	Sample Interval	Blow Count	Recovery (%)	Time	Lab No.	USCS	GRAPHIC	DESCRIPTION	PID (ppm)
20									
22	X	28 50	90	1446	Tt-TP2-B3-22	SM		No gravel; about 60% sand, mostly fine grained with some medium and little coarse grained; about 40% silt. Brown (7.5 YR 6/3).	1.9
24									
26	X	13 24 50	100	1451	Tt-TP2-B3-26			About 75% sand, some fine and coarse grained with little medium grained; about 25% silt. Brown (7.5 YR 4/3), wet. About 5% fine gravel (~1/4"); about 60% sand; about 35% silt. Brown (7.5 YR 4/4).	0.0
28								Total Depth: 27.5 ft.	
30									
32									
34									
36									
38									
40									

Lysimeter:
Elev.: ▽

BORING LOG Tt-TP2-B4/B4A

Project	: NERT-Soil Flushing Pilot	Borehole Depth	: 27.5 ft.	Sampling Method	: Split Spoon
Location	: Henderson, NV	Borehole Diameter	: 8 in.	Northing Coord. (ft)	: TBA
Project No.	: 100-SBO-T35000.M05	Drilling Contractor	: Gregg Drilling	Easting Coord. (ft)	: TBA
Logged By	: D. Manriquez	Drilling Method	: HSA	Surface Elev. (ft MSL)	: TBA
Date Boring Started	: 3/19/2015	Date Completed	: 3/19/2015	TOC Elev. (ft MSL)	: TBA

Depth (feet bgs)	Sample Interval	Blow Count	Recovery (%)	Time	Lab No.	USCS	GRAPHIC	DESCRIPTION	PID (ppm)
0								SILTY SAND: About 10% fine gravel (~1/4 to 1/2"); about 60% sand, mostly fine grained with few medium and little coarse grained; about 30% silt. Brown (7.5 YR 4/3), poorly graded, dense, moist. (ALLUVIUM)	
2	☒	--	100	0748	Tt-TP2-B4-2			Sample collected using a hand auger.	0.0
4								Very dense	
6	☒	27 50	100	0804	Tt-TP2-B4-6				0.0
8									
10	☒	21 50	100	0811	Tt-TP2-B4-10	SM		Trace coarse gravel (~2").	0.0
12									
14	☒	8 22 33	100	0815	Tt-TP2-B4-14			About 10% fine gravel (~1/4 to 3/4"); about 70% sand, mostly fine grained with little medium and some coarse grained; about 20% silt.	0.6
16									
18	☒	6 18 21	100	0825	Tt-TP2-B4-18			Fine gravel (~1/4") About 70% sand, some fine and coarse grained with few medium grained; about 30% silt. Brown (7.5 YR 5/3).	1.2
20									

Lysimeter:
Elev.:

BORING LOG Tt-TP2-B4/B4A

Project	: NERT-Soil Flushing Pilot	Borehole Depth	: 27.5 ft.	Sampling Method	: Split Spoon
Location	: Henderson, NV	Borehole Diameter	: 8 in.	Northing Coord. (ft)	: TBA
Project No.	: 100-SBO-T35000.M05	Drilling Contractor	: Gregg Drilling	Easting Coord. (ft)	: TBA
Logged By	: D. Manriquez	Drilling Method	: HSA	Surface Elev. (ft MSL)	: TBA
Date Boring Started	: 3/19/2015	Date Completed	: 3/19/2015	TOC Elev. (ft MSL)	: TBA

Depth (feet bgs)	Sample Interval	Blow Count	Recovery (%)	Time	Lab No.	USCS	GRAPHIC	DESCRIPTION	PID (ppm)
20									
22	X	19 39 50	85	0833	Tt-TP2-B4-22	SM		Trace caliche (~1/4 to 1/2"). Brown (7.5 YR 5/4), very dense. About 80% sand, some fine to coarse grained; about 20% silt. Brown (7.5 YR 4/3), wet.	0.2
24						ML		SANDY SILT: About 45% sand, mostly fine grained with few medium grained; about 55% silt. Brown (7.5 YR 4/3), non plastic, hard, wet. (UPPER MUDDY CREEK FORMATION)	
26	X	10 24 35	100	0839	Tt-TP2-B4-26	SM		SILTY SAND: About 5% fine gravel; about 80% sand, mostly coarse grained with some fine and medium grained; about 15% silt. Brown (7.5 YR 4/3), poorly graded, very dense, wet.	0.0
28								Total Depth: 27.5 ft.	
30									
32									
34									
36									
38									
40									

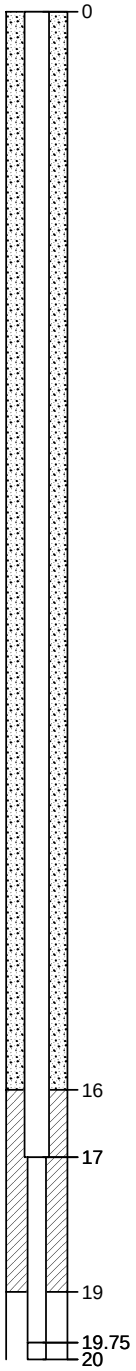
Lysimeter:
Elev.: ▽

BORING LOG Tt-TP2-L2/L2A

Project	: NERT-Soil Flushing Pilot	Borehole Depth	: 27.5 ft.	Sampling Method	: Split Spoon
Location	: Henderson, NV	Borehole Diameter	: 8 in.	Northing Coord. (ft)	: TBA
Project No.	: 100-SBO-T35000.M05	Drilling Contractor	: Gregg Drilling	Easting Coord. (ft)	: TBA
Logged By	: D. Manriquez	Drilling Method	: HSA	Surface Elev. (ft MSL)	: TBA
Date Boring Started	: 3/26/2015	Date Completed	: 3/26/2015	TOC Elev. (ft MSL)	: TBA

Depth (feet bgs)	Sample Interval	Blow Count	Recovery (%)	Time	Lab No.	USCS	GRAPHIC	DESCRIPTION	PID (ppm)
0									
2	☒	--	100	0956	Tt-TP2-L2-2			SILTY SAND: About 10% fine gravel (~1/4 to 1/2"); about 50% sand, mostly fine grained with little medium and coarse grained; about 40% silt. Brown (7.5 YR 4/4), poorly graded, dense, moist. (ALLUVIUM) Sample collected using a hand auger	0.0
4									
6	☒	28 50	100	1005	Tt-TP2-L2-6	SM		Fine gravel (~1/4 to 3/4"). Color change to strong brown (7.5 YR 4/6), very dense	0.4
8									
10	☒	18 50	100	1011	Tt-TP2-L2-10				0.0
12									
14	☒	26 50	100	1015	Tt-TP2-L2-14	SM		SILTY SAND WITH GRAVEL: About 20% fine gravel (~1/4"); about 60% sand, some fine to coarse grained; about 20% silt. Brown (7.5 YR 4/6), poorly graded, very dense, moist.	0.8
16									
18	☒	17 24 32	100	1021	Tt-TP2-L2-18	SM		SILTY SAND: About 55% sand, mostly fine grained with little medium and coarse grained; about 45% silt. Brown (7.5 YR 4/6), poorly graded, very dense, moist.	0.0
20									

Lysimeter:
Elev.:



TETRA TECH

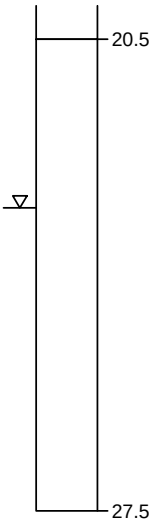
BORING LOG Tt-TP2-L2/L2A

Project	: NERT-Soil Flushing Pilot	Borehole Depth	: 27.5 ft.	Sampling Method	: Split Spoon
Location	: Henderson, NV	Borehole Diameter	: 8 in.	Northing Coord. (ft)	: TBA
Project No.	: 100-SBO-T35000.M05	Drilling Contractor	: Gregg Drilling	Easting Coord. (ft)	: TBA
Logged By	: D. Manriquez	Drilling Method	: HSA	Surface Elev. (ft MSL)	: TBA
Date Boring Started	: 3/26/2015	Date Completed	: 3/26/2015	TOC Elev. (ft MSL)	: TBA

Depth (feet bgs)	Sample Interval	Blow Count	Recovery (%)	Time	Lab No.	USCS	GRAPHIC	DESCRIPTION	PID (ppm)
20									
22	X	13 29 50	100	1027	Tt-TP2-L2-22	SM		About 70% sand, mostly coarse grained with some medium and little fine grained; about 30% silt. Very pale brown (10 YR 7/3), poorly graded, very dense, moist, trace of caliche. └About 10% fine gravel (~1/4 to 1/2") at 23 feet.	0.0
24									
26	X	30 50	100	1033	Tt-TP2-L2-26	SM		SILTY SAND WITH GRAVEL: About 15% fine gravel (~1/4" to 3/4")); about 70% sand, mostly coarse grained with little medium and coarse grained; about 15% silt. Dark brown (7.5 YR 3/4), poorly graded, very dense, wet.	0.0
28									
30									
32									
34									
36									
38									
40									

Total depth: 27.5 ft.

Lysimeter:
Elev.:



BORING LOG Tt-TP3-B1/B1A

Project	: NERT-Soil Flushing Pilot	Borehole Depth	: 27.5 ft.	Sampling Method	: Split Spoon
Location	: Henderson, NV	Borehole Diameter	: 8 in.	Northing Coord. (ft)	: TBA
Project No.	: 100-SBO-T35000.M05	Drilling Contractor	: Gregg Drilling	Easting Coord. (ft)	: TBA
Logged By	: D. Manriquez	Drilling Method	: HSA	Surface Elev. (ft MSL)	: TBA
Date Boring Started	: 3/19/2015	Date Completed	: 3/19/2015	TOC Elev. (ft MSL)	: TBA

Lysimeter:
Elev.:

Depth (feet bgs)	Sample Interval	Blow Count	Recovery (%)	Time	Lab No.	USCS	GRAPHIC	DESCRIPTION	PID (ppm)
0								SILTY SAND: About 10% fine gravel (~1/4 to 3/4"); about 50% sand, mostly fine grained with some medium and coarse grained; about 40% silt. Brown (7.5 YR 4/3), poorly graded, dense, moist. (ALLUVIUM)	
2	☒	--	100	0916	Tt-TP3-B1-2			Sample collected using a hand auger.	0.0
4									
6	☒	23 32 50	90	0931	Tt-TP3-B1-6	SM		Very dense	0.9
8									
10	☒	17 29 50	85	0935	Tt-TP3-B1-10			About 5% fine gravel (~1/4"); 55% sand; 40% silt.	0.0
12									
14	☒	30 50	100	0938	Tt-TP3-B1-14			About 10% fine gravel (~1/4 to 1/2"); about 60% sand, some fine and coarse grained with little medium grained; about 30% silt.	0.0
16									
18	☒	18 27 50	100	0943	Tt-TP3-B1-18	SM		SANDY SILT WITH GRAVEL: About 15% fine gravel (~1/4 to 3/4"); about 70% sand, some fine to coarse grained; about 15% silt. Brown (7.5 YR 4/4), poorly graded, very dense, moist.	0.0
20						ML		SANDY SILT: About 30% sand; about 70% silt. Brown (7.5 YR 5/4), non plastic, hard, moist.	

TETRA TECH

BORING LOG Tt-TP3-B1/B1A

Project	: NERT-Soil Flushing Pilot	Borehole Depth	: 27.5 ft.	Sampling Method	: Split Spoon
Location	: Henderson, NV	Borehole Diameter	: 8 in.	Northing Coord. (ft)	: TBA
Project No.	: 100-SBO-T35000.M05	Drilling Contractor	: Gregg Drilling	Easting Coord. (ft)	: TBA
Logged By	: D. Manriquez	Drilling Method	: HSA	Surface Elev. (ft MSL)	: TBA
Date Boring Started	: 3/19/2015	Date Completed	: 3/19/2015	TOC Elev. (ft MSL)	: TBA

Depth (feet bgs)	Sample Interval	Blow Count	Recovery (%)	Time	Lab No.	USCS	GRAPHIC	DESCRIPTION	PID (ppm)
20						ML			
						SM		SILTY SAND: About 10% fine gravel (~1/4 to 1/2"); about 60% sand, some fine to coarse grained; about 30% silt. Very pale brown (10 YR 7/4), poorly graded, very dense, moist.	
22		18							
	X	29	100	0950	Tt-TP3-B1-22	ML		SILT WITH SAND: About 15% sand, mostly fine grained and some medium grained; about 60% silt; about 25% clay. Pinkish white (8.5 YR 8/2), high to medium plasticity, hard, moist. (Upper Muddy Creek Formation)	0.0
		39				SM			
24								SILTY SAND: About 60% sand, mostly fine with little medium and coarse grained; about 40% silt. Very pale brown (10 YR 7/4), poorly graded, very dense, moist.	
26		31				ML		SILT WITH SAND: About 20% sand, mostly fine grained; about 65% silt; about 15% clay. Brown (7.5 YR 5/4), medium to lowplasticity, hard, wet.	
	X	38	100	0955	Tt-TP3-B1-26				0.0
		50							
28								Total Depth: 27.5 ft.	
30									
32									
34									
36									
38									
40									

Lysimeter:
Elev.: ▽

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TETRA TECH

BORING LOG Tt-TP3-B2/B2A

Project	: NERT-Soil Flushing Pilot	Borehole Depth	: 27.5 ft.	Sampling Method	: Split Spoon
Location	: Henderson, NV	Borehole Diameter	: 8 in.	Northing Coord. (ft)	: TBA
Project No.	: 100-SBO-T35000.M05	Drilling Contractor	: Gregg Drilling	Easting Coord. (ft)	: TBA
Logged By	: D. Manriquez	Drilling Method	: HSA	Surface Elev. (ft MSL)	: TBA
Date Boring Started	: 3/19/2015	Date Completed	: 3/19/2015	TOC Elev. (ft MSL)	: TBA

Lysimeter:
Elev.:

Depth (feet bgs)	Sample Interval	Blow Count	Recovery (%)	Time	Lab No.	USCS	GRAPHIC	DESCRIPTION	PID (ppm)
0								SILTY SAND: About 10% fine gravel (~1/4 to 3/4"); about 50% sand, mostly fine grained with some medium and coarse grained; about 40% silt. Brown (7.5 YR 4/3), poorly graded, dense, moist. (ALLUVIUM)	
2	⊠	--	100	1035	Tt-TP3-B2-2			Sample collected using a hand auger.	0.0
4									
6	⊠	16 50	90	1045	Tt-TP3-B2-6			Fine gravel (~1/4 to 1/2"), very dense	0.2
8									
10	⊠	23 50	100	1049	Tt-TP3-B2-10	SM			0.1
12									
14	⊠	33 50	100	1054	Tt-TP3-B2-14			About 5% fine gravel (~1/4"); about 65% sand, some fine and coarse grained with little medium grained; about 30% silt. Brown (7.5 YR 4/4)	0.0
16									
18	⊠	10 33 50	100	1100	Tt-TP3-B2-18			About 10% fine gravel (~1/4"); about 75% sand, some fine to coarse grained; about 15% silt. No gravel, about 60% sand, mostly fine with some medium grained; about 40% silt. Brown (7.5 YR 5/4)	0.0
20									

TETRA TECH

BORING LOG Tt-TP3-B2/B2A

Project	: NERT-Soil Flushing Pilot	Borehole Depth	: 27.5 ft.	Sampling Method	: Split Spoon
Location	: Henderson, NV	Borehole Diameter	: 8 in.	Northing Coord. (ft)	: TBA
Project No.	: 100-SBO-T35000.M05	Drilling Contractor	: Gregg Drilling	Easting Coord. (ft)	: TBA
Logged By	: D. Manriquez	Drilling Method	: HSA	Surface Elev. (ft MSL)	: TBA
Date Boring Started	: 3/19/2015	Date Completed	: 3/19/2015	TOC Elev. (ft MSL)	: TBA

Depth (feet bgs)	Sample Interval	Blow Count	Recovery (%)	Time	Lab No.	USCS	GRAPHIC	DESCRIPTION	PID (ppm)
20									
22	X	47 50	100	1108	Tt-TP3-B2-22	SM		About 10% fine gravel (~1/4 to 1/2"); about 60% sand, some fine and coarse grained with little medium grained; about 30% silt. Light brown (7.5 YR 6/3). └No gravel, about 65% sand, mostly fine with some medium and coarse grained; about 35% silt. Brown (7.5 YR 4/4)	0.0
24									
26	X	19 34 50	100	1112	Tt-TP3-B2-26	ML		SILT: About 75% silt; about 25% clay. Brown (7.5 YR 5/3), high to medium plasticity, hard, wet. (Upper Muddy Creek Formation)	0.0
28								Total Depth: 27.5 ft.	
30									
32									
34									
36									
38									
40									

Lysimeter:
Elev.: ▽

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TETRA TECH

BORING LOG Tt-TP3-B3/B3A

Project	: NERT-Soil Flushing Pilot	Borehole Depth	: 27.5 ft.	Sampling Method	: Split Spoon
Location	: Henderson, NV	Borehole Diameter	: 8 in.	Northing Coord. (ft)	: TBA
Project No.	: 100-SBO-T35000.M05	Drilling Contractor	: Gregg Drilling	Easting Coord. (ft)	: TBA
Logged By	: D. Manriquez	Drilling Method	: HSA	Surface Elev. (ft MSL)	: TBA
Date Boring Started	: 3/19/2015	Date Completed	: 3/19/2015	TOC Elev. (ft MSL)	: TBA

Lysimeter:
Elev.:

Depth (feet bgs)	Sample Interval	Blow Count	Recovery (%)	Time	Lab No.	USCS	GRAPHIC	DESCRIPTION	PID (ppm)
0								SILTY SAND: About 10% fine gravel (~1/4 to 3/4"); about 60% sand, mostly fine grained with few medium and little coarse grained; about 30% silt. Brown (7.5 YR 4/3), poorly graded, dense, moist. (ALLUVIUM) Sample collected using a hand auger.	
2	⊠	--	100	1238	Tt-TP3-B3-2				0.0
4									
6	⊠	37 50	100	1246	Tt-TP3-B3-6	SM		Fine gravel (~1/4"), very dense	0.6
8									
10	⊠	41 50	100	1251	Tt-TP3-B3-10			Brown (7.5 YR 4/4)	0.4
12									
14	⊠	41 50	100	1254	Tt-TP3-B3-14	SM		SILTY SAND WITH GRAVEL: About 15% fine gravel (~1/4 to 1/2"); about 65% sand, mostly coarse grained with little medium and some fine grained; about 20% silt. Brown (7.5 YR 4/4), poorly graded, very dense, moist.	0.1
16									
18	⊠	27 50	90	1258	Tt-TP3-B3-18				0.0
20						SM		SILTY SAND: About 60% sand, mostly coarse grained with little medium and few coarse grained; about 15% silt. Brown (7.5 YR 5/4), poorly graded, very dense, moist.	

TETRA TECH

BORING LOG Tt-TP3-B3/B3A

Project	: NERT-Soil Flushing Pilot	Borehole Depth	: 27.5 ft.	Sampling Method	: Split Spoon
Location	: Henderson, NV	Borehole Diameter	: 8 in.	Northing Coord. (ft)	: TBA
Project No.	: 100-SBO-T35000.M05	Drilling Contractor	: Gregg Drilling	Easting Coord. (ft)	: TBA
Logged By	: D. Manriquez	Drilling Method	: HSA	Surface Elev. (ft MSL)	: TBA
Date Boring Started	: 3/19/2015	Date Completed	: 3/19/2015	TOC Elev. (ft MSL)	: TBA

Depth (feet bgs)	Sample Interval	Blow Count	Recovery (%)	Time	Lab No.	USCS	GRAPHIC	DESCRIPTION	PID (ppm)
20									
22	X	33 50	100	1303	Tt-TP3-B3-22	SM			
24						SM		SILTY SAND WITH GRAVEL: About 20% fine gravel (~1/4 to 3/4"); about 60% sand, mostly coarse grained with little medium and some fine grained; about 20% silt. Brown (7.5 YR 5/3), poorly graded, very dense, moist.	0.0
26	X	15 27 38	100	1307	Tt-TP3-B3-26	CL/ML		SILTY CLAY: About 40% silt; about 60% clay. Brown (7.5 YR 5/3), high plasticity, hard, wet. (Upper Muddy Creek Formation)	0.0
28								Total Depth: 27.5 ft.	
30									
32									
34									
36									
38									
40									

Lysimeter:
Elev.:

TETRA TECH

BORING LOG Tt-TP3-B4/B4A

Project	: NERT-Soil Flushing Pilot	Borehole Depth	: 27.5 ft.	Sampling Method	: Split Spoon
Location	: Henderson, NV	Borehole Diameter	: 8 in.	Northing Coord. (ft)	: TBA
Project No.	: 100-SBO-T35000.M05	Drilling Contractor	: Gregg Drilling	Easting Coord. (ft)	: TBA
Logged By	: D. Manriquez	Drilling Method	: HSA	Surface Elev. (ft MSL)	: TBA
Date Boring Started	: 3/19/2015	Date Completed	: 3/19/2015	TOC Elev. (ft MSL)	: TBA

Lysimeter:
Elev.:

Depth (feet bgs)	Sample Interval	Blow Count	Recovery (%)	Time	Lab No.	USCS	GRAPHIC	DESCRIPTION	PID (ppm)
0								SILTY SAND: About 5% fine gravel (~1/4"); about 60% sand, mostly fine grained with little medium and coarse grained; about 35% silt. Brown (7.5 YR 5/3), poorly graded, dense, moist. (ALLUVIUM)	
2	☒	--	100	1340	Tt-TP3-B4-2			Sample collected using a hand auger.	0.0
4									
6	☒	18 50	90	1346	Tt-TP3-B4-6	SM		Fine gravel (~1/4 to 1/2"), very dense	0.6
8									
10	☒	23 50	90	1349	Tt-TP3-B4-10			About 10% fine gravel; about 65% sand, mostly fine grained with little medium and some coarse grained; about 25% silt.	0.4
12									
14	☒	28 50	100	1353	Tt-TP3-B4-14	SM		SILTY SAND WITH GRAVEL: About 20% fine gravel (~1/4 to 1/2"); about 50% sand, mostly coarse grained with little medium and some fine grained; about 30% silt. Brown (7.5 YR 4/3), poorly graded, very dense, moist.	0.1
16									
18	☒	18 25 50	100	1400	Tt-TP3-B4-18	SM		SILTY SAND: About 5% fine gravel (1/4 to 1/2"); about 50% sand, mostly fine grained with little medium and some coarse grained; about 25% silt. Brown (7.5 YR 4/4), poorly graded, very dense, moist.	0.0
20									

TETRA TECH

BORING LOG Tt-TP3-B4/B4A

Project	: NERT-Soil Flushing Pilot	Borehole Depth	: 27.5 ft.	Sampling Method	: Split Spoon
Location	: Henderson, NV	Borehole Diameter	: 8 in.	Northing Coord. (ft)	: TBA
Project No.	: 100-SBO-T35000.M05	Drilling Contractor	: Gregg Drilling	Easting Coord. (ft)	: TBA
Logged By	: D. Manriquez	Drilling Method	: HSA	Surface Elev. (ft MSL)	: TBA
Date Boring Started	: 3/19/2015	Date Completed	: 3/19/2015	TOC Elev. (ft MSL)	: TBA

Depth (feet bgs)	Sample Interval	Blow Count	Recovery (%)	Time	Lab No.	USCS	GRAPHIC	DESCRIPTION	PID (ppm)
20						SM			
22	X	39 50	100	1405	Tt-TP3-B4-22	SM		SILTY SAND WITH GRAVEL: About 15% fine gravel (~1/4 to 1/2"); about 65% sand, some fine to coarse grained; about 20% silt. Brown (7.5 YR 4/4), poorly graded, very dense, moist. Trace caliche (~1/2")	0.0
24									
26	X	15 27 50	100	1410	Tt-TP3-B4-26	SM		SILTY SAND: About 10% fine gravel (1/4"); about 55% sand, mostly coarse grained with little medium and some fine grained; about 35% silt. Brown (7.5 YR 4/3), poorly graded, very dense, wet.	0.0
28						ML		SILT: About 3% sand; about 77% silt; about 20% clay. Brown (7.5 YR 5/4), high to medium plasticity, hard, wet. (Upper Muddy Creek Formation)	
30								Total Depth: 27.5 ft.	
32									
34									
36									
38									
40									

Lysimeter:
Elev.: ▽

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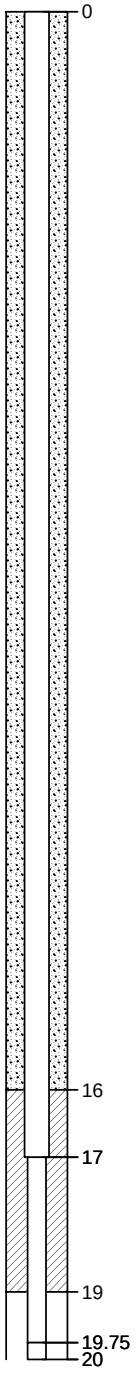
BORING LOG Tt-TP3-L2/L2A

Project	: NERT-Soil Flushing Pilot	Borehole Depth	: 27.5 ft.	Sampling Method	: Split Spoon
Location	: Henderson, NV	Borehole Diameter	: 8 in.	Northing Coord. (ft)	: TBA
Project No.	: 100-SBO-T35000.M05	Drilling Contractor	: Gregg Drilling	Easting Coord. (ft)	: TBA
Logged By	: D. Manriquez	Drilling Method	: HSA	Surface Elev. (ft MSL)	: TBA
Date Boring Started	: 3/26/2015	Date Completed	: 3/26/2015	TOC Elev. (ft MSL)	: TBA

Depth (feet bgs)	Sample Interval	Blow Count	Recovery (%)	Time	Lab No.	USCS	GRAPHIC	DESCRIPTION	PID (ppm)
0								SILTY SAND WITH GRAVEL: About 15% fine gravel (~1/4 to 3/4"); about 60% sand, mostly fine grained with some medium and little coarse grained; about 25% silt. Brown (7.5 YR 5/4), poorly graded, dense, moist. (ALLUVIUM)	
2	☒	--	100	0753	Tt-TP3-L2-2			Sample collected using a hand auger	0.0
4									
6	☒	26 38 50	100	0804	Tt-TP3-L2-6	SM		Fine gravel (~1/4 to 1/2"). Very dense	0.0
8									
10	☒	29 50	92	0811	Tt-TP3-L2-10			Mostly fine with some medium and coarse grained sand. └Fine gravel (~1/4"). Color change to brown (7.5 YR 4/3).	0.6
12									
14	☒	9 12 17	100	0815	Tt-TP3-L2-14	SM		SILTY SAND: About 20% fine gravel (~1/4" to 3/4")); about 60% sand, mostly fine grained with some medium grained and little coarse grained; about 20% silt. Brown (7.5 YR 4/6), poorly graded, very dense, moist. └About 55% sand, mostly fine grained with little medium and coarse grained; about 45% silt. Brown (7.5 YR 5/4), poorly graded, medium dense, moist.	0.9
16									
18	☒	24 50	100	0821	Tt-TP3-L2-18				0.0
20									

Lysimeter:
Elev.:



TETRA TECH

BORING LOG Tt-TP3-L2/L2A

Project	: NERT-Soil Flushing Pilot	Borehole Depth	: 27.5 ft.	Sampling Method	: Split Spoon
Location	: Henderson, NV	Borehole Diameter	: 8 in.	Northing Coord. (ft)	: TBA
Project No.	: 100-SBO-T35000.M05	Drilling Contractor	: Gregg Drilling	Easting Coord. (ft)	: TBA
Logged By	: D. Manriquez	Drilling Method	: HSA	Surface Elev. (ft MSL)	: TBA
Date Boring Started	: 3/26/2015	Date Completed	: 3/26/2015	TOC Elev. (ft MSL)	: TBA

Depth (feet bgs)	Sample Interval	Blow Count	Recovery (%)	Time	Lab No.	USCS	GRAPHIC	DESCRIPTION	PID (ppm)
20									
22	X	17 20 32	100	0824	Tt-TP3-L2-22	SM		About 65% sand, mostly coarse grained with little medium and some fine grained; about 35% silt; trace of clay. Very pale brown (10 YR 7/3), poorly graded, very dense, moist. About 70% sand, mostly coarse grained with some medium and littlefine grained; about 40% silt. Brown (7.5 YR 4/3), poorly graded, very dense, moist.	0.0
24									
26	X	11 18 36	100	0829	Tt-TP3-L2-26	ML		SILT: About 70% silt; 30% clay. Brown (7.5 YR 5/4), medium plasticity, hard, wet. (UPPER MUDDY CREEK FORMATION)	0.0
28								Total depth: 27.5 ft.	
30									
32									
34									
36									
38									
40									

Lysimeter:
Elev.: 20.5 — 27.5

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BORING LOG Tt-TP4-B1/B1A

Project	: NERT-Soil Flushing Pilot	Borehole Depth	: 27 ft.	Sampling Method	: Split Spoon
Location	: Henderson, NV	Borehole Diameter	: 8 in.	Northing Coord. (ft)	: TBA
Project No.	: 100-SBO-T35000.M05	Drilling Contractor	: Gregg Drilling	Easting Coord. (ft)	: TBA
Logged By	: D. Manriquez	Drilling Method	: HSA	Surface Elev. (ft MSL)	: TBA
Date Boring Started	: 3/19/2015	Date Completed	: 3/19/2015	TOC Elev. (ft MSL)	: TBA

Depth (feet bgs)	Sample Interval	Blow Count	Recovery (%)	Time	Lab No.	USCS	GRAPHIC	DESCRIPTION	PID (ppm)
0								SILTY SAND: About 5% fine gravel (~1/4 to 1/2"); 60% sand, mostly fine grained with little medium and some coarse grained; about 35% silt. Brown (7.5 YR 5/3), poorly graded, dense, moist. (ALLUVIUM)	
2	☒	--	100	1435	Tt-TP4-B1-2			Sample collected using a hand auger.	0.0
4									
6	☒	14 50	100	1443	Tt-TP4-B1-6			Very dense	0.0
8									
10	☒	27 50	100	1446	Tt-TP4-B1-10	SM			0.6
12									
14	☒	37 50	100	1452	Tt-TP4-B1-14			About 5% fine gravel; 70% sand, some fine to coarse grained; about 25% silt. Brown (7.5 YR 4/4).	0.0
16									
18	☒	24 33 50	100	1500	Tt-TP4-B1-18			About 10% fine gravel; 60% sand, some fine and coarse grained with little medium grained; about 30% silt.	0.1
20									

Lysimeter:
Elev.:

BORING LOG Tt-TP4-B1/B1A

Project	: NERT-Soil Flushing Pilot	Borehole Depth	: 27 ft.	Sampling Method	: Split Spoon
Location	: Henderson, NV	Borehole Diameter	: 8 in.	Northing Coord. (ft)	: TBA
Project No.	: 100-SBO-T35000.M05	Drilling Contractor	: Gregg Drilling	Easting Coord. (ft)	: TBA
Logged By	: D. Manriquez	Drilling Method	: HSA	Surface Elev. (ft MSL)	: TBA
Date Boring Started	: 3/19/2015	Date Completed	: 3/19/2015	TOC Elev. (ft MSL)	: TBA

Depth (feet bgs)	Sample Interval	Blow Count	Recovery (%)	Time	Lab No.	USCS	GRAPHIC	DESCRIPTION	PID (ppm)
22	☒	31 50	100	1504	Tt-TP4-B1-22	SM		About 80% sand, mostly coarse grained with some medium and few coarse grained; about 20% silt. Brown (7.5 YR 5/3), poorly graded, very dense, wet. └Brown (7.5 YR 4/4) at 22.5 feet.	0.0
26	☒	37 50	100	1509	Tt-TP4-B1-26	ML		About 55% sand, mostly fine grained with some medium and few coarse grained; about 45% silt. Brown (7.5 YR 5/4).	0.0
								SILT: About 70% silt and 30% clay. Brown (7.5 YR 5/4), high to medium plasticity, hard, wet. (UPPER MUDDY CREEK FORMATION)	
								Total Depth: 27 ft.	

Lysimeter:
Elev.: ▽

20 22 24 26 28 30 32 34 36 38 40

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TETRA TECH

BORING LOG Tt-TP4-B2/B2A

Project	: NERT-Soil Flushing Pilot	Borehole Depth	: 27.5 ft.	Sampling Method	: Split Spoon
Location	: Henderson, NV	Borehole Diameter	: 8 in.	Northing Coord. (ft)	: TBA
Project No.	: 100-SBO-T35000.M05	Drilling Contractor	: Gregg Drilling	Easting Coord. (ft)	: TBA
Logged By	: D. Manriquez	Drilling Method	: HSA	Surface Elev. (ft MSL)	: TBA
Date Boring Started	: 3/20/2015	Date Completed	: 3/20/2015	TOC Elev. (ft MSL)	: TBA

Depth (feet bgs)	Sample Interval	Blow Count	Recovery (%)	Time	Lab No.	USCS	GRAPHIC	DESCRIPTION	PID (ppm)
0						SM		SILTY SAND: About 10% fine gravel (~1/4 t. 3/4"); 55% sand, mostly fine grained with little medium and coarse grained; about 35% silt. Brown (7.5 YR 5/4), poorly graded, very dense, moist. (ALLUVIUM)	
2	☒	--	100	0802	Tt-TP4-B2-2			Sample collected using a hand auger.	0.0
4									
6	☒	28 50	100	0808	Tt-TP4-B2-6			Fine gravel (~1/4")	0.0
8									
10	☒	18 50	90	0817	Tt-TP4-B2-10			Trace coarse gravel (~2")	0.0
12									
14	☒	32 50	90	0821	Tt-TP4-B2-14			About 10% fine gravel; 65% sand, some fine and coarse grained with little medium grained; about 25% silt.	0.0
16									
18	☒	13 18 29	100	0825	Tt-TP4-B2-18	SM		SILTY SAND WITH GRAVEL: About 15% fine gravel (~1/4 t. 1/2"); 65% sand, mostly coarse grained with little medium and some coarse grained; about 20% silt. Brown (7.5 YR 4/3), poorly graded, dense, moist.	0.0
20									

Lysimeter:
Elev.:

BORING LOG Tt-TP4-B2/B2A

Project	: NERT-Soil Flushing Pilot	Borehole Depth	: 27.5 ft.	Sampling Method	: Split Spoon
Location	: Henderson, NV	Borehole Diameter	: 8 in.	Northing Coord. (ft)	: TBA
Project No.	: 100-SBO-T35000.M05	Drilling Contractor	: Gregg Drilling	Easting Coord. (ft)	: TBA
Logged By	: D. Manriquez	Drilling Method	: HSA	Surface Elev. (ft MSL)	: TBA
Date Boring Started	: 3/20/2015	Date Completed	: 3/20/2015	TOC Elev. (ft MSL)	: TBA

Depth (feet bgs)	Sample Interval	Blow Count	Recovery (%)	Time	Lab No.	USCS	GRAPHIC	DESCRIPTION	PID (ppm)
20									
22	X	27 50	100	0831	Tt-TP4-B2-22	SM		About 20% fine gravel (~1/4 t. 3/4"); 60% sand, mostly coarse grained with little fine and some medium grained; about 20% silt. Brown (7.5 YR 5/3), poorly graded, very dense, moist.	0.0
24									
26	X	18 27 32	100	0837	Tt-TP4-B2-26	ML		SILT: About 5% sand; 75% silt and 20% clay. Brown (7.5 YR 5/4), low plasticity, hard, wet. (UPPER MUDDY CREEK FORMATION)	0.0
28								Total Depth: 27.5 ft.	
30									
32									
34									
36									
38									
40									

Lysimeter:
Elev.: ▽

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BORING LOG Tt-TP4-B3/B3A

Project	: NERT-Soil Flushing Pilot	Borehole Depth	: 27.5 ft.	Sampling Method	: Split Spoon
Location	: Henderson, NV	Borehole Diameter	: 8 in.	Northing Coord. (ft)	: TBA
Project No.	: 100-SBO-T35000.M05	Drilling Contractor	: Gregg Drilling	Easting Coord. (ft)	: TBA
Logged By	: D. Manriquez	Drilling Method	: HSA	Surface Elev. (ft MSL)	: TBA
Date Boring Started	: 3/20/2015	Date Completed	: 3/20/2015	TOC Elev. (ft MSL)	: TBA

Depth (feet bgs)	Sample Interval	Blow Count	Recovery (%)	Time	Lab No.	USCS	GRAPHIC	DESCRIPTION	PID (ppm)
0								SILTY SAND WITH GRAVEL: About 15% fine gravel (~1/4 to 3/4"); 60% sand, mostly fine grained with few medium and some coarse grained; about 35% silt. Brown (7.5 YR 5/4), poorly graded, dense, moist. (ALLUVIUM) Sample collected using a hand auger.	
2	☒	--	100	0905	Tt-TP4-B3-2				0.0
4									
6	☒	14 21 50	100	0912	Tt-TP4-B3-6			Very dense	0.4
8						SM			
10	☒	11 23 31	100	0917	Tt-TP4-B3-10				0.6
12									
14	☒	22 50	90	0920	Tt-TP4-B3-14			About 15% fine gravel (~1/4 to 1/2"); 65% sand, mostly coarse grained with some fine and little medium grained; about 20% silt. Brown (7.5 YR 4/3)	0.1
16									
18	☒	14 19 29	100	0926	Tt-TP4-B3-18			Pinkish gray (7.5 YR 7/2), slightly micaceous.	
20						SM		SILTY SAND: About 60% sand, mostly fine grained and little coarse grained; about 40% silt. Brown (7.5 YR 4/3), poorly graded, dense, moist.	0.1

Lysimeter:
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TETRA TECH

BORING LOG Tt-TP4-B3/B3A

Project	: NERT-Soil Flushing Pilot	Borehole Depth	: 27.5 ft.	Sampling Method	: Split Spoon
Location	: Henderson, NV	Borehole Diameter	: 8 in.	Northing Coord. (ft)	: TBA
Project No.	: 100-SBO-T35000.M05	Drilling Contractor	: Gregg Drilling	Easting Coord. (ft)	: TBA
Logged By	: D. Manriquez	Drilling Method	: HSA	Surface Elev. (ft MSL)	: TBA
Date Boring Started	: 3/20/2015	Date Completed	: 3/20/2015	TOC Elev. (ft MSL)	: TBA

Depth (feet bgs)	Sample Interval	Blow Count	Recovery (%)	Time	Lab No.	USCS	GRAPHIC	DESCRIPTION	PID (ppm)
20						SM			
22	X	22 33 45	100	0934	Tt-TP4-B3-22	SM		SILTY SAND WITH GRAVEL: About 10% fine gravel (~1/4"); 60% sand, mostly coarse grained with little medium and some fine grained; about 30% silt. Brown (7.5 YR 5/4), poorly graded, very dense, very moist.	0.0
24						ML		SILT WITH SAND: About 15% sand, mostly coarse with some medium and few fine grained; 65% silt and 20% clay. Brown (7.5 YR 5/4), low plasticity, hard, very moist. (UPPER MUDDY CREEK FORMATION)	
26	X	7 11 17	100	0939	Tt-TP4-B3-26	ML		SILT: About 70% silt and 30% clay. Brown (7.5 YR 5/4), high to medium plasticity, very stiff, wet.	0.0
28								Total Depth: 27.5 ft.	
30									
32									
34									
36									
38									
40									

Lysimeter:
Elev.: ▽

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BORING LOG Tt-TP4-B4/B4A

Project	: NERT-Soil Flushing Pilot	Borehole Depth	: 27 ft.	Sampling Method	: Split Spoon
Location	: Henderson, NV	Borehole Diameter	: 8 in.	Northing Coord. (ft)	: TBA
Project No.	: 100-SBO-T35000.M05	Drilling Contractor	: Gregg Drilling	Easting Coord. (ft)	: TBA
Logged By	: D. Manriquez	Drilling Method	: HSA	Surface Elev. (ft MSL)	: TBA
Date Boring Started	: 3/20/2015	Date Completed	: 3/20/2015	TOC Elev. (ft MSL)	: TBA

Depth (feet bgs)	Sample Interval	Blow Count	Recovery (%)	Time	Lab No.	USCS	GRAPHIC	DESCRIPTION	PID (ppm)
0								SILTY SAND: About 10% fine gravel (~1/4 to 1/2"); 60% sand, mostly fine grained with few medium and some coarse grained; about 30% silt. Brown (7.5 YR 5/4), poorly graded, dense, moist. (ALLUVIUM)	
2	☒	--	100	0905	Tt-TP4-B4-2			Sample collected using a hand auger.	0.0
4									
6	☒	21 33 50	100	0912	Tt-TP4-B4-6	SM		Very dense	0.0
8									
10	☒	18 33 50	90	0917	Tt-TP4-B4-10			Brown (7.5 YR 4/4)	0.0
12									
14	☒	21 24 50	100	0920	Tt-TP4-B4-14				0.0
16						SM		SILTY SAND WITH GRAVEL: About 15% fine gravel (~1/4 to 1/2"); 60% sand, mostly coarse grained with some fine and little medium grained; about 25% silt. Brown (7.5 YR 4/4), poorly graded, dense, moist.	
18	☒	21 26 50	100	0926	Tt-TP4-B4-18	SM		SILTY SAND: About 70% sand, mostly coarse grained with some medium and little fine grained; about 30% silt. Brown (7.5 YR 3/4), poorly graded, very dense, moist.	0.0
20						SM		SILTY SAND WITH GRAVEL: About 20% fine gravel (~1/4 to 1/2"); 60% sand, mostly coarse grained with some medium and little fine grained; about 20% silt. Brown (7.5 YR 8/4), poorly graded, very dense, moist.	

Lysimeter:
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BORING LOG Tt-TP4-B4/B4A

Project	: NERT-Soil Flushing Pilot	Borehole Depth	: 27 ft.	Sampling Method	: Split Spoon
Location	: Henderson, NV	Borehole Diameter	: 8 in.	Northing Coord. (ft)	: TBA
Project No.	: 100-SBO-T35000.M05	Drilling Contractor	: Gregg Drilling	Easting Coord. (ft)	: TBA
Logged By	: D. Manriquez	Drilling Method	: HSA	Surface Elev. (ft MSL)	: TBA
Date Boring Started	: 3/20/2015	Date Completed	: 3/20/2015	TOC Elev. (ft MSL)	: TBA

Depth (feet bgs)	Sample Interval	Blow Count	Recovery (%)	Time	Lab No.	USCS	GRAPHIC	DESCRIPTION	PID (ppm)
20									
22	X	33 50	100	0934	Tt-TP4-B4-22	SM		About 10% fine gravel (~1/4"); 60% sand, some fine to coarse grained; about 30% silt. Brown (7.5 YR 5/4), poorly graded, very dense, very moist.	0.0
24						SM		SILTY SAND: About 85% sand, some fine and medium grained with little coarse grained; 15% silt. Brown (7.5 YR 5/4), poorly graded, wet.	
26	X	48 50	90	0939	Tt-TP4-B4-26	SM		SILTY SAND WITH GRAVEL: About 15% fine gravel (~1/4 to 1/2"); 70% sand, mostly coarse grained with little medium and some fine grained; about 15% silt. Brown (7.5 YR 5/3), poorly graded, very dense, wet.	0.0
28								Total Depth: 27 ft.	
30									
32									
34									
36									
38									
40									

Lysimeter:
Elev.: ▽

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BORING LOG Tt-TP4-L2/L2A

Project	: NERT-Soil Flushing Pilot	Borehole Depth	: 27.5 ft.	Sampling Method	: Split Spoon
Location	: Henderson, NV	Borehole Diameter	: 8 in.	Northing Coord. (ft)	: TBA
Project No.	: 100-SBO-T35000.M05	Drilling Contractor	: Gregg Drilling	Easting Coord. (ft)	: TBA
Logged By	: D. Manriquez	Drilling Method	: HSA	Surface Elev. (ft MSL)	: TBA
Date Boring Started	: 3/25/2015	Date Completed	: 3/25/2015	TOC Elev. (ft MSL)	: TBA

Depth (feet bgs)	Sample Interval	Blow Count	Recovery (%)	Time	Lab No.	USCS	GRAPHIC	DESCRIPTION	PID (ppm)
0									
2	☒	--	100	1317	Tt-TP4-L2-2	SM		SILTY SAND: About 10% fine gravel (~1/4 to 3/4"); about 60% sand, mostly fine grained with some medium and little coarse grained; about 30% silt. Brown (7.5 YR 5/4), poorly graded, dense, moist. (ALLUVIUM) Sample collected using a hand auger	0.0
4									
6	☒	24 50	100	1323	Tt-TP4-L2-6			Very dense	0.0
8									
10	☒	11 50	92	1328	Tt-TP4-L2-10	SM		SILTY SAND WITH GRAVEL: About 20% fine gravel (~1/4); about 60% sand, mostly fine and coarse grained with little medium grained; about 20% silt. Brown (7.5 YR 4/4), poorly graded, very dense, moist.	0.0
12									
14	☒	12 17 24	100	1332	Tt-TP4-L2-14				0.0
16									
18	☒	32 50	100	1335	Tt-TP4-L2-18	SM		SILTY SAND: About 5% fine gravel (~1/4"); about 65% sand, mostly fine grained little medium and coarse grained; about 30% silt. Brown (7.5 YR 5/4), poorly graded, very dense, moist.	0.0
20									

Lysimeter:
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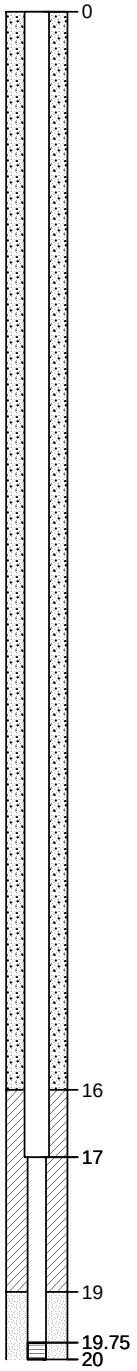

BORING LOG Tt-TP4-L2/L2A

Project	: NERT-Soil Flushing Pilot	Borehole Depth	: 27.5 ft.	Sampling Method	: Split Spoon
Location	: Henderson, NV	Borehole Diameter	: 8 in.	Northing Coord. (ft)	: TBA
Project No.	: 100-SBO-T35000.M05	Drilling Contractor	: Gregg Drilling	Easting Coord. (ft)	: TBA
Logged By	: D. Manriquez	Drilling Method	: HSA	Surface Elev. (ft MSL)	: TBA
Date Boring Started	: 3/25/2015	Date Completed	: 3/25/2015	TOC Elev. (ft MSL)	: TBA

Depth (feet bgs)	Sample Interval	Blow Count	Recovery (%)	Time	Lab No.	USCS	GRAPHIC	DESCRIPTION	PID (ppm)
22		18 29 37	100	1342	Tt-TP4-L2-22	SM			0.0
24								Interbeded layers of CLAYEY SILT and SANDY SILT WITH GRAVEL, wet.	
26		11 17 30	100	1354	Tt-TP4-L2-26	ML			0.0

Total depth: 27.5 ft.

Lysimeter:
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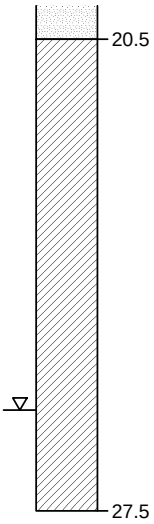


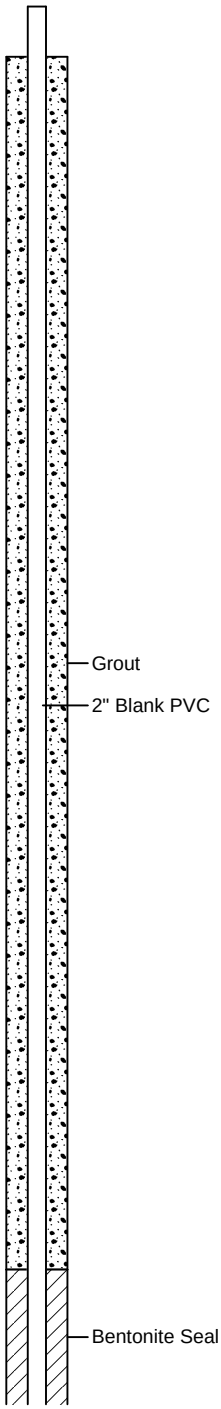
TETRA TECH

BORING LOG/WELL ID Tt-TP1-M1

Project	: NERT-Soil Flushing Pilot	Borehole Depth	: 32.5 ft.	Sampling Method	: Split Spoon
Location	: Henderson, NV	Borehole Diameter	: 8 in.	Northing Coord. (ft)	: TBA
Project No.	: 100-SBO-T35000.M05	Drilling Contractor	: Gregg Drilling	Easting Coord. (ft)	: TBA
Logged By	: D. Manriquez	Drilling Method	: HSA	Surface Elev. (ft MSL)	: TBA
Date Boring Started	: 3/24/2015	Date Completed	: 3/24/2015	TOC Elev. (ft MSL)	: TBA

Depth (feet bgs)	Sample Interval	Blow Count	Recovery (%)	Time	Lab No.	USCS	GRAPHIC	DESCRIPTION	PID (ppm)
0									
2	☒	--	100	1215		SM		SILTY SAND: About 10% fine gravel (1/4 to 3/4"); about 60% sand, mostly fine grained with some medium and little coarse grained; about 30% silt. Brown (7.5 YR 5/4), poorly graded, dense, moist. (ALLUVIUM) Sample collected using a hand auger	0.0
4									
6	☒	37 50	90	1223				Very dense Decrease gravel size (1/4 to 1/2")	0.0
8									
10	☒	50	100	1228				Trace of caliche	0.0
12									
14	☒	50	100	1232				No caliche, 2" clast noted in shoe.	1.9
16									
18	☒	41 50	100	1237		SM		SILTY SAND WITH GRAVEL: About 20% fine gravel (~1/4"); about 60% sand, some fine to coarse grained; about 30% silt. Brown (7.5 YR 5/4), poorly graded, dense, moist.	0.6
20									

Well:
Elev.:



TETRA TECH

BORING LOG/WELL ID Tt-TP1-M1

Project	: NERT-Soil Flushing Pilot	Borehole Depth	: 32.5 ft.	Sampling Method	: Split Spoon
Location	: Henderson, NV	Borehole Diameter	: 8 in.	Northing Coord. (ft)	: TBA
Project No.	: 100-SBO-T35000.M05	Drilling Contractor	: Gregg Drilling	Easting Coord. (ft)	: TBA
Logged By	: D. Manriquez	Drilling Method	: HSA	Surface Elev. (ft MSL)	: TBA
Date Boring Started	: 3/24/2015	Date Completed	: 3/24/2015	TOC Elev. (ft MSL)	: TBA

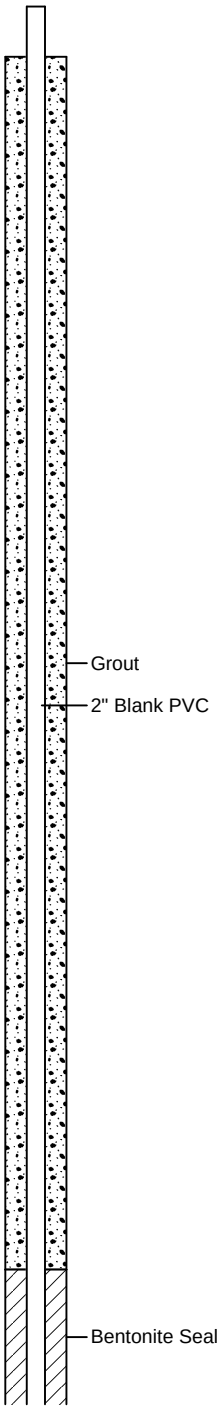
Depth (feet bgs)	Sample Interval	Blow Count	Recovery (%)	Time	Lab No.	USCS	GRAPHIC	DESCRIPTION	PID (ppm)	Well: Elev.:
22	☒	50	100	1241		SM			0.4	Bentonite Seal; 2" Blank PVC
24								SILT: About 70% silt and 30% clay. Brown (7.5 Y/R 5/4), medium to low plasticity, hard, wet. (UPPER MUDDY CREEK FORMATION)		
26	☒	11 17 23	100	1245		ML			0.0	Sand Pack; 0.020 Screen
28										
30										
32								Total Depth: 32.5 ft.		
34										
36										
38										
40										

BORING LOG/WELL ID Tt-TP1-M2

Project	: NERT-Soil Flushing Pilot	Borehole Depth	: 32.5 ft.	Sampling Method	: Split Spoon
Location	: Henderson, NV	Borehole Diameter	: 8 in.	Northing Coord. (ft)	: TBA
Project No.	: 100-SBO-T35000.M05	Drilling Contractor	: Gregg Drilling	Easting Coord. (ft)	: TBA
Logged By	: D. Manriquez	Drilling Method	: HSA	Surface Elev. (ft MSL)	: TBA
Date Boring Started	: 3/23/2015	Date Completed	: 3/23/2015	TOC Elev. (ft MSL)	: TBA

Depth (feet bgs)	Sample Interval	Blow Count	Recovery (%)	Time	Lab No.	USCS	GRAPHIC	DESCRIPTION	PID (ppm)
0									
2	☒	--	100	1500				SILTY SAND WITH GRAVEL: About 15% fine gravel (~1/4 to 3/4"); about 60% sand, mostly fine grained with some medium and little coarse grained; about 35% silt. Brown (7.5 YR 5/4), poorly graded, dense, moist. (ALLUVIUM) Sample collected using a hand auger	0.1
4									
6	☒	36 50	100	1511				Very dense Some fine to coarse grained sand.	0.1
8						SM			
10	☒	34 50	100	1514				Trace of caliche.	0.0
12									
14	☒	22 50	100	1518				Color change to brown (7.5 YR 4/4)	0.0
16									
18	☒	32 50	100	1523		SM		SILTY SAND: About 5% fine gravel (~1/4"); about 60% sand, mostly fine grained with little medium and few coarse grained; about 30% silt. Brown (7.5 YR 5/4), poorly graded, very dense, moist.	0.4
20									

Well:
Elev.:



BORING LOG/WELL ID Tt-TP1-M2

Project	: NERT-Soil Flushing Pilot	Borehole Depth	: 32.5 ft.	Sampling Method	: Split Spoon
Location	: Henderson, NV	Borehole Diameter	: 8 in.	Northing Coord. (ft)	: TBA
Project No.	: 100-SBO-T35000.M05	Drilling Contractor	: Gregg Drilling	Easting Coord. (ft)	: TBA
Logged By	: D. Manriquez	Drilling Method	: HSA	Surface Elev. (ft MSL)	: TBA
Date Boring Started	: 3/23/2015	Date Completed	: 3/23/2015	TOC Elev. (ft MSL)	: TBA

Depth (feet bgs)	Sample Interval	Blow Count	Recovery (%)	Time	Lab No.	USCS	GRAPHIC	DESCRIPTION	PID (ppm)	Well: Elev.:
20										
22		27 32 50	78	1528		SM		About 10% fine gravel; about 60% sand, mostly fine grained with some medium and coarse grained; about 25% silt. Strong brown (7.5 YR 4/6).	0.0	Bentonite Seal 2" Blank PVC
24								SILT: About 70% silt and 30% clay. Brown (7.5 Y/R 5/4), high to medium plasticity, hard, wet. (UPPER MUDDY CREEK FORMATION)		
26		9 14 17	100	1532					0.0	Sand Pack 0.020 Screen
28						ML				
30										
32								Total Depth: 32.5 ft.		
34										
36										
38										
40										

TETRA TECH

BORING LOG/WELL ID Tt-TP1-M3

Project	: NERT-Soil Flushing Pilot	Borehole Depth	: 32.5 ft.	Sampling Method	: Split Spoon
Location	: Henderson, NV	Borehole Diameter	: 8 in.	Northing Coord. (ft)	: TBA
Project No.	: 100-SBO-T35000.M05	Drilling Contractor	: Gregg Drilling	Easting Coord. (ft)	: TBA
Logged By	: D. Manriquez	Drilling Method	: HSA	Surface Elev. (ft MSL)	: TBA
Date Boring Started	: 3/24/2015	Date Completed	: 3/24/2015	TOC Elev. (ft MSL)	: TBA

Depth (feet bgs)	Sample Interval	Blow Count	Recovery (%)	Time	Lab No.	USCS	GRAPHIC	DESCRIPTION	PID (ppm)
0									
2	☒	--	100	0910		SM		SILTY SAND: About 10% fine gravel (~1/4 to 3/4"); about 60% sand, mostly fine grained with little medium and some coarse grained; about 30% silt. Brown (7.5 YR 5/4), poorly graded, dense, moist. (ALLUVIUM) Sample collected using a hand auger	0.0
4									
6	☒	10 50	100	0923				Very dense, trace of caliche.	0.0
8									
10	☒	25 50	100	0930		SM		SILTY SAND WITH GRAVEL: About 15% fine gravel (~1/4 to 1/2"); about 65% sand, mostly coarse grained with little medium and some fine grained; about 20% silt. Brown (7.5 YR 5/4), poorly graded, dense, moist.	0.1
12									
14	☒	28 50	100	0936				Trace of coarse gravel (1.5")	0.6
16									
18	☒	14 29 50	100	0941		SM		SILTY SAND: About 5% fine gravel (~1/4"); about 65% sand, moslty fine grained with little medium and coarse grained; about 30% silt. Brown (7.5 YR 5/4), poorly graded, dense, moist.	0.2
20									

Well:
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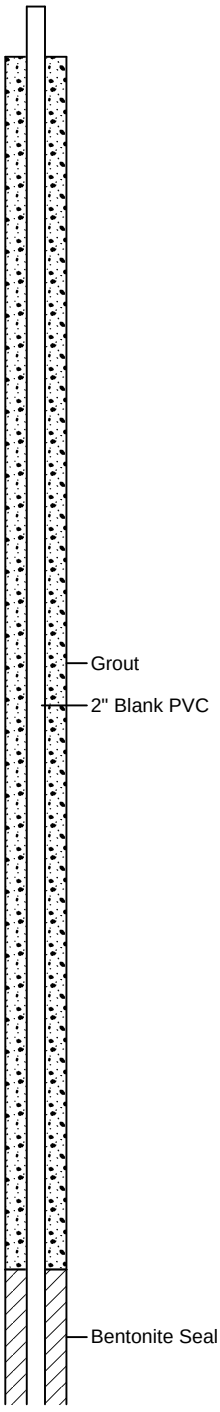

BORING LOG/WELL ID Tt-TP1-M3

Project	: NERT-Soil Flushing Pilot	Borehole Depth	: 32.5 ft.	Sampling Method	: Split Spoon
Location	: Henderson, NV	Borehole Diameter	: 8 in.	Northing Coord. (ft)	: TBA
Project No.	: 100-SBO-T35000.M05	Drilling Contractor	: Gregg Drilling	Easting Coord. (ft)	: TBA
Logged By	: D. Manriquez	Drilling Method	: HSA	Surface Elev. (ft MSL)	: TBA
Date Boring Started	: 3/24/2015	Date Completed	: 3/24/2015	TOC Elev. (ft MSL)	: TBA

Depth (feet bgs)	Sample Interval	Blow Count	Recovery (%)	Time	Lab No.	USCS	GRAPHIC	DESCRIPTION	PID (ppm)	Well: Elev.:
20						SM				Bentonite Seal
22	X	37 50	100	0946		SM		SILTY SAND WITH GRAVEL: About 20% fine gravel (~1/4 to 1/2"); about 65% sand, mostly coarse grained with some medium and little fine grained; about 15% silt. Brown (7.5 YR 4/4), poorly graded, very dense, moist.	0.0	2" Blank PVC
24										
26	X	28 50	100	0950		ML		SILT: About 70% silt and 30% clay. Brown (7.5 Y/R 5/4), medium plasticity, hard, wet. (UPPER MUDDY CREEK FORMATION)	0.0	Sand Pack 0.020 Screen
28										
30										
32										
								Total Depth: 32.5 ft.		
34										
36										
38										
40										

05-26-2015 P:\GIS\QuickLog\BoringLogs\Nevada\Tt-TP1-M3.boi

TETRA TECH

BORING LOG/WELL ID Tt-TP2-M1

Project	: NERT-Soil Flushing Pilot	Borehole Depth	: 32.5 ft.	Sampling Method	: Split Spoon
Location	: Henderson, NV	Borehole Diameter	: 8 in.	Northing Coord. (ft)	: TBA
Project No.	: 100-SBO-T35000.M05	Drilling Contractor	: Gregg Drilling	Easting Coord. (ft)	: TBA
Logged By	: D. Manriquez	Drilling Method	: HSA	Surface Elev. (ft MSL)	: TBA
Date Boring Started	: 3/24/2015	Date Completed	: 3/24/2015	TOC Elev. (ft MSL)	: TBA

Depth (feet bgs)	Sample Interval	Blow Count	Recovery (%)	Time	Lab No.	USCS	GRAPHIC	DESCRIPTION	PID (ppm)
0									
2	☒	--	--	1345		SM		SILTY SAND: About 10% fine gravel (~1/4 to 3/4"); about 60% sand, mostly fine grained with little medium and coarse grained; about 30% silt. Brown (7.5 YR 5/4), poorly graded, dense, moist. (ALLUVIUM) Sample collected using a hand auger	0.0
4									
6	☒	27 50	100	1358		SM		SILTY SAND WITH GRAVEL: About 20% fine gravel (~1/4 to 3/4"); about 60% sand, mostly coarse grained with little medium and some fine grained; about 20% silt. Brown (7.5 YR 5/4), poorly graded, dense, moist.	0.0
8									
10	☒	32 50	75	1401					0.0
12									
14	☒	50	--	1406				Color change to light brown (7.5YR 6/3), Micaceous, trace of caliche.	0.0
16									
18	☒	18 29 50	--	1411		SM		SILTY SAND: About 65% sand, moslty fine grained with some medium and little coarse grained; about 35% silt. Brown (7.5 YR 5/4), poorly graded, very dense, moist.	0.0
20									

Well:
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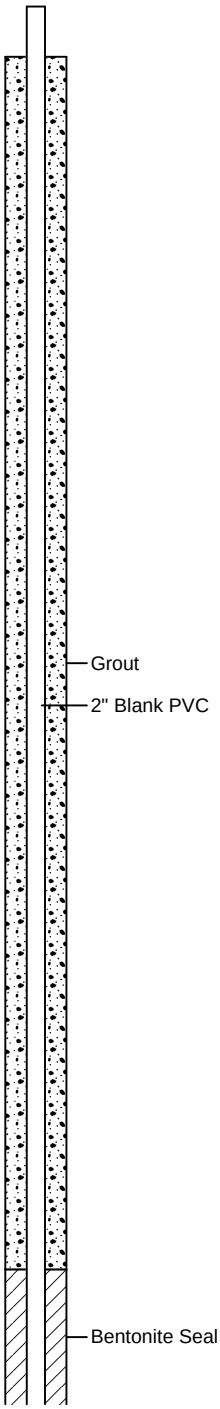

BORING LOG/WELL ID Tt-TP2-M1

Project	: NERT-Soil Flushing Pilot	Borehole Depth	: 32.5 ft.	Sampling Method	: Split Spoon
Location	: Henderson, NV	Borehole Diameter	: 8 in.	Northing Coord. (ft)	: TBA
Project No.	: 100-SBO-T35000.M05	Drilling Contractor	: Gregg Drilling	Easting Coord. (ft)	: TBA
Logged By	: D. Manriquez	Drilling Method	: HSA	Surface Elev. (ft MSL)	: TBA
Date Boring Started	: 3/24/2015	Date Completed	: 3/24/2015	TOC Elev. (ft MSL)	: TBA

Depth (feet bgs)	Sample Interval	Blow Count	Recovery (%)	Time	Lab No.	USCS	GRAPHIC	DESCRIPTION	PID (ppm)	Well: Elev.:
20										
22	X	37 50	--	1417		SM		About 65% sand, some fine and coarse grained and little medium grained; about 30% silt; about 10% clay. Pinkish gray (7.5 YR 7/2), poorly graded, very dense, moist.	0.0	Bentonite Seal 2" Blank PVC
24								SILT: About 80% silt and 20% clay. Brown (7.5 Y/R 5/4), medium to low plasticity, hard, wet. (UPPER MUDDY CREEK FORMATION)		
26	X	23 50	--	1422					0.0	Sand Pack 0.020 Screen
28						ML				
30										
32								Total Depth: 32.5 ft.		
34										
36										
38										
40										

TETRA TECH

BORING LOG/WELL ID Tt-TP2-M2

Project	: NERT-Soil Flushing Pilot	Borehole Depth	: 32.5 ft.	Sampling Method	: Split Spoon
Location	: Henderson, NV	Borehole Diameter	: 8 in.	Northing Coord. (ft)	: TBA
Project No.	: 100-SBO-T35000.M05	Drilling Contractor	: Gregg Drilling	Easting Coord. (ft)	: TBA
Logged By	: D. Manriquez	Drilling Method	: HSA	Surface Elev. (ft MSL)	: TBA
Date Boring Started	: 3/23/2015	Date Completed	: 3/23/2015	TOC Elev. (ft MSL)	: TBA

Depth (feet bgs)	Sample Interval	Blow Count	Recovery (%)	Time	Lab No.	USCS	GRAPHIC	DESCRIPTION	PID (ppm)
0									
2	☒	--	100	1249		SM		SILTY SAND: About 10% fine gravel (~1/4 to 3/4"); about 60% sand, mostly fine grained with little medium and some coarse grained; about 30% silt. Brown (7.5 YR 5/4), poorly graded, dense, moist. (ALLUVIUM) Sample collected using a hand auger	0.0
4									
6	☒	28 50	100	1255				Very dense	0.0
8									
10	☒	39 50	100	1259		SM		SILTY SAND WITH GRAVEL: About 15% fine gravel (~1/4 to 1/2"); about 60% sand, mostly fine grained with little medium and some coarse grained; about 25% silt. Brown (7.5 YR 4/4), poorly graded, very dense, moist.	0.0
12									
14	☒	43 50	100	1303		SM		SILTY SAND: About 60% sand, mostly fine grained with some medium and little coarse grained; about 30% silt; about 10% clay. Brown (7.5 YR 5/3), poorly graded, very dense, moist.	0.0
16									
18	☒	37 50	100	1306					0.0
20									

Well:
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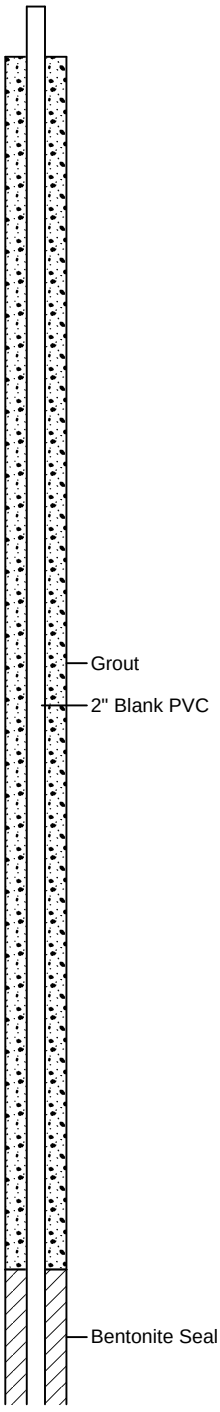

BORING LOG/WELL ID Tt-TP2-M2

Project	: NERT-Soil Flushing Pilot	Borehole Depth	: 32.5 ft.	Sampling Method	: Split Spoon
Location	: Henderson, NV	Borehole Diameter	: 8 in.	Northing Coord. (ft)	: TBA
Project No.	: 100-SBO-T35000.M05	Drilling Contractor	: Gregg Drilling	Easting Coord. (ft)	: TBA
Logged By	: D. Manriquez	Drilling Method	: HSA	Surface Elev. (ft MSL)	: TBA
Date Boring Started	: 3/23/2015	Date Completed	: 3/23/2015	TOC Elev. (ft MSL)	: TBA

Depth (feet bgs)	Sample Interval	Blow Count	Recovery (%)	Time	Lab No.	USCS	GRAPHIC	DESCRIPTION	PID (ppm)
22		38 50	100	1312		SM		About 10% fine gravel (~1/4 to 3/4"); about 60% sand, some medium to coarse grained; about 30% silt. Brown (7.5 YR 5/4), poorly graded, very dense, moist. Color change to pink (7.5 YR 7/3). Trace caliche.	0.0
24								SILT: About 75% silt and 25% clay. Brown (7.5 Y/R 5/4), medium to low plasticity, hard, wet. (UPPER MUDDY CREEK FORMATION)	
26		11 18 24	100	1315		ML			0.0
28									
30									
32								Total Depth: 32.5 ft.	
34									
36									
38									
40									

Well:
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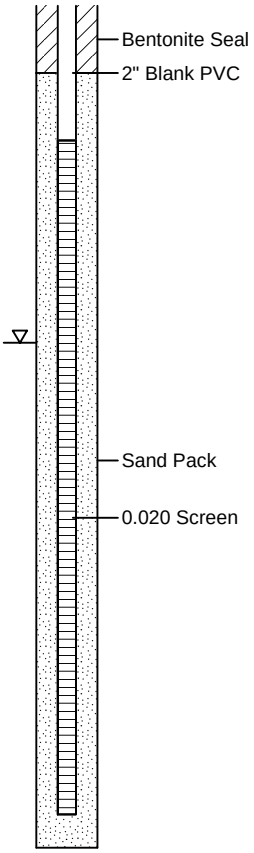

TETRA TECH

BORING LOG/WELL ID Tt-TP3-M1

Project	: NERT-Soil Flushing Pilot	Borehole Depth	: 32.5 ft.	Sampling Method	: Split Spoon
Location	: Henderson, NV	Borehole Diameter	: 8 in.	Northing Coord. (ft)	: TBA
Project No.	: 100-SBO-T35000.M05	Drilling Contractor	: Gregg Drilling	Easting Coord. (ft)	: TBA
Logged By	: D. Manriquez	Drilling Method	: HSA	Surface Elev. (ft MSL)	: TBA
Date Boring Started	: 3/25/2015	Date Completed	: 3/25/2015	TOC Elev. (ft MSL)	: TBA

Depth (feet bgs)	Sample Interval	Blow Count	Recovery (%)	Time	Lab No.	USCS	GRAPHIC	DESCRIPTION	PID (ppm)
0									
2	☒	--	100	0808				SILTY SAND WITH GRAVEL: About 15% fine gravel (~1/4 to 3/4"); about 60% sand, mostly fine grained with little medium and coarse grained; about 25% silt. Brown (7.5 YR 5/4), poorly graded, dense, moist. (ALLUVIUM) Sample collected using a hand auger	0.0
4									
6	☒	18 50	100	0816				Very dense.	0.1
8						SM			
10	☒	14 50	100	0820				15% gravel (~1/4 to 1"), mostly fine grained and few coarse grained.	0.3
12								SILTY SAND WITH GRAVEL: About 10% fine gravel (~1/4"); about 70% sand, mostly coarse grained with little fine and medium grained; about 20% silt. Brown (7.5 YR 4/3), poorly graded, very dense, moist.	
14	☒	21 50	100	0824					0.4
16									
18	☒	26 50	100	0829		SM		SILTY SAND: About 60% sand, mostly fine grained with some medium and little coarse grained; about 40% silt. Brown (7.5 YR 5/4), poorly graded, very dense, moist.	0.3
20									

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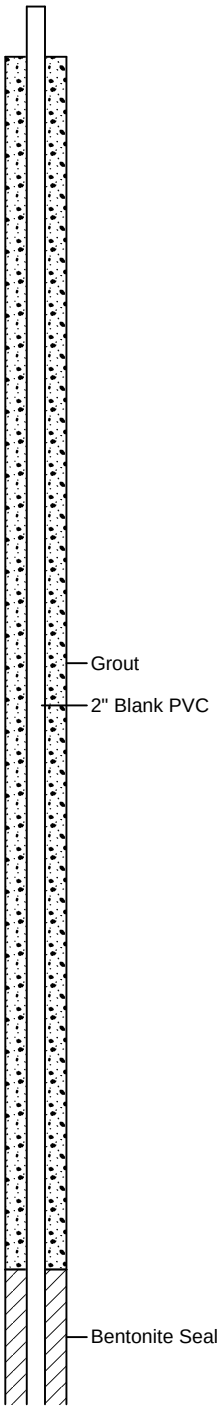

BORING LOG/WELL ID Tt-TP3-M1

Project	: NERT-Soil Flushing Pilot	Borehole Depth	: 32.5 ft.	Sampling Method	: Split Spoon
Location	: Henderson, NV	Borehole Diameter	: 8 in.	Northing Coord. (ft)	: TBA
Project No.	: 100-SBO-T35000.M05	Drilling Contractor	: Gregg Drilling	Easting Coord. (ft)	: TBA
Logged By	: D. Manriquez	Drilling Method	: HSA	Surface Elev. (ft MSL)	: TBA
Date Boring Started	: 3/25/2015	Date Completed	: 3/25/2015	TOC Elev. (ft MSL)	: TBA

Depth (feet bgs)	Sample Interval	Blow Count	Recovery (%)	Time	Lab No.	USCS	GRAPHIC	DESCRIPTION	PID (ppm)	Well: Elev.:
20										
22	X	24 50	100	0826		SM		Trace of fine gravel (~1/4"); 70% sand, some fine coarse grained with little medium grained. Color change to pinkish white (7.5 YR 8/2)	0.0	Bentonite Seal 2" Blank PVC
24								SILT: About 75% silt and 25% clay. Brown (7.5 Y/R 5/4), high to medium plasticity, hard, wet. (UPPER MUDDY CREEK FORMATION)		
26	X	26 50	100	0840					0.0	Sand Pack 0.020 Screen
28						ML				
30										
32								Total Depth: 32.5 ft.		
34										
36										
38										
40										

BORING LOG/WELL ID Tt-TP3-M2

Project	: NERT-Soil Flushing Pilot	Borehole Depth	: 32.5 ft.	Sampling Method	: Split Spoon
Location	: Henderson, NV	Borehole Diameter	: 8 in.	Northing Coord. (ft)	: TBA
Project No.	: 100-SBO-T35000.M05	Drilling Contractor	: Gregg Drilling	Easting Coord. (ft)	: TBA
Logged By	: D. Manriquez	Drilling Method	: HSA	Surface Elev. (ft MSL)	: TBA
Date Boring Started	: 3/23/2015	Date Completed	: 3/23/2015	TOC Elev. (ft MSL)	: TBA

Depth (feet bgs)	Sample Interval	Blow Count	Recovery (%)	Time	Lab No.	USCS	GRAPHIC	DESCRIPTION	PID (ppm)
0									
2	☒	--	100	1020		SM		SILTY SAND: About 10% fine gravel (~1/4 to 3/4"); about 60% sand, mostly fine grained with little medium and coarse grained; about 30% silt. Brown (7.5 YR 5/4), poorly graded, very dense, moist. (ALLUVIUM) Sample collected using a hand auger	0.0
4									
6	☒	37 50	90	1028					0.0
8									
10	☒	14 50	85	1032				Decrease gravel size (~1/4 to 1/2").	0.4
12									
14	☒	21 50	90	1036				Increase gravel size (~1/4 to 3/4"). Color change to brown (7.5 YR 4/3)	0.6
16									
18	☒	26 50	85	1041		SM		SILTY SAND WITH GRAVEL: About 15% fine gravel (~1/4" to 3/4); about 60% sand, some fine to coarse grained; about 25% silt. Brown (7.5 YR 4/3), poorly graded, very dense, moist.	0.0
20									

Well:
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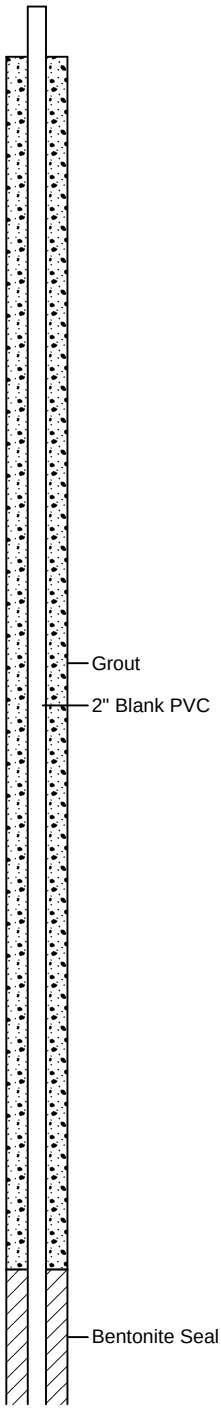


TETRA TECH

BORING LOG/WELL ID Tt-TP3-M2

Project	: NERT-Soil Flushing Pilot	Borehole Depth	: 32.5 ft.	Sampling Method	: Split Spoon
Location	: Henderson, NV	Borehole Diameter	: 8 in.	Northing Coord. (ft)	: TBA
Project No.	: 100-SBO-T35000.M05	Drilling Contractor	: Gregg Drilling	Easting Coord. (ft)	: TBA
Logged By	: D. Manriquez	Drilling Method	: HSA	Surface Elev. (ft MSL)	: TBA
Date Boring Started	: 3/23/2015	Date Completed	: 3/23/2015	TOC Elev. (ft MSL)	: TBA

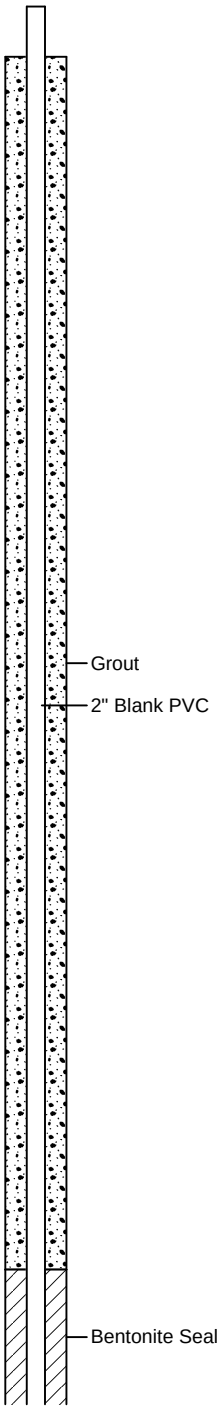
Depth (feet bgs)	Sample Interval	Blow Count	Recovery (%)	Time	Lab No.	USCS	GRAPHIC	DESCRIPTION	PID (ppm)	Well: Elev.:
20						SM		SILTY SAND: About 60% sand, mostly fine grained with some medium and little coarse grained; about 40% silt. Brown (7.5 YR 5/4), poorly graded, very dense, moist.		Bentonite Seal
22	X	24 50	100	1045					0.0	2" Blank PVC
24						SM				
26	X	26 50	100	1049				70% sand, mostly fine grained with some medium and little coarse grained; about 30% silt. Brown (7.5 YR 4/4), wet.	0.0	Sand Pack
28								SILT: About 75% silt and 25% clay. Brown (7.5 Y/R 5/4), medium plasticity, hard, wet. (UPPER MUDDY CREEK FORMATION)		0.020 Screen
30						ML				
32								Total Depth: 32.5 ft.		
34										
36										
38										
40										

BORING LOG/WELL ID Tt-TP4-M1

Project	: NERT-Soil Flushing Pilot	Borehole Depth	: 32.5 ft.	Sampling Method	: Split Spoon
Location	: Henderson, NV	Borehole Diameter	: 8 in.	Northing Coord. (ft)	: TBA
Project No.	: 100-SBO-T35000.M05	Drilling Contractor	: Gregg Drilling	Easting Coord. (ft)	: TBA
Logged By	: D. Manriquez	Drilling Method	: HSA	Surface Elev. (ft MSL)	: TBA
Date Boring Started	: 3/25/2015	Date Completed	: 3/25/2015	TOC Elev. (ft MSL)	: TBA

Depth (feet bgs)	Sample Interval	Blow Count	Recovery (%)	Time	Lab No.	USCS	GRAPHIC	DESCRIPTION	PID (ppm)
0						SM		SILTY SAND: About 10% fine gravel (~1/4 to 3/4"); about 60% sand, mostly fine grained with little medium and some coarse grained; about 30% silt. Brown (7.5 YR 5/4), poorly graded, dense, moist. (ALLUVIUM)	
2	☒	--	100	1030				Sample collected using a hand auger	0.0
4									
6	☒	23 50	100	1041				Very dense	0.0
8									
10	☒	24 50	100	1046		SM		SILTY SAND WITH GRAVEL: About 15% fine gravel (~1/4" to 3/4); about 60% sand, some fine and coarse grained with little medium grained; about 25% silt. Brown (7.5 YR 4/3), poorly graded, dense, moist.	0.0
12									
14	☒	38 50	100	1050				About 20% fine gravel (~1/4"); about 60% sand, mostly coarse grained, some medium grained and little fine grained; about 20% silt. Brown (7.5 YR 4/3), poorly graded, very dense, moist.	0.0
16									
18	☒	28 50	100	1104		SM		SILTY SAND: About 10% fine gravel (~1/4"); about 70% sand, mostly coarse grained, some medium grained with little fine grained; 20% silt. Brown (7.5 YR 4/4), poorly graded, very dense, moist.	0.0
20									

Well:
Elev.:



TETRA TECH

BORING LOG/WELL ID Tt-TP4-M1

Project	: NERT-Soil Flushing Pilot	Borehole Depth	: 32.5 ft.	Sampling Method	: Split Spoon
Location	: Henderson, NV	Borehole Diameter	: 8 in.	Northing Coord. (ft)	: TBA
Project No.	: 100-SBO-T35000.M05	Drilling Contractor	: Gregg Drilling	Easting Coord. (ft)	: TBA
Logged By	: D. Manriquez	Drilling Method	: HSA	Surface Elev. (ft MSL)	: TBA
Date Boring Started	: 3/25/2015	Date Completed	: 3/25/2015	TOC Elev. (ft MSL)	: TBA

Depth (feet bgs)	Sample Interval	Blow Count	Recovery (%)	Time	Lab No.	USCS	GRAPHIC	DESCRIPTION	PID (ppm)
22		32 50	100	1108		SM		About 60% sand, some fine and coarse grained, little medium grained; 30% silt. Color change to grayish pink (7.5 YR 6/2).	0.0
26		11 16 21	100	1113		ML		SILT: About 75% silt and 25% clay. Brown (7.5 Y/R 5/4), medium plasticity, hard, wet. (UPPER MUDDY CREEK FORMATION)	0.0
								Total Depth: 32.5 ft.	

Well:
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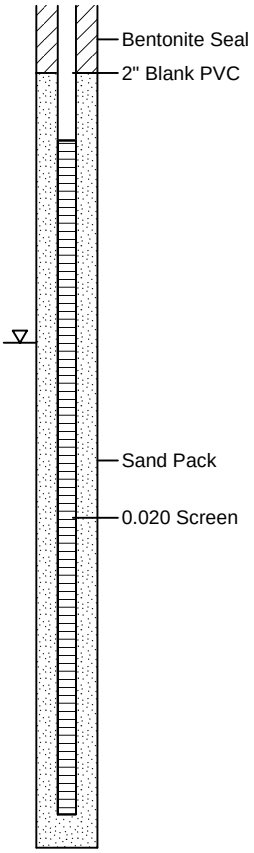
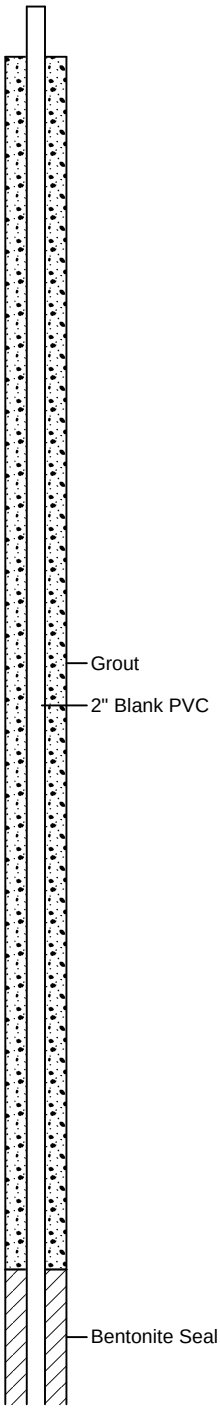


BORING LOG/WELL ID Tt-TP4-M2

Project	: NERT-Soil Flushing Pilot	Borehole Depth	: 32.5 ft.	Sampling Method	: Split Spoon
Location	: Henderson, NV	Borehole Diameter	: 8 in.	Northing Coord. (ft)	: TBA
Project No.	: 100-SBO-T35000.M05	Drilling Contractor	: Gregg Drilling	Easting Coord. (ft)	: TBA
Logged By	: D. Manriquez	Drilling Method	: HSA	Surface Elev. (ft MSL)	: TBA
Date Boring Started	: 3/23/2015	Date Completed	: 3/23/2015	TOC Elev. (ft MSL)	: TBA

Depth (feet bgs)	Sample Interval	Blow Count	Recovery (%)	Time	Lab No.	USCS	GRAPHIC	DESCRIPTION	PID (ppm)
0									
2	☒	--	100	0849				SILTY SAND: About 10% fine gravel (~1/4 to 3/4"); about 55% sand, mostly fine grained with little medium and coarse grained; about 35% silt. Brown (7.5 YR 5/4), poorly graded, dense, moist. (ALLUVIUM) Sample collected using a hand auger	0.0
4									
6	☒	23 50	100	0856				Very dense Trace coarse gravel (~2 in).	0.2
8									
10	☒	27 50	92	0901		SM			0.6
12									
14	☒	25 50	75	0906				About 10% fine gravel (~1/4 to 3/4"); about 65% sand, some fine and coarse grained and little medium grained; about 25% silt. -14 Color change to Brown (7.5 YR 4/4)	1.0
16									
18	☒	28 32 37	100	0912				About 2% fine gravel (~1/4"); about 64% sand, mostly fine grained with little medium and few coarse grained; about 34% silt. Brown (7.5 YR 5/4), poorly graded, very dense, moist.	0.0
20									

Well:
Elev.:



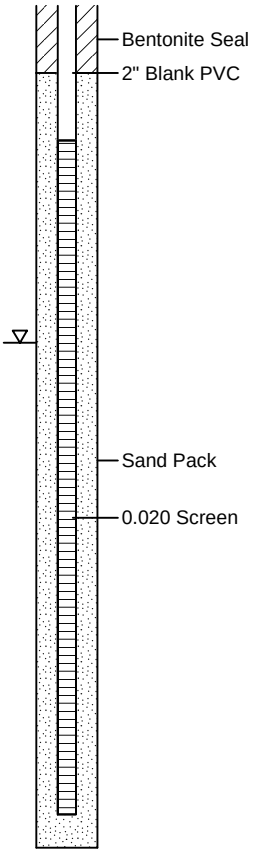
TETRA TECH

BORING LOG/WELL ID Tt-TP4-M2

Project	: NERT-Soil Flushing Pilot	Borehole Depth	: 32.5 ft.	Sampling Method	: Split Spoon
Location	: Henderson, NV	Borehole Diameter	: 8 in.	Northing Coord. (ft)	: TBA
Project No.	: 100-SBO-T35000.M05	Drilling Contractor	: Gregg Drilling	Easting Coord. (ft)	: TBA
Logged By	: D. Manriquez	Drilling Method	: HSA	Surface Elev. (ft MSL)	: TBA
Date Boring Started	: 3/23/2015	Date Completed	: 3/23/2015	TOC Elev. (ft MSL)	: TBA

Depth (feet bgs)	Sample Interval	Blow Count	Recovery (%)	Time	Lab No.	USCS	GRAPHIC	DESCRIPTION	PID (ppm)
22	X	32 50	100	0917		SM		About 10% fine gravel (~1/4"); about 65% sand, mostly fine grained with some medium and few coarse grained; about 25% silt. Brown (7.5 YR 5/4), poorly graded, very dense, moist. 3" Pinkish white (7.5 YR 8/2) lens at 22.75'	0.0
24									
26	X	23 25 32	100	0923		ML		SILT: About 75% silt and 25% clay. Brown (7.5 Y/R 5/4), medium to low plasticity, hard, wet. (UPPER MUDDY CREEK FORMATION)	0.0
28									
30									
32								Total Depth: 32.5 ft.	

Well:
Elev.:



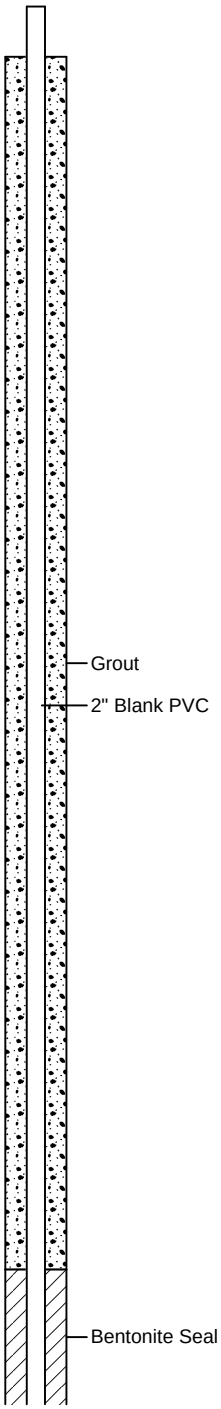
TETRA TECH

BORING LOG/WELL ID Tt-TP4-M3

Project	: NERT-Soil Flushing Pilot	Borehole Depth	: 32.5 ft.	Sampling Method	: Split Spoon
Location	: Henderson, NV	Borehole Diameter	: 8 in.	Northing Coord. (ft)	: TBA
Project No.	: 100-SBO-T35000.M05	Drilling Contractor	: Gregg Drilling	Easting Coord. (ft)	: TBA
Logged By	: D. Manriquez	Drilling Method	: HSA	Surface Elev. (ft MSL)	: TBA
Date Boring Started	: 3/20/2015	Date Completed	: 3/20/2015	TOC Elev. (ft MSL)	: TBA

Depth (feet bgs)	Sample Interval	Blow Count	Recovery (%)	Time	Lab No.	USCS	GRAPHIC	DESCRIPTION	PID (ppm)
0									
2	☒	--	100	1158		SM		SILTY SAND, About 10% fine gravel (1/4 to 1/2"); about 55% sand, mostly fine grained with little medium and coarse grained; about 35% silt. Brown (7.5 YR 5/4), poorly graded, dense, moist. (ALLUVIUM) Sample collected using a hand auger	0.0
4									
6	☒	31 50	100	1203				Very dense	0.0
8									
10	☒	19 50	100	1207		SM		SILTY SAND WITH GRAVEL: About 15% fine gravel (1/4 to 1/2"); about 55% sand, mostly fine grained with little medium and some coarse grained; about 30% silt. Brown (7.5 YR 5/4), poorly graded, very dense, moist.	0.0
12									
14	☒	17 50	100	1210		SM		SILTY SAND: About 5% fine gravel (1/4 to 1/2"); about 65% sand, some coarse and fine grained and little medium grained; about 30% silt. Brown (7.5 YR 5/4), poorly graded, very dense, moist.	0.8
16									
18	☒	19 28 50	100	1214				Color change to dark brown (7.5 YR 3/3) No gravel, about 70% sand, mostly coarse grained and little medium and fine grained; about 30% silt.	0.0
20									

Well:
Elev.:



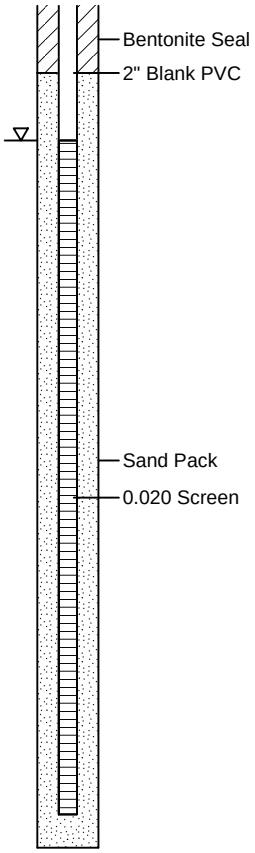
BORING LOG/WELL ID Tt-TP4-M3

Project	: NERT-Soil Flushing Pilot	Borehole Depth	: 32.5 ft.	Sampling Method	: Split Spoon
Location	: Henderson, NV	Borehole Diameter	: 8 in.	Northing Coord. (ft)	: TBA
Project No.	: 100-SBO-T35000.M05	Drilling Contractor	: Gregg Drilling	Easting Coord. (ft)	: TBA
Logged By	: D. Manriquez	Drilling Method	: HSA	Surface Elev. (ft MSL)	: TBA
Date Boring Started	: 3/20/2015	Date Completed	: 3/20/2015	TOC Elev. (ft MSL)	: TBA

Depth (feet bgs)	Sample Interval	Blow Count	Recovery (%)	Time	Lab No.	USCS	GRAPHIC	DESCRIPTION	PID (ppm)
20						SM			
22		22				SM		SILTY SAND WITH GRAVEL: About 20% fine gravel (1/4 to 1/2"); 60% sand, mostly coarse grained with some medium and little fine grained; about 20% silt. Brown (7.5 YR 5/4), poorly graded, very dense, moist.	
		33	100	1218					0.0
		50				SM		SILTY SAND: About 70% sand, mostly fine and some medium grained; about 30% silt. Brown (7.5 YR 5/3), poorly graded, very dense, wet.	
24									
26		11						SILT: About 80% silt and 20% clay. Brown (7.5 YR 5/4), medium plasticity, hard, wet. (UPPER MUDDY CREEK FORMATION)	
		17	100	1224					0.0
		22							
28						ML			
30									
32									

Total depth: 32.5 ft.

Well:
Elev.:



34
36
38
40

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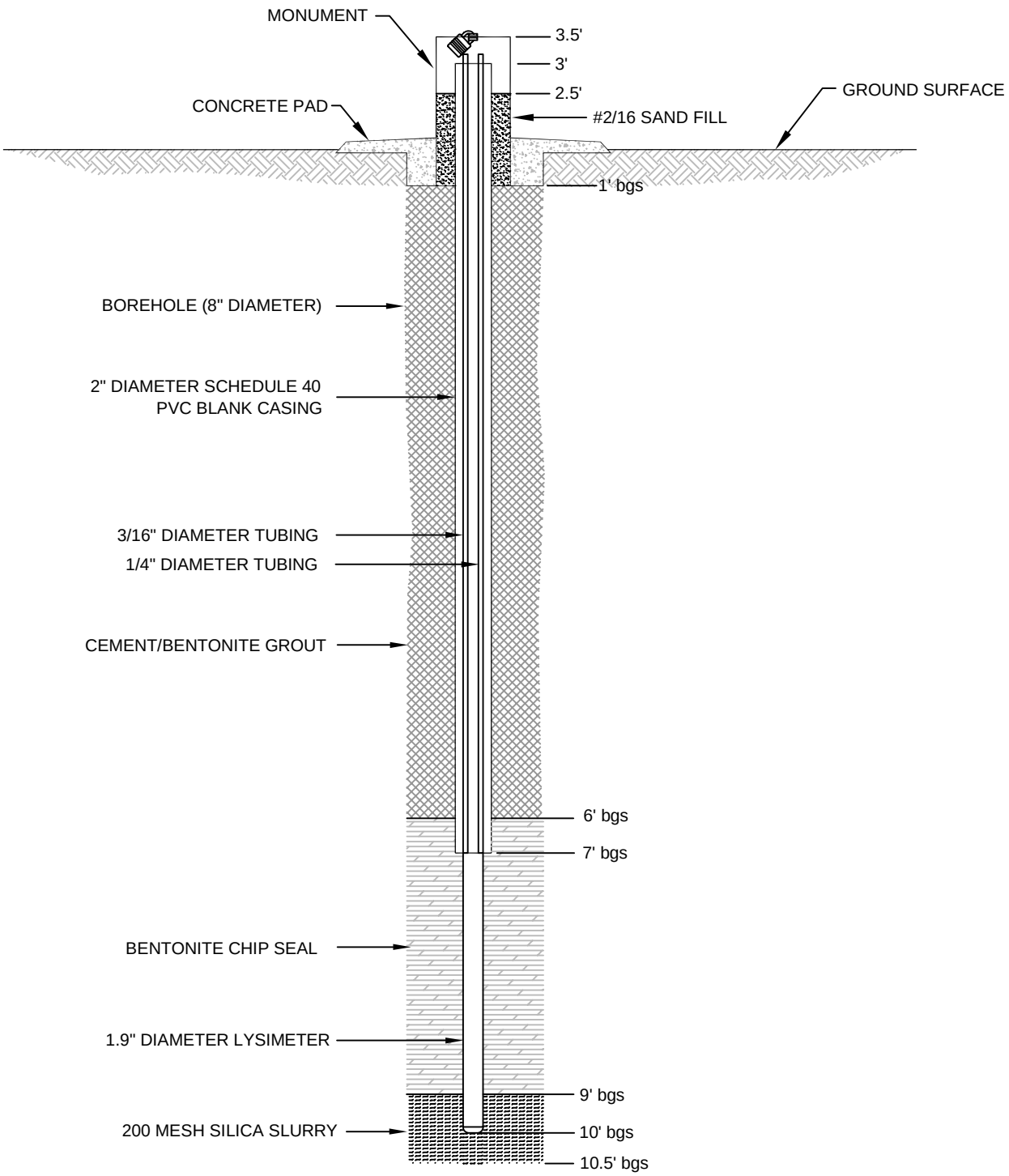

TOTAL DEPTH = 10.5' bgs

DIAGRAM IS
NOT TO SCALE

NEVADA ENVIRONMENTAL
RESPONSE TRUST

Tt-TP1-L1
Lysimeter (Shallow)
Construction Diagram

TETRA TECH

P:\GIS\35000_NERT\CAD\LYSIMETER_DEEP_TP1_L2.DWG

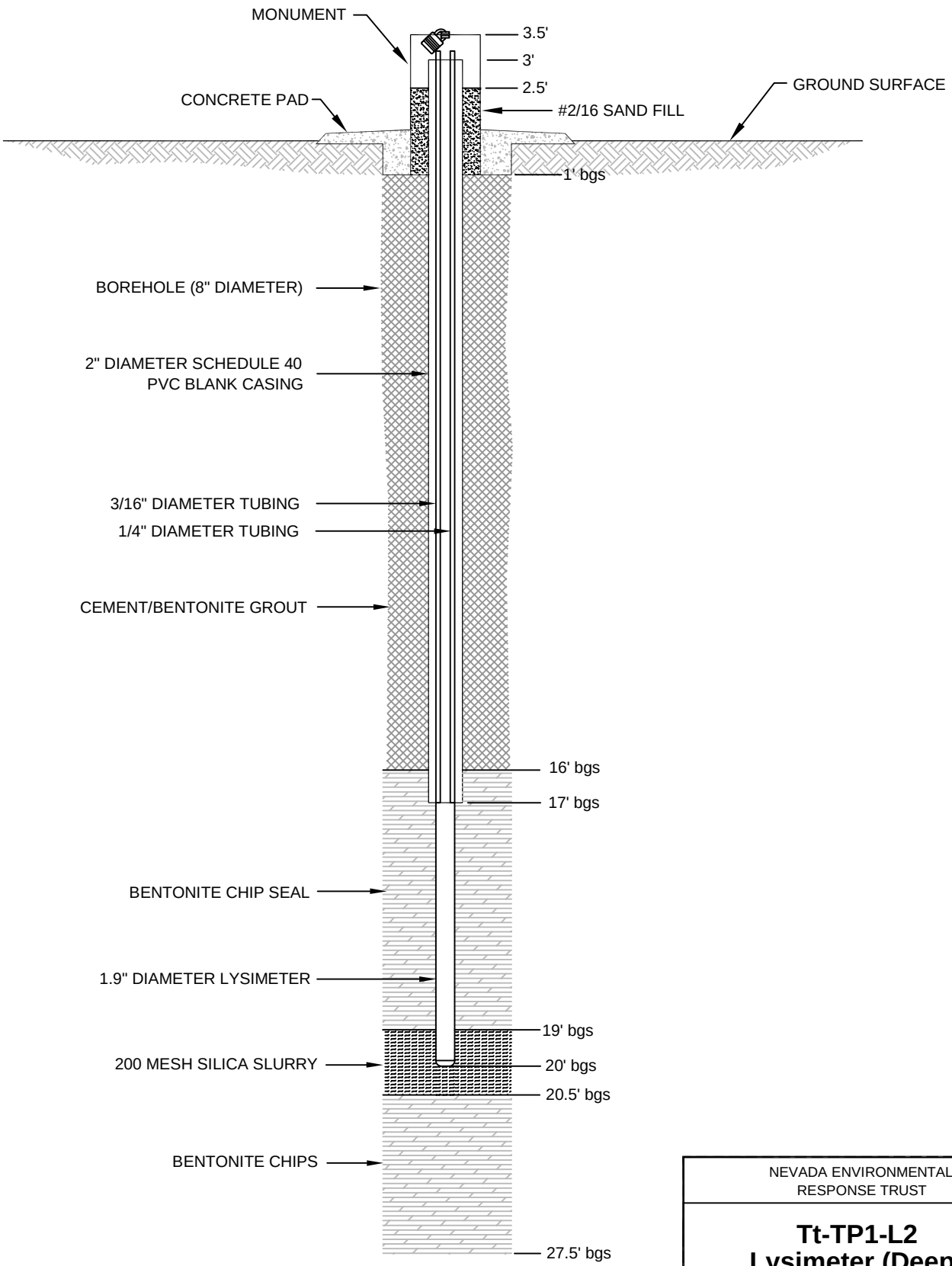

DIAGRAM IS
NOT TO SCALE

NEVADA ENVIRONMENTAL
RESPONSE TRUST

Tt-TP1-L2
Lysimeter (Deep)
Construction Diagram

TETRA TECH

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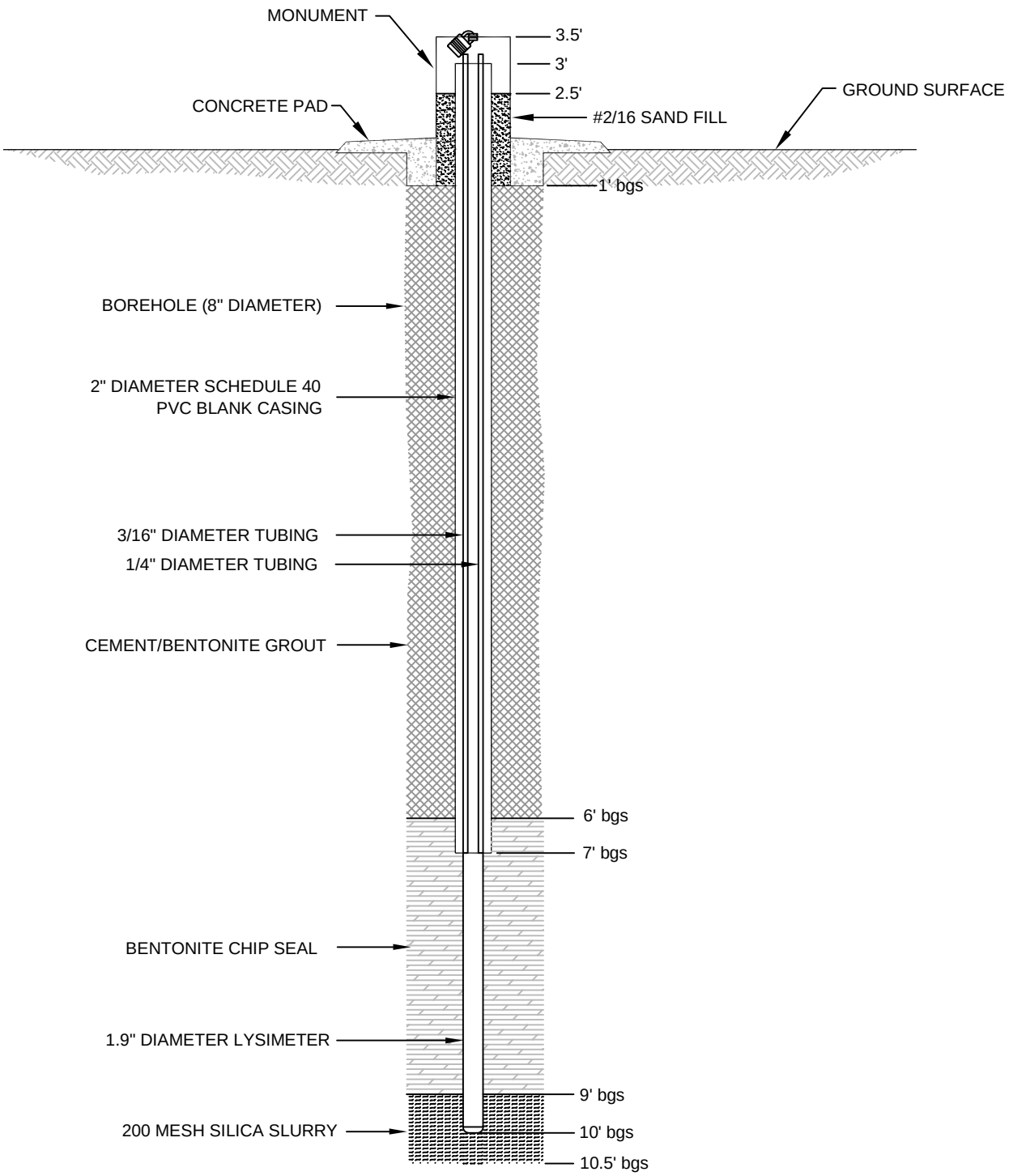


TOTAL DEPTH = 10.5' bgs

DIAGRAM IS
NOT TO SCALE

NEVADA ENVIRONMENTAL
RESPONSE TRUST

Tt-TP2-L1
Lysimeter (Shallow)
Construction Diagram

TETRA TECH

P:\GIS\35000_NERT\CAD\LYSIMETER_DEEP_TP2_L2.DWG

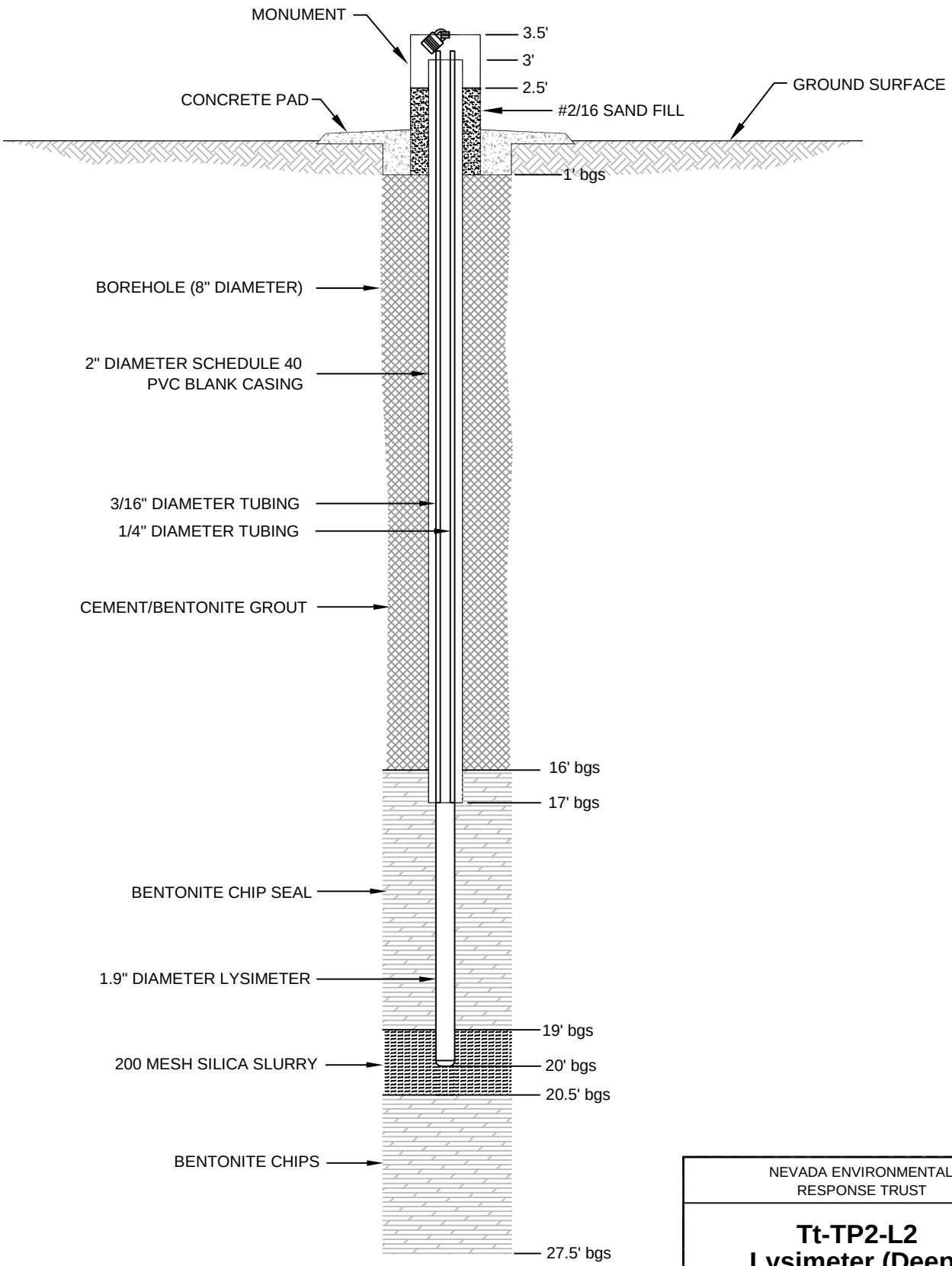


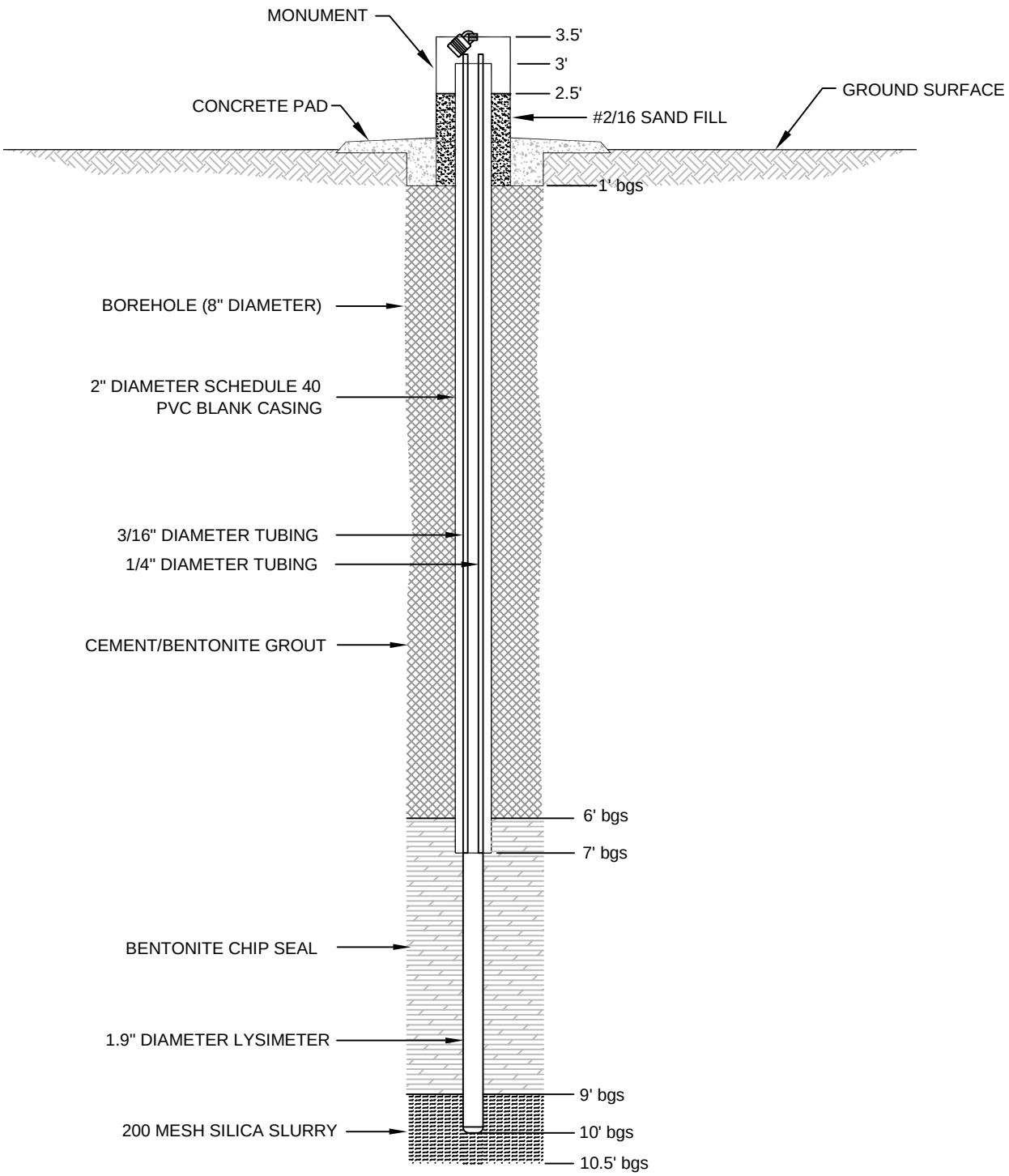
DIAGRAM IS
NOT TO SCALE

NEVADA ENVIRONMENTAL
RESPONSE TRUST

Tt-TP2-L2
Lysimeter (Deep)
Construction Diagram

TETRA TECH

P:\GIS\35000_NERT\CAD\LYSIMETER_SHALLOW_TP3_L1.DWG



TOTAL DEPTH = 10.5' bgs

DIAGRAM IS
NOT TO SCALE

NEVADA ENVIRONMENTAL
RESPONSE TRUST

Tt-TP3-L1
Lysimeter (Shallow)
Construction Diagram

TETRA TECH

P:\GIS\35000_NERT\CAD\LYSIMETER_DEEP_TP3_L2.DWG

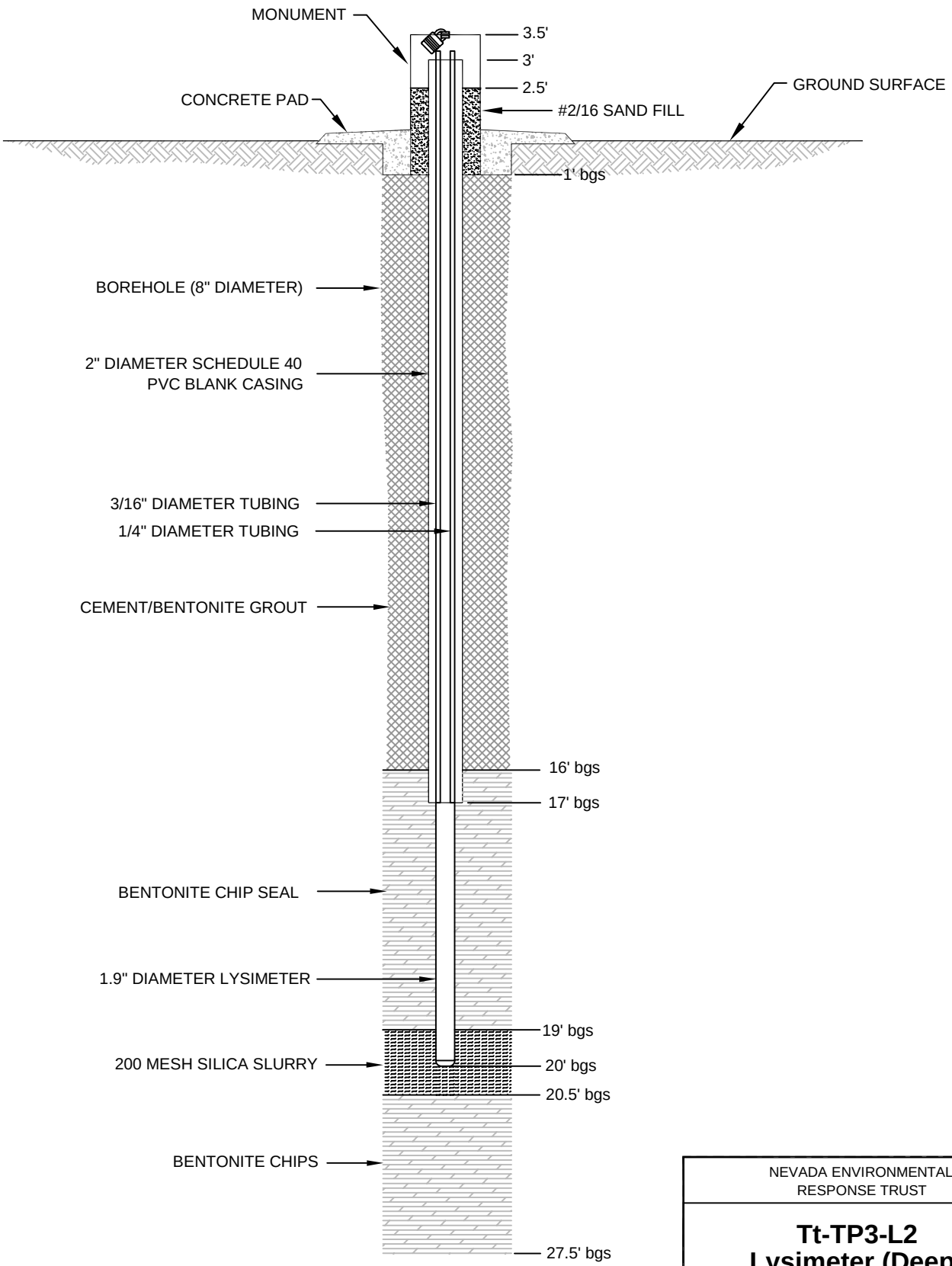


DIAGRAM IS
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NEVADA ENVIRONMENTAL
RESPONSE TRUST

Tt-TP3-L2
Lysimeter (Deep)
Construction Diagram

TETRA TECH

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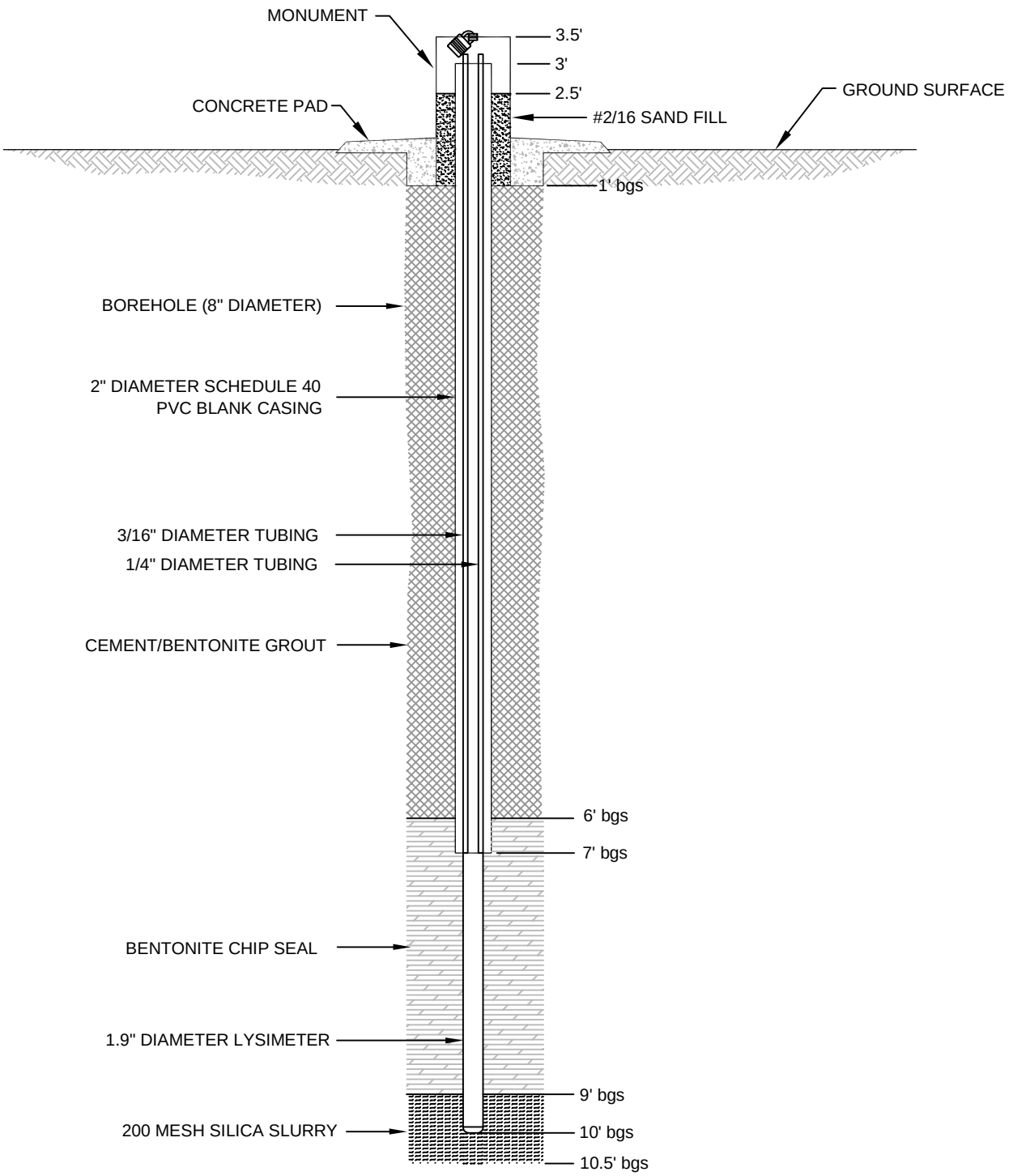

TOTAL DEPTH = 10.5' bgs

DIAGRAM IS
NOT TO SCALE

NEVADA ENVIRONMENTAL
RESPONSE TRUST

Tt-TP4-L1
Lysimeter (Shallow)
Construction Diagram

TETRA TECH

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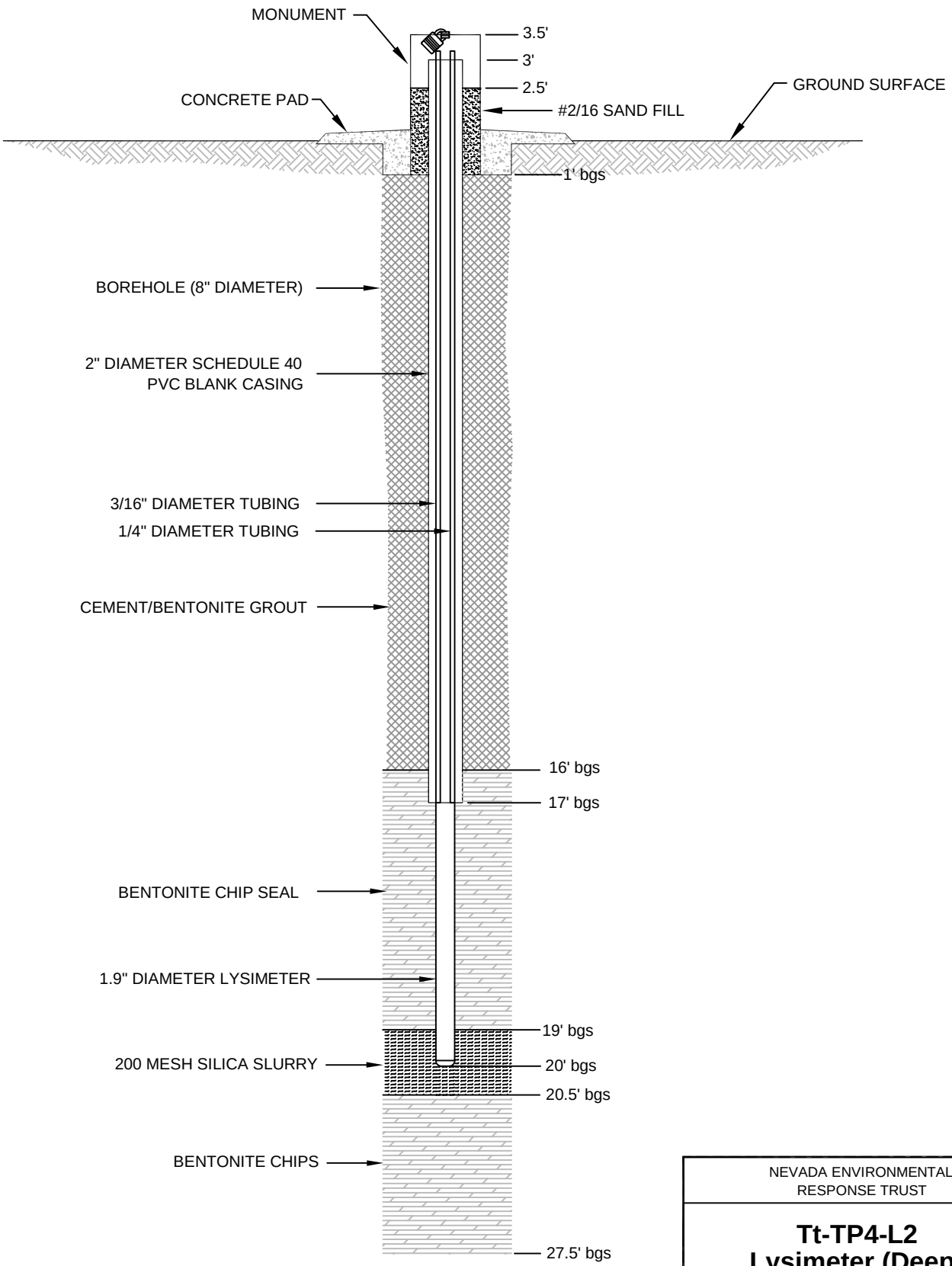

DIAGRAM IS
NOT TO SCALE

NEVADA ENVIRONMENTAL
RESPONSE TRUST

Tt-TP4-L2
Lysimeter (Deep)
Construction Diagram

TETRA TECH

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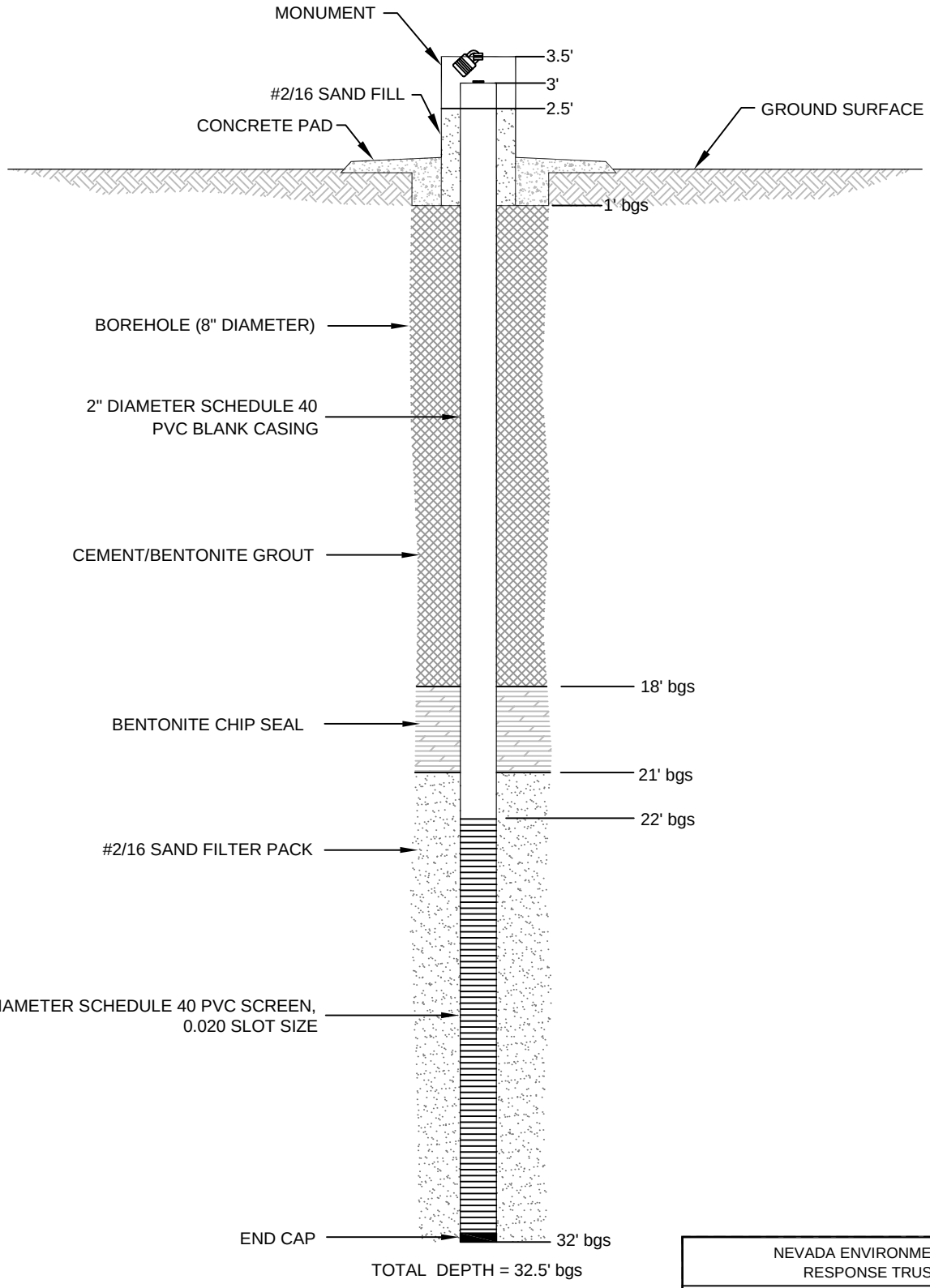

DIAGRAM IS
NOT TO SCALE

NEVADA ENVIRONMENTAL
RESPONSE TRUST

Tt-TP1-M1
Monitoring Well
Construction Diagram

TETRA TECH

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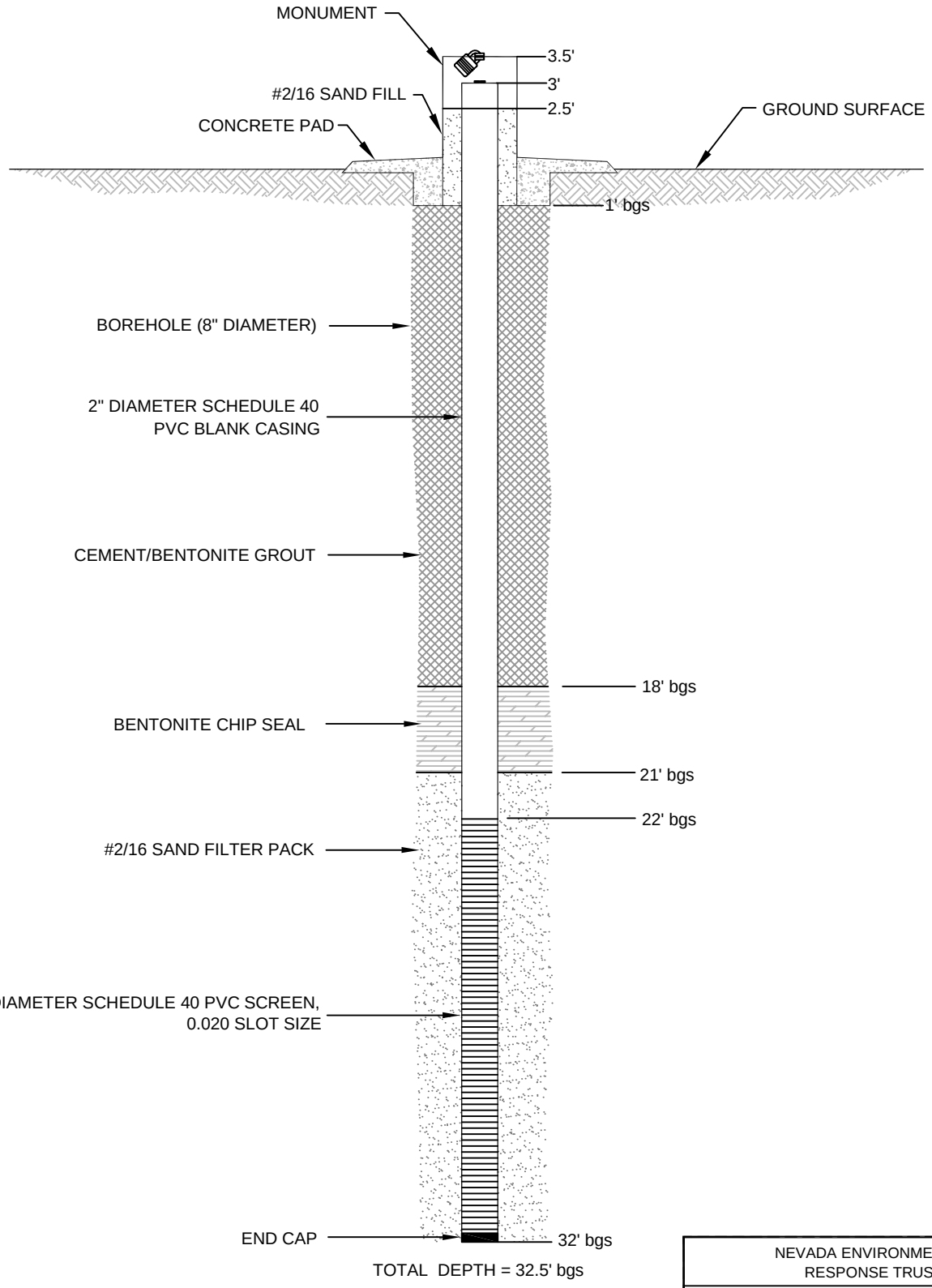

DIAGRAM IS
NOT TO SCALE

NEVADA ENVIRONMENTAL
RESPONSE TRUST

Tt-TP1-M2
Monitoring Well
Construction Diagram

TETRA TECH

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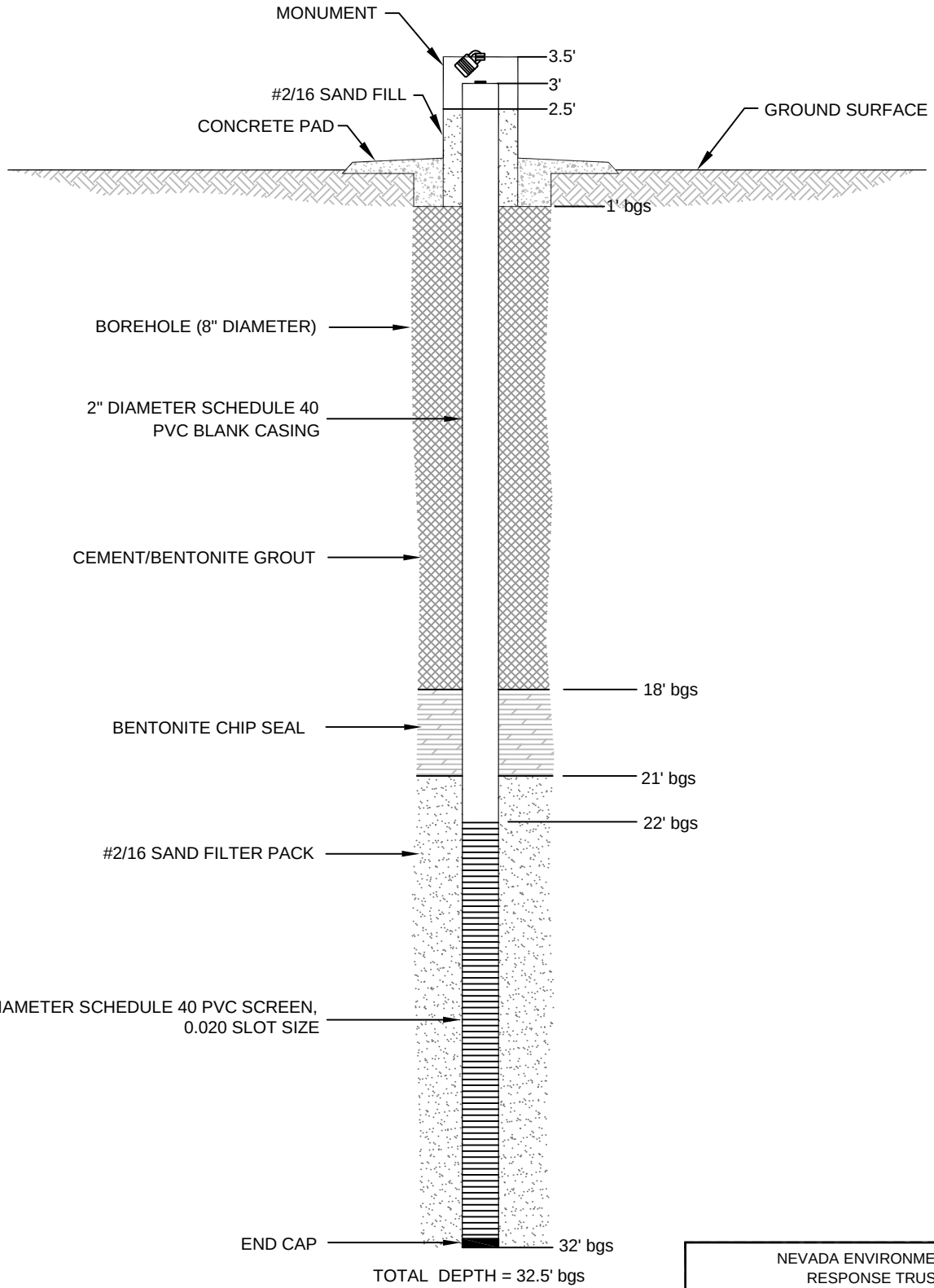

DIAGRAM IS
NOT TO SCALE

NEVADA ENVIRONMENTAL
RESPONSE TRUST

Tt-TP1-M3
Monitoring Well
Construction Diagram

TETRA TECH

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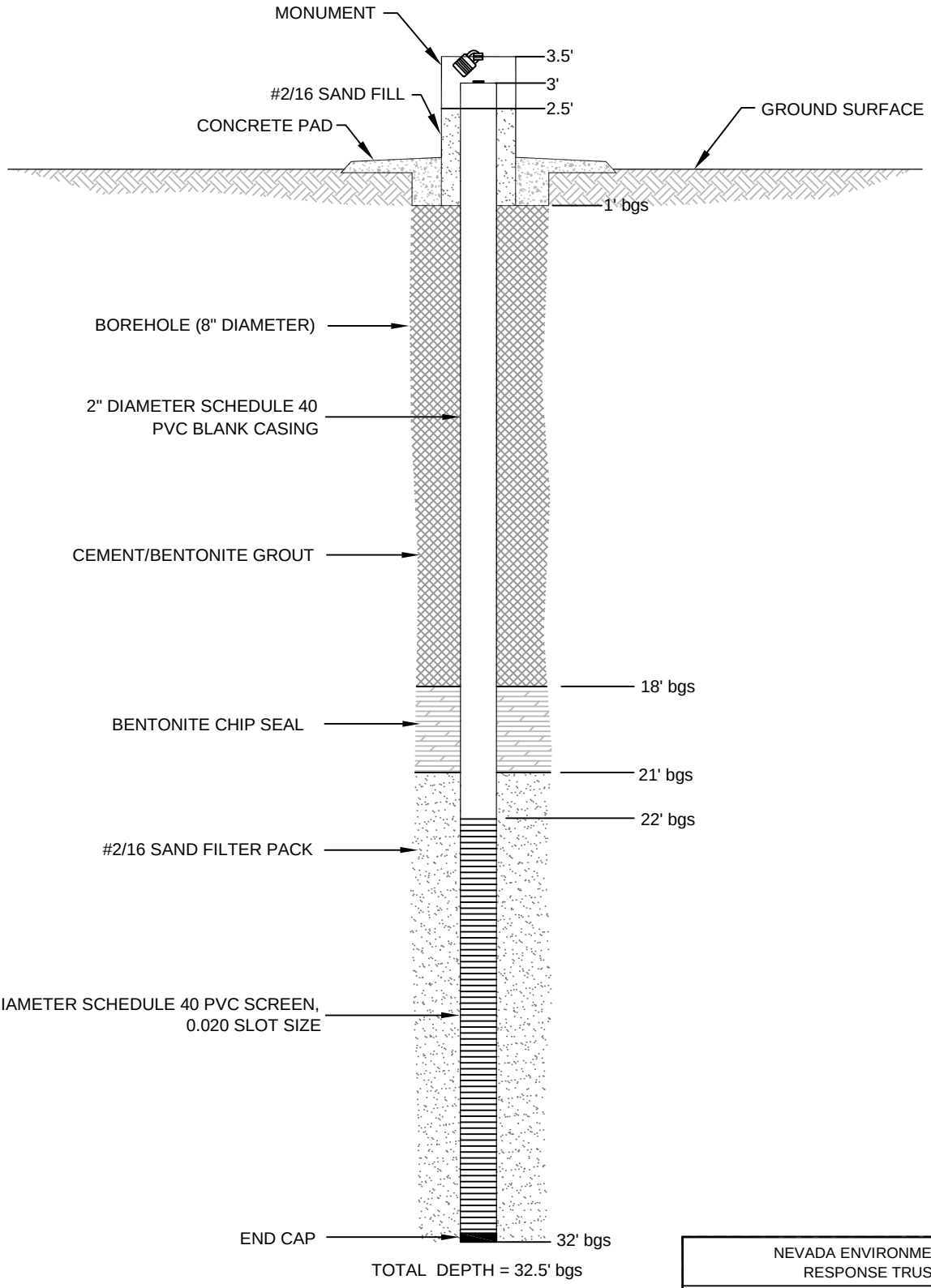

DIAGRAM IS
NOT TO SCALE

NEVADA ENVIRONMENTAL
RESPONSE TRUST

Tt-TP2-M1
Monitoring Well
Construction Diagram

TETRA TECH

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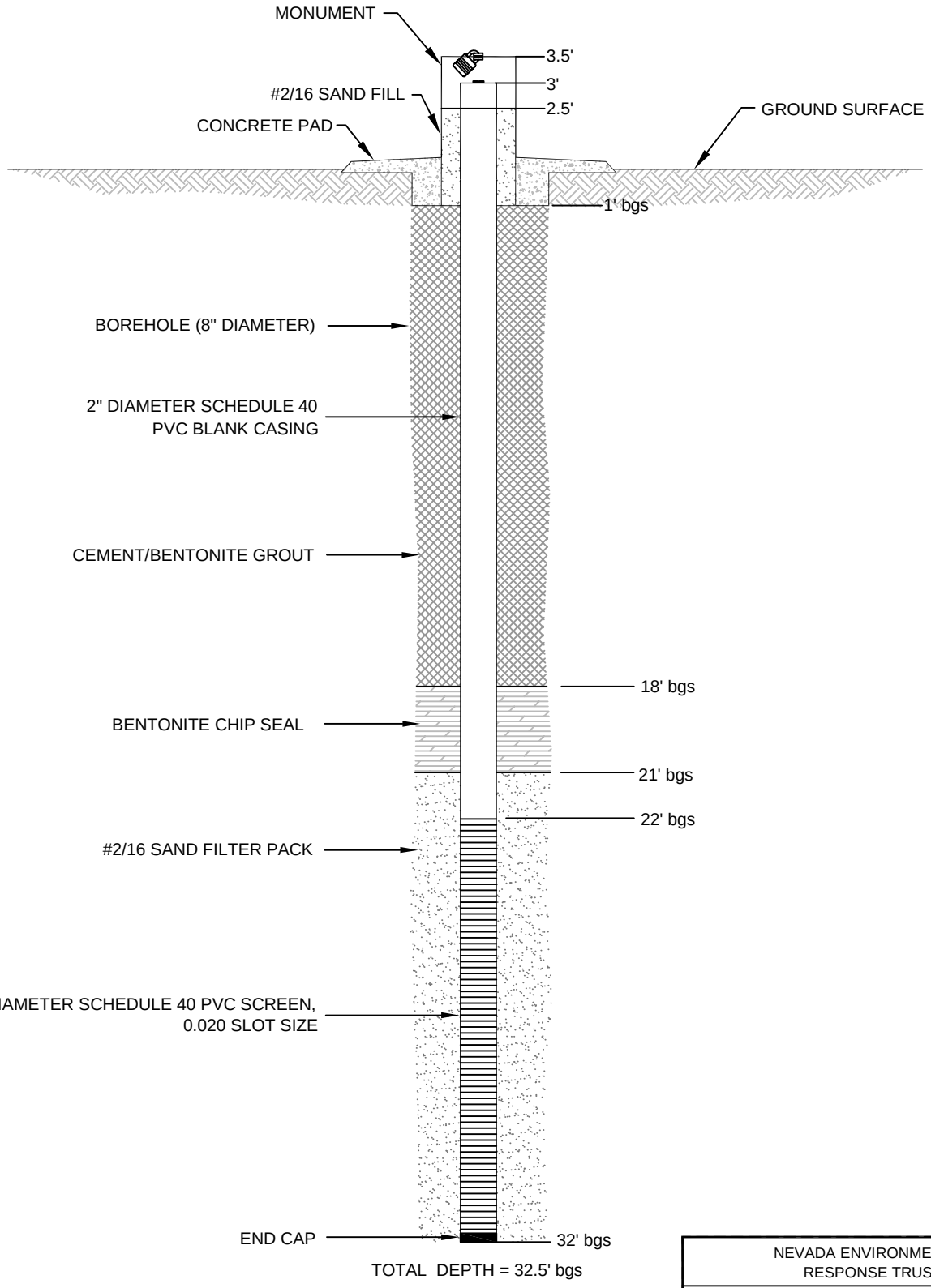

DIAGRAM IS
NOT TO SCALE

NEVADA ENVIRONMENTAL
RESPONSE TRUST

Tt-TP2-M2
Monitoring Well
Construction Diagram

TETRA TECH

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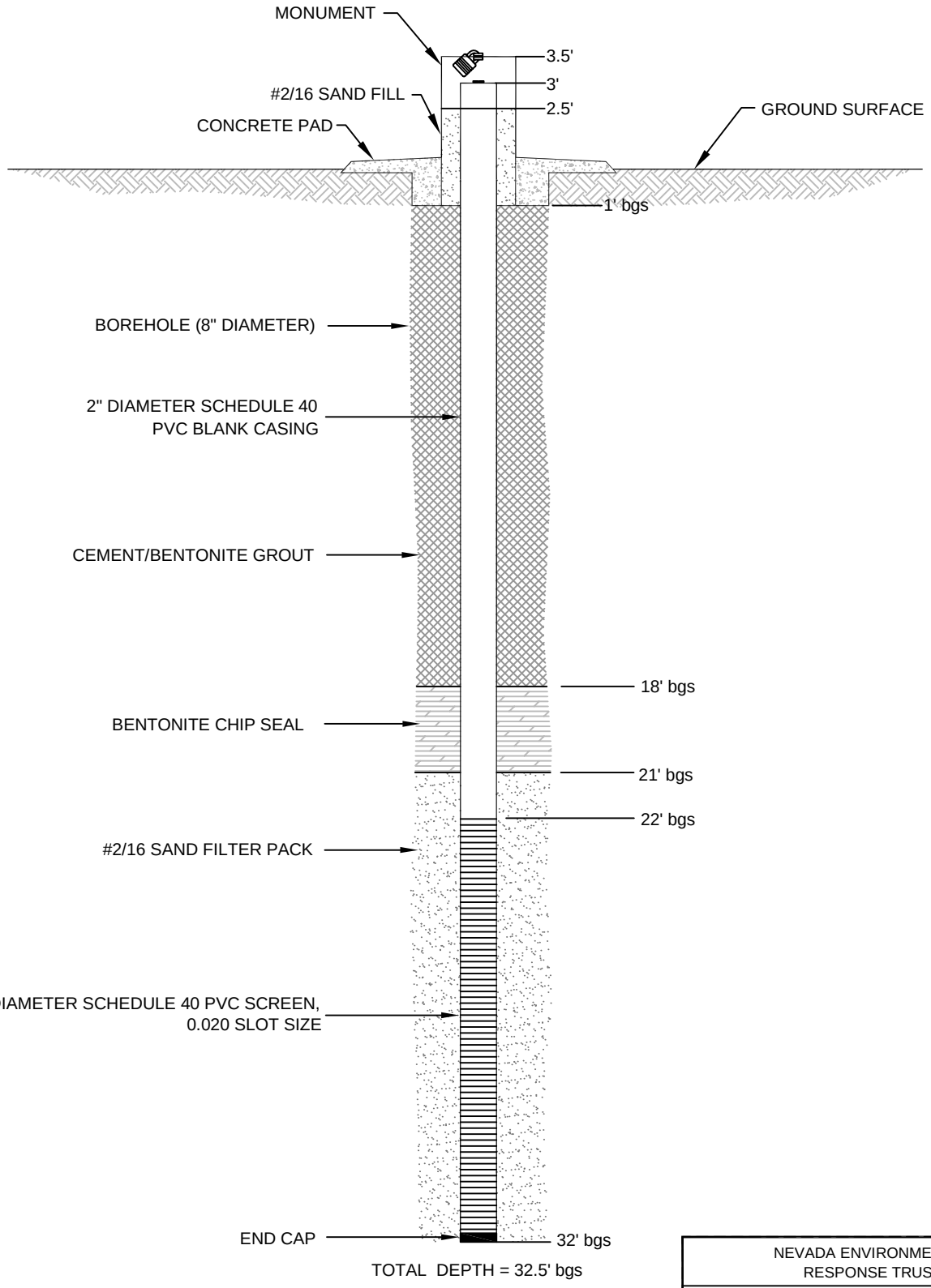

DIAGRAM IS
NOT TO SCALE

NEVADA ENVIRONMENTAL
RESPONSE TRUST

Tt-TP3-M1
Monitoring Well
Construction Diagram

TETRA TECH

P:\GIS\35000_NERT\CAD\WELL_TP3_M2.DWG

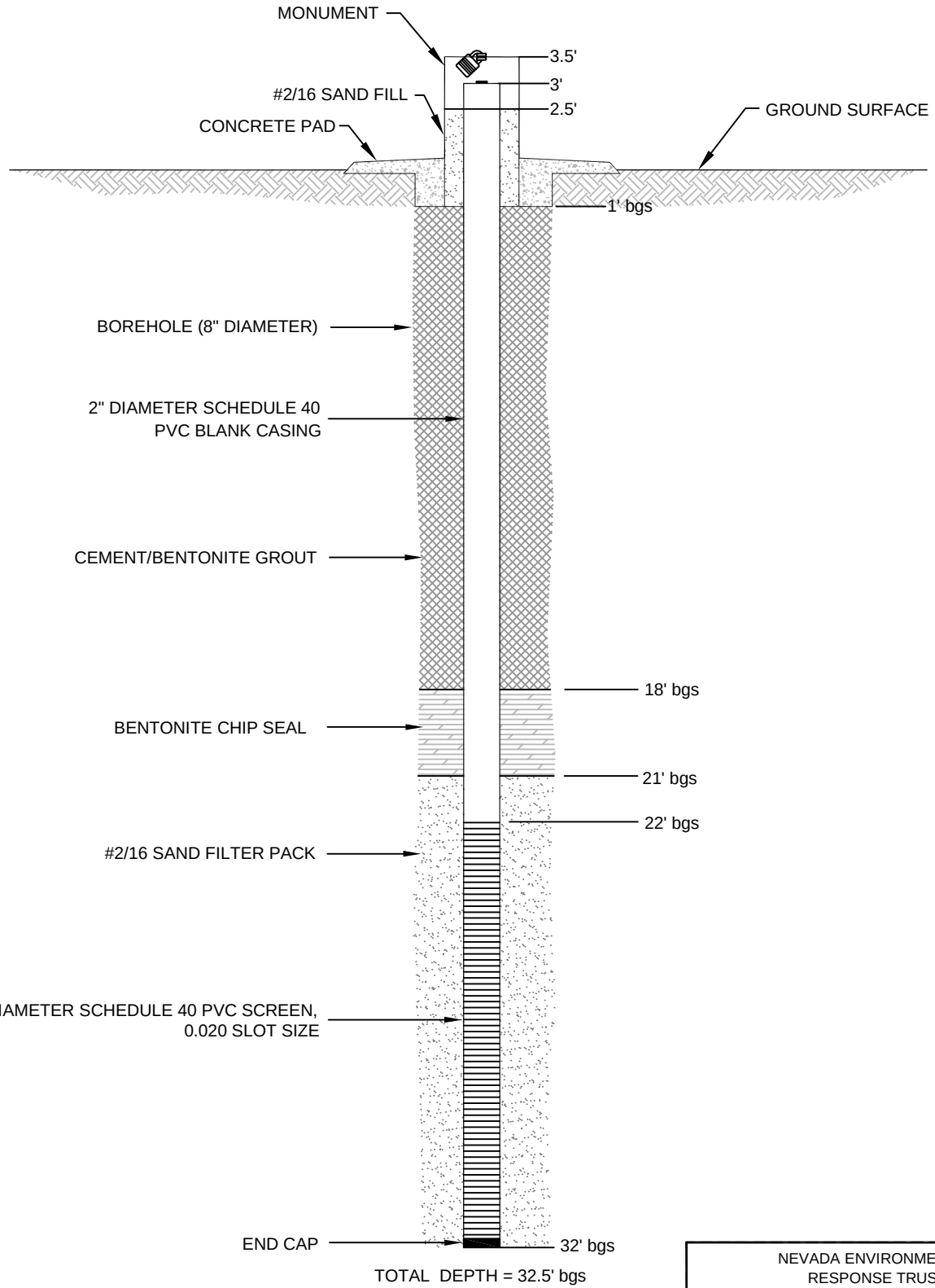

DIAGRAM IS
NOT TO SCALE

NEVADA ENVIRONMENTAL
RESPONSE TRUST

Tt-TP3-M2
Monitoring Well
Construction Diagram

TETRA TECH

P:\GIS\35000_NERT\CAD\WELL_TP4_M1.DWG

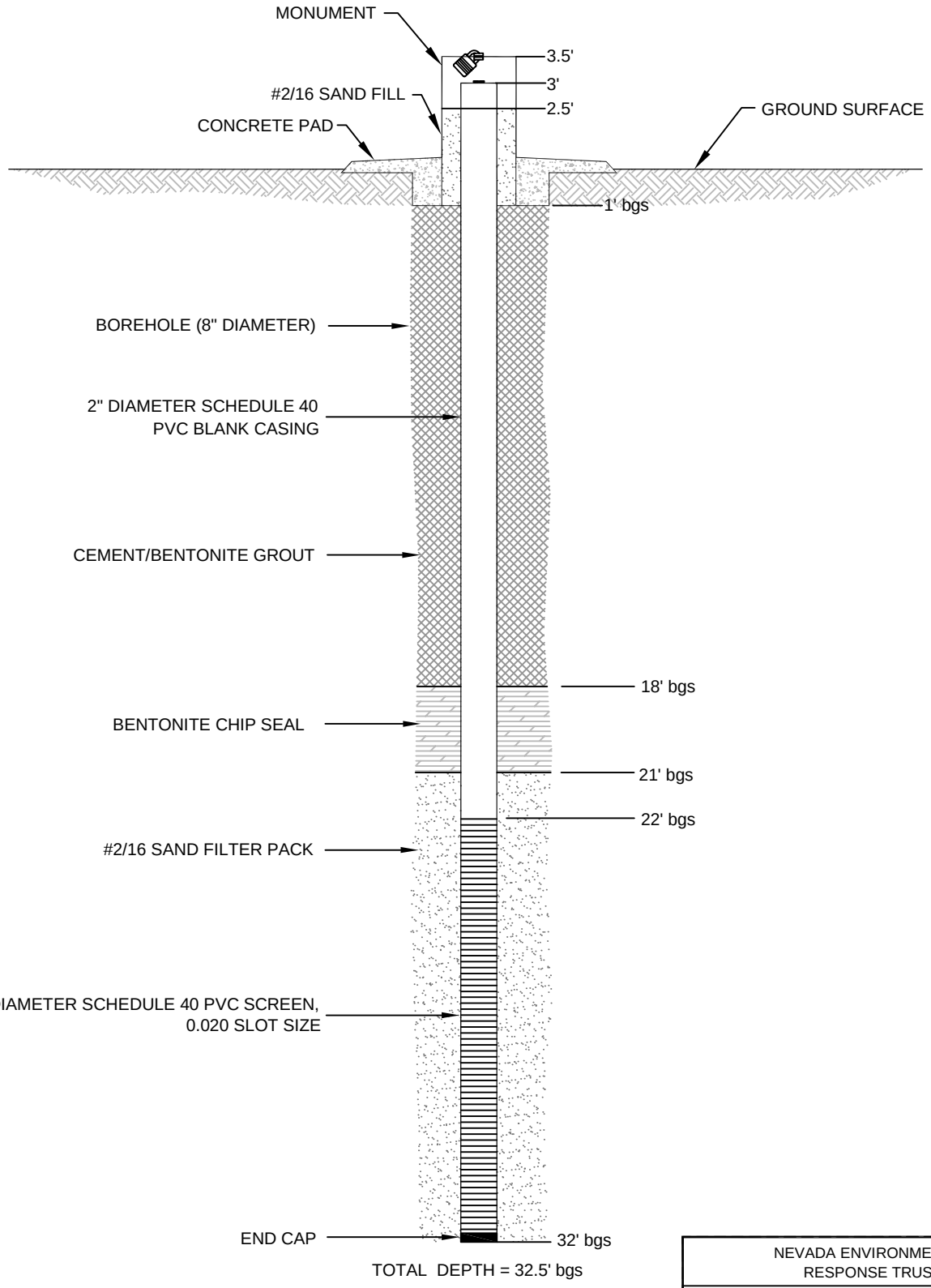

DIAGRAM IS
NOT TO SCALE

NEVADA ENVIRONMENTAL
RESPONSE TRUST

Tt-TP4-M1
Monitoring Well
Construction Diagram

TETRA TECH

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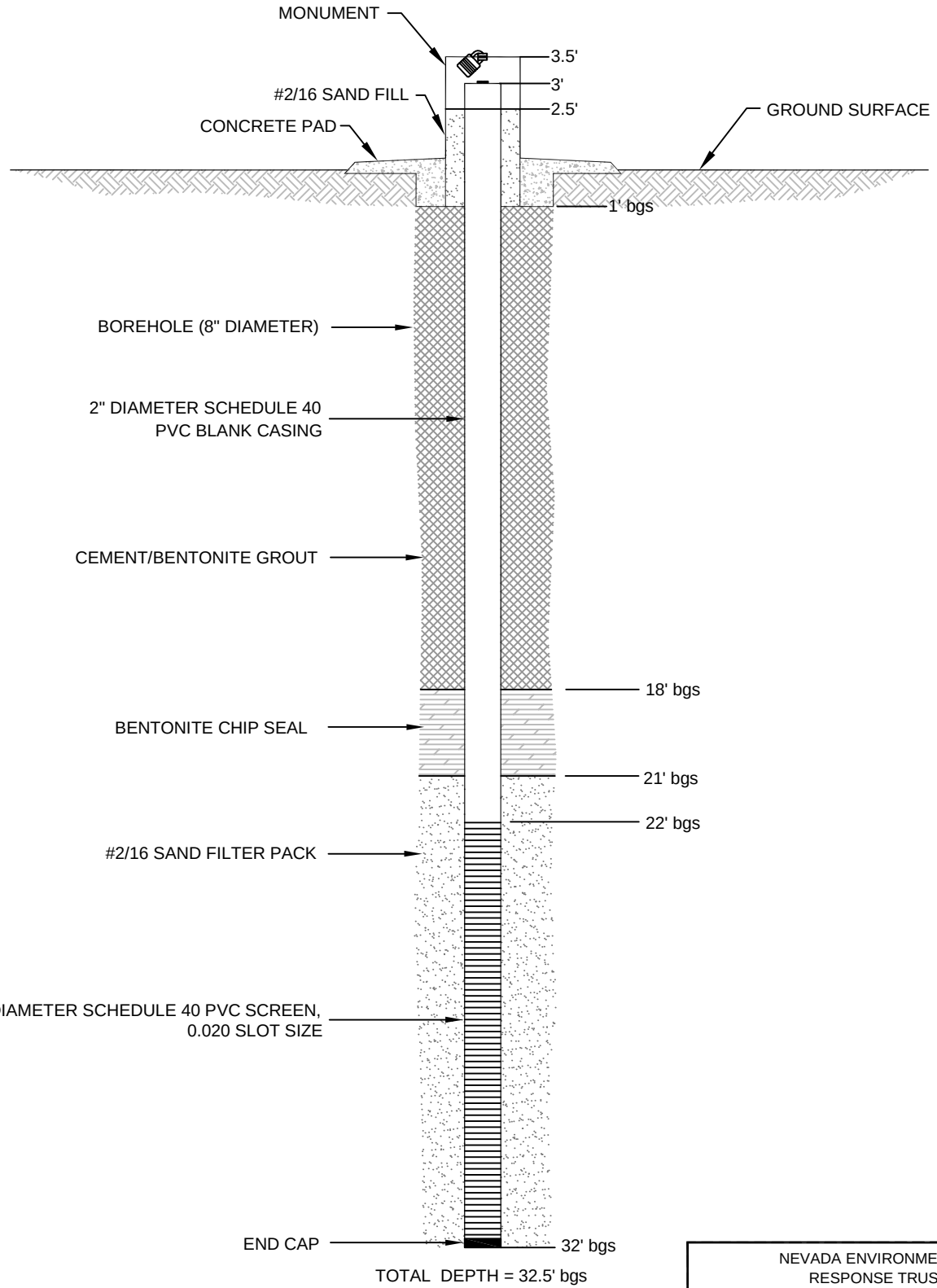

DIAGRAM IS
NOT TO SCALE

NEVADA ENVIRONMENTAL
RESPONSE TRUST

Tt-TP4-M2
Monitoring Well
Construction Diagram

TETRA TECH

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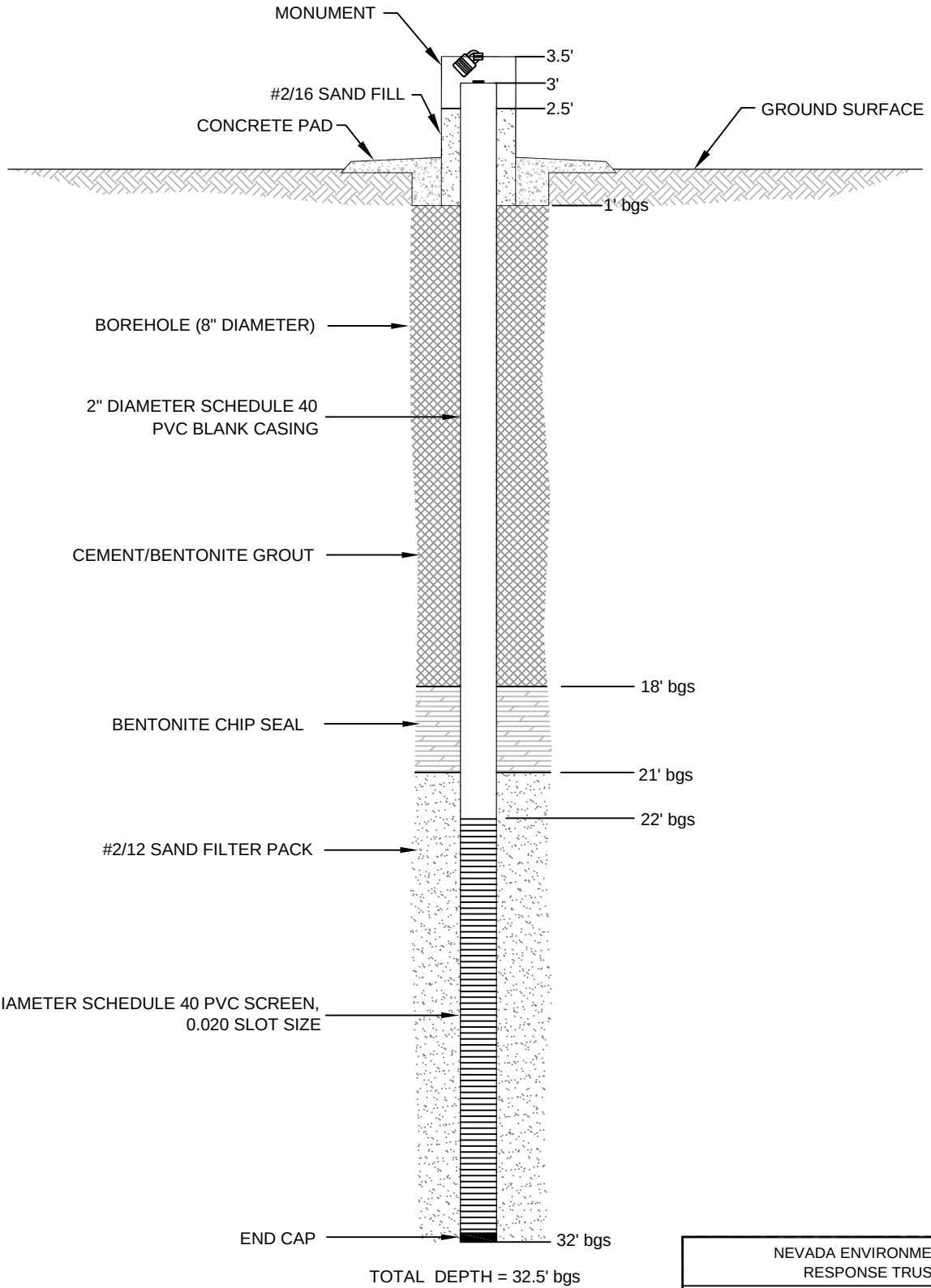

DIAGRAM IS
NOT TO SCALE

NEVADA ENVIRONMENTAL
RESPONSE TRUST

Tt-TP4-M3
Monitoring Well
Construction Diagram

TETRA TECH

Appendix B
Field Data Sheets

Field Data Summary

Well/Lysimeter ID	Date	Sample ID	Fluorescein (ppb)	Depth to Water (feet BTOC)	Temperature (°C)	pH	Conductivity (mS/cm)	DO (mg/L)	ORP (mV)	Turbidity (NTU)
TT-TP1-L1	12/10/15	TT-TP1-L1-20151210	NA	NA	Insufficient Water	Insufficient Water	Insufficient Water	Insufficient Water	Insufficient Water	Insufficient Water
	02/04/16	TT-TP1-L1-20160204	3.992	NA	15.48	7.14	16.61	3.14	244.7	1.11
	02/11/16	TT-TP1-L1-20160211	2.980	NA	16.60	7.28	14.34	3.84	190.1	0.83
	02/18/16	TT-TP1-L1-20160218	0.463	NA	15.24	7.09	11.29	2.71	238.6	1.05
	02/25/16	TT-TP1-L1-20160225	0.302	NA	17.54	7.33	10.33	2.45	148.1	1.06
	03/03/16	TT-TP1-L1-20160303	0.272	NA	18.88	7.28	8.661	1.45	211.7	0.12
	03/10/16	TT-TP1-L1-20160310	0.250	NA	18.66	7.66	6.66	3.15	182.1	0.09
	03/17/16	TT-TP1-L1-20160317	1.850	NA	20.01	7.63	5.562	2.02	156.3	0.71
	03/23/16	TT-TP1-L1-20160323	2.336	NA	20.89	7.64	4.681	2.20	135.6	0.77
	03/31/16	TT-TP1-L1-20160331	2.201	NA	18.74	7.55	4.657	1.45	134.3	1.45
	04/05/16	TT-TP1-L1-20160405	1.772	NA	25.05	7.51	4.528	4.12	128.5	0.33
	04/14/16	TT-TP1-L1-20160414	0.334	NA	19.53	7.29	4.374	2.11	196.5	1.03
	04/20/16	TT-TP1-L1-20160420	NA	NA	25.13	7.90	3.054	3.46	37.3	0.72
	04/28/16	TT-TP1-L1-20160428	9.813	NA	22.24	7.45	2.782	2.41	290.5	2.5
	05/05/16	TT-TP1-L1-20160505	0.990	NA	27.77	7.86	3.180	1.78	171.4	1.41
	05/11/16	TT-TP1-L1-20160511	2.305	NA	26.41	6.82	2.886	3.50	73.7	1.02
	05/19/16	TT-TP1-L1-20160519	1.240	NA	27.76	7.24	2.726	3.42	109.3	1.64
	05/25/16	TT-TP1-L1-20160525	1.068	NA	24.14	7.78	2.888	3.30	156.6	1.13
	06/02/16	TT-TP1-L1-20160602	2.029	NA	28.36	7.58	2.713	2.76	143.8	0.58
	06/09/16	TT-TP1-L1-20160609	Pump broke	Pump broke	Pump broke	Pump broke	Pump broke	Pump broke	Pump broke	Pump broke
	06/22/16	TT-TP1-L1-20160622	5.711	NA	31.06	7.79	2.552	3.89	4.5	1.65
	07/05/16	TT-TP1-L1-20160705	meter would not turn on	NA	31.20	7.92	2.656	2.00	-51.1	1.26
	07/27/16	TT-TP1-L1-20160727	0.507	NA	32.98	6.92	3.631	1.51	-122.1	75.72

Field Data Summary

Well/Lysimeter ID	Date	Sample ID	Fluorescein (ppb)	Depth to Water (feet BTOC)	Temperature (°C)	pH	Conductivity (mS/cm)	DO (mg/L)	ORP (mV)	Turbidity (NTU)
TT-TP1-L2	12/10/15	TT-TP1-L2-20151210	NA	NA	Insufficient Water	Insufficient Water	Insufficient Water	Insufficient Water	Insufficient Water	Insufficient Water
	02/04/16	TT-TP1-L2-20160204	2.178	NA	16.95	6.92	22.39	2.66	250.7	1.28
	02/11/16	TT-TP1-L2-20160211	1.612	NA	20.06	6.83	24.79	1.08	198.7	1.25
	02/18/16	TT-TP1-L2-20160218	0.382	NA	17.96	6.72	23.49	1.50	256.0	1.17
	02/25/16	TT-TP1-L2-20160225	0.240	NA	22.40	6.85	23.69	4.06	159.9	1.08
	03/03/16	TT-TP1-L2-20160303	0.238	NA	24.67	6.88	22.69	2.19	243.1	0.35
	03/10/16	TT-TP1-L2-20160310	0.201	NA	23.48	6.95	20.44	1.15	213.1	0.12
	03/17/16	TT-TP1-L2-20160317	1.823	NA	22.35	7.04	16.47	1.29	177.7	0.97
	03/23/16	TT-TP1-L2-20160323	2.533	NA	21.60	7.28	12.67	3.67	160.6	0.61
	03/31/16	TT-TP1-L2-20160331	2.260	NA	19.41	7.35	12.33	1.53	153.9	1.83
	04/05/16	TT-TP1-L2-20160405	2.099	NA	25.28	7.22	10.53	1.55	138.7	0.23
	04/14/16	TT-TP1-L2-20160414	0.272	NA	18.70	7.18	7.715	2.52	208.8	0.94
	04/20/16	TT-TP1-L2-20160420	NA	NA	28.62	7.67	6.267	4.86	41.1	1.02
	04/28/16	TT-TP1-L2-20160428	2.555	NA	21.30	7.34	5.422	1.59	269.4	1.83
	05/05/16	TT-TP1-L2-20160505	0.245	NA	28.31	7.73	4.700	1.95	144.5	1.50
	05/11/16	TT-TP1-L2-20160511	0.260	NA	29.42	6.96	4.307	4.37	66.6	0.99
	05/19/16	TT-TP1-L2-20160519	0.144	NA	29.67	7.49	3.677	4.08	108.7	1.80
	05/25/16	TT-TP1-L2-20160525	0.216	NA	24.53	7.76	3.658	2.56	163.7	1.81
	06/02/16	TT-TP1-L2-20160602	0.258	NA	29.05	7.80	3.462	3.33	153.6	0.4
	06/09/16	TT-TP1-L2-20160609	Pump broke	Pump broke	Pump broke	Pump broke	Pump broke	Pump broke	Pump broke	Pump broke
	06/22/16	TT-TP1-L2-20160622	0.210	NA	27.48	7.95	2.782	2.27	35.3	1.72
	07/05/16	TT-TP1-L2-20160705	meter would not turn on	NA	30.34	8.27	2.546	2.05	-66.1	1.11
	07/27/16	TT-TP1-L2-20160727	0.161	NA	33.62	7.78	2.562	3.22	4.0	1.79

Field Data Summary

Well/Lysimeter ID	Date	Sample ID	Fluorescein (ppb)	Depth to Water (feet BTOC)	Temperature (°C)	pH	Conductivity (mS/cm)	DO (mg/L)	ORP (mV)	Turbidity (NTU)
TT-TP1-M1	12/10/15	TT-TP1-M1-20151210	NA	26.78	24.10	6.91	11.87	0.14	155.7	0.03
	02/03/16	TT-TP1-M1-20160203	0.095	26.09	23.76	6.94	13.69	0.45	226.1	0.61
	02/10/16	TT-TP1-M1-20160210	0.068	25.69	24.81	7.00	12.53	1.50	222.8	0.59
	02/17/16	TT-TP1-M1-20160217	2.602	25.42	24.66	6.90	12.71	0.42	225.0	1.4
	02/24/16	TT-TP1-M1-20160224	2.295	25.09	24.32	7.13	9.499	0.57	176.8	1.22
	03/02/16	TT-TP1-M1-20160302	4.026	24.94	25.16	7.47	6.828	0.21	202.7	1.74
	03/09/16	TT-TP1-M1-20160309	1.681	24.81	24.98	7.40	7.32	0.40	108.0	0.41
	03/16/16	TT-TP1-M1-20160316	8.579	24.73	24.06	7.30	7.537	0.21	159.0	1.27
	03/23/16	TT-TP1-M1-20160323	4.632	24.70	23.93	7.26	8.315	0.25	187.8	2.8
	03/30/16	TT-TP1-M1-20160330	1.256	24.60	23.34	7.12	8.914	0.15	202.8	1.74
	04/04/16	TT-TP1-M1-20160404	1.164	24.53	23.71	6.92	8.843	0.15	167.0	3.09
	04/13/16	TT-TP1-M1-20160413	7.173	24.30	24.34	8.08	3.37	0.90	-45.4	1.58
	04/19/16	TT-TP1-M1-20160419	16.460	24.64	23.05	7.84	4.561	2.09	82.2	0.98
	04/27/16	TT-TP1-M1-20160427	12.270	24.53	22.56	7.64	4.627	0.65	47.0	0.61
	05/04/16	TT-TP1-M1-20160504	2.273	24.26	22.28	7.84	3.564	0.12	67.5	1.63
	05/10/16	TT-TP1-M1-20160510	12.550	24.40	22.63	7.54	4.298	1.07	156.2	0.89
	05/19/16	TT-TP1-M1-20160519	2.413	25.70	22.99	7.60	4.052	0.50	102.1	2.38
	05/24/16	TT-TP1-M1-20160524	5.726	24.68	22.57	7.69	4.381	0.75	185.1	1.51
	06/01/16	TT-TP1-M1-20160601	1.221	24.50	23.16	7.19	5.715	0.27	191.1	0.26
	06/08/16	TT-TP1-M1-20160608	0.040	24.42	23.26	7.23	5.963	0.49	227.6	0.77
	06/21/16	TT-TP1-M1-20160621	5.035	24.30	25.76	6.99	6.135	0.18	73.5	0.91
	07/05/16	TT-TP1-M1-20160705	0.351	25.05	24.82	7.28	5.425	0.38	127.5	2.71
	07/27/16	TT-TP1-M1-20160727	0.142	25.81	26.36	7.17	6.459	0.13	31.5	2.07

Field Data Summary

Well/Lysimeter ID	Date	Sample ID	Fluorescein (ppb)	Depth to Water (feet BTOC)	Temperature (°C)	pH	Conductivity (mS/cm)	DO (mg/L)	ORP (mV)	Turbidity (NTU)
TT-TP2-M2	12/10/15	TT-TP1-M2-20151210	NA	27.32	24.10	6.94	12.59	0.29	152.4	0.99
	02/03/16	TT-TP1-M2-20160203	0.023	27.10	23.17	7.11	12.46	0.38	152.3	1.17
	02/10/16	TT-TP1-M2-20160210	0.055	27.07	24.09	7.07	12.56	1.20	242.1	1.01
	02/17/16	TT-TP1-M2-20160217	0.589	26.64	24.43	7.04	12.8	0.23	200.6	1.96
	02/24/16	TT-TP1-M2-20160224	0.030	26.45	24.35	7.06	12.67	0.28	143.2	1.3
	03/02/16	TT-TP1-M2-20160302	0.034	26.41	25.33	7.13	12.76	0.30	203.5	1.35
	03/09/16	TT-TP1-M2-20160309	0.054	26.48	25.33	7.08	13.16	0.32	120.1	0.93
	03/16/16	TT-TP1-M2-20160316	0.391	26.19	24.86	7.00	13.07	0.22	156.2	0.72
	03/23/16	TT-TP1-M2-20160323	0.410	25.99	24.68	7.03	13.23	0.16	139.4	3.29
	03/30/16	TT-TP1-M2-20160330	0.747	26.08	24.63	6.96	12.21	0.15	177.6	5.87
	04/04/16	TT-TP1-M2-20160404	1.001	25.82	25.27	6.94	11.97	0.17	130.1	1.06
	04/13/16	TT-TP1-M2-20160413	0.217	25.72	25.05	6.85	10.82	1.35	20.0	7.98
	04/19/16	TT-TP1-M2-20160419	0.911	25.88	25.36	6.90	11.17	0.44	54.4	1.44
	04/27/16	TT-TP1-M2-20160427	0.841	25.94	25.14	7.07	10.41	0.38	75.6	1.2
	05/04/16	TT-TP1-M2-20160504	0.099	23.79	25.91	6.91	9.793	0.11	72.6	1.43
	05/10/16	TT-TP1-M2-20160510	-0.065	25.83	25.65	6.96	9.584	0.54	123.6	1.14
	05/19/16	TT-TP1-M2-20160519	0.048	26.06	25.61	6.79	10.910	0.83	141.6	2.11
	05/24/16	TT-TP1-M2-20160524	0.076	24.89	25.65	7.03	11.99	0.50	143.2	2.53
	06/01/16	TT-TP1-M2-20160601	0.041	25.78	26.17	7.00	11.09	0.34	186.3	0.54
	06/08/16	TT-TP1-M2-20160608	0.024	25.88	25.78	6.91	10.35	0.54	229.0	0.91
	06/21/16	TT-TP1-M2-20160621	1.758	25.51	28.43	6.79	10.13	0.19	66.1	1.02
	07/05/16	TT-TP1-M2-20160705	0.061	26.20	27.33	6.73	10.78	0.21	35.2	3.72
	07/27/16	TT-TP1-M2-20160727	0.136	22.95	28.57	6.94	11.62	0.20	60.6	1.93

Field Data Summary

Well/Lysimeter ID	Date	Sample ID	Fluorescein (ppb)	Depth to Water (feet BTOC)	Temperature (°C)	pH	Conductivity (mS/cm)	DO (mg/L)	ORP (mV)	Turbidity (NTU)
TT-TP1-M3	12/10/15	TT-TP1-M3-20151210	NA	27.45	24.00	6.85	11.59	0.23	165.4	0.1
	02/03/16	TT-TP1-M3-20160203	0.019	27.17	22.85	7.10	11.38	0.38	122.5	0.5
	02/10/16	TT-TP1-M3-20160210	0.011	27.10	24.61	7.15	11.38	0.64	183.4	1.19
	02/17/16	TT-TP1-M3-20160217	0.279	26.89	24.48	7.01	11.79	0.14	189.3	1
	02/24/16	TT-TP1-M3-20160224	0.057	26.64	24.60	7.02	11.73	0.35	141.4	0.97
	03/02/16	TT-TP1-M3-20160302	0.006	26.95	25.46	7.03	11.85	0.39	219.3	1.53
	03/09/16	TT-TP1-M3-20160309	0.150	26.54	25.35	7.07	12.26	0.49	187.1	1.44
	03/16/16	TT-TP1-M3-20160316	0.299	26.58	24.92	6.95	12.05	0.46	199.0	2.64
	03/23/16	TT-TP1-M3-20160323	0.523	26.25	24.97	6.99	12.02	0.16	139.3	2.6
	03/30/16	TT-TP1-M3-20160330	0.325	26.11	26.26	6.91	11.97	0.13	157.7	2.9
	04/04/16	TT-TP1-M3-20160404	1.612	26.03	25.98	6.81	11.85	0.14	122.9	1.22
	04/13/16	TT-TP1-M3-20160413	0.065	25.86	25.56	6.94	11.66	1.20	40.8	1.49
	04/19/16	TT-TP1-M3-20160419	0.377	26.05	25.73	6.99	11.44	0.34	36.5	2.01
	04/27/16	TT-TP1-M3-20160427	0.659	26.23	25.20	6.81	10.74	0.28	205.1	3.68
	05/04/16	TT-TP1-M3-20160504	0.064	25.79	25.90	6.89	9.951	0.09	67.2	1.52
	05/10/16	TT-TP1-M3-20160510	0.509	26.03	25.73	6.89	8.815	0.38	119.2	3.22
	05/19/16	TT-TP1-M3-20160519	0.103	26.12	25.93	6.92	9.831	0.39	94.2	1.66
	05/24/16	TT-TP1-M3-20160524	0.060	26.05	25.58	6.97	9.559	0.42	121.2	1.39
	06/01/16	TT-TP1-M3-20160601	0.080	26.07	26.48	6.97	9.365	0.57	195.5	0.69
	06/08/16	TT-TP1-M3-20160608	0.643	26.04	25.89	6.99	9.213	0.47	228.1	0.62
	06/21/16	TT-TP1-M3-20160621	0.550	25.84	27.82	6.88	9.032	0.14	46.3	0.99
	07/05/16	TT-TP1-M3-20160705	0.108	26.13	26.60	7.08	8.345	0.20	107.6	2.37
	07/27/16	TT-TP1-M3-20160727	0.174	26.35	29.31	6.99	8.9	0.18	24.9	1.98

Field Data Summary

Well/Lysimeter ID	Date	Sample ID	Fluorescein (ppb)	Depth to Water (feet BTOC)	Temperature (°C)	pH	Conductivity (mS/cm)	DO (mg/L)	ORP (mV)	Turbidity (NTU)
TT-TP2-L1	12/10/15	TT-TP2-L1-20151210	NA	NA	Insufficient Water	Insufficient Water	Insufficient Water	Insufficient Water	Insufficient Water	Insufficient Water
	02/04/16	TT-TP2-L1-20160204	1.462	NA	17.22	7.48	5.656	3.36	233.5	1.93
	02/11/16	TT-TP2-L1-20160211	1.621	NA	19.07	7.51	7.564	3.25	191.5	1.65
	02/18/16	TT-TP2-L1-20160218	0.255	NA	17.57	7.35	7.439	2.97	236.0	1.13
	02/25/16	TT-TP2-L1-20160225	0.210	NA	19.59	7.48	6.978	2.94	146.2	1.88
	03/03/16	TT-TP2-L1-20160303	0.160	NA	20.48	7.74	5.974	3.97	198.7	0.21
	03/10/16	TT-TP2-L1-20160310	0.131	NA	19.97	7.76	5.514	3.22	176.2	0.04
	03/17/16	TT-TP2-L1-20160317	1.746	NA	20.45	7.93	4.769	3.27	154.8	0.45
	03/23/16	TT-TP2-L1-20160323	1.958	NA	20.16	7.37	4.302	3.32	133.2	0.78
	03/31/16	TT-TP2-L1-20160331	2.099	NA	21.46	7.87	3.933	1.98	138.7	1.01
	04/05/16	TT-TP2-L1-20160405	1.691	NA	22.18	7.72	4	3.27	93.5	0.28
	04/14/16	TT-TP2-L1-20160414	0.230	NA	18.07	7.64	3.506	2.80	184.6	1.11
	04/20/16	TT-TP2-L1-20160420	NA	NA	23.28	7.88	3.528	3.75	16.8	0.96
	04/28/16	TT-TP2-L1-20160428	2.269	NA	20.51	7.61	3.549	2.38	226.1	1.99
	05/05/16	TT-TP2-L1-20160505	0.464	NA	25.73	7.89	3.330	2.35	118.6	1.36
	05/11/16	TT-TP2-L1-20160511	4.881	NA	23.12	7.78	3.279	3.97	40.1	1.31
	05/19/16	TT-TP2-L1-20160519	9.981	NA	24.29	7.52	3.207	3.07	102.8	2.06
	05/25/16	TT-TP2-L1-20160525	17.520	NA	22.96	7.96	3.173	2.80	146.7	2.03
	06/02/16	TT-TP2-L1-20160602	52.330	NA	25.33	7.97	3.164	2.49	138.4	5.2
	06/09/16	TT-TP2-L1-20160609	Pump broke	Pump broke	Pump broke	Pump broke	Pump broke	Pump broke	Pump broke	Pump broke
	06/22/16	TT-TP2-L1-20160622	29.430	NA	28.11	7.86	2.933	4.31	9.0	2.21
	07/05/16	TT-TP2-L1-20160705	meter would not turn on	NA	27.48	8.34	2.671	4.16	111.6	1.23
	07/27/16	TT-TP2-L1-20160727	22.020	NA	28.49	7.27	3.217	2.08	5.3	4.09

Field Data Summary

Well/Lysimeter ID	Date	Sample ID	Fluorescein (ppb)	Depth to Water (feet BTOC)	Temperature (°C)	pH	Conductivity (mS/cm)	DO (mg/L)	ORP (mV)	Turbidity (NTU)
TT-TP2-L2	12/10/15	TT-TP2-L2-20151210	NA	NA	Insufficient Water	Insufficient Water	Insufficient Water	Insufficient Water	Insufficient Water	Insufficient Water
	02/04/16	TT-TP2-L2-20160204	2.108	NA	18.40	7.38	13.91	3.36	243.6	1.71
	02/11/16	TT-TP2-L2-20160211	1.620	NA	20.66	7.34	14.84	3.05	198.8	1.83
	02/18/16	TT-TP2-L2-20160218	0.361	NA	19.34	7.17	13.72	3.14	246.4	0.86
	02/25/16	TT-TP2-L2-20160225	0.112	NA	20.80	7.32	13.04	3.66	156.0	1.15
	03/03/16	TT-TP2-L2-20160303	0.097	NA	24.01	7.28	13.03	3.04	229.7	0.14
	03/10/16	TT-TP2-L2-20160310	0.075	NA	21.86	7.31	12.31	2.42	195.3	0.05
	03/17/16	TT-TP2-L2-20160317	0.513	NA	21.40	7.38	11.56	2.44	173.8	0.55
	03/23/16	TT-TP2-L2-20160323	1.898	NA	22.21	7.43	9.559	3.66	148.1	0.95
	03/31/16	TT-TP2-L2-20160331	0.682	NA	19.90	7.27	9.537	3.85	159.7	1.3
	04/05/16	TT-TP2-L2-20160405	0.934	NA	23.67	7.41	8.32	4.15	105.7	0.22
	04/14/16	TT-TP2-L2-20160414	0.156	NA	18.08	7.33	7.1	3.90	198.7	0.94
	04/20/16	TT-TP2-L2-20160420	NA	NA	24.04	7.72	5.784	3.69	27.8	1.11
	04/28/16	TT-TP2-L2-20160428	1.245	NA	20.87	7.39	5.558	2.66	241.5	1.7
	05/05/16	TT-TP2-L2-20160505	0.097	NA	26.88	7.61	4.982	2.17	95.6	1.57
	05/11/16	TT-TP2-L2-20160511	0.198	NA	24.63	6.80	4.650	3.49	75.5	1.28
	05/19/16	TT-TP2-L2-20160519	0.128	NA	27.31	7.52	4.001	2.88	106.8	1.79
	05/25/16	TT-TP2-L2-20160525	1.044	NA	22.25	7.89	3.786	3.89	154.7	1.29
	06/02/16	TT-TP2-L2-20160602	0.161	NA	26.00	7.82	3.664	2.40	145.1	0.43
	06/09/16	TT-TP2-L2-20160609	Pump broke	Pump broke	Pump broke	Pump broke	Pump broke	Pump broke	Pump broke	Pump broke
	06/22/16	TT-TP2-L2-20160622	0.753	NA	30.12	7.87	3.04	3.20	10.3	2.03
	07/05/16	TT-TP2-L2-20160705	meter would not turn on	NA	27.52	8.40	2.663	2.71	99.8	1.05
	07/27/16	TT-TP2-L2-20160727	0.218	NA	30.91	7.76	2.926	2.20	8.9	1.77

Field Data Summary

Well/Lysimeter ID	Date	Sample ID	Fluorescein (ppb)	Depth to Water (feet BTOC)	Temperature (°C)	pH	Conductivity (mS/cm)	DO (mg/L)	ORP (mV)	Turbidity (NTU)
TT-TP2-M1	12/10/15	TT-TP2-M1-20151210	NA	26.28	23.30	7.11	10.95	3.35	238.1	0.78
	02/03/16	TT-TP2-M1-20160203	0.048	25.42	22.14	7.28	9.973	7.28	150.0	0.39
	02/10/16	TT-TP2-M1-20160210	0.024	24.91	21.90	7.34	9.982	3.11	159.2	0.41
	02/17/16	TT-TP2-M1-20160217	0.471	24.40	21.26	7.30	10.22	3.65	160.7	0.77
	02/24/16	TT-TP2-M1-20160224	0.141	24.13	21.05	7.27	9.822	2.91	157.3	1.46
	03/02/16	TT-TP2-M1-20160302	0.130	23.90	20.81	7.35	9.173	2.88	143.7	0.06
	03/09/16	TT-TP2-M1-20160309	0.392	23.70	15.42	7.29	10.35	2.85	131.9	0.14
	03/16/16	TT-TP2-M1-20160316	5.578	23.61	20.69	7.19	8.630	1.01	143.2	0.63
	03/23/16	TT-TP2-M1-20160323	9.099	23.45	20.42	7.26	8.117	1.25	90.2	1.52
	03/30/16	TT-TP2-M1-20160330	31.000	23.40	20.71	7.29	7.843	1.01	132.2	0.73
	04/04/16	TT-TP2-M1-20160404	30.750	23.25	21.55	7.16	7.467	0.96	50.5	1.17
	04/14/16	TT-TP2-M1-20160414	3.568	23.65	20.46	7.29	8.321	0.85	152.3	2.34
	04/19/16	TT-TP2-M1-20160419	12.920	24.63	21.34	7.38	8.911	1.12	15.3	1.24
	04/27/16	TT-TP2-M1-20160427	15.910	23.44	21.41	7.16	8.776	0.45	121.7	1.22
	05/04/16	TT-TP2-M1-20160504	1.993	23.08	21.99	7.19	8.586	0.32	40.2	1.62
	05/11/16	TT-TP2-M1-20160511	3.353	23.22	21.34	7.15	8.894	0.62	158.0	2.19
	05/19/16	TT-TP2-M1-20160519	0.338	23.78	22.25	7.06	9.931	0.50	80.0	2.53
	05/26/16	TT-TP2-M1-20160526	1.908	23.38	21.38	7.28	10.51	1.49	40.3	1.06
	06/01/16	TT-TP2-M1-20160601	2.343	23.23	22.75	7.19	9.600	0.39	184.7	1.93
	06/08/16	TT-TP2-M1-20160608	0.935	23.11	22.48	7.22	8.894	0.57	224.8	2.55
	06/22/16	TT-TP2-M1-20160622	1.435	23.03	23.02	6.99	8.298	0.24	19.0	8.96
	07/05/16	TT-TP2-M1-20160705	0.238	24.35	23.85	7.30	8.577	0.18	88.3	3.18
	07/27/16	TT-TP2-M1-20160727	0.117	25.02	26.36	7.27	6.811	0.12	5.0	1.16

Field Data Summary

Well/Lysimeter ID	Date	Sample ID	Fluorescein (ppb)	Depth to Water (feet BTOC)	Temperature (°C)	pH	Conductivity (mS/cm)	DO (mg/L)	ORP (mV)	Turbidity (NTU)
TT-TP2-M2	12/10/15	TT-TP2-M2-20151210	NA	26.67	23.40	7.03	11.01	2.30	229.6	0.2
	02/03/16	TT-TP2-M2-20160203	0.011	26.02	22.95	7.17	10.39	1.77	136.4	0.74
	02/10/16	TT-TP2-M2-20160210	0.013	25.44	23.80	7.24	10.22	2.06	155.7	0.67
	02/17/16	TT-TP2-M2-20160217	0.643	25.11	23.67	7.19	10.54	1.93	150.8	1.98
	02/24/16	TT-TP2-M2-20160224	0.013	24.78	23.92	7.14	10.2	1.51	146.2	1.84
	03/02/16	TT-TP2-M2-20160302	0.043	24.61	23.91	7.25	10.09	1.54	150.3	0.76
	03/09/16	TT-TP2-M2-20160309	0.077	24.37	23.51	7.20	10.09	1.00	125.4	0.13
	03/16/16	TT-TP2-M2-20160316	0.083	24.25	23.42	7.16	9.732	0.61	139.4	0.54
	03/23/16	TT-TP2-M2-20160323	1.318	24.15	22.92	7.20	9.581	0.47	83.5	1.4
	03/30/16	TT-TP2-M2-20160330	0.561	24.05	22.58	7.18	9.334	0.20	129.1	4.88
	04/04/16	TT-TP2-M2-20160404	1.008	24.03	23.33	7.05	9.144	0.15	75.2	0.44
	04/14/16	TT-TP2-M2-20160414	0.129	24.25	27.18	7.26	8.703	0.35	128.2	3.25
	04/19/16	TT-TP2-M2-20160419	0.490	24.24	23.39	7.03	8.874	0.43	46.9	2.56
	04/27/16	TT-TP2-M2-20160427	1.130	24.10	22.46	7.10	8.75	0.09	131.9	2.24
	05/05/16	TT-TP2-M2-20160505	0.119	23.74	22.45	7.00	8.644	0.14	74.4	1.10
	05/11/16	TT-TP2-M2-20160511	0.271	23.85	22.26	7.17	8.633	0.22	137.2	3.03
	05/19/16	TT-TP2-M2-20160519	0.040	24.28	22.92	7.17	8.743	0.36	68.2	1.17
	05/26/16	TT-TP2-M2-20160526	0.113	24.18	22.53	7.30	8.979	0.38	35.8	1.09
	06/01/16	TT-TP2-M2-20160601	0.108	23.89	23.66	7.26	9.279	0.34	158.1	0.54
	06/08/16	TT-TP2-M2-20160608	0.065	23.75	23.00	7.23	9.109	0.46	217.5	3.78
	06/22/16	TT-TP2-M2-20160622	0.122	23.67	23.74	7.19	8.486	0.21	15.7	1.51
	07/05/16	TT-TP2-M2-20160705	0.058	24.80	23.91	7.08	7.973	0.20	-10.7	2.32
	07/28/16	TT-TP2-M2-20160728	0.134	25.45	25.79	7.27	7.383	0.20	25.3	1.95

Field Data Summary

Well/Lysimeter ID	Date	Sample ID	Fluorescein (ppb)	Depth to Water (feet BTOC)	Temperature (°C)	pH	Conductivity (mS/cm)	DO (mg/L)	ORP (mV)	Turbidity (NTU)
TT-TP3-L1	12/10/15	TT-TP3-L1-20151210	NA	NA	Insufficient Water	Insufficient Water	Insufficient Water	Insufficient Water	Insufficient Water	Insufficient Water
	02/04/16	TT-TP3-L1-20160204	16.020	NA	14.01	7.94	5.953	4.83	231.0	2.01
	02/11/16	TT-TP3-L1-20160211	5.842	NA	17.42	8.60	3.337	5.52	154.3	1.75
	02/18/16	TT-TP3-L1-20160218	0.624	NA	17.09	8.49	2.626	5.60	206.2	1.98
	02/25/16	TT-TP3-L1-20160225	0.378	NA	17.78	8.56	2.533	4.51	126.5	0.98
	03/03/16	TT-TP3-L1-20160303	0.296	NA	19.38	8.65	2.294	5.43	185.0	0.13
	03/10/16	TT-TP3-L1-20160310	0.292	NA	18.96	8.74	2.244	3.97	148.0	0.05
	03/17/16	TT-TP3-L1-20160317	3.031	NA	20.68	8.72	2.237	4.15	134.0	0.78
	03/23/16	TT-TP3-L1-20160323	2.349	NA	20.19	8.77	2.095	5.11	101.3	0.97
	03/31/16	TT-TP3-L1-20160331	1.401	NA	19.33	8.16	1.418	5.22	178.3	0.94
	04/05/16	TT-TP3-L1-20160405	2.035	NA	23.75	8.47	1.902	4.98	57.1	0.23
	04/14/16	TT-TP3-L1-20160414	0.167	NA	19.10	7.53	2.741	3.62	178.2	0.84
	04/20/16	TT-TP3-L1-20160420	NA	NA	Insufficient Water	Insufficient Water	Insufficient Water	Insufficient Water	Insufficient Water	Insufficient Water
	04/28/16	TT-TP3-L1-20160428	1.478	NA	22.25	8.39	1.585	5.11	200.3	1.78
	05/05/16	TT-TP3-L1-20160505	0.096	NA	25.77	8.61	1.385	3.43	56.6	1.40
	05/11/16	TT-TP3-L1-20160511	0.143	NA	24.91	7.86	1.335	4.77	37.1	1.33
	05/19/16	TT-TP3-L1-20160519	0.181	NA	26.74	8.19	1.456	4.06	79.0	1.88
	05/25/16	TT-TP3-L1-20160525	0.110	NA	25.91	8.49	1.482	5.06	108.1	1.62
	06/02/16	TT-TP3-L1-20160602	0.181	NA	28.78	8.30	1.373	3.65	97.6	0.54
	06/09/16	TT-TP3-L1-20160609	4.464	NA	29.54	8.20	1.04	3.34	110.9	
	06/22/16	TT-TP3-L1-20160622	0.071	NA	32.15	8.09	1.35	5.64	5.3	1.78
	07/05/16	TT-TP3-L1-20160705	meter would not turn on	NA	30.23	8.56	1.314	3.22	137.5	1.53
	07/27/16	TT-TP3-L1-20160727	1.083	NA	32.11	7.63	1.4	1.65	-6.6	1.31

Field Data Summary

Well/Lysimeter ID	Date	Sample ID	Fluorescein (ppb)	Depth to Water (feet BTOC)	Temperature (°C)	pH	Conductivity (mS/cm)	DO (mg/L)	ORP (mV)	Turbidity (NTU)
TT-TP3-L2	12/10/15	TT-TP3-L2-20151210	NA	NA	Insufficient Water	Insufficient Water	Insufficient Water	Insufficient Water	Insufficient Water	Insufficient Water
	02/04/16	TT-TP3-L2-20160204	3.053	NA	15.35	7.78	5.228	2.57	230.1	2.68
	02/11/16	TT-TP3-L2-20160211	1.760	NA	16.50	7.93	4.93	3.82	177.9	1.38
	02/18/16	TT-TP3-L2-20160218	0.303	NA	16.24	7.87	4.479	4.11	224.8	1.64
	02/25/16	TT-TP3-L2-20160225	0.130	NA	18.87	7.70	4.513	2.29	143.3	1.36
	03/03/16	TT-TP3-L2-20160303	0.138	NA	21.01	7.96	4.338	3.69	193.6	0.62
	03/10/16	TT-TP3-L2-20160310	0.109	NA	20.17	7.87	4.294	2.63	168.7	0.09
	03/17/16	TT-TP3-L2-20160317	1.393	NA	21.01	7.91	4.115	2.04	153.7	0.91
	03/23/16	TT-TP3-L2-20160323	1.375	NA	20.95	8.15	3.578	3.48	150.2	0.81
	03/31/16	TT-TP3-L2-20160331	2.803	NA	18.85	8.68	1.986	5.80	104.4	0.91
	04/05/16	TT-TP3-L2-20160405	1.368	NA	22.65	7.75	3.431	2.76	103.9	0.31
	04/14/16	TT-TP3-L2-20160414	0.122	NA	19.20	7.84	3.161	2.61	174.9	1.18
	04/20/16	TT-TP3-L2-20160420	NA	NA	22.58	7.85	2.763	2.67	6.2	0.88
	04/28/16	TT-TP3-L2-20160428	1.281	NA	22.20	8.02	2.577	2.35	208.0	1.38
	05/05/16	TT-TP3-L2-20160505	0.186	NA	25.66	8.09	2.464	1.86	76.2	1.75
	05/11/16	TT-TP3-L2-20160511	0.362	NA	26.00	7.43	2.249	4.14	45.1	1.40
	05/19/16	TT-TP3-L2-20160519	0.381	NA	27.33	8.04	2.381	3.82	85.5	1.53
	05/25/16	TT-TP3-L2-20160525	0.144	NA	25.82	8.09	2.291	4.48	124.3	0.99
	06/02/16	TT-TP3-L2-20160602	1.957	NA	29.05	7.93	2.114	3.70	110.4	0.52
	06/09/16	TT-TP3-L2-20160609	22.810	NA	29.47	7.97	1.84	1.73	112.9	
	06/22/16	TT-TP3-L2-20160622	0.161	NA	29.94	8.00	1.893	4.81	5.5	1.92
	07/05/16	TT-TP3-L2-20160705	meter would not turn on	NA	30.87	8.43	1.568	2.00	125.3	1.31
	07/27/16	TT-TP3-L2-20160727	0.343	NA	31.73	7.53	1.529	1.61	-11.9	1.45

Field Data Summary

Well/Lysimeter ID	Date	Sample ID	Fluorescein (ppb)	Depth to Water (feet BTOC)	Temperature (°C)	pH	Conductivity (mS/cm)	DO (mg/L)	ORP (mV)	Turbidity (NTU)
TT-TP3-M1	12/10/15	TT-TP3-M1-20151210	NA	26.31	22.50	7.01	11.93	2.69	157.4	0.15
	02/03/16	TT-TP3-M1-20160203	0.092	24.91	23.46	7.07	12.05	1.63	160.1	0.66
	02/11/16	TT-TP3-M1-20160211	0.057	23.98	22.50	7.34	7.483	3.30	179.4	0.46
	02/18/16	TT-TP3-M1-20160218	0.169	23.33	18.38	7.43	1.957	4.89	209.0	1.03
	02/25/16	TT-TP3-M1-20160225	0.076	22.93	16.76	7.76	1.495	3.89	185.7	0.7
	03/03/16	TT-TP3-M1-20160303	0.089	22.60	16.55	7.65	1.411	3.19	113.9	0.18
	04/05/16	TT-TP3-M1-20160305	0.718	21.97	19.06	7.61	1.221	0.27	136.8	0.76
	03/10/16	TT-TP3-M1-20160310	0.064	22.40	17.07	7.80	1.301	1.31	127.8	0.08
	04/14/16	TT-TP3-M1-20160314	0.907	22.90	18.84	7.64	1.203	0.38	96.9	1.15
	03/16/16	TT-TP3-M1-20160316	0.483	22.21	17.63	7.84	1.304	0.91	113.0	0.61
	04/20/16	TT-TP3-M1-20160320	4.859	22.60	19.99	7.47	1.141	0.60	91.7	1.21
	03/23/16	TT-TP3-M1-20160323	3.473	22.10	17.47	7.91	1.265	0.70	50.3	3.98
	04/27/16	TT-TP3-M1-20160327	6.471	22.26	21.37	7.81	1.055	0.97	42.2	0.97
	03/31/16	TT-TP3-M1-20160331	6.278	22.10	17.88	8.04	1.247	0.31	113.8	1.59
	05/05/16	TT-TP3-M1-20160505	1.297	21.85	21.98	7.55	1.162	0.21	36.5	1.36
	05/11/16	TT-TP3-M1-20160511	1.110	21.95	21.50	7.63	1.135	0.26	79.0	5.20
	05/19/16	TT-TP3-M1-20160519	0.615	23.22	22.63	7.59	1.309	0.39	20.3	1.76
	05/26/16	TT-TP3-M1-20160526	1.153	22.49	22.39	7.74	1.239	0.34	-1.3	1.01
	06/01/16	TT-TP3-M1-20160601	1.077	22.13	24.20	7.71	1.177	0.22	130.9	0.66
	06/08/16	TT-TP3-M1-20160608	0.604	21.86	24.98	7.66	1.161	0.48	225.4	1.03
	06/22/16	TT-TP3-M1-20160622	1.294	21.77	28.30	7.59	1.127	0.21	5.1	2.62
	07/05/16	TT-TP3-M1-20160705	0.918	24.31	28.62	7.61	1.191	0.16	60.4	3.05
	07/28/16	TT-TP3-M1-20160728	0.264	25.18	30.31	7.22	4.223	0.18	17.6	1.46

Field Data Summary

Well/Lysimeter ID	Date	Sample ID	Fluorescein (ppb)	Depth to Water (feet BTOC)	Temperature (°C)	pH	Conductivity (mS/cm)	DO (mg/L)	ORP (mV)	Turbidity (NTU)
TT-TP3-M2	12/10/15	TT-TP3-M2-20151210	NA	26.78	21.90	7.10	11.74	1.84	236.6	13.2
	02/04/16	TT-TP3-M2-20160204	0.169	25.70	22.72	7.24	11.25	0.68	232.0	0.2
	02/10/16	TT-TP3-M2-20160210	0.026	25.14	24.15	7.30	9.676	0.21	113.5	0.55
	02/18/16	TT-TP3-M2-20160218	0.091	24.62	23.35	7.42	5.74	0.28	201.9	0.96
	02/25/16	TT-TP3-M2-20160225	0.102	24.27	22.55	7.67	3.384	0.56	190.1	2.23
	03/03/16	TT-TP3-M2-20160303	0.081	23.98	21.16	7.77	2.668	0.34	118.2	0.44
	04/05/16	TT-TP3-M2-20160305	0.280	23.35	19.60	7.95	1.922	0.10	111.9	0.36
	03/10/16	TT-TP3-M2-20160310	0.079	23.81	19.93	7.82	2.252	0.25	153.8	0.29
	04/14/16	TT-TP3-M2-20160314	0.211	23.85	19.76	8.02	2.02	0.33	139.1	1.21
	03/16/16	TT-TP3-M2-20160316	0.542	23.64	19.96	7.98	2.151	0.24	121.6	0.94
	04/20/16	TT-TP3-M2-20160320	1.705	23.77	20.45	7.88	2.015	0.60	81.3	1.19
	03/23/16	TT-TP3-M2-20160323	1.544	23.55	19.10	8.07	2.002	0.16	45.3	1.12
	04/27/16	TT-TP3-M2-20160327	2.379	23.47	20.60	7.98	1.69	0.99	64.3	2.82
	03/31/16	TT-TP3-M2-20160331	2.296	23.45	18.64	8.15	1.956	0.12	104.4	1.36
	05/05/16	TT-TP3-M2-20160505	0.690	23.30	20.33	7.55	1.744	0.14	39.5	2.15
	05/11/16	TT-TP3-M2-20160511	0.480	23.20	20.95	7.74	1.678	0.23	98.3	2.88
	05/19/16	TT-TP3-M2-20160519	0.204	23.98	21.45	7.50	1.775	0.47	42.7	0.67
	05/26/16	TT-TP3-M2-20160526	0.440	23.65	21.40	7.76	1.722	0.30	36.8	2.18
	06/02/16	TT-TP3-M2-20160602	1.059	23.22	22.95	7.64	1.623	0.26	57.6	0.60
	06/08/16	TT-TP3-M2-20160608	0.860	23.05	23.39	7.73	1.53	0.49	233.1	0.48
	06/22/16	TT-TP3-M2-20160622	0.473	22.87	25.90	7.68	1.383	0.21	-0.3	1.39
	07/05/16	TT-TP3-M2-20160705	0.378	24.76	25.93	7.46	1.67	0.15	-29.3	2.27
	07/28/16	TT-TP3-M2-20160728	0.014	25.61	27.36	7.29	5.363	0.20	20.0	1.71

Field Data Summary

Well/Lysimeter ID	Date	Sample ID	Fluorescein (ppb)	Depth to Water (feet BTOC)	Temperature (°C)	pH	Conductivity (mS/cm)	DO (mg/L)	ORP (mV)	Turbidity (NTU)
TT-TP4-L1	12/10/15	TT-TP4-L1-20151210	NA	NA	Insufficient Water	Insufficient Water	Insufficient Water	Insufficient Water	Insufficient Water	Insufficient Water
	02/04/16	TT-TP4-L1-20160204	1.468	NA	17.77	7.16	13.44	2.68	246.3	1.33
	02/11/16	TT-TP4-L1-20160211	1.465	NA	21.57	6.99	15.23	1.87	204.1	0.97
	02/18/16	TT-TP4-L1-20160218	0.317	NA	18.66	6.81	18.47	1.40	25.3	1.22
	02/25/16	TT-TP4-L1-20160225	0.202	NA	18.47	6.87	27.11	6.87	180.1	1.57
	03/03/16	TT-TP4-L1-20160303	0.202	NA	19.18	6.82	30.65	2.18	240.3	0.08
	03/10/16	TT-TP4-L1-20160310	0.382	NA	18.33	6.92	25.02	1.34	194.6	0.02
	03/17/16	TT-TP4-L1-20160317	2.362	NA	21.36	7.02	16.85	4.52	195.5	0.98
	03/23/16	TT-TP4-L1-20160323	1.713	NA	22.20	7.30	12.45	3.95	198.6	0.67
	03/31/16	TT-TP4-L1-20160331	1.948	NA	18.92	7.39	11.47	2.01	163.9	1.11
	04/05/16	TT-TP4-L1-20160405	1.531	NA	22.88	7.29	10.61	2.80	108.4	0.52
	04/14/16	TT-TP4-L1-20160414	0.189	NA	19.87	7.33	9.094	2.50	180.8	1.07
	04/20/16	TT-TP4-L1-20160428	NA	NA	23.25	7.45	6.392	3.18	54.2	0.67
	04/28/16	TT-TP4-L1-20160428	1.730	NA	22.53	7.70	2.345	2.32	212.2	1.68
	05/05/16	TT-TP4-L1-20160505	0.257	NA	24.62	7.87	2.115	2.03	59.9	1.32
	05/11/16	TT-TP4-L1-20160511	4.251	NA	25.98	7.61	1.995	2.60	30.2	1.51
	05/19/16	TT-TP4-L1-20160519	55.89	NA	26.97	7.99	1.968	2.73	84.4	1.38
	05/25/16	TT-TP4-L1-20160525	51.610	NA	26.36	7.99	1.823	4.54	141.1	1.63
	06/02/16	TT-TP4-L1-20160602	43.670	NA	30.87	8.19	1.616	1.49	130.2	4.64
	06/09/16	TT-TP4-L1-20160609	667.300	NA	29.71	8.01	1.422	1.55	124.9	
	06/22/16	TT-TP4-L1-20160622	1.001	NA	29.25	7.98	1.48	5.42	12.1	1.32
	07/05/16	TT-TP4-L1-20160705	meter would not turn on	NA	30.93	8.53	1.615	9.89	54.4	1.62
	07/27/16	TT-TP4-L1-20160727	4.616	NA	35.10	7.92	2.203	1.70	-12.6	1.81

Field Data Summary

Well/Lysimeter ID	Date	Sample ID	Fluorescein (ppb)	Depth to Water (feet BTOC)	Temperature (°C)	pH	Conductivity (mS/cm)	DO (mg/L)	ORP (mV)	Turbidity (NTU)
TT-TP4-L2	12/10/15	TT-TP4-L2-20151210	NA	NA	21.60	7.35	8.28	2.42	253.7	Insufficient Water
	02/04/16	TT-TP4-L2-20160204	3.756	NA	18.86	7.51	8.819	2.18	235.7	2.12
	02/11/16	TT-TP4-L2-20160211	1.670	NA	22.31	7.59	9.341	2.26	180.1	0.85
	02/18/16	TT-TP4-L2-20160218	0.212	NA	19.90	7.40	8.039	2.04	230.5	1.78
	02/25/16	TT-TP4-L2-20160225	0.140	NA	20.85	7.51	6.895	1.73	154.1	1.61
	03/03/16	TT-TP4-L2-20160303	0.000	NA	22.93	7.50	6.742	1.87	209.7	0.13
	03/10/16	TT-TP4-L2-20160310	0.179	NA	21.69	7.52	7.267	1.68	174.6	0.1
	03/17/16	TT-TP4-L2-20160317	0.454	NA	22.35	7.60	7.852	3.44	167.1	1.25
	03/23/16	TT-TP4-L2-20160323	1.028	NA	22.17	7.78	7.578	3.87	189.2	1.01
	03/31/16	TT-TP4-L2-20160331	1.503	NA	19.66	7.54	7.319	1.70	165.1	0.89
	04/05/16	TT-TP4-L2-20160405	1.098	NA	23.98	7.62	6.893	3.26	109.5	0.67
	04/14/16	TT-TP4-L2-20160414	0.281	NA	18.78	7.45	6.598	2.14	170.5	1.02
	04/20/16	TT-TP4-L2-20160420	NA	NA	23.08	7.58	5.86	2.43	48.6	1.17
	04/28/16	TT-TP4-L2-20160428	1.349	NA	21.97	7.42	5.594	2.07	214.5	1.48
	05/05/16	TT-TP4-L2-20160505	0.181	NA	25.55	7.59	5.159	2.32	78.1	1.66
	05/11/16	TT-TP4-L2-20160511	0.229	NA	26.12	7.35	4.499	2.84	54.9	1.12
	05/19/16	TT-TP4-L2-20160519	0.260	NA	27.11	7.74	4.078	4.20	110.4	1.21
	05/25/16	TT-TP4-L2-20160525	0.714	NA	24.35	7.76	3.862	4.75	157.6	1.24
	06/02/16	TT-TP4-L2-20160602	0.230	NA	30.75	7.86	3.521	2.50	152.2	0.43
	06/09/16	TT-TP4-L2-20160609	no water	no water	no water	no water	no water	no water	no water	no water
	06/22/16	TT-TP4-L2-20160622	0.167	NA	27.54	7.83	2.942	4.90	16.5	2.01
	07/05/16	TT-TP4-L2-20160705	meter would not turn on	NA	28.66	8.34	2.633	2.83	161.8	1.09
	07/27/16	TT-TP4-L2-20160727	0.188	NA	29.18	7.68	2.677	1.70	22.0	1.27

Field Data Summary

Well/Lysimeter ID	Date	Sample ID	Fluorescein (ppb)	Depth to Water (feet BTOC)	Temperature (°C)	pH	Conductivity (mS/cm)	DO (mg/L)	ORP (mV)	Turbidity (NTU)
TT-TP4-M1	12/10/15	TT-TP4-M1-20151210	NA	26.93	22.40	6.82	12.29	0.36	221.0	0.29
	02/04/16	TT-TP4-M1-20160204	0.246	26.21	23.43	7.29	12.2	0.27	214.6	0.94
	02/11/16	TT-TP4-M1-20160211	0.297	25.50	23.39	7.45	13.3	0.40	164.6	0.53
	02/18/16	TT-TP4-M1-20160218	0.104	25.04	23.87	7.23	12.32	0.83	205.0	0.58
	02/25/16	TT-TP4-M1-20160225	0.089	24.69	24.26	7.16	10.96	0.72	171.3	0.5
	03/03/16	TT-TP4-M1-20160303	0.083	24.45	24.43	7.10	10.86	0.46	155.0	0.16
	03/10/16	TT-TP4-M1-20160310	0.068	24.28	23.98	6.98	12.93	0.31	149.0	0.08
	03/17/16	TT-TP4-M1-20160317	0.444	24.18	23.94	7.27	8.778	0.21	182.9	0.81
	03/24/16	TT-TP4-M1-20160324	0.718	23.98	23.53	7.32	8.299	0.16	147.3	0.43
	03/31/16	TT-TP4-M1-20160331	0.687	23.95	23.21	7.38	7.677	0.15	125.7	0.61
	04/05/16	TT-TP4-M1-20160405	0.106	23.90	23.51	7.27	8.699	0.13	120.2	0.32
	04/14/16	TT-TP4-M1-20160414	0.211	24.05	21.89	7.53	5.001	0.33	103.8	1.55
	04/20/16	TT-TP4-M1-20160420	0.738	24.09	22.32	7.43	6.864	0.47	83.0	0.92
	04/27/16	TT-TP4-M1-20160427	0.900	23.90	22.03	7.32	6.419	0.11	98.3	0.88
	05/05/16	TT-TP4-M1-20160505	0.221	23.55	22.26	7.38	5.235	0.18	38.4	1.19
	05/11/16	TT-TP4-M1-20160511	0.134	23.62	21.85	7.39	5.702	0.20	97.5	2.66
	05/19/16	TT-TP4-M1-20160519	0.082	24.08	21.85	7.42	3.820	0.30	25.2	1.44
	05/26/16	TT-TP4-M1-20160526	0.107	23.80	21.57	7.46	4.57	0.43	32.1	1.38
	06/02/16	TT-TP4-M1-20160602	0.091	23.67	22.33	7.43	5.019	0.20	77.0	0.33
	06/09/16	TT-TP4-M1-20160609	3.764	23.55	22.09	7.18	4.885	0.50	145.1	0.59
	06/22/16	TT-TP4-M1-20160622	0.095	23.34	23.95	7.33	3.441	0.17	10.4	1.38
	07/06/16	TT-TP4-M1-20160706	0.619	24.92	24.76	7.27	3.187	0.45	40.9	2.49
	07/28/16	TT-TP4-M1-20160728	0.255	25.78	26.01	7.35	5.743	0.30	17.0	1.53

Field Data Summary

Well/Lysimeter ID	Date	Sample ID	Fluorescein (ppb)	Depth to Water (feet BTOC)	Temperature (°C)	pH	Conductivity (mS/cm)	DO (mg/L)	ORP (mV)	Turbidity (NTU)
TT-TP4-M2	12/10/15	TT-TP4-M2-20151210	NA	26.94	21.90	6.88	12.58	0.31	192.2	1.2
	02/04/16	TT-TP4-M2-20160204	0.270	26.15	23.26	7.17	12.05	0.32	234.7	0.3
	02/11/16	TT-TP4-M2-20160211	0.270	25.46	23.62	7.40	13.11	0.45	110.3	1.63
	02/18/16	TT-TP4-M2-20160218	0.103	25.03	24.28	7.17	12.54	0.32	195.0	1.67
	02/25/16	TT-TP4-M2-20160225	0.064	24.69	24.66	7.12	11.42	0.33	190.0	1.01
	03/03/16	TT-TP4-M2-20160303	0.082	24.48	24.63	7.08	11.14	0.36	155.4	0.62
	03/10/16	TT-TP4-M2-20160310	0.050	24.35	24.52	7.09	10.08	0.17	128.9	1.18
	03/17/16	TT-TP4-M2-20160317	0.484	24.19	24.04	7.19	9.217	0.22	208.0	1.00
	03/24/16	TT-TP4-M2-20160324	0.491	23.99	24.44	7.27	9.714	0.12	90.1	1.04
	03/31/16	TT-TP4-M2-20160331	0.454	24.02	23.77	7.30	6.79	0.17	119.7	2.08
	04/05/16	TT-TP4-M2-20160405	0.056	23.90	24.52	7.24	6.182	0.15	75.4	0.37
	04/14/16	TT-TP4-M2-20160414	0.089	24.15	23.90	7.40	5.619	0.23	73.2	1.42
	04/20/16	TT-TP4-M2-20160420	0.467	24.16	24.40	7.41	5.037	0.51	56.9	1.2
	04/27/16	TT-TP4-M2-20160427	0.801	24.00	23.50	7.34	4.59	0.15	112.7	0.82
	05/05/16	TT-TP4-M2-20160505	0.020	23.70	24.08	7.44	4.150	0.32	32.5	1.55
	05/11/16	TT-TP4-M2-20160511	0.086	23.75	23.38	7.45	3.906	0.87	83.2	2.46
	05/19/16	TT-TP4-M2-20160519	0.055	24.18	23.55	7.47	4.057	0.41	27.8	0.36
	05/26/16	TT-TP4-M2-20160526	0.071	23.90	23.22	7.57	3.531	0.38	33.6	1.89
	06/02/16	TT-TP4-M2-20160602	0.168	23.73	23.53	7.62	3.318	0.49	89.8	0.40
	06/09/16	TT-TP4-M2-20160609	0.419	23.59	23.61	7.61	3.199	0.88	217.4	0.9
	06/22/16	TT-TP4-M2-20160622	0.062	23.40	24.91	7.58	2.839	0.52	6.2	1.68
	07/06/16	TT-TP4-M2-20160705	0.131	24.91	24.17	7.44	2.814	0.32	-22.3	2.26
	07/28/16	TT-TP4-M2-20160728	0.112	25.70	26.86	7.50	4.333	0.34	0.5	1.4

Field Data Summary

Well/Lysimeter ID	Date	Sample ID	Fluorescein (ppb)	Depth to Water (feet BTOC)	Temperature (°C)	pH	Conductivity (mS/cm)	DO (mg/L)	ORP (mV)	Turbidity (NTU)
TT-TP4-M3	12/10/15	TT-TP4-M3-20151209	NA	26.21	23.20	6.87	12.36	3.43	298.9	1.00
	02/04/16	TT-TP4-M3-20160204	0.429	25.88	23.15	7.29	11.89	2.77	227.0	0.43
	02/11/16	TT-TP4-M3-20160211	0.112	25.35	23.78	7.50	12.91	2.15	99.5	0.19
	02/18/16	TT-TP4-M3-20160218	0.045	25.06	23.59	7.29	12.3	1.02	188.5	2.03
	02/25/16	TT-TP4-M3-20160225	0.029	24.75	24.55	7.25	11.32	0.60	157.2	1.3
	03/03/16	TT-TP4-M3-20160303	0.137	24.50	24.48	7.18	11.49	0.43	151.0	0.15
	03/10/16	TT-TP4-M3-20160310	0.057	24.41	24.85	7.18	11.4	0.24	114.6	1.27
	03/17/16	TT-TP4-M3-20160317	0.078	24.30	24.03	7.23	12.06	0.24	170.7	0.4
	03/24/16	TT-TP4-M3-20160324	0.333	24.12	24.55	7.23	11.83	0.19	66.9	2.81
	03/31/16	TT-TP4-M3-20160331	0.405	24.05	24.08	7.18	11.9	0.14	118.7	0.88
	04/05/16	TT-TP4-M3-20160405	0.037	24.00	24.90	7.10	11.65	0.12	83.1	0.63
	04/14/16	TT-TP4-M3-20160414	0.044	24.05	24.48	7.26	10.93	0.25	66.9	1.81
	04/20/16	TT-TP4-M3-20160420	0.469	24.06	25.01	7.22	10.38	0.19	55.8	1.04
	04/27/16	TT-TP4-M3-20160427	0.317	23.94	24.45	7.33	8.684	0.68	58.0	0.91
	05/05/16	TT-TP4-M3-20160505	0.054	23.68	25.03	7.21	8.331	0.20	34.7	1.26
	05/11/16	TT-TP4-M3-20160511	0.123	23.80	24.90	7.24	7.515	0.28	98.1	2.26
	05/19/16	TT-TP4-M3-20160519	0.037	23.96	24.80	7.27	7.241	0.29	24.0	1.91
	05/26/16	TT-TP4-M3-20160526	0.037	23.76	24.75	7.34	6.981	0.20	35.3	1.78
	06/02/16	TT-TP4-M3-20160602	0.036	23.74	25.20	7.39	6.485	0.21	59.2	0.44
	06/09/16	TT-TP4-M3-20160609	2.140	23.70	25.44	7.38	6.134	0.49	81.5	0.63
	06/22/16	TT-TP4-M3-20160622	0.038	23.50	25.98	7.30	6.01	0.30	13.8	1.42
	07/06/16	TT-TP4-M3-20160706	0.040	24.55	25.40	7.42	6.873	0.38	55.0	1.44
	07/28/16	TT-TP4-M3-20160728	0.082	25.10	28.55	7.20	9.426	0.13	19.3	1.76

Notes:
ppb: parts per billion
mg/L: milligrams per liter
NA: Not applicable
BTOC: below top of casing
mV: millivolts
mS/cm: milliSiemens per centimeter
NTU: Nephelometric Turbidity Unit

WATER LEVEL MEASUREMENT LOG

TETRA TECH

PROJECT NAME: NERT Soil Flush Pilot Test MEASUREMENT DATE: 12/9/15

CONTRACT NUMBER: 100-G80-T35000.M05-1 FIELD PERSON: Peter Jimenez/Vanessa Calder

EQUIPMENT MODEL/TYPE	SERIAL NUMBER	LAST CALIBRATION DATE
ENVIRO-Supply Model 101	60110	12/7/15

MEASURING POINTS AND DATUM USED:

WELL NUMBER	TIME	MEASURING POINT	DEPTH TO GROUNDWATER (FT BGS)	DEPTH TO FREE PRODUCT (FT BGS)	FREE PRODUCT THICKNESS (FT)	CONDITION OF WELL
TT-TP4-M3	0827	26.10		—	—	Good
TT-TP4-M1	0830	26.78		—	—	Good
TT-TP4-M2	0832	26.85		—	—	Good
TT-TP3-M2	0834	26.73		—	—	Good
TT-TP3-M1	0835	26.30		—	—	Good
TT-TP2-M2	0836	26.65		—	—	Good
TT-TP2-M1	0837	26.28		—	—	Good
TT-TP1-M2	0838	27.26	(w/out pump in well)	—	—	Good
TT-TP1-M1	0839	26.64		—	—	Good
TT-TP1-M3	0840	27.03		—	—	Good

PAGE 1 of 1

LOW-FLOW WATER PURGING & SAMPLING LOG

TETRA TECH

PROJECT NAME: NERT ~~Bioremediation~~ Pilot Test 30:1 Flush

PROJECT NUMBER: 100-SBO-T35000.M051

PROJECT LOCATION: Henderson, NV

FIELD PERSON: Vanessa Carter, Peter Jimenez

PROJECT MANAGER: Mark Feldmann

DATE: 12/9/15

PUMP / TUBING TYPE:	WELL NUMBER: TETP4-L2
EQUIPMENT CLEANING METHOD:	CASING RADIUS: 2" (In.)
PURGE WATER DISPOSAL:	TOTAL DEPTH (TD): ~~45.7~~ (ft.)
	DEPTH TO WATER (DTW): ~~24.41~~ (ft.)
	SCREENED INTERVAL: 20.7-45.7 (ft.)
PURGE START TIME:	PUMP SET AT (ft.)

TIME	PURGE RATE (ml/min)	VOLUME PURGED (ml)	DTW (ft)	TEMP (°C)	pH	COND. (µS/cm)	DO (mg/L)	ORP (mV)	TURB. (NTU)	
1429	\	\	\	21.6	7.35	828	2.42	253.7		

PURGE STOP TIME:	SAMPLE TIME:
LAB NAME:	SAMPLE ID:

OBSERVATIONS/COMMENTS (NOTE TIMES):

LOW-FLOW WATER PURGING & SAMPLING LOG

TETRA TECH

PROJECT NAME: NERT ~~Bioremediation~~ Soil Flush Pilot Test

PROJECT NUMBER: 100-380-T35000.1005-1

PROJECT LOCATION: Henderson, NV

FIELD PERSON: Peter Jimenez, Vanessa Calder

PROJECT MANAGER: Mark Feldman

DATE: 12/9/15

PUMP / TUBING TYPE: Ded. cated / 1/4" tubing

EQUIPMENT CLEANING METHOD:

PURGE WATER DISPOSAL:

WELL NUMBER: ~~TT-TP4~~ MW3

CASING RADIUS: 2" (In.)

TOTAL DEPTH (TD): (ft.)

DEPTH TO WATER (DTW): 26.10 (ft.)

SCREENED INTERVAL: (ft.)

PURGE START TIME: 1328

PUMP SET AT 27? (ft.)

TIME	PURGE RATE (ml/min)	VOLUME PURGED (ml)	DTW (ft)	TEMP (°C)	pH	COND. (µS/cm)	DO (mg/L)	ORP (mV)	TURB. (NTU)	
1332	240	9600	26.19	23.3	6.59	12.35	3.44	321.2	3.68	
1335	240	16800	26.19	23.2	6.78	12.34	3.35	308.7	2.28	
1338	240	24000	26.21	23.1	6.83	12.36	3.31	301.9	1.20	
1341	240	31200	26.21	23.2	6.87	12.36	3.43	298.9	1.07	

PURGE STOP TIME: 1341

SAMPLE TIME: 1341

LAB NAME: Test America

SAMPLE ID: TT-TP4-MW3-20151209

OBSERVATIONS/COMMENTS (NOTE TIMES):

PAGE 1 of 1

LOW-FLOW WATER PURGING & SAMPLING LOG

TETRA TECH

PROJECT NAME: Soil Flush ~~Natural Attenuation~~ Pilot Test

PROJECT NUMBER: 100-580-T35000.M08-1

PROJECT LOCATION: Henderson, NV

FIELD PERSON: Vanessa Calder, Peter Jimenez

PROJECT MANAGER: Mark Feldmann

DATE: 12/10/15

PUMP / TUBING TYPE: Dedicated Pump 1/4" tubing

EQUIPMENT CLEANING METHOD:

PURGE WATER DISPOSAL:

WELL NUMBER: FT-TP4-M2

CASING RADIUS: 2" (in.)

TOTAL DEPTH (TD): (ft.)

DEPTH TO WATER (DTW): 26.88 (ft.)

SCREENED INTERVAL: (ft.)

PURGE START TIME: 0905

PUMP SET AT 30 (ft.)

TIME	PURGE RATE (ml/min)	VOLUME PURGED (ml)	DTW (ft)	TEMP (°C)	pH	COND. (µS/cm)	DO (mg/L)	ORP (mV)	TURB. (NTU)
0908	250	~~750~~ 700	26.94	22.1	6.92	1255	0.39	201.0	1.32
0911	200	~~1500~~ 1350	26.94	22.0	6.90	12.62	0.36	195.7	1.41
0914	200	~~2250~~ 2000	26.94	21.9	6.88	12.58	0.31	192.2	1.20

PURGE STOP TIME: 0914

SAMPLE TIME: FT-TP4-M2-20151210

LAB NAME: Test America

SAMPLE ID: 0914

OBSERVATIONS/COMMENTS (NOTE TIMES):

LOW-FLOW WATER PURGING & SAMPLING LOG

TETRA TECH

PROJECT NAME: NERT Soil Flush ~~Bioremediation~~ Pilot Study

FIELD PERSON: Vanessa Calder / Peter Jimenez

PROJECT NUMBER: 100-SBV-T35000.MOS-1

PROJECT MANAGER: Mark Feldman

PROJECT LOCATION: Henderson, NV

DATE: 12/10/15

PUMP / TUBING TYPE: Dedicated 1/4" tubing

EQUIPMENT CLEANING METHOD:

PURGE WATER DISPOSAL:

WELL NUMBER: TT-TP4-M1

CASING RADIUS: 2" (in.)

TOTAL DEPTH (TD): (ft.)

DEPTH TO WATER (DTW): 26.80 (ft.)

SCREENED INTERVAL: (ft.)

PURGE START TIME: 0900

PUMP SET AT 30 (ft.)

TIME	PURGE RATE (ml/min)	VOLUME PURGED (ml)	DTW (ft)	TEMP (°C)	pH	COND. (µS/cm)	DO (mg/L)	ORP (mV)	TURB. (NTU)	
0903	300	900	26.93	22.6	6.55	12.28	0.70	~~[illegible]~~ 246.3	1.41	
0906	300	1800	26.93	22.5	6.72	12.31	0.47	230.1	0.71	
0909	300	2700	26.93	22.5	6.78	12.34	0.43	228.3	0.50	
0912	300	3600	26.93	22.4	6.82	12.29	0.36	221.0	0.29	

PURGE STOP TIME: 0912

SAMPLE TIME: 0912

LAB NAME: Test America

SAMPLE ID: TT-TP4-M1-20151210

OBSERVATIONS/COMMENTS (NOTE TIMES):

PAGE 1 of 1

LOW-FLOW WATER PURGING & SAMPLING LOG

TETRA TECH

PROJECT NAME: ~~NEXT Biodegradation~~ @ Soil Flush Pilot Test
FIELD PERSON: Rowena Calder, Peter Jimenez
PROJECT NUMBER: 100-580-T35090.MD5-1
PROJECT MANAGER: Mark Feldman
PROJECT LOCATION: Henderson, NV
DATE: 12/10/15

PUMP / TUBING TYPE: Dedicated pump/ 1/4" tubing
EQUIPMENT CLEANING METHOD:
PURGE WATER DISPOSAL:

WELL NUMBER: TT-TP3-MI
CASING RADIUS: 3" (in.)
TOTAL DEPTH (TD): (ft.)
DEPTH TO WATER (DTW): 26.30 (ft.)
SCREENED INTERVAL: (ft.)

PURGE START TIME: 0930
PUMP SET AT 30 (ft.)

TIME	PURGE RATE (ml/min)	VOLUME PURGED (ml)	DTW (ft)	TEMP (°C)	pH	COND. (µS/cm)	DO (mg/L)	ORP (mV)	TURB. (NTU)	
0933	275	825	26.31	22.7	7.09	11.95	0.99	195.5	0.63	
0936	275	1650	26.31	22.8	7.06	11.96	1.13	188.7	0.67	
0939	275	2475	26.31	22.9	7.04	11.93	0.84	183.3	0.23	
0942	275	3300	26.31	22.9	7.03	11.93	3.01	165.7	0.14	
0945	160	3780	26.30	22.2	7.02	11.95	2.47	161.9	0.10	
0948	160	4260	26.31	22.4	7.02	11.93	2.42	161.0	0.12	
0951	160	4740	26.31	22.5	7.01	11.93	2.09	157.4	0.15	

(B)

PURGE STOP TIME: 0951
SAMPLE TIME: 0951
LAB NAME: Test America
SAMPLE ID: TT-TP3-MI-20151210

OBSERVATIONS/COMMENTS (NOTE TIMES):
Duplicate
TT-TP3-MI-20151210-DUP

FILE: LOG FORMS\am-Water Purging & Sampling Log-10-20-08.dwg

LOW-FLOW WATER PURGING & SAMPLING LOG

TETRA TECH

PROJECT NAME: NERT ~~Bioremediation~~ Pilot Test @ Soil Flush
PROJECT NUMBER: 100-580-T35000.M05-1
PROJECT LOCATION: Henderson, NV
FIELD PERSON: Roger Calder, Peter Jimenez
PROJECT MANAGER: Mark Feldman
DATE: 12/10/15

PUMP / TUBING TYPE: Dedicated pump / 1/4" tubing
EQUIPMENT CLEANING METHOD:
PURGE WATER DISPOSAL:

WELL NUMBER: T-TP3-M2
CASING RADIUS: 2" (in.)
TOTAL DEPTH (TD): (ft.)
DEPTH TO WATER (DTW): 26.74 (ft.)
SCREENED INTERVAL: (ft.)

PURGE START TIME: 1032
PUMP SET AT 30 (ft.)

TIME	PURGE RATE (ml/min)	VOLUME PURGED (ml)	DTW (ft)	TEMP (°C)	pH	COND. (µS/cm)	DO (mg/L)	ORP (mV)	TURB. (NTU)	
1036	190	760	26.78	21.9	7.14	11.73	2.07	240.4	14.5	
1039	190	1330	26.79	21.7	7.12	11.75	1.83	238.4	13.8	
1042	190	1900	26.78	21.9	7.10	11.74	1.84	236.6	13.2	

PURGE STOP TIME: 1042
SAMPLE TIME: 1042
LAB NAME: Test America
SAMPLE ID: T-TP3-M2-20151210

OBSERVATIONS/COMMENTS (NOTE TIMES):

PAGE 1 of 1

LOW-FLOW WATER PURGING & SAMPLING LOG

TETRA TECH

PROJECT NAME: Soil Flush ~~Northwest~~ Pilot Test

PROJECT NUMBER: 100-580-T35000.M05-1

PROJECT LOCATION: Henderson, NV

FIELD PERSON: Peter Jimenez, Steven Calder

PROJECT MANAGER: Mark Feldman

DATE: 12/10/15

PUMP / TUBING TYPE: Dedicated pump/1/4" tubing	WELL NUMBER: ~~H~~-TP2-M1
EQUIPMENT CLEANING METHOD:	CASING RADIUS: 2" (in.)
PURGE WATER DISPOSAL:	TOTAL DEPTH (TD): (ft.)
	DEPTH TO WATER (DTW): 26.24 (ft.)
	SCREENED INTERVAL: (ft.)
PURGE START TIME: 1113	PUMP SET AT (ft.)

TIME	PURGE RATE (ml/min)	VOLUME PURGED (ml)	DTW (ft)	TEMP (°C)	pH	COND. (µS/cm)	DO (mg/L)	ORP (mV)	TURB. (NTU)	
1116	300	900	26.27	23.2	7.10	10.95	3.20	234.0	2.47	
1119	300	1800	26.28	23.4	7.08	10.95	3.38	237.1	2.47	
1122	300	2700	26.28	23.3	7.11	10.95	3.35	238.1	0.78	

PURGE STOP TIME: 1122	SAMPLE TIME: 1122
LAB NAME: Test America	SAMPLE ID: ~~H~~-TP2-M1-20151210

OBSERVATIONS/COMMENTS (NOTE TIMES):

PAGE 1 of 1

LOW-FLOW WATER PURGING & SAMPLING LOG

TETRA TECH

PROJECT NAME: ~~Nav Ammunition~~ Soil Flush Pilot Test

PROJECT NUMBER: 100-580-T35000.M05-1

PROJECT LOCATION: Henderson, NV

FIELD PERSON: Peter Jimenez, Vanessa Calder

PROJECT MANAGER: Mark Feldman

DATE: 12/10/15

PUMP / TUBING TYPE: Bladder pump / 1/4" tubing

EQUIPMENT CLEANING METHOD:

PURGE WATER DISPOSAL:

WELL NUMBER: TT-TP2-M2

CASING RADIUS: 2" (in.)

TOTAL DEPTH (TD): (ft.)

DEPTH TO WATER (DTW): 26.64 (ft.)

SCREENED INTERVAL: (ft.)

PURGE START TIME: 1139

PUMP SET AT 30 (ft.)

TIME	PURGE RATE (ml/min)	VOLUME PURGED (ml)	DTW (ft)	TEMP (°C)	pH	COND. (µS/cm)	DO (mg/L)	ORP (mV)	TURB. (NTU)	
1142	300	900	26.67	23.3	7.06	11.02	2.35	227.8	2.95	
1145	300	1800	26.67	23.3	7.04	11.02	2.42	229.1	0.85	
1148	300	2700	26.67	23.4	7.03	11.01	2.30	229.6	0.20	

(B)

PURGE STOP TIME: 1148

SAMPLE TIME: 1148

LAB NAME: Test America

SAMPLE ID: TT-TP2-M2-20151210

OBSERVATIONS/COMMENTS (NOTE TIMES):

PAGE 1 of 1

LOW-FLOW WATER PURGING & SAMPLING LOG

TETRA TECH

PROJECT NAME: ~~NEST Bioremediation~~ Soil Flush Pilot Test

PROJECT NUMBER: 100-G80-T35000.M05-1

PROJECT LOCATION: Henderson, NV

FIELD PERSON: Peter Jimenez, Vanessa Calder

PROJECT MANAGER: Mark Feblinger

DATE: 12/10/15

PUMP / TUBING TYPE: Dedicated Grundfos 1/4" tubing

EQUIPMENT CLEANING METHOD:

PURGE WATER DISPOSAL:

WELL NUMBER: ~~TT-TPI~~ -MI

CASING RADIUS: 2" (In.)

TOTAL DEPTH (TD): (ft.)

DEPTH TO WATER (DTW): 26.61 (ft.)

SCREENED INTERVAL: (ft.)

PURGE START TIME: 1210

PUMP SET AT 30 (ft.)

TIME	PURGE RATE (ml/min)	VOLUME PURGED (ml)	DTW (ft)	TEMP (°C)	pH	COND. (µS/cm)	DO (mg/L)	ORP (mV)	TURB. (NTU)
1214	285	1140	26.76	23.9	6.86	11.85	0.23	190.2	0.44
1217	285	1995	26.78	24.1	6.87	11.85	0.19	174.0	1.24
1220	285	2850	26.78	24.1	6.89	11.86	0.17	163.0	0.13
1223	285	3705	26.78	24.1	6.90	11.87	0.15	159.5	0.21
1226	285	4560	26.78	24.1	6.91	11.87	0.14	155.7	0.03

PURGE STOP TIME: 1226

SAMPLE TIME: ~~TT-TPI-MI-20151210~~ 1226

LAB NAME: Test America

SAMPLE ID: TT-TPI-MI-20151210

OBSERVATIONS/COMMENTS (NOTE TIMES):

FILE: LOG FORMS\am-Water Purging & Sampling Log-10-20-08.dwg

LOW-FLOW WATER PURGING & SAMPLING LOG

TETRA TECH

PROJECT NAME: Ft. Soil Flush Pilot Test
PROJECT NUMBER: 100-G80-T35000.M05-1
PROJECT LOCATION: Henderson, NV
FIELD PERSON: Peter Jimenez, Vanessa Calder
PROJECT MANAGER: Mark Friedman
DATE: 12/10/15

PUMP / TUBING TYPE: Dedicated Pump/1/4 Tubing
EQUIPMENT CLEANING METHOD: J
PURGE WATER DISPOSAL:

WELL NUMBER: T7-TPI-M2
CASING RADIUS: 2" (in.)
TOTAL DEPTH (TD): (ft.)
DEPTH TO WATER (DTW): 27.26 (ft.)
SCREENED INTERVAL: (ft.)

PURGE START TIME: 1244
PUMP SET AT 30 (ft.)

TIME	PURGE RATE (ml/min)	VOLUME PURGED (ml)	DTW 27.32 (ft)	TEMP (°C)	pH	COND. (µS/cm)	DO (mg/L)	ORP (mV)	TURB. (NTU)	
1247	270	810	~~27.29~~	24.2	6.91	12.25	0.40	185.5	1.80	
1250	270	1620	27.32	24.2	6.91	12.36	0.25	170.0	2.16	
1253	270	2430	27.32	24.3	6.92	12.47	0.23	159.7	1.20	
1256	270	3240	27.32	24.1	6.93	12.53	0.22	155.3	0.70	
1259	270	4050	27.32	24.1	6.94	12.59	0.29	152.4	0.99	

PURGE STOP TIME: 1259
SAMPLE TIME: 1259
LAB NAME: Test America
SAMPLE ID: T7-TPI-M2-20151210

OBSERVATIONS/COMMENTS (NOTE TIMES):

LOW-FLOW WATER PURGING & SAMPLING LOG

TETRA TECH

PROJECT NAME: ~~Nest Bioremediation~~ Soil Flush Pilot Test

PROJECT NUMBER: 100-580-T35000.M05-1

PROJECT LOCATION: Henderson, NV

FIELD PERSON: Peter Jimenez, Vanessa Calder

PROJECT MANAGER: Mark Friedman

DATE: 12/10/15

PUMP / TUBING TYPE: Dedicated pump 1 1/4" tubing

EQUIPMENT CLEANING METHOD:

PURGE WATER DISPOSAL:

WELL NUMBER: Tt-TPI-M3

CASING RADIUS: 2" (in.)

TOTAL DEPTH (TD): (ft.)

DEPTH TO WATER (DTW): 27.03 (ft.)

SCREENED INTERVAL: (ft.)

PURGE START TIME: ~~1318~~ 1322

PUMP SET AT 30 (ft.)

TIME	PURGE RATE (ml/min)	VOLUME PURGED (ml)	DTW (ft)	TEMP (°C)	pH	COND. (µS/cm)	DO (mg/L)	ORP (mV)	TURB. (NTU)	
1325	240	720	27.28	24.1	6.91	11.60	0.31	187.8	1.10	
1328	240	1440	27.42	24.1	6.91	11.59	0.20	179.1	0.36	
1331	240	2160	27.44	24.0	6.89	11.56	0.21	168.2	0.20	
1334	150	2340	27.45	24.0	6.85	11.59	0.23	165.4	0.10	

PURGE STOP TIME: 1334

SAMPLE TIME: 1334

LAB NAME: Test America

SAMPLE ID: Tt-TPI-M3-20151210

OBSERVATIONS/COMMENTS (NOTE TIMES):

LOW-FLOW WATER PURGING & SAMPLING LOG

TETRA TECH

PROJECT NAME: SOIL FLUSH PILOT TEST
FIELD PERSON: PETER JIMENEZ
PROJECT NUMBER: 100-SBO-T35000.005-1
PROJECT MANAGER: MARK FELDMAN
PROJECT LOCATION: HENDERSON, NV
DATE: 1/3/16

PUMP / TUBING TYPE: DEDICATED PUMP / 1/4" tubing
EQUIPMENT CLEANING METHOD: MICRO 90 / RINSE
PURGE WATER DISPOSAL:

WELL NUMBER:
CASING RADIUS: 2 (in.)
TOTAL DEPTH (TD): (ft.)
DEPTH TO WATER (DTW): 26.63 (ft.)
SCREENED INTERVAL: 30 (ft.)

PURGE START TIME: 1241
PUMP SET AT 30 (ft.)

TIME	PURGE RATE (ml/min)	VOLUME PURGED (ml)	DTW (ft)	TEMP (°C)	pH	COND. (µS/cm)	DO (mg/L)	ORP (mV)	TURB. (NTU)	
1241	200	—	26.63	—	—	—	—	—	—	START
1247	200	1200	26.63	23.30	7.26	11.05	3.19	150.3	0.52	
1250	200	1800	26.63	23.65	7.26	11.08	2.93	150.3	0.58	
1253	200	2400	26.63	23.66	7.27	11.08	2.88	150.3	0.47	
1256	200	3000	26.63	23.68	7.27	11.07	2.90	150.3	0.41	
1259	200	3600	26.63	23.76	7.27	11.07	2.94	150.2	0.49	SAMPLE

PURGE STOP TIME: 1314
SAMPLE TIME: 1259
LAB NAME: TEST AMERICA
SAMPLE ID: TT-TP2-M2-20160103

OBSERVATIONS/COMMENTS (NOTE TIMES):
FLUOROMETER = 0.043
-water is yellow

TETRA TECH

LOW-FLOW WATER PURGING & SAMPLING LOG

PROJECT NAME: SOIL FLUSH PILOT TEST
FIELD PERSON: PETER JIMENEZ
PROJECT NUMBER: 100-SBO-T35000.005-1
PROJECT MANAGER: MARK FELDMAN
PROJECT LOCATION: HENDERSON, NV
DATE: 1/3/16

PUMP / TUBING TYPE: DEDICATED PUMP / 1/4" tubing
EQUIPMENT CLEANING METHOD: MICRO 90 / RINSE
PURGE WATER DISPOSAL:

WELL NUMBER:
CASING RADIUS: 2 (in.)
TOTAL DEPTH (TD): (ft.)
DEPTH TO WATER (DTW): 26.22 (ft.)
SCREENED INTERVAL: (ft.)

PURGE START TIME: 1057
PUMP SET AT 30 (ft.)

TIME	PURGE RATE (ml/min)	VOLUME PURGED (ml)	DTW (ft)	TEMP (°C)	pH	COND. (µS/cm)	DO (mg/L)	ORP (mV)	TURB. (NTU)	
1057	200	—	26.22	—	—	—	—	—	—	START
1103	200	1200	26.23	23.19	6.99	10.98	4.09	149.5	3.03	
1106	200	1900	26.23	23.43	7.08	11.00	3.98	149.0	2.99	
1109	200	2400	26.23	23.51	7.14	11.02	3.88	149.3	2.96	
1112	200	3000	26.23	23.55	7.18	11.01	3.89	149.8	1.74	
1115	200	3600	26.23	23.56	7.19	11.01	3.85	149.9	1.61	
1119	200	4200	26.23	23.60	7.20	11.01	3.88	150.0	1.63	SAMPLE

PURGE STOP TIME: 1134
SAMPLE TIME: 1119
LAB NAME: TEST AMERICA
SAMPLE ID: TT-TP2-M1-20160103

OBSERVATIONS/COMMENTS (NOTE TIMES):
FLUOROMETER = 0.037
- water is yellow

WATER LEVEL MEASUREMENT LOG

TETRA TECH

PROJECT NAME: NERT SFPT MEASUREMENT DATE: 2/3/16

CONTRACT NUMBER: _____ FIELD PERSON: PETER JIMENEZ

EQUIPMENT MODEL/TYPE	SERIAL NUMBER	LAST CALIBRATION DATE
SOLINST		2/3/16

MEASURING POINTS AND DATUM USED: _____

WELL NUMBER	TIME	MEASURING POINT (TOC)	DEPTH TO GROUNDWATER (FT ~~BGS~~ TOC)	DEPTH TO FREE PRODUCT (FT BGS)	FREE PRODUCT THICKNESS (FT)	CONDITION OF WELL
TP1-M1	0901	NORTH	25.92	—	—	GOOD
TP1-M2	0903	NORTH	26.88	—	—	GOOD
TP1-M3	0905	NORTH	26.73	—	—	GOOD
TP2-M1	0907	NORTH	25.40	—	—	GOOD
TP2-M2	0909	NORTH	26.00	—	—	GOOD
TP3-M1	0911	NORTH	24.90	—	—	GOOD
TP3-M2	0913	NORTH	25.77	—	—	GOOD
TP4-M1	0915	NORTH	26.20	—	—	GOOD
TP4-M2	0917	NORTH	26.14	—	—	GOOD
TP4-M3	0919	NORTH	25.81	—	—	GOOD

FILE: LOGS\WTRLMLOG-EM

LOW-FLOW WATER PURGING & SAMPLING LOG

TETRA TECH

PROJECT NAME: SOIL FLUSH PILOT TEST
FIELD PERSON: PETER JIMENEZ
PROJECT NUMBER: 100-SB-T3500 2016-M05-M05.01
PROJECT MANAGER: MARK FOLD
PROJECT LOCATION: HENDERSON, NV
DATE: 2/3/16

PUMP / TUBING TYPE: QED 1/4"
EQUIPMENT CLEANING METHOD:
PURGE WATER DISPOSAL:

WELL NUMBER: TT-TP1-M1
CASING RADIUS: 2 (in.)
TOTAL DEPTH (TD): (ft.)
DEPTH TO WATER (DTW): 25.92 (ft.)
SCREENED INTERVAL: (ft.)

PURGE START TIME: 0953
PUMP SET AT 30 (ft.)

TIME	PURGE RATE (ml/min)	VOLUME PURGED (ml)	DTW (ft)	TEMP (°C)	pH	COND. (µS/cm)	DO (mg/L)	ORP (mV)	TURB. (NTU)	
1001	210	630	26.04	22.69	6.72	13.50	6.25	269.2	0.34	
1004	210	1260	26.05	23.70	6.85	13.75	1.52	259.6	0.49	
1007	210	1890	26.09	23.99	6.89	13.81	0.77	251.1	0.41	
1010	210	2520	26.10	24.00	6.93	13.73	0.51	235.1	0.46	
1013	210	3150	26.09	23.97	6.93	13.67	0.43	232.5	0.73	
1016	210	3780	26.09	23.76	6.94	13.69	0.45	226.1	0.61	

PURGE STOP TIME:
SAMPLE TIME: 1016
LAB NAME: TEST AMERICA
SAMPLE ID: TT-TP1-M1-20160203

OBSERVATIONS/COMMENTS (NOTE TIMES):
FLORO = 0.095

LOW-FLOW WATER PURGING & SAMPLING LOG

TETRA TECH

PROJECT NAME: NGLF SEPT — FIELD PERSON: PETER

PROJECT NUMBER: 100-5B0-T35200-2016-005 — PROJECT MANAGER: MARK FELDMAN

PROJECT LOCATION: HENDERSON, NV — DATE: 2/3/16

PUMP / TUBING TYPE:	WELL NUMBER: TT-TPT-M2
EQUIPMENT CLEANING METHOD:	CASING RADIUS: 2 (in.)
PURGE WATER DISPOSAL:	TOTAL DEPTH (TD): (ft.)
	DEPTH TO WATER (DTW): 26.90 (ft.)
	SCREENED INTERVAL: (ft.)
PURGE START TIME: 1036	PUMP SET AT 30 (ft.)

TIME	PURGE RATE (ml/min)	VOLUME PURGED (ml)	DTW (ft)	TEMP (°C)	pH	COND. (µS/cm)	DO (mg/L)	ORP (mV)	TURB. (NTU)	
1039	210	~~630~~	27.09	21.39	6.95	12.19	2.60	178.8	1.37	
1042	~~210~~ 140	~~1260~~ 1050	27.10	23.49	7.06	12.20	0.67	167.6	1.39	
1045	140	1470	27.10	23.25	7.07	12.26	0.57	165.4	1.41	
1048	140	1890	27.10	23.25	7.09	12.39	0.47	161.2	1.08	
1051	140	2310	27.10	23.26	7.10	12.42	0.40	155.5	1.26	
1054	140	2730	27.10	23.17	7.11	12.46	0.38	152.3	1.17	

PURGE STOP TIME:	SAMPLE TIME: 1054
LAB NAME: TEST AMERICA	SAMPLE ID: TT-TPT-M2-20160203

OBSERVATIONS/COMMENTS (NOTE TIMES):

FLOOR = 0.023

LOW-FLOW WATER PURGING & SAMPLING LOG

TETRA TECH

PROJECT NAME: NERT-SEPT
FIELD PERSON: PETER
PROJECT NUMBER: 100-3130-735000-2016-MOS
PROJECT MANAGER: MARK FELDMAN
PROJECT LOCATION: HENDERSON, NV
DATE: 2/3/16

PUMP / TUBING TYPE:
EQUIPMENT CLEANING METHOD:
PURGE WATER DISPOSAL:

WELL NUMBER: TT-TP1-M3
CASING RADIUS: 2 (in.)
TOTAL DEPTH (TD): (ft.)
DEPTH TO WATER (DTW): 26.71 (ft.)
SCREENED INTERVAL: (ft.)

PURGE START TIME: 1113
PUMP SET AT 30 (ft.)

TIME	PURGE RATE (ml/min)	VOLUME PURGED (ml)	DTW (ft)	TEMP (°C)	pH	COND. (µS/cm)	DO (mg/L)	ORP (mV)	TURB. (NTU)	
1116	225	675	26.92	20.64	6.90	11.23	2.57	133.2	1.83	
1119	225	1350	27.00	23.00	7.02	11.33	0.82	130.5	1.95	
1122	225	2025	27.14	23.24	7.09	11.37	0.54	128.8	1.34	
1125	170	~~+70~~ 2535	27.14	22.75	7.10	11.38	0.44	126.5	0.64	
1128	170	3045	27.17	23.00	7.10	11.35	0.40	124.3	0.85	
1131	170	3555	27.17	22.85	7.10	11.38	0.38	122.5	0.50	

PURGE STOP TIME:
SAMPLE TIME: 1131
LAB NAME: TEST AMERICA
SAMPLE ID: TT-TP1-M3-20160203

OBSERVATIONS/COMMENTS (NOTE TIMES):
FLOW = 0.019

LOW-FLOW WATER PURGING & SAMPLING LOG

TETRA TECH

PROJECT NAME: NEKT SFPT
FIELD PERSON: PETER
PROJECT NUMBER: 100-5130-T75000 - 2016-MNS
PROJECT MANAGER: MARK FELDMAN
PROJECT LOCATION: HENDERSON, NV
DATE: 2/3/16

PUMP / TUBING TYPE:	WELL NUMBER: TT-TP2-M1
EQUIPMENT CLEANING METHOD:	CASING RADIUS: 2 (in.)
PURGE WATER DISPOSAL:	TOTAL DEPTH (TD): (ft.)
	DEPTH TO WATER (DTW): 25.39 (ft.)
	SCREENED INTERVAL: (ft.)
PURGE START TIME: 1222	PUMP SET AT 30 (ft.)

TIME	PURGE RATE (ml/min)	VOLUME PURGED (ml)	DTW (ft)	TEMP (°C)	pH	COND. (µS/cm)	DO (mg/L)	ORP (mV)	TURB. (NTU)	
1225	225	675	25.40	20.49	7.31	9.613	10.41	144.4	0.76	
1228	225	1350	25.46	20.41	7.31	9.580	7.37	145.4	0.60	
1231	225	2025	25.47	21.71	7.29	9.928	7.29	147.4	0.45	
1234	225	2700	25.42	21.83	7.29	9.994	7.29	148.2	0.44	
1237	225	3375	25.42	21.93	7.29	9.984	7.29	149.0	0.41	
1240	225	4050	25.42	22.14	7.28	9.973	7.28	150.0	0.39	

PURGE STOP TIME:	SAMPLE TIME: 1240
LAB NAME: TEST AMERICA	SAMPLE ID: TT-TP2-M1-20160203

OBSERVATIONS/COMMENTS (NOTE TIMES):

FLOW = 0.048

LOW-FLOW WATER PURGING & SAMPLING LOG

TETRA TECH

PROJECT NAME: NERT SPPT
FIELD PERSON: PETER
PROJECT NUMBER: 100-5B0-T3500-2016-M05
PROJECT MANAGER: MARK FELDMAN
PROJECT LOCATION: HENDERSON NV
DATE: 2/3/16

PUMP / TUBING TYPE:	WELL NUMBER: TT-TP2-M2
EQUIPMENT CLEANING METHOD:	CASING RADIUS: 2 (in.)
PURGE WATER DISPOSAL:	TOTAL DEPTH (TD): (ft.)
	DEPTH TO WATER (DTW): 26.00 (ft.)
	SCREENED INTERVAL: (ft.)
PURGE START TIME: 1147	PUMP SET AT 30 (ft.)

TIME	PURGE RATE (ml/min)	VOLUME PURGED (ml)	DTW (ft)	TEMP (°C)	pH	COND. (µS/cm)	DO (mg/L)	ORP (mV)	TURB. (NTU)	
1150	225	675	26.05	22.23	7.17	10.68	2.66	127.1	2.72	
1153	225	1350	26.02	23.06	7.13	10.49	2.02	128.3	1.90	
1156	225	2025	26.02	22.88	7.18	10.42	1.79	130.6	1.72	
1159	225	2700	26.02	22.94	7.18	10.41	1.80	133.0	1.29	
1202	225	3375	26.02	22.95	7.17	10.40	1.78	134.3	0.93	
1205	225	4050	26.02	22.95	7.17	10.39	1.77	136.4	0.74	

PURGE STOP TIME:	SAMPLE TIME: 1205
LAB NAME: TEST AMERICA	SAMPLE ID: TT-TP2-M2-20160203

OBSERVATIONS/COMMENTS (NOTE TIMES):

FLOW= 0.011

LOW-FLOW WATER PURGING & SAMPLING LOG

TETRA TECH

PROJECT NAME: NERT SFPT

FIELD PERSON: PETER

PROJECT NUMBER: 100-SBO-T3500-2016-T005

PROJECT MANAGER: MARK FELDMAN

PROJECT LOCATION: HENDERSON, NV

DATE: 2/3/16

PUMP / TUBING TYPE:

EQUIPMENT CLEANING METHOD:

PURGE WATER DISPOSAL:

WELL NUMBER: TT-TP3-M1

CASING RADIUS: 2 (in.)

TOTAL DEPTH (TD): (ft.)

DEPTH TO WATER (DTW): 24.86 (ft.)

SCREENED INTERVAL: (ft.)

PURGE START TIME: 1310

PUMP SET AT 30 (ft.)

TIME	PURGE RATE (ml/min)	VOLUME PURGED (ml)	DTW (ft)	TEMP (°C)	pH	COND. (µS/cm)	DO (mg/L)	ORP (mV)	TURB. (NTU)	
1313	240	720	24.90	23.10	7.08	11.95	2.26	170.1	1.76	
1316	240	1440	24.91	23.47	7.08	12.18	1.74	167.5	1.29	
1319	240	2160	24.91	23.71	7.08	12.15	1.64	164.5	1.17	
1322	240	2880	24.91	23.56	7.08	12.09	1.63	161.9	0.96	
1325	240	3600	24.91	23.25	7.07	12.08	1.66	160.8	0.87	
1328	240	4320	24.91	23.46	7.07	12.05	1.63	160.1	0.66	
13										

PURGE STOP TIME:

SAMPLE TIME: 1328

LAB NAME: TEST AMERICA

SAMPLE ID: TT-TP3-M1-20160203

OBSERVATIONS/COMMENTS (NOTE TIMES):

FLUOR= 0.092

LOW-FLOW WATER PURGING & SAMPLING LOG

TETRA TECH

PROJECT NAME: NERT - SFPT
FIELD PERSON: ROBERT
PROJECT NUMBER: 100-SBO-T3500-2016-mo5-mo5.01
PROJECT MANAGER: MARK FELDMAN
PROJECT LOCATION:
DATE: 2/4/16

PUMP / TUBING TYPE: QED 1/4"	WELL NUMBER: TT-TP3-M2
EQUIPMENT CLEANING METHOD:	CASING RADIUS: 2 (in.)
	TOTAL DEPTH (TD): (ft.)
PURGE WATER DISPOSAL:	DEPTH TO WATER (DTW): 25.88 (ft.)
	SCREENED INTERVAL: (ft.)
PURGE START TIME: 923	PUMP SET AT 30 (ft.)

TIME	PURGE RATE (ml/min)	VOLUME PURGED (ml)	DTW (ft)	TEMP (°C)	pH	COND. (µS/cm)	DO (mg/L)	ORP (mV)	TURB. (NTU)	
927	210	840	25.70	21.47	7.00	11.19	689	238.8	2.08	
930	210	1470	25.70	22.37	7.09	11.18	1.20	237.6	2.17	
933	210	2100	25.70	22.90	7.15	11.20	0.86	236.4	2.04	
936	210	2730	25.70	23.14	7.21	11.24	0.66	234.6	0.91	
939	210	3360	25.70	23.06	7.22	11.23	0.68	233.4	1.33	
942	210	3990	25.70	22.72	7.24	11.25	0.68	232.0	0.20	

PURGE STOP TIME:	SAMPLE TIME: 0942
LAB NAME: TEST AMERICA	SAMPLE ID: TT-TP3-M2-20160204

OBSERVATIONS/COMMENTS (NOTE TIMES):

FLOW = 0.169

LOW-FLOW WATER PURGING & SAMPLING LOG

TETRA TECH

PROJECT NAME: NERT-SFPT
PROJECT NUMBER:
PROJECT LOCATION:
FIELD PERSON: Robert
PROJECT MANAGER: Mark Feldman
DATE: 2/4/16

PUMP / TUBING TYPE:	WELL NUMBER: TT-TP4-M1
EQUIPMENT CLEANING METHOD:	CASING RADIUS: 2 (in.)
PURGE WATER DISPOSAL:	TOTAL DEPTH (TD): (ft.)
	DEPTH TO WATER (DTW): 26.08 (ft.)
	SCREENED INTERVAL: (ft.)
PURGE START TIME: 1159	PUMP SET AT 30 (ft.)

TIME	PURGE RATE (ml/min)	VOLUME PURGED (ml)	DTW (ft)	TEMP (°C)	pH	COND. (µS/cm)	DO (mg/L)	ORP (mV)	TURB. (NTU)	
1202	255	765	26.20	22.30	7.19	12.11	2.71	222.3	0.87	
1205	240	1485	26.21	23.36	7.28	12.19	0.70	220.6	1.39	
1208	240	2205	26.21	23.69	7.29	12.20	0.47	219.5	1.44	
1211	240	2925	26.21	23.59	7.30	12.21	0.35	217.6	1.29	
1214	240	3645	26.21	23.45	7.29	12.20	0.31	216.2	1.12	
1217	240	4365	26.21	23.43	7.29	12.20	0.27	214.6	0.94	

PURGE STOP TIME:	SAMPLE TIME: 1217
LAB NAME:	SAMPLE ID: TT-TP4-M1-20160204

OBSERVATIONS/COMMENTS (NOTE TIMES):

FLUOR = 0.246

LOW-FLOW WATER PURGING & SAMPLING LOG

TETRA TECH

PROJECT NAME: NERT-SFPT
FIELD PERSON: Robert
PROJECT NUMBER:
PROJECT MANAGER: Mark Feldman
PROJECT LOCATION:
DATE: 2/4/16

PUMP / TUBING TYPE:	WELL NUMBER: TT-TP4-M2
EQUIPMENT CLEANING METHOD:	CASING RADIUS: 2 (in.)
	TOTAL DEPTH (TD): (ft.)
PURGE WATER DISPOSAL:	DEPTH TO WATER (DTW): 26.07 (ft.)
	SCREENED INTERVAL: (ft.)
PURGE START TIME: 1115	PUMP SET AT 30 (ft.)

TIME	PURGE RATE (ml/min)	VOLUME PURGED (ml)	DTW (ft)	TEMP (°C)	pH	COND. (µS/cm)	DO (mg/L)	ORP (mV)	TURB. (NTU)	
1118	270	810	26.11	23.33	7.19	12.09	2.50	245.6	1.86	
1121	210	1440	26.15	23.72	7.17	12.10	0.87	243.2	1.41	
1124	210	2070	26.15	23.59	7.17	12.09	0.53	240.8	0.90	
1127	210	2700	26.15	23.27	7.17	12.09	0.41	238.7	0.78	
1180	210	3300	26.15	23.31	7.17	12.05	0.35	236.8	0.45	
1133	210	3960	26.15	23.26	7.17	12.05	0.32	234.7	0.30	

PURGE STOP TIME:	SAMPLE TIME: 1133
LAB NAME: Test America	SAMPLE ID: TT-TP4-M2-20160204

OBSERVATIONS/COMMENTS (NOTE TIMES):

FLUOR = 0.270

LOW-FLOW WATER PURGING & SAMPLING LOG

TETRA TECH

PROJECT NAME: NERT SPPT
FIELD PERSON: PETER
PROJECT NUMBER: 100-5130-T35000-2016-MOS
PROJECT MANAGER: MARK FELDMAN
PROJECT LOCATION: HENDERSON, NV
DATE: 2/4/16

PUMP / TUBING TYPE:
EQUIPMENT CLEANING METHOD:
PURGE WATER DISPOSAL:

WELL NUMBER: TT-TP4-M3
CASING RADIUS: 2 (in.)
TOTAL DEPTH (TD): (ft.)
DEPTH TO WATER (DTW): 25.74 (ft.)
SCREENED INTERVAL: (ft.)

PURGE START TIME: 1004
PUMP SET AT 30 (ft.)

TIME	PURGE RATE (ml/min)	VOLUME PURGED (ml)	DTW (ft)	TEMP (°C)	pH	COND. (µS/cm)	DO (mg/L)	ORP (mV)	TURB. (NTU)	
1008	240	960	25.85	22.79	7.25	11.83	3.60	221.8	2.28	
1011	240	1680	25.86	23.06	7.28	11.83	3.07	222.9	1.38	
1014	240	2400	25.88	23.18	7.29	11.84	2.84	224.1	0.84	
1017	240	3120	25.88	22.87	7.30	11.86	2.88	225.3	0.67	
1020	240	3840	25.88	23.04	7.29	11.85	2.78	226.4	0.44	
1023	240	4560	25.88	23.15	7.29	11.89	2.77	227.0	0.43	

PURGE STOP TIME:
SAMPLE TIME: 1023
LAB NAME: TEST AMERICA
SAMPLE ID: TT-TP4-M3-20160204

OBSERVATIONS/COMMENTS (NOTE TIMES):
Duplicate sample ID: TT-TP4-M3-20160204-DUP
MS/MSD
FLOW = 0.429

LOW-FLOW WATER PURGING & SAMPLING LOG

TETRA TECH

PROJECT NAME: SFPT
FIELD PERSON: PETER
PROJECT NUMBER: T35000-2016-M05
PROJECT MANAGER: MARK FELDMAN
PROJECT LOCATION: HENDERSON, NV
DATE: 2/4/16

PUMP / TUBING TYPE: LYSIMETER
EQUIPMENT CLEANING METHOD: —
PURGE WATER DISPOSAL: —

WELL NUMBER: TT-TP1-L1
CASING RADIUS: 2 (in.)
TOTAL DEPTH (TD): — (ft.)
DEPTH TO WATER (DTW): — (ft.)
SCREENED INTERVAL: — (ft.)

PURGE START TIME:
PUMP SET AT (ft.)

TIME	PURGE RATE (ml/min)	VOLUME PURGED (ml)	DTW (ft)	TEMP (°C)	pH	COND. (µS/cm)	DO (mg/L)	ORP (mV)	TURB. (NTU)	
1600	—	—	—	15.48	7.14	16.61	3.14	244.7	1.11	

PURGE STOP TIME: —
SAMPLE TIME: 1303
LAB NAME: TEST AMERICA
SAMPLE ID: TT-TP1-L1-20160204

OBSERVATIONS/COMMENTS (NOTE TIMES):
FL=3.992

LOW-FLOW WATER PURGING & SAMPLING LOG

TETRA TECH

PROJECT NAME: SFPT
FIELD PERSON: PETER JIMENEZ
PROJECT NUMBER: T3500-2016-M05
PROJECT MANAGER: MARK FELDMAN
PROJECT LOCATION: HENDERSON, NV
DATE: 2/4/16

PUMP / TUBING TYPE: LYSIMETER	WELL NUMBER: TT-TP1-L2
EQUIPMENT CLEANING METHOD:	CASING RADIUS: 2 (in.)
PURGE WATER DISPOSAL:	TOTAL DEPTH (TD): — (ft.)
	DEPTH TO WATER (DTW): — (ft.)
	SCREENED INTERVAL: — (ft.)
PURGE START TIME: —	PUMP SET AT — (ft.)

TIME	PURGE RATE (ml/min)	VOLUME PURGED (ml)	DTW (ft)	TEMP (°C)	pH	COND. (µS/cm)	DO (mg/L)	ORP (mV)	TURB. (NTU)	
1605	—	—	—	16.95	6.92	22.39	2.66	250.7	1.28	

PURGE STOP TIME: —	SAMPLE TIME: 1315
LAB NAME: TEST AMERICA	SAMPLE ID: TT-TP1-L2-20160204

OBSERVATIONS/COMMENTS (NOTE TIMES):

FC = 2.178

LOW-FLOW WATER PURGING & SAMPLING LOG

TETRA TECH

PROJECT NAME: SFPT
FIELD PERSON: PETER J.
PROJECT NUMBER: T35000-2016-M05
PROJECT MANAGER: MARK F.
PROJECT LOCATION: HENDERSON, NV
DATE: 2/04/16

PUMP / TUBING TYPE: LOSIMGEE	WELL NUMBER: TT-TP2-L1
EQUIPMENT CLEANING METHOD: —	CASING RADIUS: 2 (in.)
PURGE WATER DISPOSAL:	TOTAL DEPTH (TD): — (ft.)
	DEPTH TO WATER (DTW): — (ft.)
	SCREENED INTERVAL: — (ft.)
PURGE START TIME: —	PUMP SET AT — (ft.)

TIME	PURGE RATE (ml/min)	VOLUME PURGED (ml)	DTW (ft)	TEMP (°C)	pH	COND. (µS/cm)	DO (mg/L)	ORP (mV)	TURB. (NTU)	
1547	—	—	—	17.22	7.48	5.656	3.36	233.5	1.93	

PURGE STOP TIME: —
SAMPLE TIME: 1235
LAB NAME: TEST AMERICA
SAMPLE ID: TT-TP2-L1-20160204

OBSERVATIONS/COMMENTS (NOTE TIMES):

FL= 1.462

LOW-FLOW WATER PURGING & SAMPLING LOG

TETRA TECH

PROJECT NAME: SPPT
FIELD PERSON: PETER J.
PROJECT NUMBER: T3500-2016-MOS
PROJECT MANAGER: MARK FELDMAN
PROJECT LOCATION: HENDERSON, NV
DATE: 2/4/16

PUMP / TUBING TYPE:	WELL NUMBER: TT-TP2-L2
EQUIPMENT CLEANING METHOD: —	CASING RADIUS: 2 (in.)
PURGE WATER DISPOSAL: —	TOTAL DEPTH (TD): — (ft.)
	DEPTH TO WATER (DTW): — (ft.)
	SCREENED INTERVAL: — (ft.)
PURGE START TIME: —	PUMP SET AT — (ft.)

TIME	PURGE RATE (ml/min)	VOLUME PURGED (ml)	DTW (ft)	TEMP (°C)	pH	COND. (µS/cm)	DO (mg/L)	ORP (mV)	TURB. (NTU)	
1555	—	—	—	18.40	7.38	13.91	3.36	243.6	1.71	

PURGE STOP TIME: —	SAMPLE TIME: 1250
LAB NAME: TEST AMERICA	SAMPLE ID: TT-TP2-L2-20160204

OBSERVATIONS/COMMENTS (NOTE TIMES):

FC: 2.108

LOW-FLOW WATER PURGING & SAMPLING LOG

TETRA TECH

PROJECT NAME: SFPT
FIELD PERSON: PETER J.
PROJECT NUMBER: T35000-2016-005
PROJECT MANAGER: MARK F.
PROJECT LOCATION: HENDERSON, NV
DATE: 2/4/16

PUMP / TUBING TYPE: LYSIMETER	WELL NUMBER: TT-TP3-4
EQUIPMENT CLEANING METHOD: —	CASING RADIUS: 2 (in.)
PURGE WATER DISPOSAL: —	TOTAL DEPTH (TD): — (ft.)
	DEPTH TO WATER (DTW): — (ft.)
	SCREENED INTERVAL: — (ft.)
PURGE START TIME: —	PUMP SET AT — (ft.)

TIME	PURGE RATE (ml/min)	VOLUME PURGED (ml)	DTW (ft)	TEMP (°C)	pH	COND. (µS/cm)	DO (mg/L)	ORP (mV)	TURB. (NTU)	
1536	—	—	—	14.01	7.94	5.953	4.83	231.0	2.01	

PURGE STOP TIME: —
SAMPLE TIME: 1202
LAB NAME: TEST AMER
SAMPLE ID: TT-TP3-LL-20160204

OBSERVATIONS/COMMENTS (NOTE TIMES):
FC = 16.02

LOW-FLOW WATER PURGING & SAMPLING LOG

TETRA TECH

PROJECT NAME: SFPT
FIELD PERSON: PETER J.
PROJECT NUMBER: T3500-2016-M05
PROJECT MANAGER: MARK F.
PROJECT LOCATION: HENDERSON, NV
DATE: 2/4/16

PUMP / TUBING TYPE: LYSIMETER	WELL NUMBER: TT-TP3-L2
EQUIPMENT CLEANING METHOD: —	CASING RADIUS: 2 (in.)
PURGE WATER DISPOSAL: —	TOTAL DEPTH (TD): — (ft.)
	DEPTH TO WATER (DTW): — (ft.)
	SCREENED INTERVAL: — (ft.)
PURGE START TIME:	PUMP SET AT (ft.)

TIME	PURGE RATE (ml/min)	VOLUME PURGED (ml)	DTW (ft)	TEMP (°C)	pH	COND. (µS/cm)	DO (mg/L)	ORP (mV)	TURB. (NTU)	
1540	—	—	—	15.35	7.78	5.228	2.57	230.1	2.68	

PURGE STOP TIME: —	SAMPLE TIME: 1215
LAB NAME: TEST AMER.	SAMPLE ID: TT-TP3-L2-20160204

OBSERVATIONS/COMMENTS (NOTE TIMES):

FL = 3.053

LOW-FLOW WATER PURGING & SAMPLING LOG

TETRA TECH

PROJECT NAME: NERT SPPT
FIELD PERSON: PETER
PROJECT NUMBER: 100-SBO-T3500 - 2016-MOS
PROJECT MANAGER: MARK FELDMAN
PROJECT LOCATION: HENDERSON, NV
DATE: 2/4/16

PUMP / TUBING TYPE: LYSIMETER	WELL NUMBER: TT-TP4-L1
EQUIPMENT CLEANING METHOD: —	CASING RADIUS: 2 (in.)
PURGE WATER DISPOSAL: —	TOTAL DEPTH (TD): — (ft.)
	DEPTH TO WATER (DTW): — (ft.)
	SCREENED INTERVAL: — (ft.)
PURGE START TIME:	PUMP SET AT (ft.)

TIME	PURGE RATE (ml/min)	VOLUME PURGED (ml)	DTW (ft)	TEMP (°C)	pH	COND. (µS/cm)	DO (mg/L)	ORP (mV)	TURB. (NTU)	
1127	—		—	17.77	7.16	13.44	2.68	246.3	1.33	

PURGE STOP TIME: —	SAMPLE TIME: 1127
LAB NAME: TEST AMERICA	SAMPLE ID: TT-TP4-L1-20160204

OBSERVATIONS/COMMENTS (NOTE TIMES):
FLOOR = 1.468

LOW-FLOW WATER PURGING & SAMPLING LOG

TETRA TECH

PROJECT NAME: SFPT
FIELD PERSON: PETER
PROJECT NUMBER: T35000-2016-MOS
PROJECT MANAGER: MARK F.
PROJECT LOCATION: HENDERSON, NV
DATE: 2/4/16

PUMP / TUBING TYPE: LYSIMETER	WELL NUMBER: TT-TP4-L2
EQUIPMENT CLEANING METHOD: —	CASING RADIUS: 2 (in.)
PURGE WATER DISPOSAL: —	TOTAL DEPTH (TD): — (ft.)
	DEPTH TO WATER (DTW): — (ft.)
	SCREENED INTERVAL: — (ft.)
PURGE START TIME: —	PUMP SET AT — (ft.)

TIME	PURGE RATE (ml/min)	VOLUME PURGED (ml)	DTW (ft)	TEMP (°C)	pH	COND. (µS/cm)	DO (mg/L)	ORP (mV)	TURB. (NTU)	
1532	—	—	—	18.86	7.51	8.819	2.18	235.7	2.12	

PURGE STOP TIME: —	SAMPLE TIME: 1150
LAB NAME: TEST AMER.	SAMPLE ID: TT-TP4-L2-20160204

OBSERVATIONS/COMMENTS (NOTE TIMES):
FC = 3.756

LOW-FLOW WATER PURGING & SAMPLING LOG

TETRA TECH

PROJECT NAME: NERT-SFPT
FIELD PERSON: Robert Santayo
PROJECT NUMBER: 100-SRO-T35000-2016-M05
PROJECT MANAGER: Mark Feldman
PROJECT LOCATION: Henderson, NV
DATE: 2/10/16

PUMP / TUBING TYPE: QED 1/4"	WELL NUMBER: TT-TP1-M1
EQUIPMENT CLEANING METHOD:	CASING RADIUS: 2 (in.)
PURGE WATER DISPOSAL:	TOTAL DEPTH (TD): (ft.)
	DEPTH TO WATER (DTW): 25.52 (ft.)
	SCREENED INTERVAL: (ft.)
PURGE START TIME: 1052	PUMP SET AT 30 (ft.)

TIME	PURGE RATE (ml/min)	VOLUME PURGED (ml)	DTW (ft)	TEMP (°C)	pH	COND. (µS/cm)	DO (mg/L)	ORP (mV)	TURB. (NTU)	
1055	330	990	25.68	24.75	6.95	12.88	0.39	232.8	0.87	
1058	230	1680	25.70	24.88	6.97	12.75	0.76	231.0	0.68	
1101	230	2370	25.69	24.87	6.99	12.66	1.71	228.1	0.56	
1104	230	3060	25.69	24.87	6.99	12.64	1.58	226.3	0.63	
1107	230	3750	25.69	24.82	7.00	12.57	1.54	224.1	0.46	
1110	230	4440	25.69	24.81	7.00	12.53	1.50	222.8	0.59	

PURGE STOP TIME:	SAMPLE TIME: 1110
LAB NAME:	SAMPLE ID: ~~TT-TP1-M1-20160210~~ TT-TP1-M1-20160210

OBSERVATIONS/COMMENTS (NOTE TIMES):

~~FLOW~~ FLOUR = 0.068

LOW-FLOW WATER PURGING & SAMPLING LOG

TETRA TECH

PROJECT NAME: NERT-SEPT
FIELD PERSON: Robert Santoyo
PROJECT NUMBER: 100-SBO-T35000-2016-M05
PROJECT MANAGER: Mark Feldman
PROJECT LOCATION: Henderson, NV
DATE: 2/10/16

PUMP / TUBING TYPE: QED 1/4"	WELL NUMBER: TT-TP1-M2
EQUIPMENT CLEANING METHOD:	CASING RADIUS: 2 (in.)
	TOTAL DEPTH (TD): (ft.)
PURGE WATER DISPOSAL:	DEPTH TO WATER (DTW): 26.54 (ft.)
	SCREENED INTERVAL: (ft.)
PURGE START TIME: 1003	PUMP SET AT 30 (ft.)

TIME	PURGE RATE (ml/min)	VOLUME PURGED (ml)	DTW (ft)	TEMP (°C)	pH	COND. (µS/cm)	DO (mg/L)	ORP (mV)	TURB. (NTU)	
1006	270	810	26.79	23.56	6.71	12.41	1.00	247.8	2.38	
1009	270	1620	26.92	24.28	6.85	12.25	0.53	244.1	2.41	
1012	220	2280	26.95	24.24	6.90	12.29	0.49	243.7	3.49	
1015	220	2940	26.98	24.16	6.95	12.41	0.51	245.4	1.76	
1018	220	3600	27.00	24.15	6.99	12.46	0.69	243.8	1.37	
1021	220	4260	27.04	24.13	7.02	12.51	1.10	242.7	0.88	
1024	220	4920	27.07	24.11	7.05	12.54	1.28	242.3	0.48	
1027	220	5580	27.07	24.09	7.07	12.56	1.20	242.1	1.01	

PURGE STOP TIME:	SAMPLE TIME: 1027
LAB NAME: Test America	SAMPLE ID: TT-TP1-M2-20160210

OBSERVATIONS/COMMENTS (NOTE TIMES):

Flow = 0.055
FLOUR

LOW-FLOW WATER PURGING & SAMPLING LOG

TETRA TECH

PROJECT NAME: NERT-SFPT
FIELD PERSON: Robert Santoyo
PROJECT NUMBER: 100-SBO-T35000-2016-M05
PROJECT MANAGER: Mark Feldman
PROJECT LOCATION: Henderson, NV
DATE: 2/10/16

PUMP / TUBING TYPE: QED 1/4"	WELL NUMBER: TT-TPI-M3
EQUIPMENT CLEANING METHOD:	CASING RADIUS: 2 (in.)
	TOTAL DEPTH (TD): (ft.)
PURGE WATER DISPOSAL:	DEPTH TO WATER (DTW): 26.50 (ft.)
	SCREENED INTERVAL: 30 (ft.)
PURGE START TIME: 1132	PUMP SET AT 30 (ft.)

TIME	PURGE RATE (ml/min)	VOLUME PURGED (ml)	DTW (ft)	TEMP (°C)	pH	COND. (µS/cm)	DO (mg/L)	ORP (mV)	TURB. (NTU)	
1135	255	2765	26.74	24.44	7.21	11.42	1.14	180.2	0.61	
1138	190	1335	26.85	24.91	7.20	11.40	0.39	184.3	0.64	
1141	190	1905	26.92	24.90	7.19	11.38	0.27	184.7	0.69	
1144	190	2475	26.96	24.82	7.18	11.38	0.27	184.8	0.72	
1147	190	3045	27.01	24.75	7.17	11.38	0.38	184.5	1.15	
1150	190	3615	27.04	24.69	7.16	11.38	0.70	184.2	1.34	
1153	190	4185	27.07	24.61	7.15	11.38	0.73	183.8	1.13	
1156	190	4755	27.10	24.61	7.15	11.38	0.64	183.4	1.19	

PURGE STOP TIME:	SAMPLE TIME: 1156
LAB NAME:	SAMPLE ID: TT-TPI-M3-20160210

OBSERVATIONS/COMMENTS (NOTE TIMES):

Flow - 0.011

LOW-FLOW WATER PURGING & SAMPLING LOG

TETRA TECH

PROJECT NAME: NERT-SEPT
FIELD PERSON: Robert Santoyo
PROJECT NUMBER: 100-SBD-T35000-2016-M05
PROJECT MANAGER: Mark Feldman
PROJECT LOCATION: Henderson, NV.
DATE: 2/10/16

PUMP / TUBING TYPE: QED 1/4"	WELL NUMBER: TT-TP2-M1
EQUIPMENT CLEANING METHOD:	CASING RADIUS: 2 (in.)
	TOTAL DEPTH (TD): (ft.)
PURGE WATER DISPOSAL:	DEPTH TO WATER (DTW): 24.82 (ft.)
	SCREENED INTERVAL: (ft.)
PURGE START TIME: 1213	PUMP SET AT 30 (ft.)

TIME	PURGE RATE (ml/min)	VOLUME PURGED (ml)	DTW (ft)	TEMP (°C)	pH	COND. (µS/cm)	DO (mg/L)	ORP (mV)	TURB. (NTU)	
1216	330	990	24.87	20.99	7.41	9.124	3.26	156.6	1.92	
1219	220	1650	24.91	21.57	7.41	9.826	3.16	158.8	0.58	
1222	220	2310	24.91	21.74	7.37	9.997	3.16	159.4	0.54	
1225	220	2970	24.91	21.86	7.36	9.953	3.16	159.0	0.46	
1228	220	3630	24.91	21.82	7.35	9.952	2.99	159.2	0.47	
1231	220	4290	24.91	21.89	7.35	9.981	3.16	159.3	0.39	
1234	220	4950	24.91	21.90	7.34	9.982	3.11	159.2	0.41	

PURGE STOP TIME:	SAMPLE TIME: 1234
LAB NAME:	SAMPLE ID: TT-TP2-M1-20160210

OBSERVATIONS/COMMENTS (NOTE TIMES):

Flow: 0.024

LOW-FLOW WATER PURGING & SAMPLING LOG

TETRA TECH

PROJECT NAME: NERT-SFPT
FIELD PERSON: Robert Santoyo
PROJECT NUMBER: 100-SRO-T35000-2016-M05
PROJECT MANAGER: Mark Feldman
PROJECT LOCATION: Henderson, NV
DATE: 2/10/16

PUMP / TUBING TYPE: QED 1/4"	WELL NUMBER: TT-TP2-M2
EQUIPMENT CLEANING METHOD:	CASING RADIUS: 2 (in.)
	TOTAL DEPTH (TD): (ft.)
PURGE WATER DISPOSAL:	DEPTH TO WATER (DTW): 25.44 (ft.)
	SCREENED INTERVAL: (ft.)
PURGE START TIME: 1253	PUMP SET AT 30 (ft.)

TIME	PURGE RATE (ml/min)	VOLUME PURGED (ml)	DTW (ft)	TEMP (°C)	pH	COND. (µS/cm)	DO (mg/L)	ORP (mV)	TURB. (NTU)	
1256	330	990	25.45	23.54	7.33	10.16	2.07	156.7	2.82	
1259	220	1650	25.44	23.66	7.27	10.23	2.10	158.0	2.04	
1302	220	2310	25.44	23.70	7.24	10.24	2.04	158.1	1.47	
1305	220	2970	25.44	23.69	7.24	10.25	2.10	158.0	0.54	
1308	220	3630	25.44	23.43	7.24	10.31	2.05	157.5	0.62	
1311	220	4290	25.44	23.80	7.23	10.22	2.06	155.7	0.67	

PURGE STOP TIME:	SAMPLE TIME: 1311
LAB NAME:	SAMPLE ID: TT-TP2-M2-20160210

OBSERVATIONS/COMMENTS (NOTE TIMES):

FLOUR = 0.013

LOW-FLOW WATER PURGING & SAMPLING LOG

TETRA TECH

PROJECT NAME: NERT SFPT
FIELD PERSON: Jason Cook
PROJECT NUMBER:
PROJECT MANAGER: TT-TP3-M1
PROJECT LOCATION:
DATE: 2/11/2016

PUMP / TUBING TYPE:	WELL NUMBER: TT-TP3-M1
EQUIPMENT CLEANING METHOD:	CASING RADIUS: 2 (in.)
	TOTAL DEPTH (TD): (ft.)
PURGE WATER DISPOSAL:	DEPTH TO WATER (DTW): 23.95 (ft.)
	SCREENED INTERVAL: (ft.)
PURGE START TIME: 0924	PUMP SET AT (ft.)

TIME	PURGE RATE (ml/min)	VOLUME PURGED (ml)	DTW (ft)	TEMP (°C)	pH	COND. (µS/cm)	DO (mg/L)	ORP (mV)	TURB. (NTU)	
0927	240	720	23.97	21.84	7.02	8.801	3.60	201.6	0.82	
0930	240	1440	23.99	22.21	7.24	7.632	3.51	189.5	0.79	
0933	240	2160	23.98	22.36	7.27	7.536	3.40	186.3	1.78	
0936	240	2880	23.98	22.44	7.31	7.398	3.30	182.7	0.72	
0939	240	3600	23.98	22.42	7.32	7.475	3.39	180.8	0.46	
0942	240	4320	23.98	22.50	7.34	7.483	3.30	179.4	0.46	

PURGE STOP TIME: 0942	SAMPLE TIME: 0942
LAB NAME: test America	SAMPLE ID: TT-TP3-M1-20160211

OBSERVATIONS/COMMENTS (NOTE TIMES):

0.057 Flow

LOW-FLOW WATER PURGING & SAMPLING LOG

TETRA TECH

PROJECT NAME: NERT-SFPT FIELD PERSON: Robert Santoyo

PROJECT NUMBER: 100-SBO-T35000-2016-M05 PROJECT MANAGER: Mark Feldman

PROJECT LOCATION: Henderson, NV DATE: 2/10/16

PUMP / TUBING TYPE: QED 1/4"	WELL NUMBER: TT-TP3-M2
EQUIPMENT CLEANING METHOD:	CASING RADIUS: 2 (in.)
	TOTAL DEPTH (TD): (ft.)
PURGE WATER DISPOSAL:	DEPTH TO WATER (DTW): 25.07 (ft.)
	SCREENED INTERVAL: (ft.)
PURGE START TIME: 1332	PUMP SET AT 30 (ft.)

TIME	PURGE RATE (ml/min)	VOLUME PURGED (ml)	DTW (ft)	TEMP (°C)	pH	COND. (µS/cm)	DO (mg/L)	ORP (mV)	TURB. (NTU)	
1335	270	810	25.15	24.25	7.41	10.26	0.85	154.2	1.61	
1338	200	1410	25.15	24.21	7.37	9.807	0.34	151.2	1.85	
1341	200	2010	25.12	24.19	7.34	9.672	0.22	144.1	1.82	
1344	200	2610	25.12	24.15	7.32	9.657	0.20	133.7	1.20	
1347	200	3210	25.14	24.19	7.32	9.663	0.20	122.3	1.21	
1350	200	3810	25.14	24.17	7.31	9.676	0.19	116.4	0.87	
1353	200	4410	25.14	24.15	7.30	9.676	0.21	113.5	0.55	

PURGE STOP TIME:	SAMPLE TIME: 1353
LAB NAME:	SAMPLE ID: TT-TP3-M2-20160210

OBSERVATIONS/COMMENTS (NOTE TIMES):

Flow - 0.026

LOW-FLOW WATER PURGING & SAMPLING LOG

TETRA TECH

PROJECT NAME: NERT- SPPT
FIELD PERSON: J. Cook
PROJECT NUMBER:
PROJECT MANAGER:
PROJECT LOCATION:
DATE: 2-11-2016

PUMP / TUBING TYPE:	WELL NUMBER: TT-TP4-M1
EQUIPMENT CLEANING METHOD:	CASING RADIUS: 2 (in.)
	TOTAL DEPTH (TD): (ft.)
PURGE WATER DISPOSAL:	DEPTH TO WATER (DTW): 25.42 (ft.)
	SCREENED INTERVAL: (ft.)
PURGE START TIME: 1009	PUMP SET AT (ft.)

TIME	PURGE RATE (ml/min)	VOLUME PURGED (ml)	DTW (ft)	TEMP (°C)	pH	COND. (µS/cm)	DO (mg/L)	ORP (mV)	TURB. (NTU)	
1012	220	660	25.48	23.00	7.47	13.26	0.78	173.2	0.82	
1015	220	1320	25.52	23.31	7.47	13.28	0.31	171.1	0.94	
1018	220	1980	25.50	23.36	7.46	13.30	0.25	169.3	0.88	
1021	220	2640	25.52	23.34	7.46	13.30	0.27	168.1	0.56	
1024	220	3300	25.50	23.38	7.45	13.29	0.34	166.8	0.56	
1027	220	3960	25.50	23.39	7.45	13.30	0.40	164.6	0.53	

PURGE STOP TIME: 1027
SAMPLE TIME: 1027
LAB NAME: Test America
SAMPLE ID: TT-TP4-M1-20160211

OBSERVATIONS/COMMENTS (NOTE TIMES):

0.297 flowmeter

LOW-FLOW WATER PURGING & SAMPLING LOG

TETRA TECH

PROJECT NAME: NERT-SFPT
FIELD PERSON: Robert Santoyo
PROJECT NUMBER: 100-SBD-TS5000-2016-MOS
PROJECT MANAGER: Mark Feldman
PROJECT LOCATION: Henderson, NV
DATE: 2/11/16

PUMP / TUBING TYPE: QED 1/4"	WELL NUMBER: TT-TP4-M2
EQUIPMENT CLEANING METHOD: —	CASING RADIUS: 2 (in.)
PURGE WATER DISPOSAL:	TOTAL DEPTH (TD): — (ft.)
	DEPTH TO WATER (DTW): 25.38 (ft.)
	SCREENED INTERVAL: (ft.)
PURGE START TIME: 1217	PUMP SET AT 30 (ft.)

TIME	PURGE RATE (ml/min)	VOLUME PURGED (ml)	DTW (ft)	TEMP (°C)	pH	COND. (µS/cm)	DO (mg/L)	ORP (mV)	TURB. (NTU)	
1220	180	720	25.44	23.60	7.49	13.13	0.82	107.2	1.21	
1224	180	1260	25.44	23.61	7.44	13.11	0.38	108.8	1.94	
1227	180	1800	25.44	23.67	7.43	13.16	0.35	109.5	1.89	
1230	180	2340	25.44	23.63	7.42	13.12	0.31	110.0	2.40	
1233	180	2880	25.45	23.68	7.41	13.10	0.35	110.3	1.91	
1236	180	3420	25.46	23.62	7.40	13.11	0.45	110.3	1.63	

PURGE STOP TIME:	SAMPLE TIME: 1236
LAB NAME: Test America	SAMPLE ID: TT-TP4-M2-20160211

OBSERVATIONS/COMMENTS (NOTE TIMES): DUP

FLOW R = 0.270

bottles 17

LOW-FLOW WATER PURGING & SAMPLING LOG

TETRA TECH

PROJECT NAME: NERT-SFPT
FIELD PERSON: Robert Santoyo
PROJECT NUMBER: 100-SRD-T35000-2016-M05
PROJECT MANAGER: Mark Feldman
PROJECT LOCATION: Henderson, NV
DATE: 2/11/16

PUMP / TUBING TYPE: QED 1/4"
EQUIPMENT CLEANING METHOD: —
PURGE WATER DISPOSAL:

WELL NUMBER: TT-TP4-M3
CASING RADIUS: 2 (in.)
TOTAL DEPTH (TD): — (ft.)
DEPTH TO WATER (DTW): 25.28 (ft.)
SCREENED INTERVAL: (ft.)

PURGE START TIME: 1311
PUMP SET AT 30 (ft.)

TIME	PURGE RATE (ml/min)	VOLUME PURGED (ml)	DTW (ft)	TEMP (°C)	pH	COND. (µS/cm)	DO (mg/L)	ORP (mV)	TURB. (NTU)	
1315 ~~1311~~	180	720	25.40	23.89	7.49	12.92	1.96	97.3	1.28	
1318	180	1260	25.35	23.87	7.51	12.90	1.97	98.9	0.65	
1321	180	1800	25.35	23.90	7.52	12.90	2.02	99.4	0.60	
1324	180	2340	25.35	23.80	7.51	12.91	2.06	100.2	0.57	
1327	180	2880	25.35	23.86	7.51	12.90	2.11	100.1	0.49	
1330	180	3420	25.35	~~23.78~~ 23.86	7.50	12.91	2.15	99.5	0.19	

PURGE STOP TIME:
SAMPLE TIME: 1330
LAB NAME: Test America
SAMPLE ID: TT-TP4-M3-20160211

OBSERVATIONS/COMMENTS (NOTE TIMES): MS/MSD

FLOUR = 0.112

LOW-FLOW WATER PURGING & SAMPLING LOG

TETRA TECH

PROJECT NAME: NERT SFPT
FIELD PERSON: Robert Santoyo
PROJECT NUMBER: 100-SBO-T35000-2016-MOS
PROJECT MANAGER: Mark Feldman
PROJECT LOCATION: Henderson, NV
DATE: 2/11/16

PUMP / TUBING TYPE: Lysimeter
EQUIPMENT CLEANING METHOD: —
PURGE WATER DISPOSAL: —

WELL NUMBER: TT-TP1-L1
CASING RADIUS: 2 (in.)
TOTAL DEPTH (TD): — (ft.)
DEPTH TO WATER (DTW): — (ft.)
SCREENED INTERVAL: — (ft.)

PURGE START TIME:
PUMP SET AT (ft.)

TIME	PURGE RATE (ml/min)	VOLUME PURGED (ml)	DTW (ft)	TEMP (°C)	pH	COND. (µS/cm)	DO (mg/L)	ORP (mV)	TURB. (NTU)	
1200	—	—	—	16.60	7.28	14.34	3.84	190.1	0.83	

PURGE STOP TIME: —
SAMPLE TIME: ~~1145~~ 1200
LAB NAME: Test America
SAMPLE ID: TT-TP1-L1-20160211

OBSERVATIONS/COMMENTS (NOTE TIMES):

FLOUR = 2,980

FILE: LOG FORMS\em-Water Purging & Sampling Log-10-20-08.dwg

LOW-FLOW WATER PURGING & SAMPLING LOG

TETRA TECH

PROJECT NAME: NERT SEPT
FIELD PERSON: Robert Santoyo
PROJECT NUMBER: 100-SBO-T35000-2016-MOS
PROJECT MANAGER: Mark Feldman
PROJECT LOCATION: Henderson, NV
DATE: 2/11/16

PUMP / TUBING TYPE: Lysimeter	WELL NUMBER: TT-TP1-L2
EQUIPMENT CLEANING METHOD: —	CASING RADIUS: 2 (in.)
PURGE WATER DISPOSAL: —	TOTAL DEPTH (TD): — (ft.)
	DEPTH TO WATER (DTW): — (ft.)
	SCREENED INTERVAL: — (ft.)
PURGE START TIME:	PUMP SET AT (ft.)

TIME	PURGE RATE (ml/min)	VOLUME PURGED (ml)	DTW (ft)	TEMP (°C)	pH	COND. (µS/cm)	DO (mg/L)	ORP (mV)	TURB. (NTU)	
1205	—	—	—	20.06	6.83	24.79	1.08	198.7	1.25	

PURGE STOP TIME: —	SAMPLE TIME: 1205
LAB NAME: Test America	SAMPLE ID: TT-TP1-L2-20160211

OBSERVATIONS/COMMENTS (NOTE TIMES):

FLOUR=1.612

LOW-FLOW WATER PURGING & SAMPLING LOG

TETRA TECH

PROJECT NAME: NERT-SFPT
FIELD PERSON: Robert Santoyo
PROJECT NUMBER: 100-SBO-T35000-2016-MOS
PROJECT MANAGER: Mark Feldman
PROJECT LOCATION: Henderson, NV
DATE: 2/11/16

PUMP / TUBING TYPE: Lysimeter
EQUIPMENT CLEANING METHOD: —
PURGE WATER DISPOSAL: —

WELL NUMBER: TT-TP2-L1
CASING RADIUS: 2 (in.)
TOTAL DEPTH (TD): — (ft.)
DEPTH TO WATER (DTW): — (ft.)
SCREENED INTERVAL: — (ft.)

PURGE START TIME:
PUMP SET AT (ft.)

TIME	PURGE RATE (ml/min)	VOLUME PURGED (ml)	DTW (ft)	TEMP (°C)	pH	COND. (µS/cm)	DO (mg/L)	ORP (mV)	TURB. (NTU)	
1150				19.07	7.51	7.564	3.25	191.5	1.65	

PURGE STOP TIME: —
SAMPLE TIME: 1150
LAB NAME: Test America
SAMPLE ID: TT-TP2-L1-20160211

OBSERVATIONS/COMMENTS (NOTE TIMES):

FLOUR = 1.621

LOW-FLOW WATER PURGING & SAMPLING LOG

TETRA TECH

PROJECT NAME: NERT SFPT
FIELD PERSON: Robert Santoyo
PROJECT NUMBER: 100-SBO-T35000-2016-MOS
PROJECT MANAGER: Mark Feldman
PROJECT LOCATION: Henderson, NV
DATE: 2/11/16

PUMP / TUBING TYPE: Lysimeter	WELL NUMBER: TT-TP2-L2
EQUIPMENT CLEANING METHOD: —	CASING RADIUS: 2 (in.)
PURGE WATER DISPOSAL: —	TOTAL DEPTH (TD): — (ft.)
	DEPTH TO WATER (DTW): — (ft.)
	SCREENED INTERVAL: — (ft.)
PURGE START TIME:	PUMP SET AT (ft.)

TIME	PURGE RATE (ml/min)	VOLUME PURGED (ml)	DTW (ft)	TEMP (°C)	pH	COND. (µS/cm)	DO (mg/L)	ORP (mV)	TURB. (NTU)	
1155	—	—	—	20.66	7.34	14.84	3.05	198.8	1.83	

PURGE STOP TIME: —	SAMPLE TIME: 1155
LAB NAME: Test America	SAMPLE ID: TT-TP2-L2-20160211

OBSERVATIONS/COMMENTS (NOTE TIMES):

FLOUR = 1,628

LOW-FLOW WATER PURGING & SAMPLING LOG

TETRA TECH

PROJECT NAME: NERT SFPT
FIELD PERSON: Robert Santoyo
PROJECT NUMBER: 100-SBO-T35000-2016-MOS
PROJECT MANAGER: Mark Feldman
PROJECT LOCATION: Henderson, NV
DATE: 2/11/16

PUMP / TUBING TYPE: Lysimeter	WELL NUMBER: TT-TP3-L1
EQUIPMENT CLEANING METHOD: —	CASING RADIUS: 2 (in.)
PURGE WATER DISPOSAL: —	TOTAL DEPTH (TD): — (ft.)
	DEPTH TO WATER (DTW): — (ft.)
	SCREENED INTERVAL: — (ft.)

PURGE START TIME:
PUMP SET AT (ft.)

TIME	PURGE RATE (ml/min)	VOLUME PURGED (ml)	DTW (ft)	TEMP (°C)	pH	COND. (µS/cm)	DO (mg/L)	ORP (mV)	TURB. (NTU)	
1145	—	—	—	17.42	8.60	3.337	5.52	154.3	1.75	
				2.4						

PURGE STOP TIME: —
SAMPLE TIME: 1145
LAB NAME: Test America
SAMPLE ID: TT-TP3-L1-20160211

OBSERVATIONS/COMMENTS (NOTE TIMES):

FLOUR = 5.842

LOW-FLOW WATER PURGING & SAMPLING LOG

TETRA TECH

PROJECT NAME: NERT SFPT
FIELD PERSON: Robert Santoyo
PROJECT NUMBER: 100-SBO-T35000-2016-MOS
PROJECT MANAGER: Mark Feldman
PROJECT LOCATION: Henderson, NV
DATE: 2/11/16

PUMP / TUBING TYPE: Lysimeter	WELL NUMBER:
EQUIPMENT CLEANING METHOD: —	CASING RADIUS: 2 (in.)
PURGE WATER DISPOSAL: —	TOTAL DEPTH (TD): — (ft.)
	DEPTH TO WATER (DTW): — (ft.)
	SCREENED INTERVAL: — (ft.)
PURGE START TIME:	PUMP SET AT (ft.)

TIME	PURGE RATE (ml/min)	VOLUME PURGED (ml)	DTW (ft)	TEMP (°C)	pH	COND. (µS/cm)	DO (mg/L)	ORP (mV)	TURB. (NTU)	
1148	—	—	—	16.50	7.93	4,930	3.82	177.9	1.38	

PURGE STOP TIME:	SAMPLE TIME: 1148
LAB NAME: Test America	SAMPLE ID: TT-TP3-L2-20160211

OBSERVATIONS/COMMENTS (NOTE TIMES):

FLOUR = 1.760

LOW-FLOW WATER PURGING & SAMPLING LOG

TETRA TECH

PROJECT NAME: NERT SFPT
FIELD PERSON: Robert Santoyo
PROJECT NUMBER: 100-SBO-T35000-2016-MOS
PROJECT MANAGER: Mark Feldman
PROJECT LOCATION: Henderson, NV
DATE: 2/11/16

PUMP / TUBING TYPE: Lysimeter	WELL NUMBER: TT-TP4-L1
EQUIPMENT CLEANING METHOD:	CASING RADIUS: 2 (in.)
	TOTAL DEPTH (TD): (ft.)
PURGE WATER DISPOSAL:	DEPTH TO WATER (DTW): (ft.)
	SCREENED INTERVAL: (ft.)
PURGE START TIME:	PUMP SET AT (ft.)

TIME	PURGE RATE (ml/min)	VOLUME PURGED (ml)	DTW (ft)	TEMP (°C)	pH	COND. (µS/cm)	DO (mg/L)	ORP (mV)	TURB. (NTU)	
1130	—	—	—	21.57	6.99	15.23	1.87	204.1	0.97	
				21.5						

PURGE STOP TIME: —	SAMPLE TIME: 1130
LAB NAME: Test America	SAMPLE ID: TT-TP4-L1-20160211

OBSERVATIONS/COMMENTS (NOTE TIMES):

FLOUR = 1.465

LOW-FLOW WATER PURGING & SAMPLING LOG

TETRA TECH

PROJECT NAME: NERT SFPT
FIELD PERSON: Robert Santoyo
PROJECT NUMBER: 100-SBO-T35000-2016-MOS
PROJECT MANAGER: Mark Feldman
PROJECT LOCATION: Henderson, NV
DATE: 2/11/16

PUMP / TUBING TYPE: Lysimeter	WELL NUMBER: TT-TP4-L2
EQUIPMENT CLEANING METHOD: —	CASING RADIUS: 2 (in.)
PURGE WATER DISPOSAL: —	TOTAL DEPTH (TD): — (ft.)
	DEPTH TO WATER (DTW): — (ft.)
	SCREENED INTERVAL: — (ft.)
PURGE START TIME:	PUMP SET AT (ft.)

TIME	PURGE RATE (ml/min)	VOLUME PURGED (ml)	DTW (ft)	TEMP (°C)	pH	COND. (µS/cm)	DO (mg/L)	ORP (mV)	TURB. (NTU)	
1137	—	—	—	22.31	7.59	9,341	2.26	180.1	0.85	

PURGE STOP TIME:	SAMPLE TIME: 1137
LAB NAME: Test America	SAMPLE ID: TT-TP4-L2-20160211

OBSERVATIONS/COMMENTS (NOTE TIMES):

FLOUR=1.670

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LOW-FLOW WATER PURGING & SAMPLING LOG

TETRA TECH

PROJECT NAME: SRPT NERT
PROJECT NUMBER: 100-580-T35000-2016-M05
PROJECT LOCATION: Henderson NV
FIELD PERSON: MAXX W.
PROJECT MANAGER: Mark Feldman
DATE: 2-17-16

PUMP / TUBING TYPE: dedicated
EQUIPMENT CLEANING METHOD:
PURGE WATER DISPOSAL:

WELL NUMBER: TT-TPI-M1
CASING RADIUS: 2 (in.)
TOTAL DEPTH (TD): (ft.)
DEPTH TO WATER (DTW): 25.16 (ft.)
SCREENED INTERVAL: (ft.)

PURGE START TIME: 1109
PUMP SET AT 30 (ft.)

TIME	PURGE RATE (ml/min)	VOLUME PURGED (ml)	DTW (ft)	TEMP (°C)	pH	COND. (µS/cm)	DO (mg/L)	ORP (mV)	TURB. (NTU)	
1109	270									
1112	270	810	25.36	24.71	6.84	13.41	0.90	240.3	9.36	8
1115	270	1620	25.40	24.76	6.87	13.15	0.71	236.7	2.45	
1118	270	2430	25.41	24.78	6.88	12.95	0.53	235.6	1.32	
1121	270	3240	25.41	24.77	6.89	12.88	0.37	233.3	1.18	
1124	270	4050	25.41	24.76	6.90	12.80	0.43	222.0	1.67	
1127	270	4860	25.42	24.64	6.90	12.71	0.42	225.0	1.40	

PURGE STOP TIME: 1127
SAMPLE TIME: 1127
LAB NAME: Test America
SAMPLE ID: TT-TPI-M1-20160217

OBSERVATIONS/COMMENTS (NOTE TIMES):

Fluor = 2.602

LOW-FLOW WATER PURGING & SAMPLING LOG

TETRA TECH

PROJECT NAME: SEPT INERT
PROJECT NUMBER: 100-SBO-T3500-2016-1105
PROJECT LOCATION: Henderson NV
FIELD PERSON: MAXX W.
PROJECT MANAGER: ~~Matt~~ Mark Feldman
DATE: 2-17-16

PUMP / TUBING TYPE: dedicated
EQUIPMENT CLEANING METHOD:
PURGE WATER DISPOSAL:

WELL NUMBER: TT-TP1-M2
CASING RADIUS: 2 (in.)
TOTAL DEPTH (TD): (ft.)
DEPTH TO WATER (DTW): 26.27 (ft.)
SCREENED INTERVAL: (ft.)

PURGE START TIME: 1147
PUMP SET AT 30 (ft.)

TIME	PURGE RATE (ml/min)	VOLUME PURGED (ml)	DTW (ft)	TEMP (°C)	pH	COND. (µS/cm)	DO (mg/L)	ORP (mV)	TURB. (NTU)	
1147	270									
1150	270	810	26.51	24.58	7.11	12.65	0.64	200.8	2.37	
1153	270	1620	26.54	24.68	7.07	12.58	0.51	201.2	2.25	
1156	270	2430	26.57	24.71	7.05	12.61	0.50	201.4	3.87	
1159	270	3240	26.59	24.70	7.04	12.66	0.38	200.6	2.76	
1202	270	4050	26.61	24.68	7.04	12.70	0.34	200.6	2.01	
1205	270	4860	26.64	24.43	7.04	12.80	0.23	200.6	1.96	

PURGE STOP TIME: 1205
SAMPLE TIME: 1205
LAB NAME: TA
SAMPLE ID: TT-TP1-M2-20160217

OBSERVATIONS/COMMENTS (NOTE TIMES):

Fluor - 0.589

LOW-FLOW WATER PURGING & SAMPLING LOG

TETRA TECH

PROJECT NAME: SPPT NERT FIELD PERSON: MAXX U.

PROJECT NUMBER: 100-SBO-T35000-2016-MW5 PROJECT MANAGER: Mark Feldman

PROJECT LOCATION: Henderson, NV DATE: 2.17.16

PUMP / TUBING TYPE: dedicated	WELL NUMBER: TT-TP1-M3
EQUIPMENT CLEANING METHOD:	CASING RADIUS: 2 (in.)
	TOTAL DEPTH (TD): (ft.)
PURGE WATER DISPOSAL:	DEPTH TO WATER (DTW): 26.34 (ft.)
	SCREENED INTERVAL: 30 (ft.)
PURGE START TIME: 1221	PUMP SET AT 30 (ft.)

TIME	PURGE RATE (ml/min)	VOLUME PURGED (ml)	DTW (ft)	TEMP (°C)	pH	COND. (µS/cm)	DO (mg/L)	ORP (mV)	TURB. (NTU)	
1221	220	660								
1224	220	660	26.71	24.14	7.00	11.77	0.30	191.0	1.17	
1227	220	1320	26.72	24.38	7.05	11.80	0.21	190.3	0.85	
1230	220	1980	26.74	24.48	7.06	11.79	0.18	190.0	1.02	
1233	220	2640	26.82	24.46	7.04	11.79	0.18	189.7	1.62	
1236	220	3300	26.85	24.47	7.02	11.79	0.17	189.6	0.92	
1239	220	3960	26.89	24.48	7.01	11.79	0.14	189.3	1.00	

PURGE STOP TIME: 1239	SAMPLE TIME: 1239
LAB NAME: TA	SAMPLE ID: TT-TP1-M3-20160217

OBSERVATIONS/COMMENTS (NOTE TIMES):

Floor = 0.279

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LOW-FLOW WATER PURGING & SAMPLING LOG

TETRA TECH

PROJECT NAME: SRPT NEXT FIELD PERSON: MAXX

PROJECT NUMBER: 100-580-T35000-2016-M05 PROJECT MANAGER: Mark Feldman

PROJECT LOCATION: Henderson NV. DATE: 2-17-16

PUMP / TUBING TYPE: dedicated	WELL NUMBER: TT-TPZ-M1
EQUIPMENT CLEANING METHOD:	CASING RADIUS: 2 (in.)
	TOTAL DEPTH (TD): (ft.)
PURGE WATER DISPOSAL:	DEPTH TO WATER (DTW): 24.38 (ft.)
	SCREENED INTERVAL: (ft.)
PURGE START TIME: 1256	PUMP SET AT 36 (ft.)

TIME	PURGE RATE (ml/min)	VOLUME PURGED (ml)	DTW (ft)	TEMP (°C)	pH	COND. (µS/cm)	DO (mg/L)	ORP (mV)	TURB. (NTU)	
1256	220									
1259	220	660	24.40	24.95	7.34	9.882	3.72	170.0	1.00	
1302	220	1320	24.40	21.03	7.33	10.04	3.63	168.9	0.44	
1305	220	1980	24.40	21.13	7.32	10.16	3.74	167.1	0.62	
1308	220	2640	24.40	21.20	7.30	10.25	3.81	164.6	0.72	
1311	220	3300	24.40	21.24	7.30	10.23	3.83	162.8	0.81	
1314	220	3960	24.40	21.26	7.30	10.22	3.65	160.7	0.77	

PURGE STOP TIME: 1314	SAMPLE TIME: 1314
LAB NAME: TA	SAMPLE ID: TT-TPZ-M1-20160217

OBSERVATIONS/COMMENTS (NOTE TIMES):

Flow Thru - 0.471

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LOW-FLOW WATER PURGING & SAMPLING LOG

TETRA TECH

PROJECT NAME: NERT : SFPT FIELD PERSON: Maxx W.

PROJECT NUMBER: 100-580-T35000-2016-M05 PROJECT MANAGER: Mark Feldman

PROJECT LOCATION: Henderson NV DATE: 2-17-16

PUMP / TUBING TYPE: dedicated	WELL NUMBER: TT-TP2-MZ
EQUIPMENT CLEANING METHOD:	CASING RADIUS: 2 (in.)
	TOTAL DEPTH (TD): (ft.)
PURGE WATER DISPOSAL:	DEPTH TO WATER (DTW): 25.02 (ft.)
	SCREENED INTERVAL: (ft.)
PURGE START TIME: 1332	PUMP SET AT 30 (ft.)

TIME	PURGE RATE (ml/min)	VOLUME PURGED (ml)	DTW (ft)	TEMP (°C)	pH	COND. (µS/cm)	DO (mg/L)	ORP (mV)	TURB. (NTU)	
1332	230									
1335	230	690	25.04	23.50	7.23	10.39	2.21	155.0	11.7	
1338	230	1380	25.04	23.60	7.22	10.47	2.07	154.4	8.68	
1341	230	2070	25.08	23.68	7.20	10.53	1.95	153.1	5.18	
1344	230	2760	25.08	23.66	7.20	10.54	2.01	152.1	3.37	
1347	230	3450	25.10	23.66	7.19	10.54	1.90	151.3	2.25	
1350	230	4140	25.11	23.67	7.19	10.54	1.93	150.8	1.98	

PURGE STOP TIME: 1350	SAMPLE TIME: 1350
LAB NAME: TA	SAMPLE ID: TT-TP2-MZ-20160217

OBSERVATIONS/COMMENTS (NOTE TIMES):

Fluor 0.643

LOW-FLOW WATER PURGING & SAMPLING LOG

TETRA TECH

PROJECT NAME: NERT SFPT
PROJECT NUMBER: 100-500-T35000-2016-M05
PROJECT LOCATION: Henderson NV
FIELD PERSON: MAXX W.
PROJECT MANAGER: Mark Feldman
DATE: 2/18/2016

PUMP / TUBING TYPE:
EQUIPMENT CLEANING METHOD:
PURGE WATER DISPOSAL: 0913

WELL NUMBER: TT-TP3-M1
CASING RADIUS: 2 (in.)
TOTAL DEPTH (TD): (ft.)
DEPTH TO WATER (DTW): 23.30 (ft.)
SCREENED INTERVAL: (ft.)

PURGE START TIME:
PUMP SET AT 30 (ft.)

TIME	PURGE RATE (ml/min)	VOLUME PURGED (ml)	DTW (ft)	TEMP (°C)	pH	COND. (µS/cm)	DO (mg/L)	ORP (mV)	TURB. (NTU)	
0913	200									
0916	200	600	23.30	18.73	7.25	3.254	4.68	236.8	1.32	
0919	200	1200	27.30	18.43	7.37	2.266	4.82	227.8	1.19	
0922	200	1800	23.32	18.40	7.39	2.073	4.74	221.7	1.87	
0925	200	2400	23.32	18.34	7.41	1.971	4.71	213.8	1.45	
0928	200	3000	23.32	18.35	7.42	1.961	4.69	211.2	1.69	
0931	200	3600	23.33	18.38	7.43	1.957	4.89	209.0	1.03	

PURGE STOP TIME: 0931
SAMPLE TIME: 0931
LAB NAME: TA
SAMPLE ID: TT-TP3-M1-20160218

OBSERVATIONS/COMMENTS (NOTE TIMES):

Flow - 0.1 GPM

PAGE 1 of 1

LOW-FLOW WATER PURGING & SAMPLING LOG

TETRA TECH

PROJECT NAME: SFPT NERT FIELD PERSON: Maxx W.

PROJECT NUMBER: 100-580-T35000-2016-1105 PROJECT MANAGER: Mark Feldman

PROJECT LOCATION: Henderson NV DATE: 2-18-2016

PUMP / TUBING TYPE: dedicated

WELL NUMBER: TT-TPB-M2

EQUIPMENT CLEANING METHOD:

CASING RADIUS: (in.)

TOTAL DEPTH (TD): (ft.)

PURGE WATER DISPOSAL:

DEPTH TO WATER (DTW): 24.54 (ft.)

SCREENED INTERVAL: (ft.)

PURGE START TIME: 0948

PUMP SET AT 30 (ft.)

TIME	PURGE RATE (ml/min)	VOLUME PURGED (ml)	DTW (ft)	TEMP (°C)	pH	COND. (µS/cm)	DO (mg/L)	ORP (mV)	TURB. (NTU)	
0948	200									
0951	200	600	24.60	22.83	7.38	6.414	0.77	212.7	1.35	
0954	200	1200	24.61	23.14	7.40	6.015	0.53	209.7	1.09	
0957	200	1800	24.61	23.24	7.41	5.784	0.37	207.2	1.41	
1000	200	2400	24.62	23.32	7.42	5.712	0.32	205.6	1.12	
1003	200	3000	24.62	23.35	7.42	5.708	0.29	204.1	0.98	
1006	200	3600	24.62	23.35	7.42	5.740	0.28	201.9	0.96	

PURGE STOP TIME: 1006 SAMPLE TIME: 1006

LAB NAME: TK SAMPLE ID: TT-TPB-M2-20160218

OBSERVATIONS/COMMENTS (NOTE TIMES):

Flow = 0.091

LOW-FLOW WATER PURGING & SAMPLING LOG

TETRA TECH

PROJECT NAME: SPPT NERT
FIELD PERSON: MAXX W.
PROJECT NUMBER: 100-SBO-T55000-2016-M05
PROJECT MANAGER: Mark Feldman
PROJECT LOCATION: Henderson NV
DATE: 2-18-16

PUMP / TUBING TYPE: dedicated
EQUIPMENT CLEANING METHOD:
PURGE WATER DISPOSAL:

WELL NUMBER: TT-TP4-M1
CASING RADIUS: 2 (in.)
TOTAL DEPTH (TD): (ft.)
DEPTH TO WATER (DTW): 24.95 (ft.)
SCREENED INTERVAL: (ft.)

PURGE START TIME: 1015
PUMP SET AT 30 (ft.)

TIME	PURGE RATE (ml/min)	VOLUME PURGED (ml)	DTW (ft)	TEMP (°C)	pH	COND. (µS/cm)	DO (mg/L)	ORP (mV)	TURB. (NTU)	
1015	220									
1018	220	660	2500	23.26	7.20	12.68	0.73	214.0	0.90	
1021	220	1320	25.02	23.42	7.23	12.68	0.51	210.2	0.97	
1024	220	1980	25.03	23.78	7.26	12.68	0.25	208.6	0.83	
1027	220	2640	25.04	23.85	7.25	12.49	0.63	206.3	0.54	
1030	220	3300	25.04	23.89	7.24	12.36	0.80	205.4	0.67	
1037	220	3600	25.04	23.87	7.23	12.32	0.83	205.0	0.58	

PURGE STOP TIME: 1037
SAMPLE TIME: 1037
LAB NAME: TA
SAMPLE ID: TT-TP4-M1-20160218

OBSERVATIONS/COMMENTS (NOTE TIMES):

Fluor 0.104

LOW-FLOW WATER PURGING & SAMPLING LOG

TETRA TECH

PROJECT NAME: SEPT NERT FIELD PERSON: MAX W.

PROJECT NUMBER: 100-580-T35200-2016 MOS PROJECT MANAGER: Mark F.

PROJECT LOCATION: Henderson NV DATE: 2.18.2016

PUMP / TUBING TYPE: dedicated	WELL NUMBER: TT-TP4-M2
EQUIPMENT CLEANING METHOD:	CASING RADIUS: 2 (in.)
	TOTAL DEPTH (TD): (ft.)
PURGE WATER DISPOSAL:	DEPTH TO WATER (DTW): 24.93 (ft.)
	SCREENED INTERVAL: (ft.)
PURGE START TIME: 1041	PUMP SET AT 30 (ft.)

TIME	PURGE RATE (ml/min)	VOLUME PURGED (ml)	DTW (ft)	TEMP (°C)	pH	COND. (µS/cm)	DO (mg/L)	ORP (mV)	TURB. (NTU)	
1041	220									
1044	220	660	25.03	23.74	7.21	12.49	0.95	201.6	3.49	
1047	220	1320	25.03	24.06	7.18	12.52	0.57	200.5	4.08	
1050	220	1980	25.03	24.36	7.17	12.53	0.33	197.9	2.97	
1053	220	2640	25.03	24.33	7.17	12.54	0.31	196.2	2.51	
1056	220	3300	25.03	24.3	7.17	12.53	0.34	195.8	1.84	
1059	220	3960	25.03	24.28	7.17	12.54	0.32	195.0	1.67	

PURGE STOP TIME: 1059	SAMPLE TIME: 1059
LAB NAME: TA	SAMPLE ID: TT-TP4-M2-20160218

OBSERVATIONS/COMMENTS (NOTE TIMES):

Flow: 0.103

LOW-FLOW WATER PURGING & SAMPLING LOG

TETRA TECH

PROJECT NAME: SFPT NERT
FIELD PERSON: MAXX W.
PROJECT NUMBER: 100-580-T35000-2016 MAS
PROJECT MANAGER: MARK F.
PROJECT LOCATION: Henderson NV
DATE: 2.18.16

PUMP / TUBING TYPE: dedicated
EQUIPMENT CLEANING METHOD:
PURGE WATER DISPOSAL:

WELL NUMBER: TT-TP4-M3
CASING RADIUS: (in.)
TOTAL DEPTH (TD): (ft.)
DEPTH TO WATER (DTW): 24.93 (ft.)
SCREENED INTERVAL: (ft.)

PURGE START TIME: 1107
PUMP SET AT 30 (ft.)

TIME	PURGE RATE (ml/min)	VOLUME PURGED (ml)	DTW (ft)	TEMP (°C)	pH	COND. (µS/cm)	DO (mg/L)	ORP (mV)	TURB. (NTU)	
1107	220									
1110	220	660	25.03	23.47	7.24	12.29	1.08	192.2	3.21	
1113	220	1320	25.06	23.54	7.26	12.29	1.04	191.7	2.69	
1116	220	1980	25.06	23.65	7.28	12.29	0.94	190.2	1.81	
1119	220	2640	25.06	23.64	7.28	12.30	1.01	189.5	1.59	
1122	220	3300	25.06	23.60	7.29	12.30	1.10	188.7	1.42	
1125	220	3960	25.06	23.59	7.29	12.30	1.02	188.5	2.03	

PURGE STOP TIME: 1125
SAMPLE TIME: 1125
LAB NAME: Test America
SAMPLE ID: TT-TP4-M3-20160218

OBSERVATIONS/COMMENTS (NOTE TIMES):

TT-TP4-M3-20160218-DUP

Sample TT-TP4-M3-20160218 is an MS/MSD

Flags - Q045

LOW-FLOW WATER PURGING & SAMPLING LOG

TETRA TECH

PROJECT NAME: NERT Soil Flush Pilot Test FIELD PERSON: P. Jimenez

PROJECT NUMBER: 100-SBO-T35000-2016-MNS PROJECT MANAGER: —

PROJECT LOCATION: Henderson NV DATE: 2-18-2016

PUMP / TUBING TYPE: Lysimeter	WELL NUMBER: TT-TPI-L1
EQUIPMENT CLEANING METHOD: —	CASING RADIUS: (In.)
PURGE WATER DISPOSAL:	TOTAL DEPTH (TD): (ft.)
	DEPTH TO WATER (DTW): (ft.)
	SCREENED INTERVAL: (ft.)
PURGE START TIME: 1230	PUMP SET AT — (ft.)

TIME	PURGE RATE (ml/min)	VOLUME PURGED (ml)	DTW (ft)	TEMP (°C)	pH	COND. (µS/cm)	DO (mg/L)	ORP (mV)	TURB. (NTU)	
1230	—	—	—	15.24	7.09	11.29	2.71	238.6	1.05	

PURGE STOP TIME: — SAMPLE TIME: 1230

LAB NAME: Test America SAMPLE ID: TT-TPI-L1-20160218

OBSERVATIONS/COMMENTS (NOTE TIMES):

Fluor 0.463

LOW-FLOW WATER PURGING & SAMPLING LOG

TETRA TECH

PROJECT NAME: NERT Soil Flush Pilot Test
FIELD PERSON: R. Jimenez
PROJECT NUMBER: 100-SBO-T35000-2016-M09
PROJECT MANAGER: –
PROJECT LOCATION: Henderson, NV
DATE: 2-18-2016

PUMP / TUBING TYPE: Lysimeter	WELL NUMBER: TT-TPI-LZ
EQUIPMENT CLEANING METHOD: –	CASING RADIUS: – (in.)
PURGE WATER DISPOSAL: ✓	TOTAL DEPTH (TD): – (ft.)
	DEPTH TO WATER (DTW): – (ft.)
	SCREENED INTERVAL: ✓ (ft.)

PURGE START TIME: 1240
PUMP SET AT – (ft.)

TIME	PURGE RATE (ml/min)	VOLUME PURGED (ml)	DTW (ft)	TEMP (°C)	pH	COND. (µS/cm)	DO (mg/L)	ORP (mV)	TURB. (NTU)	
1240	–	–	–	17.96	6.72	23.49	1.50	256.0	1.17	

PURGE STOP TIME: –
SAMPLE TIME: 1240
LAB NAME: Test America
SAMPLE ID: TT-TPI-LZ-20160218

OBSERVATIONS/COMMENTS (NOTE TIMES):

Fluor ~0.382

LOW-FLOW WATER PURGING & SAMPLING LOG

TETRA TECH

PROJECT NAME: NERT Soil Flush Pilot Test FIELD PERSON: R. Simonet

PROJECT NUMBER: — PROJECT MANAGER: —

PROJECT LOCATION: — DATE: 2-18-2016

PUMP / TUBING TYPE: Lysimeter	WELL NUMBER: TT-TPZ-L1
EQUIPMENT CLEANING METHOD: —	CASING RADIUS: — (in.)
PURGE WATER DISPOSAL:	TOTAL DEPTH (TD): — (ft.)
	DEPTH TO WATER (DTW): — (ft.)
	SCREENED INTERVAL: — (ft.)
PURGE START TIME: 1220	PUMP SET AT — (ft.)

TIME	PURGE RATE (ml/min)	VOLUME PURGED (ml)	DTW (ft)	TEMP (°C)	pH	COND. (µS/cm)	DO (mg/L)	ORP (mV)	TURB. (NTU)	
1220	—	—	—	17.57	7.35	7.439	2.97	2366	1.13	

PURGE STOP TIME: — SAMPLE TIME: 1220

LAB NAME: Test America SAMPLE ID: TT-TPZ-L1-20160218

OBSERVATIONS/COMMENTS (NOTE TIMES):

Fluor = 0.25

LOW-FLOW WATER PURGING & SAMPLING LOG

TETRA TECH

PROJECT NAME: NEA Soil Flush Pilot Test
FIELD PERSON: P. Simone
PROJECT NUMBER: 60-580-T35000-2016-MOS
PROJECT MANAGER: -
PROJECT LOCATION: Henderson, NV
DATE: 2-18-2016

PUMP / TUBING TYPE: Lysimeter	WELL NUMBER: TT-TPZ-L2
EQUIPMENT CLEANING METHOD: -	CASING RADIUS: - (in.)
PURGE WATER DISPOSAL: -	TOTAL DEPTH (TD): (ft.)
	DEPTH TO WATER (DTW): - (ft.)
	SCREENED INTERVAL: - (ft.)
PURGE START TIME: 1225	PUMP SET AT - (ft.)

TIME	PURGE RATE (ml/min)	VOLUME PURGED (ml)	DTW (ft)	TEMP (°C)	pH	COND. (µS/cm)	DO (mg/L)	ORP (mV)	TURB. (NTU)	
1225	-	-	-	19.34	7.17	13.72	3.14	246.4	086	

PURGE STOP TIME: 1225
SAMPLE TIME: 1225
LAB NAME: Test America
SAMPLE ID: TT-TPZ-L2-20160218

OBSERVATIONS/COMMENTS (NOTE TIMES):

Fluor = ~~0.360~~
0.361

LOW-FLOW WATER PURGING & SAMPLING LOG

TETRA TECH

PROJECT NAME: NERT Soil Flush Pilot Test
FIELD PERSON: P. Jimenez
PROJECT NUMBER: 100-SBO-T35000-2016-MOS
PROJECT MANAGER: -
PROJECT LOCATION: Henderson, NV
DATE: 2-18-2016

PUMP / TUBING TYPE: Lysimeter
WELL NUMBER: TT-TP3-L1
EQUIPMENT CLEANING METHOD: —
CASING RADIUS: — (in.)
TOTAL DEPTH (TD): — (ft.)
PURGE WATER DISPOSAL: —
DEPTH TO WATER (DTW): — (ft.)
SCREENED INTERVAL: — (ft.)

PURGE START TIME: 1210
PUMP SET AT — (ft.)

TIME	PURGE RATE (ml/min)	VOLUME PURGED (ml)	DTW (ft)	TEMP (°C)	pH	COND. (µS/cm)	DO (mg/L)	ORP (mV)	TURB. (NTU)	
1210	—	—	—	17.09	8.49	2.626	5.60	206.2	1.98	

PURGE STOP TIME: —
SAMPLE TIME: 1210
LAB NAME: Test America
SAMPLE ID: TT-TP3-L1-20160218

OBSERVATIONS/COMMENTS (NOTE TIMES):

Fluor = 0.624

LOW-FLOW WATER PURGING & SAMPLING LOG

TETRA TECH

PROJECT NAME: NERT Soil Flush Pilot Test
FIELD PERSON: R. Jimenez
PROJECT NUMBER: 100-SBO-T35000-2016-Mos
PROJECT MANAGER: -
PROJECT LOCATION: Henderson, NV
DATE: 2-18-2016

PUMP / TUBING TYPE: Lysimeter	WELL NUMBER: TT-TP3-L2
EQUIPMENT CLEANING METHOD: -	CASING RADIUS: - (in.)
PURGE WATER DISPOSAL: -	TOTAL DEPTH (TD): - (ft.)
	DEPTH TO WATER (DTW): - (ft.)
	SCREENED INTERVAL: - (ft.)
PURGE START TIME: 1215	PUMP SET AT - (ft.)

TIME	PURGE RATE (ml/min)	VOLUME PURGED (ml)	DTW (ft)	TEMP (°C)	pH	COND. (µS/cm)	DO (mg/L)	ORP (mV)	TURB. (NTU)	
1215	-	-	-	16.24	7.87	4.479	4.11	224.8	1.64	

PURGE STOP TIME: -
SAMPLE TIME: 1215
LAB NAME: Test America
SAMPLE ID: TT-TP3-L2-20160218

OBSERVATIONS/COMMENTS (NOTE TIMES):

Fluor = 0.303

LOW-FLOW WATER PURGING & SAMPLING LOG

TETRA TECH

PROJECT NAME: NERT Soil Flush Pilot Test
FIELD PERSON: R. Jimenez
PROJECT NUMBER: 100-SBO-T35000-2016-MOS
PROJECT MANAGER: -
PROJECT LOCATION: Henderson, NV
DATE: 2-18-2016

PUMP / TUBING TYPE: Lysimeter	WELL NUMBER: TT-TPH-L1
EQUIPMENT CLEANING METHOD: -	CASING RADIUS: - (in.)
PURGE WATER DISPOSAL:	TOTAL DEPTH (TD): - (ft.)
	DEPTH TO WATER (DTW): - (ft.)
	SCREENED INTERVAL: / (ft.)
PURGE START TIME: 1150	PUMP SET AT - (ft.)

TIME	PURGE RATE (ml/min)	VOLUME PURGED (ml)	DTW (ft)	TEMP (°C)	pH	COND. (µS/cm)	DO (mg/L)	ORP (mV)	TURB. (NTU)	
1150	-	-	-	18.66	6.81	18.47	1.40	253	1.22	

PURGE STOP TIME: -
SAMPLE TIME: 1150
LAB NAME: Test America
SAMPLE ID: TT-TPH-L1-20160218

OBSERVATIONS/COMMENTS (NOTE TIMES):

Fluor - 0.317

LOW-FLOW WATER PURGING & SAMPLING LOG

TETRA TECH

PROJECT NAME: NERT Soil Flush Pilot Test
FIELD PERSON: P. Jimenez
PROJECT NUMBER: 100-5830-73500C 2016 -005
PROJECT MANAGER: —
PROJECT LOCATION: Henderson, NV
DATE: 2-18-2016

PUMP / TUBING TYPE: Lysimeter
WELL NUMBER: TT-TP4-L2
EQUIPMENT CLEANING METHOD: —
CASING RADIUS: — (in.)
TOTAL DEPTH (TD): — (ft.)
PURGE WATER DISPOSAL: /
DEPTH TO WATER (DTW): — (ft.)
SCREENED INTERVAL: — (ft.)

PURGE START TIME: 1200
PUMP SET AT — (ft.)

TIME	PURGE RATE (ml/min)	VOLUME PURGED (ml)	DTW (ft)	TEMP (°C)	pH	COND. (µS/cm)	DO (mg/L)	ORP (mV)	TURB. (NTU)	
1200	—	—	/	19.90	7.40	6.039	2.04	230.5	1.78	

PURGE STOP TIME: —
SAMPLE TIME: 1200
LAB NAME: Test America
SAMPLE ID: TT-TP4-L2-20160218

OBSERVATIONS/COMMENTS (NOTE TIMES):

Fluor = 0.212

LOW-FLOW WATER PURGING & SAMPLING LOG

TETRA TECH

PROJECT NAME: NERT SFPT
FIELD PERSON: Maxx W
PROJECT NUMBER: 100-SBO-T35000-2016-M05-M05,01
PROJECT MANAGER: Mark Feldman
PROJECT LOCATION: Henderson, NV
DATE: 2-24-16

PUMP / TUBING TYPE: dedicated	WELL NUMBER: TT-TP1-M1
EQUIPMENT CLEANING METHOD:	CASING RADIUS: 2" (in.)
	TOTAL DEPTH (TD): (ft.)
PURGE WATER DISPOSAL:	DEPTH TO WATER (DTW): 25.0 (ft.)
	SCREENED INTERVAL: (ft.)
PURGE START TIME: 1056	PUMP SET AT 30 (ft.)

TIME	PURGE RATE (ml/min)	VOLUME PURGED (ml)	DTW (ft)	TEMP (°C)	pH	COND. (µS/cm)	DO (mg/L)	ORP (mV)	TURB. (NTU)	
1100	250	1000	25.10	24.02	7.15	9.708	0.95	192.0	1.18	
1103	180	1750	25.20	24.36	7.17	9.563	0.77	190.1	0.96	
1106	180	2290	25.09	24.50	7.15	9.546	0.62	187.2	0.92	
1109	180	3370	25.09	24.40	7.13	9.639	0.63	184.9	1.21	
1112	180	3910	25.09	24.36	7.15	9.551	0.61	179.3	1.08	
1115	180	4450	25.09	24.32	7.13	9,499	0.57	176.8	1.22	

PURGE STOP TIME:
SAMPLE TIME: 1115 ~~TT-TP1-M1-20160224~~
LAB NAME:
SAMPLE ID: TT-TP1-M1-20160224

OBSERVATIONS/COMMENTS (NOTE TIMES):
Pump volume = 680 mL

Fluor = 2.295

LOW-FLOW WATER PURGING & SAMPLING LOG

TETRA TECH

PROJECT NAME: NERT SFPT
FIELD PERSON: Maxx W
PROJECT NUMBER: 100-SBO-T35000-2016-MOS-MOS.01
PROJECT MANAGER: Mark Feldman
PROJECT LOCATION: Henderson NV
DATE: 2-24-16

PUMP / TUBING TYPE: dedicated	WELL NUMBER: TT-TP1-MZ
EQUIPMENT CLEANING METHOD:	CASING RADIUS: 2 (in.)
	TOTAL DEPTH (TD): (ft.)
PURGE WATER DISPOSAL:	DEPTH TO WATER (DTW): 26.05 (ft.)
	SCREENED INTERVAL: (ft.)
PURGE START TIME: 1130	PUMP SET AT 30 (ft.)

TIME	PURGE RATE (ml/min)	VOLUME PURGED (ml)	DTW (ft)	TEMP (°C)	pH	COND. (µS/cm)	DO (mg/L)	ORP (mV)	TURB. (NTU)	
1134	180	720	26.35	24.01	7.03	12.63	0.98	157.5	1.52	
1137	180	1260	26.35	24.45	7.03	12.57	0.50	154.2	1.32	
1140	180	1800	26.40	24.45	7.03	12.57	0.39	151.4	1.63	
1143	180	2340	26.45	24.45	7.03	12.58	0.36	149.5	1.15	
1146	180	2880	26.45	24.43	7.04	12.63	0.30	146.1	1.39	
1149	180	3420	26.45	24.35	7.06	12.67	0.28	143.2	1.30	

PURGE STOP TIME:	SAMPLE TIME: 1149
LAB NAME:	SAMPLE ID: TT-TP1-MZ-20160224

OBSERVATIONS/COMMENTS (NOTE TIMES):
680mL = pump vol

FL = 0.030

yellow water

LOW-FLOW WATER PURGING & SAMPLING LOG

TETRA TECH

PROJECT NAME: Nevt SFPT
FIELD PERSON: Maxx W
PROJECT NUMBER: 100-SBO-T35000-2016-M05 - M05.01
PROJECT MANAGER: Mark Feldman
PROJECT LOCATION: Henderson NV
DATE: 2-24-16

PUMP / TUBING TYPE: dedicated	WELL NUMBER: TT-TP1-M3
EQUIPMENT CLEANING METHOD:	CASING RADIUS: 2 (in.)
	TOTAL DEPTH (TD): (ft.)
PURGE WATER DISPOSAL:	DEPTH TO WATER (DTW): 26.20 (ft.)
	SCREENED INTERVAL: (ft.)
PURGE START TIME: 1203	PUMP SET AT 30 (ft.)

TIME	PURGE RATE (ml/min)	VOLUME PURGED (ml)	DTW (ft)	TEMP (°C)	pH	COND. (µS/cm)	DO (mg/L)	ORP (mV)	TURB. (NTU)	
1208	150	750	26.45	23.91	6.98	11.65	1.66	148.4	0.80	
1211	150	1200	26.50	24.33	7.01	11.69	0.80	147.2	0.99	
1214	150	1650	26.51	24.47	7.02	11.71	0.63	148.2	1.11	
1217	150	2100	26.60	24.54	7.03	11.73	0.43	144.0	1.21	
1220	150	2550	26.60	24.58	7.02	11.73	0.36	141.9	1.07	
1223	150	3000	26.64	24.60	7.02	11.73	0.35	141.4	0.97	

PURGE STOP TIME:	SAMPLE TIME: 1223
LAB NAME:	SAMPLE ID: TT-TP1-M3-20160224

OBSERVATIONS/COMMENTS (NOTE TIMES): Pump vol = 650mL

FL = 0.057

LOW-FLOW WATER PURGING & SAMPLING LOG

TETRA TECH

PROJECT NAME: NERT SFPT
FIELD PERSON: PETER JIMENEZ
PROJECT NUMBER: 100-SBO-T35000-2016-MOS-MOS.01
PROJECT MANAGER: MARK FELDMAN
PROJECT LOCATION: Henderson NV
DATE: 2/24/16

PUMP / TUBING TYPE:	WELL NUMBER: TT-TP2-M2
EQUIPMENT CLEANING METHOD:	CASING RADIUS: 2 (in.)
	TOTAL DEPTH (TD): (ft.)
PURGE WATER DISPOSAL:	DEPTH TO WATER (DTW): 24.72 (ft.)
	SCREENED INTERVAL: (ft.)
PURGE START TIME: 1237	PUMP SET AT 30 (ft.)

TIME	PURGE RATE (ml/min)	VOLUME PURGED (ml)	DTW (ft)	TEMP (°C)	pH	COND. (µS/cm)	DO (mg/L)	ORP (mV)	TURB. (NTU)	
1240	300	900	24.78	23.77	7.23	10.13	1.87	145.1	10.63	
1243	300	1800	24.82	23.92	7.17	10.20	1.61	145.7	8.91	
1246	300	2700	24.80	23.96	7.16	10.19	1.56	145.6	5.17	
1249	300	3600	24.78	23.97	7.15	10.20	1.55	145.6	4.77	
1252	300	4500	24.78	23.91	7.15	10.21	1.51	145.8	2.27	
1255	300	5400	24.78	23.92	7.14	10.20	1.51	146.2	1.84	

PURGE STOP TIME:	SAMPLE TIME: 1255
LAB NAME: TEST AMERICA	SAMPLE ID: TT-TP2-M2-20160224

OBSERVATIONS/COMMENTS (NOTE TIMES):

FLOOR = 0.013

Yellow water

TETRA TECH

LOW-FLOW WATER PURGING & SAMPLING LOG

PROJECT NAME: Nert SFPT

FIELD PERSON: Marco W.

PROJECT NUMBER: 100-SB0-T35000-2016-M05-M05.01

PROJECT MANAGER:

PROJECT LOCATION: Henderson NV

DATE: 2-24-16

PUMP / TUBING TYPE:

EQUIPMENT CLEANING METHOD:

PURGE WATER DISPOSAL:

WELL NUMBER: TT-TP2-M1

CASING RADIUS: 2" (in.)

TOTAL DEPTH (TD): (ft.)

DEPTH TO WATER (DTW): 24.10 (ft.)

SCREENED INTERVAL: (ft.)

PURGE START TIME: 1307

PUMP SET AT 30 (ft.)

TIME	PURGE RATE (ml/min)	VOLUME PURGED (ml)	DTW (ft)	TEMP (°C)	pH	COND. (µS/cm)	DO (mg/L)	ORP (mV)	TURB. (NTU)	
1310	270	810	24.13	20.58	7.37	9,049	3.24	159.3	1.83	
1313	270	1620	24.13	20.74	7.31	9,475	3.07	159.9	1.61	
1316	270	2430	24.13	20.87	7.28	9,657	2.97	159.4	1.73	
1319	270	3240	24.13	20.98	7.28	9,772	2.86	158.0	1.38	
1322	270	4050	24.13	21.04	7.27	9,799	2.83	157.8	1.22	
1325	270	4860	24.13	21.05	7.27	9,822	2.91	157.3	1.46	

PURGE STOP TIME:

SAMPLE TIME: 1325

LAB NAME:

SAMPLE ID: TT-TP2-M1-20160224

OBSERVATIONS/COMMENTS (NOTE TIMES):

pmp vol = 680mL

FL = 0.141

LOW-FLOW WATER PURGING & SAMPLING LOG

TETRA TECH

PROJECT NAME: NEST Sept
FIELD PERSON: Mark W Jason Cook
PROJECT NUMBER: 100-580-T3500-2016-M05
PROJECT MANAGER: Mark F.
PROJECT LOCATION: Henderson NV
DATE: 2-25-2016

PUMP / TUBING TYPE: Dedicated	WELL NUMBER: TT-TP3-M1
EQUIPMENT CLEANING METHOD:	CASING RADIUS: 2 (in.)
	TOTAL DEPTH (TD): (ft.)
PURGE WATER DISPOSAL:	DEPTH TO WATER (DTW): 22.87 (ft.)
	SCREENED INTERVAL: (ft.)
PURGE START TIME: 1001	PUMP SET AT 30 (ft.)

TIME	PURGE RATE (ml/min)	VOLUME PURGED (ml)	DTW (ft)	TEMP (°C)	pH	COND. (µS/cm)	DO (mg/L)	ORP (mV)	TURB. (NTU)	
1001	210									
1005	210	840	22.90	17.08	7.42	1.609	4.32	189.5	1.17	
1008	210	1470	22.92	16.86	7.56	1.545	4.23	188.7	0.86	
1011	210	2100	22.93	16.79	7.66	1.512	4.09	188.3	1.02	
1014	210	2730	22.93	16.75	7.72	1.498	3.89	186.8	0.66	
1017	210	3360	22.93	16.70	7.74	1.498	3.92	186.3	0.75	
1020	210	3990	22.93	16.76	7.76	1.495	3.89	185.7	0.70	

PURGE STOP TIME:	SAMPLE TIME: 1020
LAB NAME: TA	SAMPLE ID: TT-TP3-M1-20160225

OBSERVATIONS/COMMENTS (NOTE TIMES):

Flow rate = 0.06

LOW-FLOW WATER PURGING & SAMPLING LOG

TETRA TECH

PROJECT NAME: NERT SFPT
FIELD PERSON: Mark W.
PROJECT NUMBER: 100-SBO-T35000-2016-MNS
PROJECT MANAGER: Mark F.
PROJECT LOCATION: Henderson NV
DATE: 2-25-2016

PUMP / TUBING TYPE:	WELL NUMBER: TT-TP3-M2
EQUIPMENT CLEANING METHOD:	CASING RADIUS: 2 (in.)
PURGE WATER DISPOSAL:	TOTAL DEPTH (TD): (ft.)
	DEPTH TO WATER (DTW): 24.20 (ft.)
	SCREENED INTERVAL: (ft.)
PURGE START TIME: 1028	PUMP SET AT 30 (ft.)

TIME	PURGE RATE (ml/min)	VOLUME PURGED (ml)	DTW (ft)	TEMP (°C)	pH	COND. (µS/cm)	DO (mg/L)	ORP (mV)	TURB. (NTU)	
1028	210									
1032	210	840	24.22	22.28	7.69	3.571	1.29	200.8	3.85	
1035	210	1470	24.24	22.39	7.69	3.449	0.94	198.4	4.19	
1038	210	2100	24.26	22.45	7.69	3.385	0.77	196.2	2.87	
1041	210	2730	24.26	22.48	7.68	3.364	0.64	193.3	3.01	
1044	210	3360	24.26	22.52	7.67	3.371	0.59	190.6	2.99	
1047	210	3990	24.27	22.55	7.67	3.384	0.56	190.1	2.23	

PURGE STOP TIME:	SAMPLE TIME: 1047
LAB NAME: TA	SAMPLE ID: TT-TP3-M2-2016 0225

OBSERVATIONS/COMMENTS (NOTE TIMES):

Fluorecein = 0.102

LOW-FLOW WATER PURGING & SAMPLING LOG

TETRA TECH

PROJECT NAME: SPPT NERT
FIELD PERSON: Maxx G
PROJECT NUMBER: 100-580-T35000-2016-M05
PROJECT MANAGER: Mark F.
PROJECT LOCATION: Henderson NV
DATE: 2-25-2016

PUMP / TUBING TYPE:
EQUIPMENT CLEANING METHOD:
PURGE WATER DISPOSAL:

WELL NUMBER: TT-TP4-M1
CASING RADIUS: 2 (in.)
TOTAL DEPTH (TD): (ft.)
DEPTH TO WATER (DTW): 24.61 (ft.)
SCREENED INTERVAL: (ft.)

PURGE START TIME: 1124
PUMP SET AT 30 (ft.)

TIME	PURGE RATE (ml/min)	VOLUME PURGED (ml)	DTW (ft)	TEMP (°C)	pH	COND. (µS/cm)	DO (mg/L)	ORP (mV)	TURB. (NTU)	
1124	210									
1128	210	840	24.66	24.19	7.24	11.62	0.83	185.8	1.04	
1131	210	1470	24.68	24.22	7.25	11.61	0.65	182.5	0.80	
1134	210	2100	24.68	24.22	7.24	11.52	0.61	179.9	0.74	
1137	210	2730	24.68	24.24	7.17	11.06	0.69	174.3	0.66	
1140	210	3360	24.68	24.24	7.17	11.00	0.70	173.2	0.73	
1143	210	3990	24.69	24.26	7.16	10.96	0.72	171.3	0.50	

PURGE STOP TIME:
SAMPLE TIME: 1143
LAB NAME: TA
SAMPLE ID: TT-TP4-M1-20160225

OBSERVATIONS/COMMENTS (NOTE TIMES):

FL = 0.08 T

LOW-FLOW WATER PURGING & SAMPLING LOG

TETRA TECH

PROJECT NAME: SFPT NERT FIELD PERSON: Mark W

PROJECT NUMBER: 100-580-T35000-2016-M05 PROJECT MANAGER: Mark F

PROJECT LOCATION: Henderson NV DATE: 2-25-2016

PUMP / TUBING TYPE: dedicated	WELL NUMBER: TT-TP4-M2
EQUIPMENT CLEANING METHOD:	CASING RADIUS: 2 (in.)
	TOTAL DEPTH (TD): (ft.)
PURGE WATER DISPOSAL:	DEPTH TO WATER (DTW): 24.61 (ft.)
	SCREENED INTERVAL: (ft.)
PURGE START TIME: 1055	PUMP SET AT 30 (ft.)

TIME	PURGE RATE (ml/min)	VOLUME PURGED (ml)	DTW (ft)	TEMP (°C)	pH	COND. (µS/cm)	DO (mg/L)	ORP (mV)	TURB. (NTU)	
1055	240									
1059	240	840	24.68	24.02	7.13	11.37	1.06	210.2	1.75	
1102	240	1470	24.69	24.46	7.11	11.40	0.59	206.9	1.32	
1105	240	2100	24.69	24.67	7.11	11.41	0.42	201.9	1.93	
1108	240	2730	24.69	24.68	7.13	11.42	0.37	196.8	0.97	
1111	240	3360	24.69	24.68	7.12	11.41	0.34	193.4	0.86	
1114	240	3990	24.69	24.66	7.12	11.42	0.33	190.0	1.01	

PURGE STOP TIME:	SAMPLE TIME: 1114
LAB NAME: TT	SAMPLE ID: TT-TP4-M2-2016 0225

OBSERVATIONS/COMMENTS (NOTE TIMES):

Fluor 0.064

LOW-FLOW WATER PURGING & SAMPLING LOG

TETRA TECH

PROJECT NAME: SPPT NERT
FIELD PERSON: J. Cook
PROJECT NUMBER: 100-580-TJ5000-2016-1005
PROJECT MANAGER: Mark F.
PROJECT LOCATION: Henderson NV
DATE: 2-25-2016

PUMP / TUBING TYPE: dedicated
EQUIPMENT CLEANING METHOD:
PURGE WATER DISPOSAL:

WELL NUMBER: TT-TP4-M3
CASING RADIUS: 2 (in.)
TOTAL DEPTH (TD): (ft.)
DEPTH TO WATER (DTW): 24.64 (ft.)
SCREENED INTERVAL: (ft.)

PURGE START TIME: 1155
PUMP SET AT 30 (ft.)

TIME	PURGE RATE (ml/min)	VOLUME PURGED (ml)	DTW (ft)	TEMP (°C)	pH	COND. (µS/cm)	DO (mg/L)	ORP (mV)	TURB. (NTU)	
1155	210									
1159	210	840	24.73	24.13	7.23	11.30	1.69	174.3	1.46	
1202	210	1470	24.73	24.36	7.24	11.30	1.01	170.3	1.23	
1205	210	2100	24.75	24.44	7.24	11.31	0.72	163.0	1.32	
1208	210	2730	24.75	24.46	7.25	11.32	0.67	160.6	1.17	
1211	210	3360	24.75	24.49	7.25	11.32	0.66	159.3	1.29	
1214	210	3990	24.75	24.55	7.25	11.32	0.66	157.2	1.30	

PURGE STOP TIME:
SAMPLE TIME: 1214
LAB NAME:
SAMPLE ID: TT-TP4-M3-20160225

OBSERVATIONS/COMMENTS (NOTE TIMES):

Dup & MS MSD

Fluor -0.029

LOW-FLOW WATER PURGING & SAMPLING LOG

TETRA TECH

PROJECT NAME: NERT Soil Flush Pilot Test
FIELD PERSON: P Jimenez
PROJECT NUMBER: 100-580-T35000-2016-1105
PROJECT MANAGER:
PROJECT LOCATION: Henderson, NV
DATE: 2-25-2016

PUMP / TUBING TYPE: Lysimeter	WELL NUMBER: TT-TPI-L1
EQUIPMENT CLEANING METHOD:	CASING RADIUS: — (in.)
	TOTAL DEPTH (TD): — (ft.)
PURGE WATER DISPOSAL: on site	DEPTH TO WATER (DTW): — (ft.)
	SCREENED INTERVAL: / (ft.)
PURGE START TIME: 1255	PUMP SET AT — (ft.)

TIME	PURGE RATE (ml/min)	VOLUME PURGED (ml)	DTW (ft)	TEMP (°C)	pH	COND. (µS/cm)	DO (mg/L)	ORP (mV)	TURB. (NTU)	
1255	—	—	—	17.54	7.33	10.33	2.45	148.1	1.06	

PURGE STOP TIME: —
SAMPLE TIME: 1255
LAB NAME: Test America
SAMPLE ID: TT-TPILI-20160225

OBSERVATIONS/COMMENTS (NOTE TIMES):

Fluor = 0.302

LOW-FLOW WATER PURGING & SAMPLING LOG

TETRA TECH

PROJECT NAME: NERT Soil Flush Pilot Test FIELD PERSON: P. Jimenez

PROJECT NUMBER: 100-SBO-T35000-2016-M03 PROJECT MANAGER: _____

PROJECT LOCATION: Henderson, NV DATE: 2-25-2016

PUMP / TUBING TYPE: Lysimeter	WELL NUMBER: TT-TPI-LZ
EQUIPMENT CLEANING METHOD: —	CASING RADIUS: — (in.)
	TOTAL DEPTH (TD): — (ft.)
PURGE WATER DISPOSAL: —	DEPTH TO WATER (DTW): — (ft.)
	SCREENED INTERVAL: — (ft.)
PURGE START TIME: 1300	PUMP SET AT (ft.)

TIME	PURGE RATE (ml/min)	VOLUME PURGED (ml)	DTW (ft)	TEMP (°C)	pH	COND. (µS/cm)	DO (mg/L)	ORP (mV)	TURB. (NTU)	
1300	-	—	—	22.4	6.85	23.69	4.06	159.9	108	

PURGE STOP TIME: — SAMPLE TIME: 1300

LAB NAME: Test America SAMPLE ID: TT-TPI-LZ-20160225

OBSERVATIONS/COMMENTS (NOTE TIMES):

Fluor- 0.240

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LOW-FLOW WATER PURGING & SAMPLING LOG

TETRA TECH

PROJECT NAME: NERT Soil Flush Pilot Test FIELD PERSON: P. Jimenez

PROJECT NUMBER: 100-SD0-T3000-2016-M05 PROJECT MANAGER: —

PROJECT LOCATION: Henderson, NV DATE: 2-25-2016

PUMP / TUBING TYPE: Lysimeter	WELL NUMBER: TT-TPZ-L1
EQUIPMENT CLEANING METHOD: —	CASING RADIUS: — (in.)
PURGE WATER DISPOSAL: —	TOTAL DEPTH (TD): — (ft.)
	DEPTH TO WATER (DTW): — (ft.)
	SCREENED INTERVAL: — (ft.)
PURGE START TIME: 1240	PUMP SET AT — (ft.)

TIME	PURGE RATE (ml/min)	VOLUME PURGED (ml)	DTW (ft)	TEMP (°C)	pH	COND. (µS/cm)	DO (mg/L)	ORP (mV)	TURB. (NTU)	
1240	—	—	—	19.59	7.48	6.976	2.94	1462	1.88	

PURGE STOP TIME: — SAMPLE TIME: 1240

LAB NAME: Test America SAMPLE ID: TT-TPZ-L1-20160225

OBSERVATIONS/COMMENTS (NOTE TIMES):

Fluor = 0.210

TETRA TECH

LOW-FLOW WATER PURGING & SAMPLING LOG

PROJECT NAME: NERT Soil Flush Pilot Test
FIELD PERSON: P. Jimenez
PROJECT NUMBER: 100-SB0-T35000-2016-MBS
PROJECT MANAGER: —
PROJECT LOCATION: Henderson, NV
DATE: 2-25-2016

PUMP / TUBING TYPE: Lysimeter

WELL NUMBER: TT-TP2-L2

EQUIPMENT CLEANING METHOD: —

CASING RADIUS: — (in.)

TOTAL DEPTH (TD): — (ft.)

PURGE WATER DISPOSAL: —

DEPTH TO WATER (DTW): — (ft.)

SCREENED INTERVAL: — (ft.)

PURGE START TIME: 1245

PUMP SET AT — (ft.)

TIME	PURGE RATE (ml/min)	VOLUME PURGED (ml)	DTW (ft)	TEMP (°C)	pH	COND. (μS/cm)	DO (mg/L)	ORP (mV)	TURB. (NTU)	
1245	—	—	—	20.8	7.32	13.04	7.66	156.0	1.15	

PURGE STOP TIME: —

SAMPLE TIME: 1245

LAB NAME: Test America

SAMPLE ID: TT-TP2-L2-20160225

OBSERVATIONS/COMMENTS (NOTE TIMES):

Fluor = 0.112

FILE: LOG FORMS\em-Water Purging & Sampling Log-10-20-09.dwg

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LOW-FLOW WATER PURGING & SAMPLING LOG

TETRA TECH

PROJECT NAME: NERT Soil Flush Pilot Test
FIELD PERSON: P. Timmer
PROJECT NUMBER: 100-SBO-T33000-2016-1105
PROJECT MANAGER:
PROJECT LOCATION: Henderson, NV
DATE: 2-25-2016

PUMP / TUBING TYPE: Lysimeter	WELL NUMBER: TT-TP3-L1
EQUIPMENT CLEANING METHOD: —	CASING RADIUS: — (In.)
	TOTAL DEPTH (TD): — (ft.)
PURGE WATER DISPOSAL:	DEPTH TO WATER (DTW): — (ft.)
	SCREENED INTERVAL: — (ft.)
PURGE START TIME: 1230	PUMP SET AT (ft.)

TIME	PURGE RATE (ml/min)	VOLUME PURGED (ml)	DTW (ft)	TEMP (°C)	pH	COND. (µS/cm)	DO (mg/L)	ORP (mV)	TURB. (NTU)	
1230	—	—	—	17.78	8.56	2,533	4.51	126.5	0.98	

PURGE STOP TIME: —	SAMPLE TIME: 1230
LAB NAME: Test America	SAMPLE ID: TT-TP3-L1-20160225

OBSERVATIONS/COMMENTS (NOTE TIMES):

Fluor = 0.378

LOW-FLOW WATER PURGING & SAMPLING LOG

TETRA TECH

PROJECT NAME: NERT Soil Flush Pilot Test
FIELD PERSON: P. Jimenez
PROJECT NUMBER: 100-5130-T35000-2016-M05
PROJECT MANAGER: —
PROJECT LOCATION: Henderson, NV
DATE: 2-25-2016

PUMP / TUBING TYPE: Lysimeter
WELL NUMBER: TT-TP3-LZ
EQUIPMENT CLEANING METHOD: —
CASING RADIUS: — (in.)
TOTAL DEPTH (TD): — (ft.)
PURGE WATER DISPOSAL:
DEPTH TO WATER (DTW): — (ft.)
SCREENED INTERVAL: — (ft.)

PURGE START TIME: 1235
PUMP SET AT — (ft.)

TIME	PURGE RATE (ml/min)	VOLUME PURGED (ml)	DTW (ft)	TEMP (°C)	pH	COND. (µS/cm)	DO (mg/L)	ORP (mV)	TURB. (NTU)	
1235	—	—	—	18.87	7.70	4.513	2.29	143.3	1.36	

PURGE STOP TIME: —
SAMPLE TIME: 1235
LAB NAME: Test America
SAMPLE ID: TT-TP3-LZ-20160225

OBSERVATIONS/COMMENTS (NOTE TIMES):

Fluor = 0.130

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LOW-FLOW WATER PURGING & SAMPLING LOG

TETRA TECH

PROJECT NAME: VERT Soil Flush Pilot Test
FIELD PERSON: P. Jimenez
PROJECT NUMBER: 100-G80-T35000-2016-M05
PROJECT MANAGER: —
PROJECT LOCATION: Henderson, NV
DATE: 2-25-2016

PUMP / TUBING TYPE: Lysimeter
WELL NUMBER: TT-TP4-L1
EQUIPMENT CLEANING METHOD: —
CASING RADIUS: — (In.)
TOTAL DEPTH (TD): — (ft.)
PURGE WATER DISPOSAL: —
DEPTH TO WATER (DTW): — (ft.)
SCREENED INTERVAL: — (ft.)

PURGE START TIME: 1225
PUMP SET AT — (ft.)

TIME	PURGE RATE (ml/min)	VOLUME PURGED (ml)	DTW (ft)	TEMP (°C)	pH	COND. (µS/cm)	DO (mg/L)	ORP (mV)	TURB. (NTU)	
1225	—	—	—	18.47	6.87	27.11	6.87	180.1	1.57	

PURGE STOP TIME: —
SAMPLE TIME: 1225
LAB NAME: Test America
SAMPLE ID: TT-TP4-L1-20160225

OBSERVATIONS/COMMENTS (NOTE TIMES):

Fluor = 0.202

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LOW-FLOW WATER PURGING & SAMPLING LOG

TETRA TECH

PROJECT NAME: NERT Soil Flush Pilot Test FIELD PERSON: P. Jimenez

PROJECT NUMBER: 100-SBO-T35000-2016-MOS PROJECT MANAGER: -

PROJECT LOCATION: Henderson, NV DATE: 2-25-2016

PUMP / TUBING TYPE: Lysimeter	WELL NUMBER: TT-TP4-L2
EQUIPMENT CLEANING METHOD: -	CASING RADIUS: - (in.)
PURGE WATER DISPOSAL: -	TOTAL DEPTH (TD): - (ft.)
	DEPTH TO WATER (DTW): - (ft.)
	SCREENED INTERVAL: - (ft.)
PURGE START TIME: 1220	PUMP SET AT - (ft.)

TIME	PURGE RATE (ml/min)	VOLUME PURGED (ml)	DTW (ft)	TEMP (°C)	pH	COND. (µS/cm)	DO (mg/L)	ORP (mV)	TURB. (NTU)	
1220	-	-	-	20.85	7.51	6.895	1.703	154.1	1.61	

PURGE STOP TIME: - SAMPLE TIME: 1220

LAB NAME: Test America SAMPLE ID: TT-TP4-L2-20160225

OBSERVATIONS/COMMENTS (NOTE TIMES):

Fluor = 0.140

LOW-FLOW WATER PURGING & SAMPLING LOG

TETRA TECH

PROJECT NAME: NERT SFDT
FIELD PERSON: M. WILSON / M. WLODARCZYK
PROJECT NUMBER:
PROJECT MANAGER:
PROJECT LOCATION:
DATE: 3/2/16

PUMP / TUBING TYPE: DEDICATED
EQUIPMENT CLEANING METHOD: MICRO 90 / DECON BUCKETS
PURGE WATER DISPOSAL:

WELL NUMBER: Tt-TP1-M1
CASING RADIUS: 2 (in.)
TOTAL DEPTH (TD): (ft.)
DEPTH TO WATER (DTW): 24.77 (ft.)
SCREENED INTERVAL: (ft.)

PURGE START TIME: 1237
PUMP SET AT 30 (ft.)

TIME	PURGE RATE (ml/min)	VOLUME PURGED (ml)	DTW (ft)	TEMP (°C)	pH	COND. (µS/cm)	DO (mg/L)	ORP (mV)	TURB. (NTU)	
1237	240	—	24.77	—	—	—	—	—	—	
1241	↓	960	24.95	25.16	7.60	6.563	0.80	200.9	2.05	
1244		1680	24.93	25.12	7.55	6.544	0.71	204.4	2.32	
1247		2400	24.90	25.17	7.53	6.557	0.40	204.9	2.07	
1250		3120	24.94	25.18	7.51	6.559	0.35	203.7	1.81	
1253		3840	24.94	25.14	7.50	6.656	0.22	202.5	1.80	
1256	↓	4560	24.94	25.16	7.47	6.828	0.21	202.7	1.74	

PURGE STOP TIME: 1256
SAMPLE TIME: 1256
LAB NAME: TESTAMERICA
SAMPLE ID: Tt-TP1-M1-20160302

OBSERVATIONS/COMMENTS (NOTE TIMES):

FL = 4.026

LOW-FLOW WATER PURGING & SAMPLING LOG

TETRA TECH

PROJECT NAME: NERT SFAT
FIELD PERSON: M. WILSON/M. WLODARCZYK
PROJECT NUMBER:
PROJECT MANAGER:
PROJECT LOCATION:
DATE: 3/2/16

PUMP / TUBING TYPE: DEDICATED
EQUIPMENT CLEANING METHOD: MICRO 90 / DECON BUCKETS
PURGE WATER DISPOSAL:

WELL NUMBER: Tt-TP1-M2
CASING RADIUS: 2 (in.)
TOTAL DEPTH (TD): (ft.)
DEPTH TO WATER (DTW): 25.86 (ft.)
SCREENED INTERVAL: (ft.)

PURGE START TIME: 1201
PUMP SET AT 30 (ft.)

TIME	PURGE RATE (ml/min)	VOLUME PURGED (ml)	DTW (ft)	TEMP (°C)	pH	COND. (µS/cm)	DO (mg/L)	ORP (mV)	TURB. (NTU)	
1201	315	—	25.86	—	—	—	—	—	—	
1205	315	1260	26.23	25.45	7.06	12.59	0.52	210.4	4.29	
1208	210	2205	26.28	25.44	7.07	12.59	0.40	209.6	4.12	
1211	210	2835	26.31	25.42	7.09	12.66	0.43	207.9	2.60	
1214	210	3465	26.34	25.39	7.11	12.71	0.53	206.5	1.91	
1217	210	4095	26.39	25.38	7.12	12.74	0.37	204.6	1.38	
1220	210	4725	26.41	25.33	7.13	12.76	0.30	203.5	1.35	

PURGE STOP TIME: 1220
SAMPLE TIME: 1220
LAB NAME: TEST AMERICA
SAMPLE ID: Tt-TP1-M2-20160302

OBSERVATIONS/COMMENTS (NOTE TIMES):

FL = 0.034

LOW-FLOW WATER PURGING & SAMPLING LOG

TETRA TECH

PROJECT NAME: NERT SFPT FIELD PERSON: M.WILSON / M. WLODARCZYK

PROJECT NUMBER: PROJECT MANAGER:

PROJECT LOCATION: DATE: 3/2/16

PUMP / TUBING TYPE: DEDICATED	WELL NUMBER: Tt-TP1-M3
EQUIPMENT CLEANING METHOD: MICRO 90 / DECON BUCKETS	CASING RADIUS: 2 (in.)
PURGE WATER DISPOSAL:	TOTAL DEPTH (TD): (ft.)
	DEPTH TO WATER (DTW): 26.03 (ft.)
	SCREENED INTERVAL: (ft.)
PURGE START TIME: 1055	PUMP SET AT 30 (ft.)

TIME	PURGE RATE (ml/min)	VOLUME PURGED (ml)	DTW (ft)	TEMP (°C)	pH	COND. (µS/cm)	DO (mg/L)	ORP (mV)	TURB. (NTU)	
1055	390	—	26.03	—	—	—	—	—	—	
1059	390	1560	26.55	25.38	6.83	11.81	0.49	235.4	1.18	
1102	390	2730	26.69	25.43	6.92	11.82	0.54	232.5	2.75	
1105	285	3900	26.80	25.46	6.94	11.83	1.06	229.7	3.65	
1108	285	4755	26.85	25.45	6.97	11.83	1.02	226.8	2.84	
1111	285	5610	26.89	25.41	7.00	11.85	0.79	224.3	2.15	
1114	285	6465	26.92	25.47	7.01	11.84	0.61	223.0	1.68	
1117	285	7320	26.94	25.42	7.02	11.85	0.44	220.8	1.74	
1120	285	8175	26.95	25.46	7.03	11.85	0.39	219.3	1.53	

PURGE STOP TIME: 1120	SAMPLE TIME: 1120
LAB NAME: TEST AMERICA	SAMPLE ID: Tt-TP1-M3-20160302

OBSERVATIONS/COMMENTS (NOTE TIMES):

FL = 0.006

PAGE 1 of 1

LOW-FLOW WATER PURGING & SAMPLING LOG

TETRA TECH

PROJECT NAME: NERT SFPT

FIELD PERSON: M. WILSON / M. WLODARCZYK

PROJECT NUMBER: _____

PROJECT MANAGER: _____

PROJECT LOCATION: _____

DATE: 3/2/16

PUMP / TUBING TYPE: DEDICATED

EQUIPMENT CLEANING METHOD: MICRO 90 / DECON BUCKETS

PURGE WATER DISPOSAL:

WELL NUMBER: Tt-TP2-M1

CASING RADIUS: 2 (in.)

TOTAL DEPTH (TD): _____ (ft.)

DEPTH TO WATER (DTW): 23.86 (ft.)

SCREENED INTERVAL: _____ (ft.)

PURGE START TIME: 1342

PUMP SET AT 30 (ft.)

TIME	PURGE RATE (ml/min)	VOLUME PURGED (ml)	DTW (ft)	TEMP (°C)	pH	COND. (µS/cm)	DO (mg/L)	ORP (mV)	TURB. (NTU)	
1342	210	—	23.86	—	—	—	—	—	—	
1346	210	840	23.90	20.50	7.46	8.493	2.99	146.7	0.41	
1349	210	1470	23.90	20.65	7.39	8.660	3.01	146.9	0.10	
1352	↓	2100	23.90	20.71	7.49	8.926	2.86	146.1	0.07	
1355		2730	23.90	20.74	7.36	9.117	2.79	145.6	0.02	
1358		3360	23.90	20.80	7.36	9.159	3.05	144.4	0.05	
1401	↓	3990	23.90	20.81	7.35	9.173	2.88	143.7	0.06	

PURGE STOP TIME: 1401

SAMPLE TIME: 1401

LAB NAME: TEST AMERICA

SAMPLE ID: Tt-TP2-M1-20160302

OBSERVATIONS/COMMENTS (NOTE TIMES):

FL = 0.130

LOW-FLOW WATER PURGING & SAMPLING LOG

TETRA TECH

PROJECT NAME: NERT SFAT
FIELD PERSON: M.WILSON/M.WLODARCZYK
PROJECT NUMBER:
PROJECT MANAGER:
PROJECT LOCATION:
DATE: 3/2/16

PUMP / TUBING TYPE: DEDICATED
EQUIPMENT CLEANING METHOD: MICRO 90 / DECON BUCKETS
PURGE WATER DISPOSAL:

WELL NUMBER: Tt-TP2-M2
CASING RADIUS: 2 (in.)
TOTAL DEPTH (TD): (ft.)
DEPTH TO WATER (DTW): 24.54 (ft.)
SCREENED INTERVAL: (ft.)

PURGE START TIME: 1312
PUMP SET AT 30 (ft.)

TIME	PURGE RATE (ml/min)	VOLUME PURGED (ml)	DTW (ft)	TEMP (°C)	pH	COND. (µS/cm)	DO (mg/L)	ORP (mV)	TURB. (NTU)	
1312	240	—	24.54	—	—	—	—	—	—	
1316	240	960	24.60	24.36	7.39	10.08	1.98	167.4	2.64	
1319	240	1680	24.61	24.07	7.30	10.08	1.59	161.0	2.59	
1322	|	2400	24.61	23.96	7.26	10.10	1.52	158.0	2.60	
1325	|	3120	24.61	23.90	7.27	10.09	1.58	154.8	2.58	
1328	|	3840	24.61	23.88	7.26	10.10	1.56	152.4	0.40	
1331	|	4560	24.61	23.91	7.25	10.09	1.54	150.3	0.76	

PURGE STOP TIME: 1331
SAMPLE TIME: 1331
LAB NAME: TEST AMERICA
SAMPLE ID: Tt-TP2-M2-20160302

OBSERVATIONS/COMMENTS (NOTE TIMES):

FL = 0.043

PAGE 1 of 1

LOW-FLOW WATER PURGING & SAMPLING LOG

TETRA TECH

PROJECT NAME: NERT SFPT

FIELD PERSON: M.WILSON/M.WLODARCZYK

PROJECT NUMBER:

PROJECT MANAGER:

PROJECT LOCATION:

DATE: 3/3/16

PUMP / TUBING TYPE: DEDICATED

EQUIPMENT CLEANING METHOD: MICRO 90 / DECON BUCKETS

PURGE WATER DISPOSAL:

WELL NUMBER: Tt-TP3-M1

CASING RADIUS: 2 (in.)

TOTAL DEPTH (TD): (ft.)

DEPTH TO WATER (DTW): 22.56 (ft.)

SCREENED INTERVAL: (ft.)

PURGE START TIME: 0922

PUMP SET AT 30 (ft.)

TIME	PURGE RATE (ml/min)	VOLUME PURGED (ml)	DTW (ft)	TEMP (°C)	pH	COND. (µS/cm)	DO (mg/L)	ORP (mV)	TURB. (NTU)	
0922	240	—	22.56	—	—	—	—	—	—	
0926	↓	960	22.60	17.02	7.24	1.481	3.57	133.1	0.18	
0929		1680	22.60	16.70	7.44	1.425	3.39	125.4	0.26	
0932		2400	22.60	16.63	7.53	1.410	3.37	120.4	0.30	
0935		3120	22.60	16.63	7.58	1.409	3.38	117.5	0.12	
0938		3840	22.60	16.53	7.62	1.410	3.35	115.4	0.38	
0941	↓	4560	22.60	16.55	7.65	1.411	3.19	113.9	0.18	

PURGE STOP TIME: 0941

SAMPLE TIME: 0941

LAB NAME: TEST AMERICA

SAMPLE ID: Tt-TP3-M1-20160303

OBSERVATIONS/COMMENTS (NOTE TIMES):

FL = 0.089

LOW-FLOW WATER PURGING & SAMPLING LOG

TETRA TECH

PROJECT NAME: NERT SFPT
FIELD PERSON: M.WILSON/M.WLODARCZYK
PROJECT NUMBER:
PROJECT MANAGER:
PROJECT LOCATION:
DATE: 3/3/16

PUMP / TUBING TYPE: DEDICATED
EQUIPMENT CLEANING METHOD: MICRO 90 / DECON BUCKETS
PURGE WATER DISPOSAL:

WELL NUMBER: Tt-TP3-M2
CASING RADIUS: 2 (in.)
TOTAL DEPTH (TD): (ft.)
DEPTH TO WATER (DTW): 23.94 (ft.)
SCREENED INTERVAL: (ft.)

PURGE START TIME: 0953
PUMP SET AT 30 (ft.)

TIME	PURGE RATE (ml/min)	VOLUME PURGED (ml)	DTW (ft)	TEMP (°C)	pH	COND. (µS/cm)	DO (mg/L)	ORP (mV)	TURB. (NTU)	
0953	150	—	23.94	—	—	—	—	—	—	
0957	↓	600	23.98	20.41	7.71	2.687	1.61	122.6	3.40	
1000		1050	24.00	20.85	7.74	2.667	0.78	121.1	4.02	
1003		1500	23.98	21.03	7.76	2.645	0.51	119.7	2.62	
1006		1950	23.98	21.08	7.76	2.647	0.41	118.9	1.30	
1009		2400	23.98	21.11	7.77	2.657	0.38	118.5	0.67	
1012	↓	2850	23.98	21.16	7.77	2.668	0.34	118.2	0.44	

PURGE STOP TIME: 1012
SAMPLE TIME: 1012
LAB NAME: TEST AMERICA
SAMPLE ID: Tt-TP3-M2-20160303

OBSERVATIONS/COMMENTS (NOTE TIMES):

FL= 0.081

LOW-FLOW WATER PURGING & SAMPLING LOG

TETRA TECH

PROJECT NAME: NERT SFPT

FIELD PERSON: M.WILSON / M.WLODARCZYK

PROJECT NUMBER:

PROJECT MANAGER:

PROJECT LOCATION:

DATE: 3/3/16

PUMP / TUBING TYPE: DEDICATED

EQUIPMENT CLEANING METHOD: MICRO 90 / DECON BUCKETS

PURGE WATER DISPOSAL:

WELL NUMBER: Tt-TP4-M1

CASING RADIUS: 2 (in.)

TOTAL DEPTH (TD): (ft.)

DEPTH TO WATER (DTW): 24.39 (ft.)

SCREENED INTERVAL: (ft.)

PURGE START TIME: 1026

PUMP SET AT 30 (ft.)

TIME	PURGE RATE (ml/min)	VOLUME PURGED (ml)	DTW (ft)	TEMP (°C)	pH	COND. (µS/cm)	DO (mg/L)	ORP (mV)	TURB. (NTU)	
1026	210	—	24.39	—	—	—	—	—	—	
1030	↓	840	24.46	23.69	7.08	11.35	1.50	157.9	0.75	
1033		1470	24.45	24.09	7.17	11.57	0.55	157.9	0.50	
1036		2100	24.45	24.20	7.18	11.55	0.43	157.7	0.23	
1039		2730	24.45	24.27	7.14	11.28	0.41	157.1	0.67	
1042		3360	24.45	24.36	7.12	10.99	0.43	156.3	0.40	
1045	↓	3990	24.45	24.43	7.10	10.86	0.46	155.0	0.16	

PURGE STOP TIME: 1045

SAMPLE TIME: 1045

LAB NAME: TEST AMERICA

SAMPLE ID: Tt-TP4-M1-20160303

OBSERVATIONS/COMMENTS (NOTE TIMES):

FL = 0.083

LOW-FLOW WATER PURGING & SAMPLING LOG

TETRA TECH

PROJECT NAME: NERT SPPT
FIELD PERSON: M. WILSON / M. WLODARCZYK
PROJECT NUMBER:
PROJECT MANAGER:
PROJECT LOCATION:
DATE: 3/3/16

PUMP / TUBING TYPE: DEDICATED	WELL NUMBER: Tt-TP4-M2
EQUIPMENT CLEANING METHOD: MICRO 90/ DECON BUCKETS	CASING RADIUS: 2 (in.)
PURGE WATER DISPOSAL:	TOTAL DEPTH (TD): (ft.)
	DEPTH TO WATER (DTW): 24.38 (ft.)
	SCREENED INTERVAL: (ft.)
PURGE START TIME: 1057	PUMP SET AT 30 (ft.)

TIME	PURGE RATE (ml/min)	VOLUME PURGED (ml)	DTW (ft)	TEMP (°C)	pH	COND. (µS/cm)	DO (mg/L)	ORP (mV)	TURB. (NTU)	
1057	165	—	24.38	—	—	—	—	—	—	
1102	↓	825	24.46	24.41	7.14	11.29	0.75	155.9	1.33	
1105	↓	1320	24.48	24.68	7.10	11.17	0.39	155.5	0.46	
1108	↓	1815	24.48	24.73	7.09	11.15	0.28	155.4	0.25	
1111	↓	2310	24.48	24.69	7.09	11.13	0.27	155.3	0.26	
1114	↓	2805	24.48	24.62	7.08	11.13	0.29	155.3	0.33	
1117	↓	3300	24.48	24.63	7.08	11.14	0.36	155.4	0.62	

PURGE STOP TIME: 1117	SAMPLE TIME: 1117
LAB NAME: TEST AMERICA	SAMPLE ID: Tt-TP4-M2-20160303

OBSERVATIONS/COMMENTS (NOTE TIMES):

FL= 0.082

LOW-FLOW WATER PURGING & SAMPLING LOG

TETRA TECH

PROJECT NAME: NERT SFPT
FIELD PERSON: M. WILSON / M. WLODCZYK
PROJECT NUMBER:
PROJECT MANAGER:
PROJECT LOCATION:
DATE: 3/3/16

PUMP / TUBING TYPE: DEDICATED
EQUIPMENT CLEANING METHOD: MICRO90 / DECON BUCKETS
PURGE WATER DISPOSAL:

WELL NUMBER: Tt-TP4-M3
CASING RADIUS: 2 (in.)
TOTAL DEPTH (TD): (ft.)
DEPTH TO WATER (DTW): 24.46 (ft.)
SCREENED INTERVAL: (ft.)

PURGE START TIME: 1129
PUMP SET AT 30 (ft.)

TIME	PURGE RATE (ml/min)	VOLUME PURGED (ml)	DTW (ft)	TEMP (°C)	pH	COND. (µS/cm)	DO (mg/L)	ORP (mV)	TURB. (NTU)	
1129	165	—	24.46	—	—	—	—	—	—	
1134	↓	825	24.50	24.55	7.19	11.46	0.93	154.8	0.64	
1137		1320	24.50	24.68	7.19	11.46	0.46	153.6	0.06	
1140		1815	24.50	24.61	7.18	11.48	0.45	152.9	1.12	
1143		2310	24.50	24.60	7.18	11.48	0.43	152.1	0.15	
1146		2805	24.50	24.57	7.18	11.48	0.43	151.5	0.17	
1149	↓	3300	24.50	24.48	7.18	11.49	0.43	151.0	0.15	

PURGE STOP TIME: 1149
SAMPLE TIME: 1149
LAB NAME: TEST AMERICA
SAMPLE ID: Tt-TP4-M3-20160303

OBSERVATIONS/COMMENTS (NOTE TIMES):

Tt-TP4-M3-20160303-DUP

FL= 0.137

LOW-FLOW WATER PURGING & SAMPLING LOG

TETRA TECH

PROJECT NAME: SFPT ~~SFPT~~ NERT

FIELD PERSON: M.WILSON/M.WLODARCZYK

PROJECT NUMBER:

PROJECT MANAGER:

PROJECT LOCATION:

DATE: 3/3/16

PUMP / TUBING TYPE: LYSIMETER	WELL NUMBER: TT-TP1-L1
EQUIPMENT CLEANING METHOD:	CASING RADIUS: — (in.)
	TOTAL DEPTH (TD): — (ft.)
PURGE WATER DISPOSAL:	DEPTH TO WATER (DTW): — (ft.)
	SCREENED INTERVAL: — (ft.)
PURGE START TIME:	PUMP SET AT — (ft.)

TIME	PURGE RATE (ml/min)	VOLUME PURGED (ml)	DTW (ft)	TEMP (°C)	pH	COND. (µS/cm)	DO (mg/L)	ORP (mV)	TURB. (NTU)	
1237				18.88	7.28	8.661	1.45	211.7	0.12	

PURGE STOP TIME:	SAMPLE TIME: 1237
LAB NAME:	SAMPLE ID: TT-TP1-L1-20160303

OBSERVATIONS/COMMENTS (NOTE TIMES):

FL = 0.272

LOW-FLOW WATER PURGING & SAMPLING LOG

TETRA TECH

PROJECT NAME: NERT SFPT

FIELD PERSON: M. WILSON / M. WLODARCZYK

PROJECT NUMBER: _____

PROJECT MANAGER: _____

PROJECT LOCATION: _____

DATE: 3/3/16

PUMP / TUBING TYPE: LYSIMETER

EQUIPMENT CLEANING METHOD:

PURGE WATER DISPOSAL:

WELL NUMBER: Tt-TP1-L2

CASING RADIUS: — (in.)

TOTAL DEPTH (TD): — (ft.)

DEPTH TO WATER (DTW): — (ft.)

SCREENED INTERVAL: — (ft.)

PURGE START TIME:

PUMP SET AT — (ft.)

TIME	PURGE RATE (ml/min)	VOLUME PURGED (ml)	DTW (ft)	TEMP (°C)	pH	COND. (µS/cm)	DO (mg/L)	ORP (mV)	TURB. (NTU)	
1241				24.67	6.88	22.69	2.19	243.1	0.35	

PURGE STOP TIME:

SAMPLE TIME: 1241

LAB NAME:

SAMPLE ID: TT-TP1-L2-20160303

OBSERVATIONS/COMMENTS (NOTE TIMES):

FL = 0.238

FILE: LOG FORMS\em-Water Purging & Sampling Log-10-20-09.dwg

LOW-FLOW WATER PURGING & SAMPLING LOG

TETRA TECH

PROJECT NAME: NERT SFPT

FIELD PERSON: M.WILSON/M.WLODARCZYK

PROJECT NUMBER:

PROJECT MANAGER:

PROJECT LOCATION:

DATE: 3/3/16

PUMP / TUBING TYPE: LYSIMETER	WELL NUMBER: TT-TP2-L1
EQUIPMENT CLEANING METHOD:	CASING RADIUS: — (in.)
	TOTAL DEPTH (TD): — (ft.)
PURGE WATER DISPOSAL:	DEPTH TO WATER (DTW): — (ft.)
	SCREENED INTERVAL: — (ft.)
PURGE START TIME:	PUMP SET AT — (ft.)

TIME	PURGE RATE (ml/min)	VOLUME PURGED (ml)	DTW (ft)	TEMP (°C)	pH	COND. (µS/cm)	DO (mg/L)	ORP (mV)	TURB. (NTU)	
1227				20.48	7.74	5.974	3.97	198.7	0.21	

PURGE STOP TIME:

SAMPLE TIME: 1227

LAB NAME:

SAMPLE ID: TT-TP2-L1-20160303

OBSERVATIONS/COMMENTS (NOTE TIMES):

FL = 0.160

FILE: LOG FORMS\em-Water Purging & Sampling Log-10-20-09.dwg

LOW-FLOW WATER PURGING & SAMPLING LOG

TETRA TECH

PROJECT NAME: NERT SFPT
FIELD PERSON: M.WILSON/M.WLODARCZYK
PROJECT NUMBER:
PROJECT MANAGER:
PROJECT LOCATION:
DATE: 3/3/16

PUMP / TUBING TYPE: LYSIMETER	WELL NUMBER: Tt-TP2-L2
EQUIPMENT CLEANING METHOD:	CASING RADIUS: — (in.)
	TOTAL DEPTH (TD): — (ft.)
PURGE WATER DISPOSAL:	DEPTH TO WATER (DTW): — (ft.)
	SCREENED INTERVAL: — (ft.)
PURGE START TIME:	PUMP SET AT (ft.)

TIME	PURGE RATE (ml/min)	VOLUME PURGED (ml)	DTW (ft)	TEMP (°C)	pH	COND. (µS/cm)	DO (mg/L)	ORP (mV)	TURB. (NTU)	
1231				24.01	7.28	13.03	3.04	229.7	0.14	

PURGE STOP TIME:	SAMPLE TIME: 1231
LAB NAME:	SAMPLE ID: TT-TP2-L2-20160303

OBSERVATIONS/COMMENTS (NOTE TIMES):

FL= 0.097

T35000-2016-M05 M05.01 T34819.TM B1GWOM.10 B2GWOM.09

FILE: LOG FORMS\em-Water Purging & Sampling Log-10-20-05.dwg

LOW-FLOW WATER PURGING & SAMPLING LOG

TETRA TECH

PROJECT NAME: NERT SFPT

FIELD PERSON: M. Wilson / M. Wlodarczyk

PROJECT NUMBER:

PROJECT MANAGER:

PROJECT LOCATION:

DATE: 3/3/16

PUMP / TUBING TYPE: LYSIMETER	WELL NUMBER: TT-TP3-L1
EQUIPMENT CLEANING METHOD:	CASING RADIUS: ~ (in.)
	TOTAL DEPTH (TD): ~ (ft.)
PURGE WATER DISPOSAL:	DEPTH TO WATER (DTW): ~ (ft.)
	SCREENED INTERVAL: ~ (ft.)
PURGE START TIME:	PUMP SET AT ~ (ft.)

TIME	PURGE RATE (ml/min)	VOLUME PURGED (ml)	DTW (ft)	TEMP (°C)	pH	COND. (µS/cm)	DO (mg/L)	ORP (mV)	TURB. (NTU)	
1218				19.38	8.65	2.294	5.43	185.0	0.13	

PURGE STOP TIME:	SAMPLE TIME: 1218
LAB NAME:	SAMPLE ID: TT-TP3-L1-20160303

OBSERVATIONS/COMMENTS (NOTE TIMES):

FL = 0.296

LOW-FLOW WATER PURGING & SAMPLING LOG

TETRA TECH

PROJECT NAME: NERT SFPT
FIELD PERSON: M.WILSON/M.WLODARCZYK
PROJECT NUMBER:
PROJECT MANAGER:
PROJECT LOCATION:
DATE: 3/3/16

PUMP / TUBING TYPE: LYSIMETER	WELL NUMBER: TT-TP3-L2
EQUIPMENT CLEANING METHOD:	CASING RADIUS: — (in.)
	TOTAL DEPTH (TD): — (ft.)
PURGE WATER DISPOSAL:	DEPTH TO WATER (DTW): — (ft.)
	SCREENED INTERVAL: (ft.)
PURGE START TIME:	PUMP SET AT — (ft.)

TIME	PURGE RATE (ml/min)	VOLUME PURGED (ml)	DTW (ft)	TEMP (°C)	pH	COND. (µS/cm)	DO (mg/L)	ORP (mV)	TURB. (NTU)	
1223				21.01	7.96	4.338	3.69	193.6	0.62	

PURGE STOP TIME:
SAMPLE TIME: 1223
LAB NAME:
SAMPLE ID: TT-TP3-L2-20160303

OBSERVATIONS/COMMENTS (NOTE TIMES):

FL= 0.138

LOW-FLOW WATER PURGING & SAMPLING LOG

TETRA TECH

PROJECT NAME: NERT SFPT

FIELD PERSON: M.WILSON/M.WLODARCZYK

PROJECT NUMBER:

PROJECT MANAGER:

PROJECT LOCATION:

DATE: 3/3/16

PUMP / TUBING TYPE: LYSIMETER	WELL NUMBER: TT-TP4-L1
EQUIPMENT CLEANING METHOD:	CASING RADIUS: 2 (in.)
	TOTAL DEPTH (TD): (ft.)
PURGE WATER DISPOSAL:	DEPTH TO WATER (DTW): (ft.)
	SCREENED INTERVAL: (ft.)
PURGE START TIME:	PUMP SET AT — (ft.)

TIME	PURGE RATE (ml/min)	VOLUME PURGED (ml)	DTW (ft)	TEMP (°C)	pH	COND. (µS/cm)	DO (mg/L)	ORP (mV)	TURB. (NTU)	
1205				19.18	6.82	30.65	2.18	240.3	0.08	

PURGE STOP TIME:	SAMPLE TIME: 1205
LAB NAME:	SAMPLE ID: TT-TP4-L1-20160303

OBSERVATIONS/COMMENTS (NOTE TIMES):

FL= 0.202

LOW-FLOW WATER PURGING & SAMPLING LOG

TETRA TECH

PROJECT NAME: NERT SFOT

FIELD PERSON: M.WILSON/M.WLODARCZYK

PROJECT NUMBER:

PROJECT MANAGER:

PROJECT LOCATION:

DATE: 3/3/16

PUMP / TUBING TYPE: LYSIMETER

EQUIPMENT CLEANING METHOD:

PURGE WATER DISPOSAL:

WELL NUMBER: Tt-TP4-L2

CASING RADIUS: — (in.)

TOTAL DEPTH (TD): — (ft.)

DEPTH TO WATER (DTW): — (ft.)

SCREENED INTERVAL: — (ft.)

PURGE START TIME:

PUMP SET AT — (ft.)

TIME	PURGE RATE (ml/min)	VOLUME PURGED (ml)	DTW (ft)	TEMP (°C)	pH	COND. (µS/cm)	DO (mg/L)	ORP (mV)	TURB. (NTU)	
1212				22.93	7.50	6.742	1.87	209.7	0.13	

PURGE STOP TIME:

SAMPLE TIME: 1212

LAB NAME:

SAMPLE ID: TT-TP4-L2-20160303

OBSERVATIONS/COMMENTS (NOTE TIMES):

FL = 0.000

LOW-FLOW WATER PURGING & SAMPLING LOG

TETRA TECH

PROJECT NAME: NERT SFPT

FIELD PERSON: M.WILSON | M.WLODARCZYK

PROJECT NUMBER: _____

PROJECT MANAGER: _____

PROJECT LOCATION: _____

DATE: 3/9/16

PUMP / TUBING TYPE: DEDICATED

EQUIPMENT CLEANING METHOD: MICRO90 / DEION BUCKET

PURGE WATER DISPOSAL:

WELL NUMBER: Tt-TP1-m1

CASING RADIUS: 2 (in.)

TOTAL DEPTH (TD): _____ (ft.)

DEPTH TO WATER (DTW): 24.68 (ft.)

SCREENED INTERVAL: _____ (ft.)

PURGE START TIME: 1151

PUMP SET AT _____ (ft.)

TIME	PURGE RATE (ml/min)	VOLUME PURGED (ml)	DTW (ft)	TEMP (°C)	pH	COND. (µS/cm)	DO (mg/L)	ORP (mV)	TURB. (NTU)	
1151	270	—	24.68	—	—	—	—	—	—	
1155		1080	24.80	25.03	7.57	6.103	0.89	115.2	1.24	
1158		1890	24.81	25.10	7.54	6.282	0.43	114.4	0.66	
1201		2700	24.81	25.13	7.51	6.425	0.33	112.6	0.58	
1204		3510	24.81	25.02	7.48	6.628	0.37	111.2	0.53	
1207		4320	24.81	24.98	7.46	6.832	0.39	110.5	0.45	
1210		5130	24.81	25.01	7.43	7.032	0.42	109.9	0.48	
1213		5940	24.81	25.02	7.41	7.210	0.41	109.0	0.40	
1216	↓	6750	24.81	24.98	7.40	7.320	0.40	108.0	0.41	

PURGE STOP TIME: 1216

SAMPLE TIME: 1216

LAB NAME: TEST AMERICA

SAMPLE ID: Tt-TP1-m1-20160309

OBSERVATIONS/COMMENTS (NOTE TIMES):

FL = 1.681

PAGE ___ of ___

LOW-FLOW WATER PURGING & SAMPLING LOG

TETRA TECH

PROJECT NAME: NERT SFPT

FIELD PERSON: M. WILSON / M. WLODARCZYK

PROJECT NUMBER: _____

PROJECT MANAGER: _____

PROJECT LOCATION: _____

DATE: 3/9/16

PUMP / TUBING TYPE: DEDICATED

EQUIPMENT CLEANING METHOD: MICRO 90 | DECON BUCKETS

PURGE WATER DISPOSAL:

WELL NUMBER: Tt-TP1-M2

CASING RADIUS: 2 (in.)

TOTAL DEPTH (TD): _____ (ft.)

DEPTH TO WATER (DTW): 25.77 (ft.)

SCREENED INTERVAL: _____ (ft.)

PURGE START TIME: 1116

PUMP SET AT _____ (ft.)

TIME	PURGE RATE (ml/min)	VOLUME PURGED (ml)	DTW (ft)	TEMP (°C)	pH	COND. (µS/cm)	DO (mg/L)	ORP (mV)	TURB. (NTU)	
1116	375	—	25.77	—	—	—	—	—	—	
1120	375	1500	26.12	25.52	7.04	12.98	1.02	126.6	5.58	
1123	255	2625	26.30	25.43	7.04	12.95	0.60	125.6	4.59	
1126	↓	3390	26.35	25.37	7.05	13.03	0.47	124.5	2.38	
1129		4155	26.39	25.37	7.07	13.10	0.39	123.0	1.34	
1132		4920	26.44	25.30	7.07	13.15	0.34	121.5	0.93	
1135	↓	5685	26.48	25.33	7.08	13.16	0.32	120.1	0.93	

PURGE STOP TIME: 1135

SAMPLE TIME: 1135

LAB NAME: TEST AMERICA

SAMPLE ID: Tt-TP1-M2-20160309

OBSERVATIONS/COMMENTS (NOTE TIMES):

FL = 0.054

LOW-FLOW WATER PURGING & SAMPLING LOG

TETRA TECH

PROJECT NAME: NERT SFPT
FIELD PERSON: MarkO W Mandy W.
PROJECT NUMBER: 100-SBO-T35000
PROJECT MANAGER: Mark Feldman
PROJECT LOCATION: Henderson NV
DATE: 3/9/16

PUMP / TUBING TYPE: dedicated 1/4"
EQUIPMENT CLEANING METHOD:
PURGE WATER DISPOSAL:

WELL NUMBER: TT-TP1-M3
CASING RADIUS: 2" (in.)
TOTAL DEPTH (TD): (ft.)
DEPTH TO WATER (DTW): 25.95 (ft.)
SCREENED INTERVAL: (ft.)

PURGE START TIME: 1017
PUMP SET AT ~30' (ft.)

TIME	PURGE RATE (ml/min)	VOLUME PURGED (ml)	DTW (ft)	TEMP (°C)	pH	COND. (µS/cm)	DO (mg/L)	ORP (mV)	TURB. (NTU)	
1021	250	~~250~~ 1000	26.30	25.07	6.91	12.19	1.14	213.6	2.31	
1024	250	1750	26.34	25.25	6.93	12.22	0.90	209.1	1.67	
1027	180	2500	26.46	25.43	6.99	12.22	0.68	201.6	1.99	
1030	180	3040	26.51	25.41	7.01	12.25	0.61	196.9	1.22	
1033	180	3580	26.52	25.39	7.01	12.27	0.52	189.9	1.37	
1036	180	4120	26.54	25.35	7.07	12.26	0.49	182.1	1.44	

PURGE STOP TIME:
SAMPLE TIME: 1036
LAB NAME:
SAMPLE ID: TT-TP1-M3-20160309

OBSERVATIONS/COMMENTS (NOTE TIMES):

FL=0.150

PAGE ___ of ___

LOW-FLOW WATER PURGING & SAMPLING LOG

TETRA TECH

PROJECT NAME: NERT SFPT FIELD PERSON: M.WILSON/M.WOODARD24K

PROJECT NUMBER: PROJECT MANAGER:

PROJECT LOCATION: DATE: 3/9/16

PUMP / TUBING TYPE: DEDICATED

EQUIPMENT CLEANING METHOD: MICRO90 | DECON BUCKET

PURGE WATER DISPOSAL:

WELL NUMBER: Tt-TP2-M2

CASING RADIUS: 2 (in.)

TOTAL DEPTH (TD): (ft.)

DEPTH TO WATER (DTW): 24.35 (ft.)

SCREENED INTERVAL: (ft.)

PURGE START TIME: 1231

PUMP SET AT (ft.)

TIME	PURGE RATE (ml/min)	VOLUME PURGED (ml)	DTW (ft)	TEMP (°C)	pH	COND. (µS/cm)	DO (mg/L)	ORP (mV)	TURB. (NTU)	
1231	240	—	24.35	—	—	—	—	—	—	
1234	↓	960	24.35	23.66	7.28	10.07	1.26	128.1	0.29	
1237		1680	24.37	23.59	7.24	10.11	1.13	127.5	0.34	
1240		2400	24.37	23.57	7.22	10.09	1.09	126.4	0.34	
1243		3120	24.37	23.55	7.21	10.08	1.07	126.0	0.17	
1246		3840	24.37	23.56	7.20	10.08	1.04	125.7	0.15	
1249		4560	24.37	23.51	7.20	10.09	1.00	125.4	0.13	

PURGE STOP TIME: 1249

SAMPLE TIME: 1249

LAB NAME: TEST AMERICA

SAMPLE ID: Tt-TP2-M2-20160309

OBSERVATIONS/COMMENTS (NOTE TIMES):

FL= 0.077

PAGE ___ of ___

LOW-FLOW WATER PURGING & SAMPLING LOG

TETRA TECH

PROJECT NAME: NERT SPPT

FIELD PERSON: M. WILSON / M. WLODARCZYK

PROJECT NUMBER: _____

PROJECT MANAGER: _____

PROJECT LOCATION: _____

DATE: 3/9/16

PUMP / TUBING TYPE: DEDICATED

EQUIPMENT CLEANING METHOD: MICRO 90 / DECON BUCKET

PURGE WATER DISPOSAL:

WELL NUMBER: TT-TP2-M1

CASING RADIUS: 2 (in.)

TOTAL DEPTH (TD): _____ (ft.)

DEPTH TO WATER (DTW): 23.69 (ft.)

SCREENED INTERVAL: _____ (ft.)

PURGE START TIME: 1303

PUMP SET AT _____ (ft.)

TIME	PURGE RATE (ml/min)	VOLUME PURGED (ml)	DTW (ft)	TEMP (°C)	pH	COND. (µS/cm)	DO (mg/L)	ORP (mV)	TURB. (NTU)	
1303	255	—	23.69	—	—	—	—	—	—	
1307	↓	1020	23.70	15.06	7.50	8.949	3.33	135.1	1.12	
1310		1785	23.70	15.16	7.35	9.804	2.97	136.4	0.53	
1313		2550	23.70	15.27	7.31	10.08	2.89	134.9	0.37	
1316		3315	23.70	15.26	7.31	10.20	2.89	134.0	0.30	
1319		4080	23.70	15.37	7.30	10.30	2.84	132.9	0.20	
1322		4845	23.70	15.42	7.29	10.35	2.85	131.9	0.14	

PURGE STOP TIME: 1322

SAMPLE TIME: 1322

LAB NAME: TEST AMERICA

SAMPLE ID: TT-TP2-M1-20160309

OBSERVATIONS/COMMENTS (NOTE TIMES):

FL= 0.392

PAGE ___ of ___

LOW-FLOW WATER PURGING & SAMPLING LOG

TETRA TECH

PROJECT NAME: NERT SFPT

FIELD PERSON: M. WILSON / M. WOODARCZYK

PROJECT NUMBER: _____

PROJECT MANAGER: _____

PROJECT LOCATION: _____

DATE: 3/10/16

PUMP / TUBING TYPE: DEDICATED

EQUIPMENT CLEANING METHOD: MICRO 90 / DECON BUCKETS

PURGE WATER DISPOSAL:

WELL NUMBER: Tt-TP3-M1

CASING RADIUS: 2 (in.)

TOTAL DEPTH (TD): _____ (ft.)

DEPTH TO WATER (DTW): 22.37 (ft.)

SCREENED INTERVAL: _____ (ft.)

PURGE START TIME: 0953

PUMP SET AT _____ (ft.)

TIME	PURGE RATE (ml/min)	VOLUME PURGED (ml)	DTW (ft)	TEMP (°C)	pH	COND. (µS/cm)	DO (mg/L)	ORP (mV)	TURB. (NTU)	
0953	315	—	22.37	—	—	—	—	—	—	
0957	↓	1260	22.40	17.27	7.81	1.326	1.55	135.1	0.46	
1000		2205	22.40	17.21	7.80	1.291	1.42	133.9	0.35	
1003		3150	22.40	17.08	7.80	1.289	1.41	132.2	0.17	
1006		4095	22.40	17.10	7.80	1.289	1.41	131.0	0.50	
1009		5040	22.40	17.14	7.81	1.293	1.35	129.1	0.12	
1012		5985	22.40	17.07	7.80	1.301	1.31	127.8	0.08	

PURGE STOP TIME: 1012

SAMPLE TIME: 1012

LAB NAME: TEST AMERICA

SAMPLE ID: Tt-TP3-M1-20160310

OBSERVATIONS/COMMENTS (NOTE TIMES):

FL = 0.064

PAGE ___ of ___

LOW-FLOW WATER PURGING & SAMPLING LOG

TETRA TECH

PROJECT NAME: NERT SFDT

FIELD PERSON: M.WILSON | M.WLODARCZYK

PROJECT NUMBER: _____

PROJECT MANAGER: _____

PROJECT LOCATION: _____

DATE: 3/10/16

PUMP / TUBING TYPE: DEDICATED

EQUIPMENT CLEANING METHOD: MICRO 90 / DECCON BUCKETS

PURGE WATER DISPOSAL:

WELL NUMBER: TT-TP3-M2

CASING RADIUS: 2 (in.)

TOTAL DEPTH (TD): _____ (ft.)

DEPTH TO WATER (DTW): 23.75 (ft.)

SCREENED INTERVAL: _____ (ft.)

PURGE START TIME: 0914

PUMP SET AT _____ (ft.)

TIME	PURGE RATE (ml/min)	VOLUME PURGED (ml)	DTW (ft)	TEMP (°C)	pH	COND. (µS/cm)	DO (mg/L)	ORP (mV)	TURB. (NTU)	
0914	315	—	23.75	—	—	—	—	—	—	
0918	↓	1260	23.81	20.05	7.23	2.300	3.05	169.0	1.78	
0921		2205	23.81	≠19.97	7.51	2.247	0.82	165.4	0.94	
0924		3150	23.81	19.97	7.68	2.242	0.44	161.6	0.77	
0927		4095	23.81	19.99	7.74	2.243	0.36	159.4	0.40	
0930		5040	23.81	19.99	7.79	2.247	0.30	156.0	0.28	
0933	↓	5985	23.81	19.93	7.82	2.252	0.25	153.8	0.29	

PURGE STOP TIME: 0933

SAMPLE TIME: 0933

LAB NAME: TEST AMERICA

SAMPLE ID: TT-TP3-M2-20160310

OBSERVATIONS/COMMENTS (NOTE TIMES):

FL= 0.079

PAGE ___ of ___

LOW-FLOW WATER PURGING & SAMPLING LOG

TETRA TECH

PROJECT NAME: NERT SFPT

FIELD PERSON: M.WILSON / M.WLODARCZYK

PROJECT NUMBER: _____

PROJECT MANAGER: _____

PROJECT LOCATION: _____

DATE: 3/10/16

PUMP / TUBING TYPE: DEDICATED

EQUIPMENT CLEANING METHOD: MICRO90 / DECON BUCKETS

PURGE WATER DISPOSAL:

WELL NUMBER: Tt-TP4-m1

CASING RADIUS: 2 (in.)

TOTAL DEPTH (TD): _____ (ft.)

DEPTH TO WATER (DTW): 24.21 (ft.)

SCREENED INTERVAL: _____ (ft.)

PURGE START TIME: 1029

PUMP SET AT _____ (ft.)

TIME	PURGE RATE (ml/min)	VOLUME PURGED (ml)	DTW (ft)	TEMP (°C)	pH	COND. (µS/cm)	DO (mg/L)	ORP (mV)	TURB. (NTU)	
1029	330	—	24.21	—	—	—	—	—	—	
1033	↓	1320	24.28	23.94	7.12	11.67	0.92	165.3	3.66	
1036		2310	24.28	24.01	7.12	11.57	0.45	159.9	5.32	
1039		3300	24.28	24.01	7.08	11.20	0.32	155.7	1.85	
1042		4290	24.28	23.98	7.03	11.26	0.27	153.9	0.70	
1045		5280	24.28	23.98	7.00	11.68	0.26	153.0	0.28	
1048		6270	24.28	23.96	6.98	12.23	0.27	152.2	0.68	
1051		7260	24.28	23.97	6.98	12.66	0.29	151.1	0.33	
1054		8250	24.28	23.97	6.98	12.86	0.30	150.0	0.32	
1057	↓	9240	24.28	23.98	6.98	12.93	0.31	149.0	0.08	

PURGE STOP TIME: 1057

SAMPLE TIME: 1057

LAB NAME: TESTAMERICA

SAMPLE ID: Tt-TP4-m1-20160310

OBSERVATIONS/COMMENTS (NOTE TIMES):

FL = 0.068

PAGE ___ of ___

LOW-FLOW WATER PURGING & SAMPLING LOG

TETRA TECH

PROJECT NAME: NERT SFPT

FIELD PERSON: M. WILSON / M. WLODARCZYK

PROJECT NUMBER: _____

PROJECT MANAGER: _____

PROJECT LOCATION: _____

DATE: 3/10/16

PUMP / TUBING TYPE: DEDICATED

EQUIPMENT CLEANING METHOD: MICRO 90 / DECON BUCKETS

PURGE WATER DISPOSAL:

WELL NUMBER: TT-TP4-MW2

CASING RADIUS: 2 (in.)

TOTAL DEPTH (TD): _____ (ft.)

DEPTH TO WATER (DTW): 24.20 (ft.)

SCREENED INTERVAL: _____ (ft.)

PURGE START TIME: 1112

PUMP SET AT _____ (ft.)

TIME	PURGE RATE (ml/min)	VOLUME PURGED (ml)	DTW (ft)	TEMP (°C)	pH	COND. (µS/cm)	DO (mg/L)	ORP (mV)	TURB. (NTU)	
1112	300	—	24.20	—	—	—	—	—	—	
1116	300	1200	24.45	24.51	7.11	10.19	0.43	134.5	5.25	
1119	240	2100	24.36	24.52	7.09	10.08	0.26	133.7	4.91	
1122	↓	3000	24.35	24.56	7.10	10.08	0.21	132.8	4.71	
1125		3900	24.35	24.60	7.10	10.07	0.19	130.7	3.01	
1128		4800	24.35	24.58	7.10	10.07	0.18	129.6	2.94	
1131	↓	5700	24.35	24.52	7.09	10.08	0.17	128.9	1.18	

PURGE STOP TIME: 1131

SAMPLE TIME: 1131

LAB NAME: TEST AMERICA

SAMPLE ID: TT-TP4-MW2-20160310

OBSERVATIONS/COMMENTS (NOTE TIMES):

FL= 0.050

LOW-FLOW WATER PURGING & SAMPLING LOG

TETRA TECH

PROJECT NAME: NERT SFPT
PROJECT NUMBER: 100-SBO-T35000
PROJECT LOCATION: Henderson NV
FIELD PERSON: Maxx W. Mandy W.
PROJECT MANAGER: Mark Feldman
DATE: 3-10-16

PUMP / TUBING TYPE: dedicated 1/4" tubing
EQUIPMENT CLEANING METHOD:
PURGE WATER DISPOSAL:

WELL NUMBER: TT-TP4-M3
CASING RADIUS: 2" (in.)
TOTAL DEPTH (TD): (ft.)
DEPTH TO WATER (DTW): 24.28 (ft.)
SCREENED INTERVAL: (ft.)

PURGE START TIME: 1146
PUMP SET AT (ft.)

TIME	PURGE RATE (ml/min)	VOLUME PURGED (ml)	DTW (ft)	TEMP (°C)	pH	COND. (µS/cm)	DO (mg/L)	ORP (mV)	TURB. (NTU)
1150	210	840	24.37	24.92	7.16	11.37	0.38	126.3	1.65
1153	↓	1470	24.40	24.88	7.17	11.40	0.28	124.6	1.12
1156		2100	24.41	24.88	7.17	11.40	0.24	120.7	0.84
1159		2730	24.41	24.89	7.17	11.40	0.24	118.7	1.67
1202		3360	24.41	24.89	7.18	11.40	0.23	116.5	1.42
1205	↓	3990	24.41	24.85	7.18	11.40	0.24	114.6	1.27

PURGE STOP TIME: 1205
SAMPLE TIME: 1205
LAB NAME: TEST AMERICA
SAMPLE ID: TT-TP4-M3-20160310

OBSERVATIONS/COMMENTS (NOTE TIMES):

FL= 0.057

MS/MSD
TT-TP4-M3-20160310

LOW-FLOW WATER PURGING & SAMPLING LOG

TETRA TECH

PROJECT NAME: NERT STPT

FIELD PERSON: M. WILSON / M. WLODARCZYK

PROJECT NUMBER: _____

PROJECT MANAGER: _____

PROJECT LOCATION: _____

DATE: 3/10/16

PUMP / TUBING TYPE:	WELL NUMBER: Tt-TP1-L1
EQUIPMENT CLEANING METHOD:	CASING RADIUS: _____ (in.)
PURGE WATER DISPOSAL:	TOTAL DEPTH (TD): _____ (ft.)
	DEPTH TO WATER (DTW): _____ (ft.)
	SCREENED INTERVAL: _____ (ft.)
PURGE START TIME:	PUMP SET AT (ft.)

TIME	PURGE RATE (ml/min)	VOLUME PURGED (ml)	DTW (ft)	TEMP (°C)	pH	COND. (µS/cm)	DO (mg/L)	ORP (mV)	TURB. (NTU)	
				18.66	7.66	6.660	3.15	182.1	0.09	

PURGE STOP TIME:	SAMPLE TIME: 1308
LAB NAME: TEST AMERICA	SAMPLE ID: Tt-TP1-L1-20160310

OBSERVATIONS/COMMENTS (NOTE TIMES):

FL= 0.250

LOW-FLOW WATER PURGING & SAMPLING LOG

TETRA TECH

PROJECT NAME: NERT SFPT

FIELD PERSON: M. WILSON / M. WLODARCZYK

PROJECT NUMBER:

PROJECT MANAGER:

PROJECT LOCATION:

DATE: 3/10/16

PUMP / TUBING TYPE:	WELL NUMBER: Tt-TP1-L2
EQUIPMENT CLEANING METHOD:	CASING RADIUS: (in.)
	TOTAL DEPTH (TD): (ft.)
PURGE WATER DISPOSAL:	DEPTH TO WATER (DTW): (ft.)
	SCREENED INTERVAL: (ft.)
PURGE START TIME:	PUMP SET AT (ft.)

TIME	PURGE RATE (ml/min)	VOLUME PURGED (ml)	DTW (ft)	TEMP (°C)	pH	COND. (µS/cm)	DO (mg/L)	ORP (mV)	TURB. (NTU)	
				23.48	6.95	20.44	1.15	213.1	0.12	

PURGE STOP TIME:	SAMPLE TIME: 1311
LAB NAME: TEST AMERICA	SAMPLE ID: Tt-TP1-L2-20160310

OBSERVATIONS/COMMENTS (NOTE TIMES):

FL = 0.201

LOW-FLOW WATER PURGING & SAMPLING LOG

TETRA TECH

PROJECT NAME: NERT SFPT

FIELD PERSON: M. WILSON / M. WLODARCZYK

PROJECT NUMBER:

PROJECT MANAGER:

PROJECT LOCATION:

DATE: 3/10/16

PUMP / TUBING TYPE:	WELL NUMBER: TT-TP2-~~EB~~ L1
EQUIPMENT CLEANING METHOD:	CASING RADIUS: (in.)
	TOTAL DEPTH (TD): (ft.)
PURGE WATER DISPOSAL:	DEPTH TO WATER (DTW): (ft.)
	SCREENED INTERVAL: (ft.)
PURGE START TIME:	PUMP SET AT (ft.)

TIME	PURGE RATE (ml/min)	VOLUME PURGED (ml)	DTW (ft)	TEMP (°C)	pH	COND. (µS/cm)	DO (mg/L)	ORP (mV)	TURB. (NTU)	
1257				19.97	7.76	5.514	3.22	176.2	0.04	

PURGE STOP TIME:	SAMPLE TIME: 1257
LAB NAME: TEST AMERICA	SAMPLE ID: TT-TP2-L1-20160310

OBSERVATIONS/COMMENTS (NOTE TIMES):

FL = 0.131

LOW-FLOW WATER PURGING & SAMPLING LOG

TETRA TECH

PROJECT NAME: NERT SFDT

FIELD PERSON: M. WILSON / M. WLODARCZYK

PROJECT NUMBER:

PROJECT MANAGER:

PROJECT LOCATION:

DATE: 3/10/16

PUMP / TUBING TYPE:	WELL NUMBER: Tt-TP2-L2
EQUIPMENT CLEANING METHOD:	CASING RADIUS: (in.)
	TOTAL DEPTH (TD): (ft.)
PURGE WATER DISPOSAL:	DEPTH TO WATER (DTW): (ft.)
	SCREENED INTERVAL: (ft.)
PURGE START TIME:	PUMP SET AT (ft.)

TIME	PURGE RATE (ml/min)	VOLUME PURGED (ml)	DTW (ft)	TEMP (°C)	pH	COND. (µS/cm)	DO (mg/L)	ORP (mV)	TURB. (NTU)	
				21.86	7.31	12.31	2.42	195.3	0.05	

PURGE STOP TIME:	SAMPLE TIME: 1300
LAB NAME: TEST AMERICA	SAMPLE ID: Tt-TP2-L2-20160310

OBSERVATIONS/COMMENTS (NOTE TIMES):

FL = 0.075

LOW-FLOW WATER PURGING & SAMPLING LOG

TETRA TECH

PROJECT NAME: NERT SFDT

FIELD PERSON: M. WILSON | M. WLODARCZYK

PROJECT NUMBER:

PROJECT MANAGER:

PROJECT LOCATION:

DATE: 3/10/16

PUMP / TUBING TYPE:	WELL NUMBER: Tt-TP3-L1
EQUIPMENT CLEANING METHOD:	CASING RADIUS: (in.)
	TOTAL DEPTH (TD): (ft.)
PURGE WATER DISPOSAL:	DEPTH TO WATER (DTW): (ft.)
	SCREENED INTERVAL: (ft.)
PURGE START TIME:	PUMP SET AT (ft.)

TIME	PURGE RATE (ml/min)	VOLUME PURGED (ml)	DTW (ft)	TEMP (°C)	pH	COND. (µS/cm)	DO (mg/L)	ORP (mV)	TURB. (NTU)	
1247				18.96	8.74	2.244	3.97	148.0	0.05	

PURGE STOP TIME:	SAMPLE TIME: 1247
LAB NAME: TEST AMERICA	SAMPLE ID: Tt-TP3-L1-20160310

OBSERVATIONS/COMMENTS (NOTE TIMES):

FL = 0.292

LOW-FLOW WATER PURGING & SAMPLING LOG

TETRA TECH

PROJECT NAME: NERT SFPT

FIELD PERSON: M. WILSON / M. WLODARCZYK

PROJECT NUMBER:

PROJECT MANAGER:

PROJECT LOCATION:

DATE: 3/10/16

PUMP / TUBING TYPE:	WELL NUMBER: Tt-TP3-L2
EQUIPMENT CLEANING METHOD:	CASING RADIUS: (in.)
PURGE WATER DISPOSAL:	TOTAL DEPTH (TD): (ft.)
	DEPTH TO WATER (DTW): (ft.)
	SCREENED INTERVAL: (ft.)
PURGE START TIME:	PUMP SET AT (ft.)

TIME	PURGE RATE (ml/min)	VOLUME PURGED (ml)	DTW (ft)	TEMP (°C)	pH	COND. (µS/cm)	DO (mg/L)	ORP (mV)	TURB. (NTU)	
1249				20.17	7.87	4.294	2.63	168.7	0.09	

PURGE STOP TIME:	SAMPLE TIME: 1249
LAB NAME: TEST AMERICA	SAMPLE ID: Tt-TP3-L2-20160310

OBSERVATIONS/COMMENTS (NOTE TIMES):

FL = 0.109

LOW-FLOW WATER PURGING & SAMPLING LOG

TETRA TECH

PROJECT NAME: NERT SFPS
FIELD PERSON: M. WILSON / M. WLODARCZYK
PROJECT NUMBER:
PROJECT MANAGER:
PROJECT LOCATION:
DATE: 3/10/16

PUMP / TUBING TYPE:
WELL NUMBER: Tt-TP4-L1
EQUIPMENT CLEANING METHOD:
CASING RADIUS: (in.)
TOTAL DEPTH (TD): (ft.)
PURGE WATER DISPOSAL:
DEPTH TO WATER (DTW): (ft.)
SCREENED INTERVAL: (ft.)

PURGE START TIME:
PUMP SET AT (ft.)

TIME	PURGE RATE (ml/min)	VOLUME PURGED (ml)	DTW (ft)	TEMP (°C)	pH	COND. (µS/cm)	DO (mg/L)	ORP (mV)	TURB. (NTU)	
1236				18.33	6.92	25.02	1.34	194.6	0.02	

PURGE STOP TIME:
SAMPLE TIME: 1236
LAB NAME: TEST AMERICA
SAMPLE ID: Tt-TP4-L1-20160310

OBSERVATIONS/COMMENTS (NOTE TIMES):

FL = 0.382

LOW-FLOW WATER PURGING & SAMPLING LOG

TETRA TECH

PROJECT NAME: NERT 5FPT
FIELD PERSO: M. WILSON/M. WLODARCZYK
PROJECT NUMBER:
PROJECT MANAGER:
PROJECT LOCATION:
DATE: 3/10/16

PUMP / TUBING TYPE:
WELL NUMBER: Tt-TP4-L2
EQUIPMENT CLEANING METHOD:
CASING RADIUS: (in.)
TOTAL DEPTH (TD): (ft.)
PURGE WATER DISPOSAL:
DEPTH TO WATER (DTW): (ft.)
SCREENED INTERVAL: (ft.)

PURGE START TIME:
PUMP SET AT (ft.)

TIME	PURGE RATE (ml/min)	VOLUME PURGED (ml)	DTW (ft)	TEMP (°C)	pH	COND. (µS/cm)	DO (mg/L)	ORP (mV)	TURB. (NTU)	
1241				21.69	7.52	7.267	1.68	174.6	0.10	

PURGE STOP TIME:
SAMPLE TIME: 1241
LAB NAME: TEST AMERICA
SAMPLE ID: Tt-TP4-L2-20160310

OBSERVATIONS/COMMENTS (NOTE TIMES):

FL = 0.179

LOW-FLOW WATER PURGING & SAMPLING LOG

TETRA TECH

PROJECT NAME: NERT SFDT
FIELD PERSON: M. WILSON / J. COOK
PROJECT NUMBER:
PROJECT MANAGER:
PROJECT LOCATION:
DATE: 3/16/16

PUMP / TUBING TYPE: DEDICATED
WELL NUMBER: T6-TP1-M1
EQUIPMENT CLEANING METHOD: MICRO 90 / DELON BUCKET
CASING RADIUS: 2" (in.)
PURGE WATER DISPOSAL:
TOTAL DEPTH (TD): (ft.)
DEPTH TO WATER (DTW): 24.59 (ft.)
SCREENED INTERVAL: (ft.)

PURGE START TIME: ~~0937~~ 1037
PUMP SET AT (ft.)

	TIME	PURGE RATE (ml/min)	VOLUME PURGED (ml)	DTW (ft)	TEMP (°C)	pH	COND. (µS/cm)	DO (mg/L)	ORP (mV)	TURB. (NTU)	
1037	~~0937~~	270	—	24.59	—	—	—	—	—	—	
1040	~~0940~~	270	810	24.73	23.58	7.36	7.365	0.56	166.4	2.36	
1043	~~0943~~	270	1620	24.73	23.88	7.36	7.293	0.33	165.1	1.53	
1046	~~0946~~	270	2430	24.73	23.97	7.34	7.362	0.27	163.8	1.50	
1049	~~0949~~	270	3240	24.73	24.01	7.33	7.384	0.24	162.4	1.59	
1052	~~0952~~	270	4050	24.73	24.05	7.32	7.462	0.21	160.7	1.32	
1055	~~0955~~	270	4860	24.73	24.06	7.30	7.537	0.21	159.0	1.27	

PURGE STOP TIME: ~~0955~~ 1055
SAMPLE TIME: ~~0955~~ 1055
LAB NAME: TEST AMERICA
SAMPLE ID: T7-TP1-M1-20160316

OBSERVATIONS/COMMENTS (NOTE TIMES):

FL = 8.579

LOW-FLOW WATER PURGING & SAMPLING LOG

TETRA TECH

PROJECT NAME: NERT SFPT
FIELD PERSON: M.WILSON / J. CODIC
PROJECT NUMBER:
PROJECT MANAGER:
PROJECT LOCATION:
DATE: 3/16/16

PUMP / TUBING TYPE: DEDICATED
EQUIPMENT CLEANING METHOD: MICRO 90 | DECON BUCKET
PURGE WATER DISPOSAL:

WELL NUMBER: Tt - TP1 - M2
CASING RADIUS: 2 (in.)
TOTAL DEPTH (TD): (ft.)
DEPTH TO WATER (DTW): 25.67 (ft.)
SCREENED INTERVAL: (ft.)

PURGE START TIME: 1104
PUMP SET AT (ft.)

TIME	PURGE RATE (ml/min)	VOLUME PURGED (ml)	DTW (ft)	TEMP (°C)	pH	COND. (µS/cm)	DO (mg/L)	ORP (mV)	TURB. (NTU)	
1104	240	—	25.67	—	—	—	—	—	—	
1108	240	960	25.87	24.50	6.90	13.00	1.21	166.5	0.87	
1111	240	1680	25.97	24.85	6.93	13.01	0.50	165.0	0.85	
1114	↓	2400	26.03	24.89	6.96	12.99	0.36	162.9	1.69	
1117	↓	3120	26.09	24.92	6.98	13.01	0.29	160.4	0.99	
1120	↓	3840	26.15	24.93	6.99	13.04	0.25	158.2	0.71	
1123	↓	4560	26.19	24.86	7.00	13.07	0.22	156.2	0.72	

PURGE STOP TIME: 1123
SAMPLE TIME: 1123
LAB NAME: TEST AMERICA
SAMPLE ID: Tt - TP1 - M2 - 20160316

OBSERVATIONS/COMMENTS (NOTE TIMES):

FL = -0.391

LOW-FLOW WATER PURGING & SAMPLING LOG

TETRA TECH

PROJECT NAME: NERT SFDT
FIELD PERSON: M. WILSON / J. COOK
PROJECT NUMBER:
PROJECT MANAGER:
PROJECT LOCATION:
DATE: 3/16/16

PUMP / TUBING TYPE: DEDICATED
EQUIPMENT CLEANING METHOD: MICRO 90 / DECON BUCKET
PURGE WATER DISPOSAL:

WELL NUMBER: TT-TP1-M3
CASING RADIUS: 2 (in.)
TOTAL DEPTH (TD): (ft.)
DEPTH TO WATER (DTW): ~~28~~ 25.85 (ft.)
SCREENED INTERVAL: (ft.)

PURGE START TIME: ~~0858~~ 0958
PUMP SET AT (ft.)

	TIME	PURGE RATE (ml/min)	VOLUME PURGED (ml)	DTW (ft)	TEMP (°C)	pH	COND. (µS/cm)	DO (mg/L)	ORP (mV)	TURB. (NTU)	
0958	~~0858~~	330	—	25.85	—	—	—	—	—	—	
1001	~~0901~~	330	990	26.25	24.53	6.86	12.03	2.50	227.0	1.35	
1004	~~0904~~	~~330~~ 385	1980	26.35	24.90	6.94	12.05	1.25	218.9	1.50	
1007	~~0907~~	285	2835	26.43	24.89	6.95	12.05	1.05	213.2	2.16	
1010	~~0910~~	285	3690	26.47	24.92	6.95	12.04	0.90	210.3	2.20	
1013	~~0913~~	285	4545	26.52	24.92	6.95	12.05	0.71	206.1	3.34	
1016	~~0916~~	285	5400	26.55	24.96	6.95	12.05	0.56	202.7	2.69	
1019	~~0919~~	285	6255	26.58	24.92	6.95	12.05	0.46	199.0	2.64	

PURGE STOP TIME: ~~0919~~ 1019
SAMPLE TIME: ~~0919~~ 1019
LAB NAME: TEST AMERICA
SAMPLE ID: TT-TP1-M3-20160316

OBSERVATIONS/COMMENTS (NOTE TIMES):

FL = -0.299

LOW-FLOW WATER PURGING & SAMPLING LOG

TETRA TECH

PROJECT NAME: NERT SFDT
FIELD PERSON: M. Wilson / J. Cook
PROJECT NUMBER:
PROJECT MANAGER:
PROJECT LOCATION:
DATE: 3/16/16

PUMP / TUBING TYPE: DEDICATED	WELL NUMBER: Tt-TP2-m1
EQUIPMENT CLEANING METHOD: MICRO 90 / DECON BUCKET	CASING RADIUS: 2 (in.)
PURGE WATER DISPOSAL:	TOTAL DEPTH (TD): (ft.)
	DEPTH TO WATER (DTW): 23.52 (ft.)
	SCREENED INTERVAL: (ft.)
PURGE START TIME: 1135	PUMP SET AT (ft.)

TIME	PURGE RATE (ml/min)	VOLUME PURGED (ml)	DTW (ft)	TEMP (°C)	pH	COND. (µS/cm)	DO (mg/L)	ORP (mV)	TURB. (NTU)	
1135	210	—	23.52	—	—	—	—	—	—	
1138	210	630	23.61	19.92	7.49	7.820	2.33	145.4	1.65	
1141	210	1260	23.61	20.18	7.34	7.826	1.58	146.4	1.13	
1144	↓	1890	23.61	20.43	7.24	8.275	1.17	145.9	0.76	
1147		2520	23.61	20.44	7.21	8495	1.06	144.7	0.70	
1150		3150	23.61	20.57	7.20	8.581	1.04	144.2	0.62	
1153	↓	3780	23.61	20.69	7.19	8.630	1.01	143.2	0.63	
~~1156~~										

PURGE STOP TIME: 1153	SAMPLE TIME: 1153
LAB NAME: TEST AMERICA	SAMPLE ID: Tt-TP2-m1-20160316

OBSERVATIONS/COMMENTS (NOTE TIMES):

FL = 5.578

LOW-FLOW WATER PURGING & SAMPLING LOG

TETRA TECH

PROJECT NAME: NERT SFPT
FIELD PERSON: M. Wilson / J. Cook
PROJECT NUMBER:
PROJECT MANAGER:
PROJECT LOCATION:
DATE: 3/16/16

PUMP / TUBING TYPE: DEDICATED
EQUIPMENT CLEANING METHOD: micro90 / DECON BUCKETS
PURGE WATER DISPOSAL:

WELL NUMBER: TT-TP2-M2
CASING RADIUS: 2 (in.)
TOTAL DEPTH (TD): (ft.)
DEPTH TO WATER (DTW): 24.20 (ft.)
SCREENED INTERVAL: (ft.)

PURGE START TIME: 1205
PUMP SET AT (ft.)

TIME	PURGE RATE (ml/min)	VOLUME PURGED (ml)	DTW (ft)	TEMP (°C)	pH	COND. (µS/cm)	DO (mg/L)	ORP (mV)	TURB. (NTU)	
1205	240	—	24.20	—	—	—	—	—	—	
1209	↓	960	24.25	23.15	7.22	9.765	1.11	147.4	1.13	
1212		1680	24.25	23.35	7.18	9.720	0.75	145.4	1.28	
1215		2400	24.25	23.34	7.17	9.739	0.67	143.8	0.79	
1218		3120	24.25	23.39	7.16	9.736	0.62	142.4	1.13	
1221	↓	3840	24.25	23.41	7.16	9.738	0.64	141.0	0.63	
1224		4560	24.25	23.42	7.16	9.732	0.61	139.4	0.54	

PURGE STOP TIME: 1224
SAMPLE TIME: 1224
LAB NAME: TEST AMERICA
SAMPLE ID: TT-TP2-M2-20160316

OBSERVATIONS/COMMENTS (NOTE TIMES):

FL: -0.083

LOW-FLOW WATER PURGING & SAMPLING LOG

TETRA TECH

PROJECT NAME: NERT SFPT
FIELD PERSON: M.WILSON/J.COOLE
PROJECT NUMBER:
PROJECT MANAGER:
PROJECT LOCATION:
DATE: 3/16/16

PUMP / TUBING TYPE: DEDICATED
EQUIPMENT CLEANING METHOD: MICRO 90 / DECON BUCKET
PURGE WATER DISPOSAL:

WELL NUMBER: Tt-TP3-m1
CASING RADIUS: 2 (in.)
TOTAL DEPTH (TD): (ft.)
DEPTH TO WATER (DTW): 22.18 (ft.)
SCREENED INTERVAL: (ft.)

PURGE START TIME: 1320
PUMP SET AT (ft.)

TIME	PURGE RATE (ml/min)	VOLUME PURGED (ml)	DTW (ft)	TEMP (°C)	pH	COND. (µS/cm)	DO (mg/L)	ORP (mV)	TURB. (NTU)	
1320	240	—	22.18	—	—	—	—	—	—	
1323	↓	720	22.18	18.58	7.84	1.377	3.76	127.4	0.67	
1326		1440	22.19	17.93	7.83	1.333	1.31	125.0	0.71	
1329		2160	22.20	17.66	7.83	1.304	1.02	122.5	0.79	
1332		2880	22.20	17.57	7.84	1.302	0.96	119.7	0.77	
1335		3600	22.20	17.56	7.84	1.303	0.91	116.2	0.73	
1338		4320	22.21	17.63	7.84	1.304	0.91	113.6	0.61	

PURGE STOP TIME: 1338
SAMPLE TIME: 1338
LAB NAME: TEST AMERICA
SAMPLE ID: Tt-TP3-m1-20160316

OBSERVATIONS/COMMENTS (NOTE TIMES):

FL = 0.483

LOW-FLOW WATER PURGING & SAMPLING LOG

TETRA TECH

PROJECT NAME: NERT SFDT
FIELD PERSON: M. WILSON | J. COOK
PROJECT NUMBER:
PROJECT MANAGER:
PROJECT LOCATION:
DATE: 3-16-16

PUMP / TUBING TYPE: DEDICATED	WELL NUMBER: Tt-TP3-M2
EQUIPMENT CLEANING METHOD: MICRO 90 / DECON BUCKET	CASING RADIUS: 2 (in.)
PURGE WATER DISPOSAL:	TOTAL DEPTH (TD): (ft.)
	DEPTH TO WATER (DTW): 23.60 (ft.)
	SCREENED INTERVAL: (ft.)
PURGE START TIME: 1251	PUMP SET AT (ft.)

TIME	PURGE RATE (ml/min)	VOLUME PURGED (ml)	DTW (ft)	TEMP (°C)	pH	COND. (µS/cm)	DO (mg/L)	ORP (mV)	TURB. (NTU)	
1251	210	—	23.60	—	—	—	—	—	—	
1255	↓	840	23.61	20.77	8.06	2.292	2.03	136.0	1.90	
1258		1470	23.63	20.20	8.03	2.230	0.66	133.0	3.31	
1301		2100	23.63	20.04	8.01	2.175	0.41	130.3	2.10	
1304		2730	23.63	19.96	8.00	2.161	0.31	127.2	1.62	
1307		3360	23.64	19.95	7.99	2.~~154~~ 159	0.27	124.0	1.10	
1310	↓	3990	23.64	19.96	7.98	2.151	0.24	121.6	0.94	

PURGE STOP TIME: 1310
SAMPLE TIME: 1310
LAB NAME: TEST AMERICA
SAMPLE ID: Tt-TP3-M2-20160316

OBSERVATIONS/COMMENTS (NOTE TIMES):

FL= 0.542

LOW-FLOW WATER PURGING & SAMPLING LOG

TETRA TECH

PROJECT NAME: NERT 5FPT
FIELD PERSON: M. WILSON / J. COOK
PROJECT NUMBER:
PROJECT MANAGER:
PROJECT LOCATION:
DATE: 3/17/16

PUMP / TUBING TYPE: DEDICATED
EQUIPMENT CLEANING METHOD: MICRO 90 / DECON BUCKET
PURGE WATER DISPOSAL:

WELL NUMBER: TT-TP4-M1
CASING RADIUS: (in.)
TOTAL DEPTH (TD): (ft.)
DEPTH TO WATER (DTW): 24.07 (ft.)
SCREENED INTERVAL: (ft.)

PURGE START TIME: ~~0815~~ 0915
PUMP SET AT (ft.)

TIME	PURGE RATE (ml/min)	VOLUME PURGED (ml)	DTW (ft)	TEMP (°C)	pH	COND. (µS/cm)	DO (mg/L)	ORP (mV)	TURB. (NTU)	
0915 ~~0815~~	270	—	24.07	—	—	—	—	—	—	
0919 ~~0819~~	↓	1080	24.13	23.44	7.25	12.25	0.75	198.6	1.09	
0922 ~~0822~~		1890	24.15	23.86	7.30	11.33	0.35	194.6	0.71	
0925 ~~0825~~		2700	24.18	23.97	7.30	9.968	0.26	190.2	1.09	
0928 ~~0828~~		3510	24.18	23.96	7.29	9.135	0.22	187.0	0.57	
0931 ~~0831~~		4320	24.18	23.97	7.28	8.880	0.21	184.9	0.72	
0934		5130	24.18	23.94	7.27	8.778	0.21	182.9	0.81	

PURGE STOP TIME: 0934
SAMPLE TIME: 0934
LAB NAME: TEST AMERICA
SAMPLE ID: TT-TP4-M1-20160317

OBSERVATIONS/COMMENTS (NOTE TIMES):

FL = 0.444

LOW-FLOW WATER PURGING & SAMPLING LOG

TETRA TECH

PROJECT NAME: NERT SFPT
FIELD PERSON: M. WILSON / J. COOK
PROJECT NUMBER:
PROJECT MANAGER:
PROJECT LOCATION:
DATE: 3/17/16

PUMP / TUBING TYPE: DEDICATED	WELL NUMBER: Tt-TP4-M2
EQUIPMENT CLEANING METHOD: MICRO 90 / DECON BUCKET	CASING RADIUS: 2 (in.)
PURGE WATER DISPOSAL:	TOTAL DEPTH (TD): (ft.)
	DEPTH TO WATER (DTW): 24.07 (ft.)
	SCREENED INTERVAL: (ft.)
PURGE START TIME: 0842	PUMP SET AT (ft.)

TIME	PURGE RATE (ml/min)	VOLUME PURGED (ml)	DTW (ft)	TEMP (°C)	pH	COND. (µS/cm)	DO (mg/L)	ORP (mV)	TURB. (NTU)	
0842	285	—	24.07	—	—	—	—	—	—	
0846	↓	1140	24.20	23.13	7.09	9.421	0.73	230.6	2.68	
0849		1995	24.19	23.73	7.14	9.231	0.41	227.0	2.41	
0852		2850	24.19	23.92	7.16	9.201	0.31	219.8	1.84	
0855		3705	24.19	24.04	7.17	9.201	0.28	217.1	1.37	
0858		4560	24.19	24.05	7.18	9.211	0.25	212.7	1.13	
0901	↓	5415	24.19	24.04	7.19	9.217	0.22	208.0	1.00	

PURGE STOP TIME: 0901	SAMPLE TIME: 0901
LAB NAME: TEST AMERICA	SAMPLE ID: Tt-TP4-M2-20160317

OBSERVATIONS/COMMENTS (NOTE TIMES):

FL= 0.484

PAGE 1 of 1

LOW-FLOW WATER PURGING & SAMPLING LOG

TETRA TECH

PROJECT NAME: NERT SFOT
FIELD PERSON: M.WILSON/J.COOK
PROJECT NUMBER:
PROJECT MANAGER:
PROJECT LOCATION:
DATE: 3/17/16

PUMP / TUBING TYPE: DEDICATED	WELL NUMBER: Tt-TP4-M3
EQUIPMENT CLEANING METHOD: MICRO90 / DECON BUCKET	CASING RADIUS: 2 (in.)
PURGE WATER DISPOSAL:	TOTAL DEPTH (TD): (ft.)
	DEPTH TO WATER (DTW): 24.12 (ft.)
	SCREENED INTERVAL: (ft.)
PURGE START TIME: 0955	PUMP SET AT (ft.)

TIME	PURGE RATE (ml/min)	VOLUME PURGED (ml)	DTW (ft)	TEMP (°C)	pH	COND. (µS/cm)	DO (mg/L)	ORP (mV)	TURB. (NTU)	
0955	240	—	24.12	—	—	—	—	—	—	
0958	↓	720	24.32	23.49	7.39	12.00	2.47	181.5	1.01	
1001		1440	24.30	23.91	7.28	12.04	0.67	180.2	0.60	
1004		2160	24.30	23.98	7.25	12.05	0.39	178.1	0.86	
1007		2880	24.30	23.99	7.24	12.06	0.30	175.6	0.94	
1010		3600	24.30	24.01	7.24	12.06	0.27	173.1	0.57	
1013	↓	4320	24.30	24.03	7.23	12.06	0.24	170.7	0.40	

PURGE STOP TIME: 1013	SAMPLE TIME: 1013
LAB NAME: TEST AMERICA	SAMPLE ID: Tt-TP4-M3-20160317

OBSERVATIONS/COMMENTS (NOTE TIMES): Tt-TP4-M3-20160317-DUP

FL = 0.078

FILE: LOG FORMS\em-Water Purging & Sampling Log-10-20-05.dwg

LOW-FLOW WATER PURGING & SAMPLING LOG

TETRA TECH

PROJECT NAME: NERT SFDT
FIELD PERSON: M.WILSON/J.COOK
PROJECT NUMBER:
PROJECT MANAGER:
PROJECT LOCATION:
DATE: 3/17/16

PUMP / TUBING TYPE:	WELL NUMBER: TT-TP1-L1
EQUIPMENT CLEANING METHOD:	CASING RADIUS: (in.)
	TOTAL DEPTH (TD): (ft.)
PURGE WATER DISPOSAL:	DEPTH TO WATER (DTW): (ft.)
	SCREENED INTERVAL: (ft.)
PURGE START TIME:	PUMP SET AT (ft.)

TIME	PURGE RATE (ml/min)	VOLUME PURGED (ml)	DTW (ft)	TEMP (°C)	pH	COND. (µS/cm)	DO (mg/L)	ORP (mV)	TURB. (NTU)	
1130				20.01	7.63	5.562	2.02	156.3	0.71	

PURGE STOP TIME:	SAMPLE TIME: 1130
LAB NAME: TEST AMERICA	SAMPLE ID: TT-TP1-L1-20160317

OBSERVATIONS/COMMENTS (NOTE TIMES):

FL= 1.850

LOW-FLOW WATER PURGING & SAMPLING LOG

TETRA TECH

PROJECT NAME: NERT SFDT
FIELD PERSON: M. Wilson / J. Cook
PROJECT NUMBER:
PROJECT MANAGER:
PROJECT LOCATION:
DATE: 3/17/16

PUMP / TUBING TYPE:	WELL NUMBER: Tt-TP1-L2
EQUIPMENT CLEANING METHOD:	CASING RADIUS: (in.)
	TOTAL DEPTH (TD): (ft.)
PURGE WATER DISPOSAL:	DEPTH TO WATER (DTW): (ft.)
	SCREENED INTERVAL: (ft.)
PURGE START TIME:	PUMP SET AT (ft.)

TIME	PURGE RATE (ml/min)	VOLUME PURGED (ml)	DTW (ft)	TEMP (°C)	pH	COND. (µS/cm)	DO (mg/L)	ORP (mV)	TURB. (NTU)	
1135				22.35	7.04	16.47	1.29	177.7	0.97	

PURGE STOP TIME:	SAMPLE TIME: 1135
LAB NAME: TEST AMERICA	SAMPLE ID: Tt-TP1-L2-20160317

OBSERVATIONS/COMMENTS (NOTE TIMES):

FL = 1.823

LOW-FLOW WATER PURGING & SAMPLING LOG

TETRA TECH

PROJECT NAME: NERT SFDT
FIELD PERSON: mwilson / j. cook
PROJECT NUMBER:
PROJECT MANAGER:
PROJECT LOCATION:
DATE: 3/17/16

PUMP / TUBING TYPE:	WELL NUMBER: Tt-TP2-L1
EQUIPMENT CLEANING METHOD:	CASING RADIUS: (in.)
	TOTAL DEPTH (TD): (ft.)
PURGE WATER DISPOSAL:	DEPTH TO WATER (DTW): (ft.)
	SCREENED INTERVAL: (ft.)
PURGE START TIME:	PUMP SET AT (ft.)

TIME	PURGE RATE (ml/min)	VOLUME PURGED (ml)	DTW (ft)	TEMP (°C)	pH	COND. (µS/cm)	DO (mg/L)	ORP (mV)	TURB. (NTU)	
1120				20.45	7.93	4.769	3.27	154.8	0.45	

PURGE STOP TIME:	SAMPLE TIME: 1120
LAB NAME: TEST AMERICA	SAMPLE ID: Tt-TP2-L1-20160317

OBSERVATIONS/COMMENTS (NOTE TIMES):

FL = 1.746

PAGE ___ of ___

LOW-FLOW WATER PURGING & SAMPLING LOG

TETRA TECH

PROJECT NAME: NERT SFPT

FIELD PERSON: M. WILSON / J. COOK

PROJECT NUMBER: _____

PROJECT MANAGER: _____

PROJECT LOCATION: _____

DATE: 3/17/16

PUMP / TUBING TYPE:	WELL NUMBER: Tt-TP2-L2
EQUIPMENT CLEANING METHOD:	CASING RADIUS: _____ (in.)
	TOTAL DEPTH (TD): _____ (ft.)
PURGE WATER DISPOSAL:	DEPTH TO WATER (DTW): _____ (ft.)
	SCREENED INTERVAL: _____ (ft.)
PURGE START TIME:	PUMP SET AT _____ (ft.)

TIME	PURGE RATE (ml/min)	VOLUME PURGED (ml)	DTW (ft)	TEMP (°C)	pH	COND. (µS/cm)	DO (mg/L)	ORP (mV)	TURB. (NTU)	
1125				21.40	7.38	11.56	2.44	173.8	0.55	

PURGE STOP TIME:	SAMPLE TIME: 1125
LAB NAME: TEST AMERICA	SAMPLE ID: Tt-TP2-L2-20160317

OBSERVATIONS/COMMENTS (NOTE TIMES):

FL= 0.513

PAGE 1 of 1

LOW-FLOW WATER PURGING & SAMPLING LOG

TETRA TECH

PROJECT NAME: NERT SFPT

FIELD PERSON: M WILSON / J. COOK

PROJECT NUMBER:

PROJECT MANAGER:

PROJECT LOCATION:

DATE: 3/17/16

PUMP / TUBING TYPE:

WELL NUMBER: TT-TP3-L1

EQUIPMENT CLEANING METHOD:

CASING RADIUS: (in.)

TOTAL DEPTH (TD): (ft.)

PURGE WATER DISPOSAL:

DEPTH TO WATER (DTW): (ft.)

SCREENED INTERVAL: (ft.)

PURGE START TIME:

PUMP SET AT (ft.)

TIME	PURGE RATE (ml/min)	VOLUME PURGED (ml)	DTW (ft)	TEMP (°C)	pH	COND. (µS/cm)	DO (mg/L)	ORP (mV)	TURB. (NTU)	
1110				20.68	8.72	2.237	4.15	134.0	0.78	

PURGE STOP TIME:

SAMPLE TIME: 1110

LAB NAME: TEST AMERICA

SAMPLE ID: TT-TP3-L1-20160317

OBSERVATIONS/COMMENTS (NOTE TIMES):

FL= 3.031

LOW-FLOW WATER PURGING & SAMPLING LOG

TETRA TECH

PROJECT NAME: NERT SFDT
FIELD PERSON: M. WILSON / J. COOK
PROJECT NUMBER:
PROJECT MANAGER:
PROJECT LOCATION:
DATE: 3/17/16

PUMP / TUBING TYPE:	WELL NUMBER: Tt-TP3-L2
EQUIPMENT CLEANING METHOD:	CASING RADIUS: (in.)
	TOTAL DEPTH (TD): (ft.)
PURGE WATER DISPOSAL:	DEPTH TO WATER (DTW): (ft.)
	SCREENED INTERVAL: (ft.)
PURGE START TIME:	PUMP SET AT (ft.)

TIME	PURGE RATE (ml/min)	VOLUME PURGED (ml)	DTW (ft)	TEMP (°C)	pH	COND. (µS/cm)	DO (mg/L)	ORP (mV)	TURB. (NTU)	
1115				21.01	7.91	4.115	2.04	153.7	0.91	

PURGE STOP TIME:	SAMPLE TIME: 1115
LAB NAME: TEST AMERICA	SAMPLE ID: Tt-TP3-L2-20160317

OBSERVATIONS/COMMENTS (NOTE TIMES):

FL = 1.393

LOW-FLOW WATER PURGING & SAMPLING LOG

TETRA TECH

PROJECT NAME: NERT SFPT
FIELD PERSON: M.WILSON / J.COOK
PROJECT NUMBER:
PROJECT MANAGER:
PROJECT LOCATION:
DATE: 3/17/16

PUMP / TUBING TYPE:	WELL NUMBER: TT-TP4-L1
EQUIPMENT CLEANING METHOD:	CASING RADIUS: (in.)
	TOTAL DEPTH (TD): (ft.)
PURGE WATER DISPOSAL:	DEPTH TO WATER (DTW): (ft.)
	SCREENED INTERVAL: (ft.)
PURGE START TIME:	PUMP SET AT (ft.)

TIME	PURGE RATE (ml/min)	VOLUME PURGED (ml)	DTW (ft)	TEMP (°C)	pH	COND. (µS/cm)	DO (mg/L)	ORP (mV)	TURB. (NTU)	
1100	—	—	—	21.36	7.02	16.85	4.52	195.5	0.98	

PURGE STOP TIME:	SAMPLE TIME: 1100
LAB NAME: TEST AMERICA	SAMPLE ID: TT-TP4-L1-20160317

OBSERVATIONS/COMMENTS (NOTE TIMES):

FL = 2.362

PAGE ___ of ___

LOW-FLOW WATER PURGING & SAMPLING LOG

TETRA TECH

PROJECT NAME: NERT SFPT

FIELD PERSON: M. WILSON / J. COOK

PROJECT NUMBER: _____

PROJECT MANAGER: _____

PROJECT LOCATION: _____

DATE: 3/17/16

PUMP / TUBING TYPE:	WELL NUMBER: TT-TP4-L2
EQUIPMENT CLEANING METHOD:	CASING RADIUS: _____ (in.)
	TOTAL DEPTH (TD): _____ (ft.)
PURGE WATER DISPOSAL:	DEPTH TO WATER (DTW): _____ (ft.)
	SCREENED INTERVAL: _____ (ft.)
PURGE START TIME:	PUMP SET AT (ft.)

TIME	PURGE RATE (ml/min)	VOLUME PURGED (ml)	DTW (ft)	TEMP (°C)	pH	COND. (µS/cm)	DO (mg/L)	ORP (mV)	TURB. (NTU)	
1105	—	—	—	22.35	7.60	7.852	3.44	167.1	1.25	

PURGE STOP TIME:	SAMPLE TIME: 1105
LAB NAME: TEST AMERICA	SAMPLE ID: TT-TP4-L2-20160317

OBSERVATIONS/COMMENTS (NOTE TIMES):

FL = 0.454

LOW-FLOW WATER PURGING & SAMPLING LOG

TETRA TECH

PROJECT NAME: NERT SFDT
FIELD PERSON: Mexoxo Wlodarczyk
PROJECT NUMBER: 100-SBO-T35000-2016-MOS
PROJECT MANAGER: Mark Feldman
PROJECT LOCATION: Henderson NV
DATE: 3-23-16

PUMP / TUBING TYPE: dedicated 1/4" tubing
WELL NUMBER: TT-TP1-M1
EQUIPMENT CLEANING METHOD:
CASING RADIUS: 2 (in.)
TOTAL DEPTH (TD): (ft.)
DEPTH TO WATER (DTW): 24.55 (ft.)
PURGE WATER DISPOSAL:
SCREENED INTERVAL: (ft.)

PURGE START TIME: 955
PUMP SET AT (ft.)

TIME	PURGE RATE (ml/min)	VOLUME PURGED (ml)	DTW (ft)	TEMP (°C)	pH	COND. (µS/cm)	DO (mg/L)	ORP (mV)	TURB. (NTU)	
0959	300		24.70	23.43	7.32	2.632	0.41	215.9	3.08	
1002			~~23.87~~ 24.80	23.87	7.37	7.781	0.19	211.6	4.22	
1005	250		24.70	23.88	7.32	8.060	0.16	200.0	3.16	
1008			24.70	23.91	7.28	8.291	0.18	195.1	3.85	
1011			24.70	23.91	7.27	8.297	0.22	189.9	2.92	
1014			24.70	23.93	7.26	8.315	0.25	187.8	2.80	

PURGE STOP TIME:
SAMPLE TIME: 1014
LAB NAME:
SAMPLE ID: TT-TP1-M1-20160323

OBSERVATIONS/COMMENTS (NOTE TIMES):

~~Flow =~~ 4,632
Flow =

FILE: LOG FORMS\em-Water Purging & Sampling Log-10-20-09.dwg

LOW-FLOW WATER PURGING & SAMPLING LOG

TETRA TECH

PROJECT NAME: NERT SFPT
FIELD PERSON: Alexis Wickerson
PROJECT NUMBER: 100-SBO-T35000-2016-MOS
PROJECT MANAGER: Mark Feldman
PROJECT LOCATION: Henderson NV
DATE: 3-23-16

PUMP / TUBING TYPE: dedicated 1/4" tubing
EQUIPMENT CLEANING METHOD:
PURGE WATER DISPOSAL:

WELL NUMBER: TT-TP1-MW2
CASING RADIUS: 2" (in.)
TOTAL DEPTH (TD): (ft.)
DEPTH TO WATER (DTW): 25.60 (ft.)
SCREENED INTERVAL: (ft.)

PURGE START TIME: 1025
PUMP SET AT (ft.)

TIME	PURGE RATE (ml/min)	VOLUME PURGED (ml)	DTW (ft)	TEMP (°C)	pH	COND. (µS/cm)	DO (mg/L)	ORP (mV)	TURB. (NTU)	
1029	210		25.91	24.68	6.99	13.24	0.46	159.7	5.38	
1032	210		25.95	24.69	7.01	13.20	0.23	153.8	6.00	
1035	210		25.96	24.73	7.03	13.20	0.21	151.3	5.47	
1038	210		25.97	24.73	7.06	13.21	0.18	144.8	5.55	
1041	210		25.98	24.67	7.02	13.24	0.18	142.7	5.01	
1044	210		25.99	24.68	7.03	13.23	0.16	139.4	3.29	

PURGE STOP TIME:
SAMPLE TIME: 1044
LAB NAME:
SAMPLE ID: TT-TP1-MW2-20160323

OBSERVATIONS/COMMENTS (NOTE TIMES):

Flow = 0.410
Fluor

LOW-FLOW WATER PURGING & SAMPLING LOG

TETRA TECH

PROJECT NAME: NERT SPDT
FIELD PERSON: Mark Wickenheiser
PROJECT NUMBER: 100-SBO-T35000-2016-M05
PROJECT MANAGER: Mark Feldman
PROJECT LOCATION: Henderson, NV
DATE: 3-23-16

PUMP / TUBING TYPE: dedicated Y/N tubing
EQUIPMENT CLEANING METHOD:
PURGE WATER DISPOSAL:

WELL NUMBER: TT-TP1-M3
CASING RADIUS: 2 (in.)
TOTAL DEPTH (TD): (ft.)
DEPTH TO WATER (DTW): 25.50 (ft.)
SCREENED INTERVAL: (ft.)

PURGE START TIME: 1059
PUMP SET AT (ft.)

TIME	PURGE RATE (ml/min)	VOLUME PURGED (ml)	DTW (ft)	TEMP (°C)	pH	COND. (µS/cm)	DO (mg/L)	ORP (mV)	TURB. (NTU)	
1103	240		25.96	24.33	6.96	12.08	0.57	172.7	3.81	
1106	210		26.16	24.89	6.98	12.05	0.38	162.3	3.24	
1109	210		26.20	24.98	6.99	12.05	0.25	155.0	3.05	
1112	150		26.20	25.03	7.00	12.03	0.18	145.6	2.62	
1115	150		26.23	25.01	6.98	12.02	0.18	142.8	2.51	
1118	150		26.25	24.97	6.99	12.02	0.16	139.3	2.60	

PURGE STOP TIME:
SAMPLE TIME: 1118
LAB NAME:
SAMPLE ID: TT-TP1-M3-20160323

OBSERVATIONS/COMMENTS (NOTE TIMES):

FL = 0.523

LOW-FLOW WATER PURGING & SAMPLING LOG

TETRA TECH

PROJECT NAME: NERT SFOT
FIELD PERSON: Maxie Wlodarczyk
PROJECT NUMBER: 100-580-T35000-2016-M05
PROJECT MANAGER: Mark Feldman
PROJECT LOCATION: Henderson NV
DATE: 3-23-16

PUMP / TUBING TYPE: dedicated 1/4" tubing	WELL NUMBER: TT-TP2-M1
EQUIPMENT CLEANING METHOD:	CASING RADIUS: 2" (in.)
	TOTAL DEPTH (TD): (ft.)
PURGE WATER DISPOSAL:	DEPTH TO WATER (DTW): 23.43 (ft.)
	SCREENED INTERVAL: (ft.)
PURGE START TIME: 1131	PUMP SET AT (ft.)

TIME	PURGE RATE (ml/min)	VOLUME PURGED (ml)	DTW (ft)	TEMP (°C)	pH	COND. (µS/cm)	DO (mg/L)	ORP (mV)	TURB. (NTU)	
1135	220		23.45	19.71	7.64	6.896	2.40	92.1	2.62	
1138	↓		23.45	20.33	7.48	7.699	1.30	91.5	2.63	
1141		23.4[illegible]141		20.41	7.35	7.870	1.21	90.0	2.45	
1144			23.45	20.39	7.29	8.013	1.33	97.3	2.27	
1147			23.45	20.36	7.31	8.057	1.24	93.8	1.91	
1150			23.45	20.42	7.26	8.117	1.25	90.2	1.52	

PURGE STOP TIME:	SAMPLE TIME: 1150
LAB NAME:	SAMPLE ID: TT-TP2-M1-20160323

OBSERVATIONS/COMMENTS (NOTE TIMES):

FL = 9,099

LOW-FLOW WATER PURGING & SAMPLING LOG

TETRA TECH

PROJECT NAME: NERT SFPT

FIELD PERSON: Marco [illegible]

PROJECT NUMBER: 100-SB0-T35000-2016-M05

PROJECT MANAGER: Mark Feldman

PROJECT LOCATION: Henderson ~~NV~~ NV

DATE: 3-23-16

PUMP / TUBING TYPE:

EQUIPMENT CLEANING METHOD:

PURGE WATER DISPOSAL:

WELL NUMBER: TT-TP2-M2

CASING RADIUS: 2" (in.)

TOTAL DEPTH (TD): (ft.)

DEPTH TO WATER (DTW): 24.09 (ft.)

SCREENED INTERVAL: (ft.)

PURGE START TIME: 1157

PUMP SET AT (ft.)

TIME	PURGE RATE (ml/min)	VOLUME PURGED (ml)	DTW (ft)	TEMP (°C)	pH	COND. (µS/cm)	DO (mg/L)	ORP (mV)	TURB. (NTU)	
1203	250		24.12	22.81	7.31	9.547	1.06	102.0	1.65	
1206	↓		24.14	22.88	7.24	9.576	0.56	98.8	1.55	
1209			24.15	22.89	7.25	9.584	0.52	95.2	1.62	
1212			24.15	22.99	7.24	9.585	0.48	91.8	1.69	
1215			24.15	22.95	7.21	9.581	0.50	86.9	1.73	
1218			24.15	22.92	7.20	9.581	0.47	83.5	1.40	

PURGE STOP TIME:

SAMPLE TIME: 1218

LAB NAME:

SAMPLE ID: TT-TP2-M2-20160323

OBSERVATIONS/COMMENTS (NOTE TIMES):

FL = 1.318

LOW-FLOW WATER PURGING & SAMPLING LOG

TETRA TECH

PROJECT NAME: NEAT SFPT FIELD PERSON: Mario Wlodarczyk

PROJECT NUMBER: 100-380-T3500-2016-M05 PROJECT MANAGER: Mark Fehlmann

PROJECT LOCATION: Henderson NV DATE: 3-23-16

PUMP / TUBING TYPE: dedicated	WELL NUMBER: TT-TP3-M1
EQUIPMENT CLEANING METHOD:	CASING RADIUS: 2" (in.)
	TOTAL DEPTH (TD): (ft.)
PURGE WATER DISPOSAL:	DEPTH TO WATER (DTW): 22.10 (ft.)
	SCREENED INTERVAL: (ft.)
PURGE START TIME: 1225	PUMP SET AT (ft.)

TIME	PURGE RATE (ml/min)	VOLUME PURGED (ml)	DTW (ft)	TEMP (°C)	pH	COND. (µS/cm)	DO (mg/L)	ORP (mV)	TURB. (NTU)	
1229	240		22.10	17.65	8.00	1.278	0.62	56.0	4.32	
1232	↓		22.10	17.66	7.97	1.260	0.59	49.7	4.10	
1235			22.10	17.62	7.94	1.263	0.58	46.3	4.27	
1238			22.10	17.56	7.93	1.267	0.61	55.6	4.09	
1241			22.10	17.51	7.92	1.269	0.68	51.3	4.07	
1244	↓		22.10	17.47	7.91	1.265	0.70	50.3	3.98	

PURGE STOP TIME:	SAMPLE TIME: 1244
LAB NAME:	SAMPLE ID: TT-TP3-M1-20160323

OBSERVATIONS/COMMENTS (NOTE TIMES):

FL = 3.973

LOW-FLOW WATER PURGING & SAMPLING LOG

TETRA TECH

PROJECT NAME: NEKT 5FPT
FIELD PERSON: Maxx Widmann
PROJECT NUMBER: 100-SBO-T35000-2016-M05
PROJECT MANAGER: Mark Feldman
PROJECT LOCATION: Henderson NV
DATE: 3-23-16

PUMP / TUBING TYPE: dedicated 1/4" tubing

EQUIPMENT CLEANING METHOD:

PURGE WATER DISPOSAL:

WELL NUMBER: TJ-TP3-M2

CASING RADIUS: 2" (in.)

TOTAL DEPTH (TD): (ft.)

DEPTH TO WATER (DTW): 23.50 (ft.)

SCREENED INTERVAL: (ft.)

PURGE START TIME: 1252

PUMP SET AT (ft.)

TIME	PURGE RATE (ml/min)	VOLUME PURGED (ml)	DTW (ft)	TEMP (°C)	pH	COND. (µS/cm)	DO (mg/L)	ORP (mV)	TURB. (NTU)	
1256	220		23.60	19.36	8.09	2,082	1.01	64.5	1.65	
1259			23.60	19.28	8.14	2.039	0.63	59.2	1.25	
1302			23.58	19.20	8.06	2.005	0.23	65.0	1.58	
1305			23.57	19.22	8.09	2.003	0.21	50.2	1.29	
1308			23.55	19.16	8.08	2.004	0.17	47.4	1.51	
1311			23.55	19.10	8.07	2.002	0.16	45.3	1.R	

PURGE STOP TIME:

SAMPLE TIME: 134

LAB NAME:

SAMPLE ID: TJ-TP3-M2-20160323

OBSERVATIONS/COMMENTS (NOTE TIMES):

FL = 1.544

FILE: LOG FORMS\em-Water Purging & Sampling Log-10-20-09.dwg

LOW-FLOW WATER PURGING & SAMPLING LOG

TETRA TECH

PROJECT NAME: NERT SFPT
FIELD PERSON: PETER
PROJECT NUMBER:
PROJECT MANAGER:
PROJECT LOCATION:
DATE: 3/24/16

PUMP / TUBING TYPE:	WELL NUMBER: TT-TP4-M1
EQUIPMENT CLEANING METHOD:	CASING RADIUS: 2 (in.)
PURGE WATER DISPOSAL:	TOTAL DEPTH (TD): (ft.)
	DEPTH TO WATER (DTW): 23.95 (ft.)
	SCREENED INTERVAL: (ft.)
PURGE START TIME: 1053	PUMP SET AT 30 (ft.)

TIME	PURGE RATE (ml/min)	VOLUME PURGED (ml)	DTW (ft)	TEMP (°C)	pH	COND. (µS/cm)	DO (mg/L)	ORP (mV)	TURB. (NTU)	
1056	250		23.98	23.39	7.08	10.39	0.44	201.4	0.25	
1059	250		23.98	23.47	7.22	10.40	0.21	188.9	0.32	
1102	250		23.98	23.57	7.27	10.16	0.17	178.4	0.44	
1105	250		23.98	23.65	7.31	9.169	0.15	160.1	0.21	
1108	250		23.98	23.66	7.33	8.628	0.15	152.4	0.30	
1111	250		23.98	23.58	7.32	8.380	0.15	150.1	0.27	
1114	250		23.98	23.53	7.32	8.299	0.16	147.3	0.43	

PURGE STOP TIME:	SAMPLE TIME: 1114
LAB NAME:	SAMPLE ID: TT-TP4-M1-20160324

OBSERVATIONS/COMMENTS (NOTE TIMES):

RL = 0.718

LOW-FLOW WATER PURGING & SAMPLING LOG

TETRA TECH

PROJECT NAME: NERC SEPT
FIELD PERSON: PETER
PROJECT NUMBER:
PROJECT MANAGER: MARK FELDMAN
PROJECT LOCATION:
DATE: 3/24/16

PUMP / TUBING TYPE:	WELL NUMBER: TP4-M2
EQUIPMENT CLEANING METHOD:	CASING RADIUS: 2 (in.)
	TOTAL DEPTH (TD): (ft.)
PURGE WATER DISPOSAL:	DEPTH TO WATER (DTW): 23.94 (ft.)
	SCREENED INTERVAL: (ft.)
PURGE START TIME: 1128	PUMP SET AT 30 (ft.)

TIME	PURGE RATE (ml/min)	VOLUME PURGED (ml)	DTW (ft)	TEMP (°C)	pH	COND. (µS/cm)	DO (mg/L)	ORP (mV)	TURB. (NTU)	
1131	240		23.99	24.42	7.30	7.847	0.56	125.8	1.09	
1134	240		23.99	24.46	7.29	7.732	0.27	118.5	0.91	
1137	240		23.99	24.44	7.27	7.703	0.22	108.6	1.26	
1140	240		23.99	24.42	7.27	7.706	0.14	97.2	1.33	
1143	240		23.99	24.44	7.26	7.710	0.13	92.0	1.15	
1146	240		23.99	24.44	7.27	7.714	0.12	90.1	1.04	

PURGE STOP TIME:	SAMPLE TIME: 1146
LAB NAME:	SAMPLE ID: TT-TP4M2-20160324

OBSERVATIONS/COMMENTS (NOTE TIMES):

FC= 0.491

LOW-FLOW WATER PURGING & SAMPLING LOG

TETRA TECH

PROJECT NAME: NERT S FPT
PROJECT NUMBER: 100-SBO-T35000-2016-M05
PROJECT LOCATION: Henderson NV
FIELD PERSON: Maxx Wlodarczyk
PROJECT MANAGER: ~~Matt~~ Mark Feldman
DATE: 3-24-16

PUMP / TUBING TYPE: dedicated 1/4" tubing
EQUIPMENT CLEANING METHOD:
PURGE WATER DISPOSAL:

WELL NUMBER: TT-TP4-M3
CASING RADIUS: 2" (in.)
TOTAL DEPTH (TD): (ft.)
DEPTH TO WATER (DTW): 24.04 (ft.)
SCREENED INTERVAL: (ft.)

PURGE START TIME: 1201
PUMP SET AT 30 (ft.)

TIME	PURGE RATE (ml/min)	VOLUME PURGED (ml)	DTW (ft)	TEMP (°C)	pH	COND. (µS/cm)	DO (mg/L)	ORP (mV)	TURB. (NTU)	
1206	180		24.12	24.35	7.33	11.84	0.63	111.6	6.08	
1209	↓		24.12	24.38	7.30	11.84	0.41	103.7	5.28	
1212			24.12	24.52	7.26	11.84	0.24	85.0	2.91	
1215			24.12	24.62	7.25	11.83	0.20	75.3	2.69	
1218	↓		24.12	24.60	7.24	11.82	0.19	70.1	2.78	
1221			24.12	24.55	7.23	11.83	0.19	66.7	2.81	

PURGE STOP TIME:
SAMPLE TIME: ~~TT-TP4-M3-20160324~~ 1221
LAB NAME:
SAMPLE ID: TT-TP4-M3-20160324

OBSERVATIONS/COMMENTS (NOTE TIMES):

Dup + MS/MSD

FL = 0.333

FILE: LOG FORMS\em-Water Purging & Sampling Log-10-20-09.dwg

LOW-FLOW WATER PURGING & SAMPLING LOG

TETRA TECH

PROJECT NAME: NERT SFPT
FIELD PERSON: Maxx W Peter J
PROJECT NUMBER: 100-880-T35000-2016-M05
PROJECT MANAGER: Mark Feldman
PROJECT LOCATION:
DATE: 3-23-16

PUMP / TUBING TYPE:	WELL NUMBER: All lysimeters
EQUIPMENT CLEANING METHOD:	CASING RADIUS: (in.)
PURGE WATER DISPOSAL:	TOTAL DEPTH (TD): (ft.)
	DEPTH TO WATER (DTW): (ft.)
	SCREENED INTERVAL: (ft.)
PURGE START TIME:	PUMP SET AT (ft.)

TIME	~~PURGE RATE (ml/min)~~	~~VOLUME PURGED~~	~~Flowcam DTW (ft)~~	TEMP (°C)	pH	COND. (µS/cm)	DO (mg/L)	ORP (mV)	TURB. (NTU)	well ID
1300			1.713	22.20	7.30	12.95	3.95	178.6	0.67	TT-TP4-L1
1307			1.028	22.17	7.78	7.578	3.87	189.2	1.01	TT-TP4-L2
1315			2.349	20.19	8.77	2.095	5.11	101.3	0.97	TT-TP3-L1
1320			1.375	20.95	8.15	3.578	3.98	150.2	0.81	TT-TP3-L2
1328			1.958	20.16	7.37	4.302	3.32	133.2	0.78	TT-TP2-L1
1330			1.898	22.21	7.43	9.559	3.66	148.1	0.95	TT-TP2-L2
1335			2.336	20.89	7.64	4.681	2.20	135.6	0.77	TT-TP1-L1
1340			2.533	21.60	7.28	12.67	3.67	160.6	0.61	TT-TP1-L2

PURGE STOP TIME:	SAMPLE TIME:
LAB NAME:	SAMPLE ID:

OBSERVATIONS/COMMENTS (NOTE TIMES):

LOW-FLOW WATER PURGING & SAMPLING LOG

TETRA TECH

PROJECT NAME: NERT SFPT
FIELD PERSON:
PROJECT NUMBER:
PROJECT MANAGER:
PROJECT LOCATION:
DATE: 3-30-2016

PUMP / TUBING TYPE:	WELL NUMBER: TT-TPI-M1
EQUIPMENT CLEANING METHOD:	CASING RADIUS: 24 (in.)
	TOTAL DEPTH (TD): (ft.)
PURGE WATER DISPOSAL:	DEPTH TO WATER (DTW): 24.48 (ft.)
	SCREENED INTERVAL: (ft.)
PURGE START TIME:	PUMP SET AT (ft.)

TIME	PURGE RATE (ml/min)	VOLUME PURGED (ml)	DTW (ft)	TEMP (°C)	pH	COND. (µS/cm)	DO (mg/L)	ORP (mV)	TURB. (NTU)	
1048	270									
1051	270		24.55	22.46	7.17	8.850	0.79	229.4	3.62	
1054	270		24.59	23.23	7.13	8.953	0.23	221.0	4.36	
1057	270		24.60	23.30	7.13	8.949	0.22	216.0	3.79	
1100	270		24.60	23.32	7.12	8.956	0.21	211.6	2.83	
1103	270		24.60	23.32	7.12	8.925	0.15	207.5	2.73	
1106	270		24.60	23.34	7.12	8.914	0.15	202.8	1.74	

PURGE STOP TIME: 1106	SAMPLE TIME: 1106
LAB NAME: Test America	SAMPLE ID: TT-TPI-M1-20160330

OBSERVATIONS/COMMENTS (NOTE TIMES):

F = 1.256

LOW-FLOW WATER PURGING & SAMPLING LOG

TETRA TECH

PROJECT NAME: NERT SFPT
FIELD PERSON:
PROJECT NUMBER:
PROJECT MANAGER:
PROJECT LOCATION:
DATE: 3-30-16

PUMP / TUBING TYPE:	WELL NUMBER: TT-TP1-MZ
EQUIPMENT CLEANING METHOD:	CASING RADIUS: 2" (in.)
PURGE WATER DISPOSAL:	TOTAL DEPTH (TD): (ft.)
	DEPTH TO WATER (DTW): 25.50 (ft.)
	SCREENED INTERVAL: (ft.)
PURGE START TIME:	PUMP SET AT (ft.)

TIME	PURGE RATE (ml/min)	VOLUME PURGED (ml)	DTW (ft)	TEMP (°C)	pH	COND. (µS/cm)	DO (mg/L)	ORP (mV)	TURB. (NTU)	
1120	240									
1123	240		25.90	24.49	6.91	11.61	0.30	193.2	7.11	
1126	240		26.00	24.61	6.92	11.48	0.28	186.0	6.85	
1129	240		26.03	24.62	6.92	11.59	0.21	183.9	6.41	
1132	240		26.05	24.68	6.94	12.03	0.18	181.7	6.25	
1135	240		26.07	24.64	6.95	12.15	0.17	179.4	7.18	
1138	240		26.08	24.63	6.96	12.21	0.15	177.6	5.87	

PURGE STOP TIME: 1138	SAMPLE TIME: 1138
LAB NAME:	SAMPLE ID: TT-TP1-MZ-20160330

OBSERVATIONS/COMMENTS (NOTE TIMES):

F-0.747

LOW-FLOW WATER PURGING & SAMPLING LOG

TETRA TECH

PROJECT NAME: VERTSFDT

FIELD PERSON:

PROJECT NUMBER:

PROJECT MANAGER:

PROJECT LOCATION:

DATE: 3-30-16

PUMP / TUBING TYPE:	WELL NUMBER: TT-TP1-M3
EQUIPMENT CLEANING METHOD:	CASING RADIUS: 2" (in.)
	TOTAL DEPTH (TD): (ft.)
PURGE WATER DISPOSAL:	DEPTH TO WATER (DTW): 25.78 (ft.)
	SCREENED INTERVAL: (ft.)
PURGE START TIME:	PUMP SET AT (ft.)

TIME	PURGE RATE (ml/min)	VOLUME PURGED (ml)	DTW (ft)	TEMP (°C)	pH	COND. (µS/cm)	DO (mg/L)	ORP (mV)	TURB. (NTU)	
1147	225									
1150	225		25.97	24.72	6.88	12.00	0.68	170.2	3.53	
1153	225		26.05	25.10	6.90	12.00	0.20	166.8	3.67	
1156	225		26.10	26.20	6.91	11.98	0.17	163.3	3.09	
1159	225		26.10	26.34	6.91	11.98	0.16	162.2	3.37	
1202	225		26.11	26.23	6.91	11.97	0.12	158.2	2.88	
1205	225		26.11	26.26	6.91	11.97	0.13	157.7	2.90	

PURGE STOP TIME: 1205	SAMPLE TIME: 1205
LAB NAME:	SAMPLE ID: TT-TP1-M3-20160330

OBSERVATIONS/COMMENTS (NOTE TIMES):

F = 0.325

LOW-FLOW WATER PURGING & SAMPLING LOG

TETRA TECH

PROJECT NAME: NERT SFPT
FIELD PERSON: Peter J
PROJECT NUMBER:
PROJECT MANAGER:
PROJECT LOCATION:
DATE: 3-30-16

PUMP / TUBING TYPE:	WELL NUMBER: TT-TP2-M1
EQUIPMENT CLEANING METHOD:	CASING RADIUS: (in.)
	TOTAL DEPTH (TD): (ft.)
PURGE WATER DISPOSAL:	DEPTH TO WATER (DTW): 23.39 (ft.)
	SCREENED INTERVAL: (ft.)
PURGE START TIME:	PUMP SET AT (ft.)

TIME	PURGE RATE (ml/min)	VOLUME PURGED (ml)	DTW (ft)	TEMP (°C)	pH	COND. (µS/cm)	DO (mg/L)	ORP (mV)	TURB. (NTU)	
1226	240									
1229	240		23.40	20.24	7.48	7.005	1.46	137.3	0.82	
1232	240		23.40	20.42	7.44	7.001	1.31	136.3	0.96	
1235	240		23.40	20.57	7.37	7.435	1.28	135.7	0.71	
1238	240		23.40	20.66	7.33	7.655	1.11	134.8	1.03	
1241	240		23.40	20.78	7.31	7.777	1.07	133.5	0.69	
1244	240		23.40	20.71	7.29	7.843	1.01	132.3	0.73	

PURGE STOP TIME: 1244	SAMPLE TIME: 1244
LAB NAME:	SAMPLE ID: TT-TP2-M1-20160330

OBSERVATIONS/COMMENTS (NOTE TIMES):

F = 31.00

PAGE 1 of 1

LOW-FLOW WATER PURGING & SAMPLING LOG

TETRA TECH

PROJECT NAME: NEKT SFPT

FIELD PERSON: Peter J.

PROJECT NUMBER:

PROJECT MANAGER:

PROJECT LOCATION:

DATE: 3-30-16

PUMP / TUBING TYPE:	WELL NUMBER: TT-TP2-MZ
EQUIPMENT CLEANING METHOD:	CASING RADIUS: (in.)
	TOTAL DEPTH (TD): (ft.)
PURGE WATER DISPOSAL:	DEPTH TO WATER (DTW): 24.05 (ft.)
	SCREENED INTERVAL: (ft.)
PURGE START TIME:	PUMP SET AT (ft.)

TIME	PURGE RATE (ml/min)	VOLUME PURGED (ml)	DTW (ft)	TEMP (°C)	pH	COND. (µS/cm)	DO (mg/L)	ORP (mV)	TURB. (NTU)	
1255	240									
1258	240		24.05	22.60	7.26	9.326	0.53	136.6	7.62	
1301	240		24.05	22.50	7.22	9.129	0.29	133.9	7.99	
1304	240		24.05	22.54	7.19	9.295	0.22	133.2	6.87	
1307	240		24.05	22.54	7.18	9.327	0.23	131.8	5.46	
1310	240		24.05	22.57	7.18	9.331	0.21	130.9	5.13	
1313	240		24.05	22.58	7.18	9.334	0.20	129.1	4.88	

PURGE STOP TIME: 1313	SAMPLE TIME: 1313
LAB NAME: Test America	SAMPLE ID: TT-TP2-MZ-20160330

OBSERVATIONS/COMMENTS (NOTE TIMES):

F-0.561

LOW-FLOW WATER PURGING & SAMPLING LOG

TETRA TECH

PROJECT NAME: NCRT
FIELD PERSON: Marc W.
PROJECT NUMBER: 100-SBO-T35000-216-M05
PROJECT MANAGER: Mark Feldman
PROJECT LOCATION: Henderson NV.
DATE: 3-31-16

PUMP / TUBING TYPE:	WELL NUMBER: TT-TP3-M1
EQUIPMENT CLEANING METHOD:	CASING RADIUS: 2" (in.)
	TOTAL DEPTH (TD): (ft.)
PURGE WATER DISPOSAL:	DEPTH TO WATER (DTW): 22.06 (ft.)
	SCREENED INTERVAL: (ft.)
PURGE START TIME: 0915	PUMP SET AT 30 (ft.)

TIME	PURGE RATE (ml/min)	VOLUME PURGED (ml)	DTW (ft)	TEMP (°C)	pH	COND. (µS/cm)	DO (mg/L)	ORP (mV)	TURB. (NTU)	
0919	210		22.10	17.34	8.32	1.265	0.77	118.4	1.52	
0922			22.10	17.62	8.20	1.249	0.48	116.6	1.46	
0925			22.10	17.77	8.13	~~115.6~~ 1.245	0.36	115.6	1.68	
0928			22.09	17.82	8.05	1.245	0.35	114.6	1.71	
0931			22.10	17.85	8.05	1.246	0.33	114.2	1.72	
0934			22.10	17.88	8.04	1.247	0.31	113.8	1.59	

PURGE STOP TIME:	SAMPLE TIME: 0934
LAB NAME:	SAMPLE ID: TT-TP3-M1-20160331

OBSERVATIONS/COMMENTS (NOTE TIMES):

F = 6.278

LOW-FLOW WATER PURGING & SAMPLING LOG

TETRA TECH

PROJECT NAME: NEAT SPOT FIELD PERSON: Max W

PROJECT NUMBER: 100-580-T55000-2016-M05 PROJECT MANAGER: Mark Feldmann

PROJECT LOCATION: Henderson NV. DATE: 3-31-16

PUMP / TUBING TYPE: dedicated	WELL NUMBER: TT-TP3-M2
EQUIPMENT CLEANING METHOD:	CASING RADIUS: 2" (in.)
	TOTAL DEPTH (TD): (ft.)
PURGE WATER DISPOSAL:	DEPTH TO WATER (DTW): 23.42 (ft.)
	SCREENED INTERVAL: (ft.)
PURGE START TIME: 0945	PUMP SET AT (ft.)

TIME	PURGE RATE (ml/min)	VOLUME PURGED (ml)	DTW (ft)	TEMP (°C)	pH	COND. (µS/cm)	DO (mg/L)	ORP (mV)	TURB. (NTU)	
0949	210		23.45	18.81	8.16	2.006	2.06	113.4	1.71	
0952	210		23.45	18.69	8.18	2.000	0.77	111.0	1.42	
0955	210		23.44	18.67	8.18	1.988	0.31	109.3	1.34	
0958	210		23.44	18.65	8.17	1.965	0.15	106.2	1.32	
1001	210		23.45	18.64	8.16	1.961	0.12	105.7	1.53	
1004	210		23.45	18.64	8.15	1.956	0.12	104.4	1.36	

PURGE STOP TIME:	SAMPLE TIME: ~~TT-TP3-M2-20160331-~~ 1004
LAB NAME:	SAMPLE ID: TT-TP3-M2-20160331

OBSERVATIONS/COMMENTS (NOTE TIMES):

F = 2.296

LOW-FLOW WATER PURGING & SAMPLING LOG

TETRA TECH

PROJECT NAME: NERT SFPT
FIELD PERSON:
PROJECT NUMBER:
PROJECT MANAGER:
PROJECT LOCATION:
DATE: 3-31-16

PUMP / TUBING TYPE:	WELL NUMBER: T1-TP4-M1
EQUIPMENT CLEANING METHOD:	CASING RADIUS: (in.)
	TOTAL DEPTH (TD): (ft.)
PURGE WATER DISPOSAL:	DEPTH TO WATER (DTW): 23.90 (ft.)
	SCREENED INTERVAL: (ft.)
PURGE START TIME:	PUMP SET AT (ft.)

TIME	PURGE RATE (ml/min)	VOLUME PURGED (ml)	DTW (ft)	TEMP (°C)	pH	COND. (µS/cm)	DO (mg/L)	ORP (mV)	TURB. (NTU)	
1025	240								0.	
1028	240		23.95	23.13	7.38	9.650	0.20	137.8	0.53	
1031	240		23.95	23.20	7.39	9.068	0.16	134.9	0.53	
1034	240		23.95	23.25	7.39	8.522	0.15	132.5	0.74	
1037	240		23.95	23.22	7.38	7.781	0.15	128.1	0.81	
1040	240		23.95	23.24	7.38	7.722	0.15	126.9	0.76	
1043	240		23.95	23.21	7.38	7.677	0.15	125.7	0.61	

PURGE STOP TIME: 1043
SAMPLE TIME: 1043
LAB NAME: Test America
SAMPLE ID: T1-TP4-M1-20160331

OBSERVATIONS/COMMENTS (NOTE TIMES):

F = 0.687

LOW-FLOW WATER PURGING & SAMPLING LOG

TETRA TECH

PROJECT NAME: NERT SFPT
FIELD PERSON:
PROJECT NUMBER:
PROJECT MANAGER:
PROJECT LOCATION:
DATE: 3-30-16

PUMP / TUBING TYPE:	WELL NUMBER: TT-TP4-M2
EQUIPMENT CLEANING METHOD:	CASING RADIUS: (In.)
	TOTAL DEPTH (TD): (ft.)
PURGE WATER DISPOSAL:	DEPTH TO WATER (DTW): 23.88 (ft.)
	SCREENED INTERVAL: (ft.)
PURGE START TIME:	PUMP SET AT (ft.)

TIME	PURGE RATE (ml/min)	VOLUME PURGED (ml)	DTW (ft)	TEMP (°C)	pH	COND. (µS/cm)	DO (mg/L)	ORP (mV)	TURB. (NTU)	
1057	210									
1100	210		23.95	23.76	7.36	6.831	0.28	128.2	6.93	
1103	210		24.00	23.77	7.33	6.807	0.19	125.7	5.76	
1106	210		24.02	23.78	7.31	6.800	0.18	123.8	5.18	
1109	210		24.02	23.78	7.30	6.799	0.14	122.7	4.97	
1112	210		24.02	23.79	7.30	6.796	0.16	120.4	4.01	
1115	210		24.02	23.77	7.30	6.790	0.17	119.7	2.08	
1										

PURGE STOP TIME: 1115	SAMPLE TIME: 1115
LAB NAME: Test America	SAMPLE ID: TT-TP4-M2.20160330

OBSERVATIONS/COMMENTS (NOTE TIMES):

F = 0.454

LOW-FLOW WATER PURGING & SAMPLING LOG

TETRA TECH

PROJECT NAME: NERT soil FPT
FIELD PERSON:
PROJECT NUMBER:
PROJECT MANAGER:
PROJECT LOCATION:
DATE: 3-31-16

PUMP / TUBING TYPE:	WELL NUMBER: H-TPH-M3
EQUIPMENT CLEANING METHOD:	CASING RADIUS: (in.)
	TOTAL DEPTH (TD): (ft.)
PURGE WATER DISPOSAL:	DEPTH TO WATER (DTW): (ft.)
	SCREENED INTERVAL: (ft.)
PURGE START TIME:	PUMP SET AT (ft.)

TIME	PURGE RATE (ml/min)	VOLUME PURGED (ml)	DTW (ft)	TEMP (°C)	pH	COND. (µS/cm)	DO (mg/L)	ORP (mV)	TURB. (NTU)	
1130	210									
1133	210		24.05	23.79	7.29	11.88	0.54	124.0	1.23	
1136	210		24.05	23.84	7.24	11.88	0.31	123.2	1.08	
1139	210		24.05	23.95	7.20	11.88	0.18	122.6	1.12	
1142	210		24.05	24.00	7.20	11.88	0.17	121.4	0.95	
1145	210		24.05	24.08	7.19	11.89	0.14	120.6	0.91	
1148	210		24.05	24.08	7.18	11.90	0.14	118.7	0.88	

PURGE STOP TIME:	SAMPLE TIME: 1148
LAB NAME: Test America	SAMPLE ID: TT-TPH-M3-20160331

OBSERVATIONS/COMMENTS (NOTE TIMES):

F= 0.405

LOW-FLOW WATER PURGING & SAMPLING LOG

TETRA TECH

PROJECT NAME: NERT SPOT
FIELD PERSON:
PROJECT NUMBER:
PROJECT MANAGER:
PROJECT LOCATION:
DATE: 3-31-16

PUMP / TUBING TYPE:	WELL NUMBER:
EQUIPMENT CLEANING METHOD:	CASING RADIUS: (in.)
	TOTAL DEPTH (TD): (ft.)
PURGE WATER DISPOSAL:	DEPTH TO WATER (DTW): (ft.)
	SCREENED INTERVAL: (ft.)
PURGE START TIME:	PUMP SET AT (ft.)

TIME	PURGE RATE (ml/min)	VOLUME PURGED (ml)	~~DTW~~ (ft) FL	TEMP (°C)	pH	COND. (µS/cm)	DO (mg/L)	ORP (mV)	TURB. (NTU)	
			2.260	19.41	7.35	12.33	1.53	153.9	1.83	TP1-L1-20160331
			2.201	18.74	7.55	4.657	1.45	139.3	1.45	TP1-L1-20160331
			0.682	19.90	7.27	9.537	3.85	159.7	1.30	TP2-L1-20160331
			2.099	21.46	7.87	5.933	1.98	138.7	1.01	TP2-L1-20160331
			2.883	18.85	8.68	1.986	5.80	109.4	0.91	TP3-L1-20160331
			1.401	19.33	8.16	1.448	5.22	178.3	0.94	TP3-L1-20160331
			1.503	19.66	7.54	7.319	1.70	165.1	0.89	TP4-L1-20160331
			1.948	18.92	7.39	11.47	2.01	163.9	1.11	TP4-L1-20160331

PURGE STOP TIME:	SAMPLE TIME:
LAB NAME:	SAMPLE ID:

OBSERVATIONS/COMMENTS (NOTE TIMES):

TETRA TECH
301 E. Vanderbilt Way, Suite 450
San Bernardino, CA 92408
Telephone (909) 381-1674
Telefax (909) 889-139

GROUNDWATER MONITORING WELL
FIELD DATA LOG SHEET - SAMPLING

DATE 4/4/16 SITE NAME / NUMBER NERT PURGING DEVICE: ☑ Dedicated Pump ☐ Peristaltic Pump ☐ Bladder Pump

PROGRAM NAME NERT SFPT SAMPLING DEVICE: ☑ Purging Pump ☐ Disposable Bailer ☐ Other

MONITORING WELL IDENTIFICATION TT-TP1-M1 OVA: ☐ FID ☐ PID In Casing (ppm) (initial) — (vented to) —

SAMPLE I.D. TT-TP1-M1-20160404 DUPLICATE I.D. — IN BREATHING ZONE (ppm) (initial) — (vented to) —

STATIC WATER LEVEL (ft btoc) 24.44 WELL DEPTH (ft btoc) — FINAL PUMP DEPTH (ft btoc) 30

WATER COLUMN (feet) — TUBE DIAMETER (in) 1/4 SAMPLER'S SIGNATURE Peter T.

PUMP VOLUME (V) (ml) — 3 v (gal/ml) — WELL SAMPLE TIME 1104 DUPLICATE SAMPLE TIME —

Time	Activity	Water Level (ft btoc)	Pump Depth (ft btoc)	Temp (°C)	EC (ms/cm)	pH	Turbidity (NTU)	Dissolved Oxygen (mg/L)	ORP (mV)	Color	Volume Purged (ml)	Pump Volumes Purged	Flow Rate (ml/min)
1045	START												
1049		24.50		23.84	8.689	6.95	3.79	0.29	185.3	yellow			200
1052		24.53		23.83	8.697	6.94	3.81	0.22	180.2	yellow			
1055				23.83	8.751	6.93	3.75	0.18	177.9	yellow			
1058				23.82	8.776	6.93	3.67	0.16	174.4	yellow			
1101				23.82	8.821	6.92	3.48	0.16	170.1	yellow			
1104	SAMPLE	↓		23.81	8.843	6.92	3.09	0.15	167.0	yellow			↓

Colorimetric test (taken prior to sampling) Sulfide (mg/L): — Fe^{+2} (mg/L): — D.O. (ppm): —

Water level at time of sampling (ft btoc): 24.53 Turbidity at time of sampling: 3.09

Pump Settings: CPM: — PSI: — Recharge: — Discharge:

Comments: FC: 1.164

PARAMETERS FOR WATER QUALITY STABILIZATION	
Temperature collect readings	Conductivity ± 3 %
pH ± 0.1	DO ± 0.3 mg/L
Turbidity < 10 NTUs (if > 10 NTUs ± 10 %)	
WL ± 0.1 foot	ORP ± 10 mV

Note:

If volatiles are detected in the breathing zone during the initial screening, the breathing zone will be periodically monitored during purging and sampling activities.

All water levels and pump depths are measured from the reference point (notch) in the top of the well casing.

If no reference point is observed then the casing high point should be notched and measurements should be collected from this point.

Every attempt should be made to limit water level drawdown to less than 0.33 feet and purge rate to less than 0.5 L/min.

LOW-FLOW WATER PURGING & SAMPLING LOG

TETRA TECH

PROJECT NAME: NERT SFDT
FIELD PERSON: Peter J.
PROJECT NUMBER: 100-SBO-T35000-2016-M05
PROJECT MANAGER: Mark Feldman
PROJECT LOCATION: Henderson NV
DATE: 4-4-16

PUMP / TUBING TYPE: dedicated
WELL NUMBER: TT-TP1-M2
EQUIPMENT CLEANING METHOD:
CASING RADIUS: 2 (in.)
TOTAL DEPTH (TD): (ft.)
PURGE WATER DISPOSAL:
DEPTH TO WATER (DTW): 25.45 (ft.)
SCREENED INTERVAL: (ft.)

PURGE START TIME: 1132
PUMP SET AT 30 (ft.)

TIME	PURGE RATE (ml/min)	VOLUME PURGED (ml)	DTW (ft)	TEMP (°C)	pH	COND. (µS/cm)	DO (mg/L)	ORP (mV)	TURB. (NTU)	
1132	210									
1136	↓		25.70	25.38	6.83	11.15	0.33	140.5	2.27	
1139	↓		25.77	25.34	6.85	11.18	0.20	142.3	0.65	
1142	180		25.82	25.31	6.88	11.63	0.15	134.4	1.11	
1145	↑		25.82	25.32	6.88	11.78	0.16	132.5	1.17	
1148	↓		25.82	25.29	6.91	11.92	0.16	131.3	1.11	
1151	↓		25.82	25.27	6.94	11.97	0.17	130.1	1.06	

PURGE STOP TIME:
SAMPLE TIME: 1151
LAB NAME:
SAMPLE ID: TT-TP1-M2-20160404

OBSERVATIONS/COMMENTS (NOTE TIMES):
FL> 1.00'

LOW-FLOW WATER PURGING & SAMPLING LOG

TETRA TECH

PROJECT NAME: NERT SFDT
FIELD PERSON: Peter J
PROJECT NUMBER: 100-SBO-T35000-2016-M05
PROJECT MANAGER: Mark Feldman
PROJECT LOCATION: Henderson, NV
DATE: 4-4-16

PUMP / TUBING TYPE: dedicated 1/4 tubing
WELL NUMBER: TT-TP1-M3
EQUIPMENT CLEANING METHOD:
CASING RADIUS: (in.)
PURGE WATER DISPOSAL:
TOTAL DEPTH (TD): (ft.)
DEPTH TO WATER (DTW): 25.71 (ft.)
SCREENED INTERVAL: (ft.)

PURGE START TIME: 1207
PUMP SET AT 30 (ft.)

TIME	PURGE RATE (ml/min)	VOLUME PURGED (ml)	DTW (ft)	TEMP (°C)	pH	COND. (µS/cm)	DO (mg/L)	ORP (mV)	TURB. (NTU)	
~~1207~~	~~300~~		~~25.94~~							
1211	180		25.94	25.96	6.79	11.88	0.43	152.4	0.95	
1214	180		25.98	25.92	6.76	11.88	0.25	143.6	0.88	
1217	↓		25.99	25.91	6.79	11.87	0.21	136.4	0.81	
1220	↓		26.00	25.96	6.73	11.86	0.19	132.9	0.87	
1223	↓		26.02	25.95	6.77	11.86	0.14	124.0	1.46	
1226	↓		26.03	25.98	6.80	11.85	0.14	122.9	1.22	

PURGE STOP TIME:
SAMPLE TIME: 1226
LAB NAME:
SAMPLE ID: TT-TP1-M3-20160404

OBSERVATIONS/COMMENTS (NOTE TIMES):

FL= 1.612

PAGE 1 of 1

LOW-FLOW WATER PURGING & SAMPLING LOG

TETRA TECH

PROJECT NAME: NERT SFPT
FIELD PERSON: Peter J
PROJECT NUMBER: 100-SBO-T35000-2016-M05
PROJECT MANAGER: MARK FELDMAN
PROJECT LOCATION: Henderson NV
DATE: 4/4/16

PUMP / TUBING TYPE: dedicated 1/4 tubing
WELL NUMBER: TT-TP2-M1
EQUIPMENT CLEANING METHOD:
CASING RADIUS: 2 (in.)
TOTAL DEPTH (TD): (ft.)
PURGE WATER DISPOSAL:
DEPTH TO WATER (DTW): 23.25 (ft.)
SCREENED INTERVAL: (ft.)

PURGE START TIME: 1240
PUMP SET AT 30 (ft.)

TIME	PURGE RATE (ml/min)	VOLUME PURGED (ml)	DTW (ft)	TEMP (°C)	pH	COND. (µS/cm)	DO (mg/L)	ORP (mV)	TURB. (NTU)	
1240			23.25							
1244			23.25	21.44	7.46	6.659	2.22	80.4	1.95	
1247			23.25	21.42	7.27	7.077	1.23	69.6	1.81	
1250			23.25	21.49	7.21	7.305	1.10	58.2	1.82	
1253			23.25	21.49	7.19	7.373	1.03	54.7	1.66	
1256			23.25	21.51	7.18	7.431	1.00	52.4	1.38	
1259			23.25	21.55	7.16	7.467	0.96	50.5	1.17	

PURGE STOP TIME:
SAMPLE TIME: 1259
LAB NAME:
SAMPLE ID: TT-TP2-M1-20160404

OBSERVATIONS/COMMENTS (NOTE TIMES):
FC = 30.75

LOW-FLOW WATER PURGING & SAMPLING LOG

TETRA TECH

PROJECT NAME: NERT SFOS
PROJECT NUMBER: 100-SBO-T35000-2016-MO5
PROJECT LOCATION: Henderson, NV
FIELD PERSON: Peter J.
PROJECT MANAGER: MARK FELDMAN
DATE: 4/4/16

PUMP / TUBING TYPE: dedicated 1/4" tubing
EQUIPMENT CLEANING METHOD:
PURGE WATER DISPOSAL:

WELL NUMBER: TT-TP2-M2
CASING RADIUS: 2 (in.)
TOTAL DEPTH (TD): (ft.)
DEPTH TO WATER (DTW): 23.99 (ft.)
SCREENED INTERVAL: (ft.)

PURGE START TIME: 1312
PUMP SET AT 30 (ft.)

TIME	PURGE RATE (ml/min)	VOLUME PURGED (ml)	DTW (ft)	TEMP (°C)	pH	COND. (µS/cm)	DO (mg/L)	ORP (mV)	TURB. (NTU)	
1312	200	—	23.99	—	—	—	—	—	—	—
1317			24.03	23.41	7.10	9.123	0.31	82.8	0.99	
1320			24.03	23.38	7.09	9.139	0.21	80.0	1.05	
1323			24.03	23.39	7.07	9.142	0.20	79.5	0.83	
1326			24.03	23.38	7.07	9.144	0.19	78.9	0.78	
1329			24.03	23.36	7.06	9.141	0.18	76.8	0.76	
1332			24.03	23.33	7.05	9.144	0.15	75.2	0.44	

PURGE STOP TIME:
SAMPLE TIME: 1332
LAB NAME:
SAMPLE ID: TT-TP2-M2-20160404

OBSERVATIONS/COMMENTS (NOTE TIMES):

FL = 1.008

LOW-FLOW WATER PURGING & SAMPLING LOG

TETRA TECH

PROJECT NAME: NERT SFPT
FIELD PERSON:
PROJECT NUMBER:
PROJECT MANAGER: MARK FELDMAN
PROJECT LOCATION:
DATE:

PUMP / TUBING TYPE:	WELL NUMBER: TT-TP3-M1
EQUIPMENT CLEANING METHOD:	CASING RADIUS: 2 (in.)
PURGE WATER DISPOSAL:	TOTAL DEPTH (TD): (ft.)
	DEPTH TO WATER (DTW): 21.97 (ft.)
	SCREENED INTERVAL: (ft.)
PURGE START TIME:	PUMP SET AT 30 (ft.)

TIME	PURGE RATE (ml/min)	VOLUME PURGED (ml)	DTW (ft)	TEMP (°C)	pH	COND. (µS/cm)	DO (mg/L)	ORP (mV)	TURB. (NTU)	
0955	180	—	21.97							
1000			21.97	19.19	7.32	1.220	0.50	170.3	0.96	
1003			21.97	19.08	7.45	1.218	0.31	157.0	0.91	
1006			21.97	19.08	7.52	1.220	0.27	149.6	0.87	
1009			21.97	19.08	7.57	1.221	0.28	143.1	0.90	
1012			21.97	19.12	7.59	1.218	0.30	139.0	0.72	
1015			21.97	19.06	7.61	1.221	0.27	136.8	0.76	

PURGE STOP TIME:	SAMPLE TIME: 1015
LAB NAME:	SAMPLE ID: TT-TP3-M1-20160405

OBSERVATIONS/COMMENTS (NOTE TIMES):

Water is clear, no color.

FLO 0.718

LOW-FLOW WATER PURGING & SAMPLING LOG

TETRA TECH

PROJECT NAME: NERT SFPT
FIELD PERSON:
PROJECT NUMBER:
PROJECT MANAGER:
PROJECT LOCATION:
DATE: 4/5/16

PUMP / TUBING TYPE:
EQUIPMENT CLEANING METHOD:
PURGE WATER DISPOSAL:

WELL NUMBER: TT-TP3-M2
CASING RADIUS: (in.)
TOTAL DEPTH (TD): (ft.)
DEPTH TO WATER (DTW): (ft.)
SCREENED INTERVAL: (ft.)

PURGE START TIME:
PUMP SET AT (ft.)

TIME	PURGE RATE (ml/min)	VOLUME PURGED (ml)	DTW (ft)	TEMP (°C)	pH	COND. (µS/cm)	DO (mg/L)	ORP (mV)	TURB. (NTU)	
1027	200	—	23.35							
1031	↓		23.35	19.81	7.89	1.960	0.55	136.5	0.93	
1034			23.35	19.77	7.92	1.955	0.31	131.7	0.63	
1037			23.35	19.70	7.93	1.941	0.20	122.3	0.32	
1040			23.35	19.58	7.93	1.926	0.11	114.9	0.45	
1043			23.35	19.58	7.94	1.924	0.10	113.0	0.42	
1046	↓		23.35	19.60	7.95	1.922	0.10	111.9	0.36	

PURGE STOP TIME:
SAMPLE TIME: 1046
LAB NAME:
SAMPLE ID: TT-TP3-M2-20160405

OBSERVATIONS/COMMENTS (NOTE TIMES):

FL = 0.25g

Clear water

LOW-FLOW WATER PURGING & SAMPLING LOG

TETRA TECH

PROJECT NAME: NERT SFPT
FIELD PERSON: Peter J
PROJECT NUMBER:
PROJECT MANAGER: MIKE FELDMAN
PROJECT LOCATION:
DATE: 4/5/16

PUMP / TUBING TYPE:	WELL NUMBER: TT-TP4-M1
EQUIPMENT CLEANING METHOD:	CASING RADIUS: 2 (in.)
PURGE WATER DISPOSAL:	TOTAL DEPTH (TD): (ft.)
	DEPTH TO WATER (DTW): 23.84 (ft.)
	SCREENED INTERVAL: (ft.)
PURGE START TIME:	PUMP SET AT (ft.)

TIME	PURGE RATE (ml/min)	VOLUME PURGED (ml)	DTW (ft)	TEMP (°C)	pH	COND. (µS/cm)	DO (mg/L)	ORP (mV)	TURB. (NTU)	
1104	200		23.84	—	—	—	—	—	—	
1108	↓		23.90	23.53	7.29	9.525	0.32	147.3	0.41	
1111			23.90	23.53	7.27	9.446	0.29	142.1	0.43	
1114			23.90	23.48	7.27	9.300	0.18	136.8	0.39	
1117			23.90	23.47	7.28	8.860	0.11	129.7	0.45	
1120			23.90	23.55	7.27	8.840	0.14	128.5	0.32	
1123	↓		23.90	23.51	7.27	8.699	0.13	120.2	0.32	

PURGE STOP TIME:	SAMPLE TIME: 1123
LAB NAME:	SAMPLE ID: TT-TP4-M1-20160405

OBSERVATIONS/COMMENTS (NOTE TIMES):

Water is Yellow

FL=0.106

LOW-FLOW WATER PURGING & SAMPLING LOG

TETRA TECH

PROJECT NAME: NERT SFDT
FIELD PERSON: Peter J.
PROJECT NUMBER: 100-580-T35000-2016-M05
PROJECT MANAGER: Mark Feldman
PROJECT LOCATION: Henderson NV
DATE: 4/5/16

PUMP / TUBING TYPE: dedicated
EQUIPMENT CLEANING METHOD:
PURGE WATER DISPOSAL:

WELL NUMBER: TT-TP4-M2
CASING RADIUS: 2 (in.)
TOTAL DEPTH (TD): (ft.)
DEPTH TO WATER (DTW): 23.84 (ft.)
SCREENED INTERVAL: (ft.)

PURGE START TIME: 1142
PUMP SET AT 30 (ft.)

TIME	PURGE RATE (ml/min)	VOLUME PURGED (ml)	DTW (ft)	TEMP (°C)	pH	COND. (µS/cm)	DO (mg/L)	ORP (mV)	TURB. (NTU)	
1142	250		23.84							
1146	↓		23.90	24.71	7.38	6.252	0.44	97.0	0.69	
1149			23.90	24.65	7.32	6.218	0.31	93.9	0.96	
1152			23.90	24.60	7.28	6.199	0.17	87.8	0.72	
1155			23.90	24.53	7.25	6.185	0.13	78.1	0.41	
1158			23.90	24.54	7.25	6.187	0.15	76.7	0.39	
1201	↓		23.90	24.52	7.24	6.182	0.15	75.4	0.37	

PURGE STOP TIME:
SAMPLE TIME: 1201
LAB NAME:
SAMPLE ID: TT-TP4-M2-20160405

OBSERVATIONS/COMMENTS (NOTE TIMES):
water is yellow
FL = 0.056

FILE: LOG FORMS\em-Water Purging & Sampling Log-10-20-09.dwg

LOW-FLOW WATER PURGING & SAMPLING LOG

TETRA TECH

PROJECT NAME: NERT SFPT
FIELD PERSON: Maxx Wodarczyk
PROJECT NUMBER: 100-SBO-B5000-2016-M05
PROJECT MANAGER: Mark Feldman
PROJECT LOCATION: Henderson, NV
DATE: 4-5-16

PUMP / TUBING TYPE: 1/4" tubing dedicated	WELL NUMBER: TT-TP4-M3-
EQUIPMENT CLEANING METHOD:	CASING RADIUS: 2" (in.)
PURGE WATER DISPOSAL:	TOTAL DEPTH (TD): (ft.)
	DEPTH TO WATER (DTW): 23.94 (ft.)
	SCREENED INTERVAL: (ft.)
PURGE START TIME: 1219	PUMP SET AT 30 (ft.)

TIME	PURGE RATE (ml/min)	VOLUME PURGED (ml)	DTW (ft)	TEMP (°C)	pH	COND. (µS/cm)	DO (mg/L)	ORP (mV)	TURB. (NTU)	
1223	200	800	24.01	25.08	7.17	11.66	0.32	97.5	0.65	
1226	200	1400	24.00	25.07	7.14	11.65	0.23	94.6	0.88	
1229	200	2000	24.01	25.00	7.12	11.66	0.15	89.7	0.72	
1232	200	2600	24.00	25.01	7.11	~~11.66~~ 11.66	0.13	86.5	0.56	
1235	200	3200	24.00	24.94	7.11	11.66	0.13	84.5	0.48	
1238	200	3800	24.00	24.90	7.10	11.65	0.12	83.1	0.63	

PURGE STOP TIME:	SAMPLE TIME: ~~TT-TP4-M3-20160405~~ 1238
LAB NAME:	SAMPLE ID: TT-TP4-M3-20160405

OBSERVATIONS/COMMENTS (NOTE TIMES):

FL= 0.037

LOW-FLOW WATER PURGING & SAMPLING LOG

TETRA TECH

PROJECT NAME: NERT SFPT
FIELD PERSON:
PROJECT NUMBER:
PROJECT MANAGER: MARK FELDMAN
PROJECT LOCATION:
DATE: 04/4/16

PUMP / TUBING TYPE: LYSIMETERS	WELL NUMBER:
EQUIPMENT CLEANING METHOD:	CASING RADIUS: (in.)
	TOTAL DEPTH (TD): (ft.)
PURGE WATER DISPOSAL:	DEPTH TO WATER (DTW): (ft.)
	SCREENED INTERVAL: (ft.)
PURGE START TIME:	PUMP SET AT (ft.)

	TIME	PURGE RATE (ml/min)	VOLUME PURGED (ml)	DTW (ft)	TEMP (°C)	pH	COND. (µS/cm)	DO (mg/L)	ORP (mV)	TURB. (NTU)	FL.
TP1-L2	1340	—	—	—	25.28	7.22	10.53	1.55	138.7	0.52	2.099
TP1-L1	1344	—	—	—	25.05	7.51	4.528	4.12	128.5	0.67	1.772
TP2-L2	1347	—	—	—	23.17	7.41	8.320	4.15	105.7	0.23	0.934
TP2-L1	1350	—	—	—	22.18	7.72	4.000	3.27	93.5	0.31	1.691
TP3-L2	1353	—	—	—	22.65	7.75	3.431	2.76	103.9	0.28	1.368
TP3-L1	1356	—	—	—	23.75	8.47	1.902	4.98	57.1	0.22	2.035
TP4-L2	1402	—	—	—	23.98	7.62	6.893	3.26	109.5	0.33	1.098
TP4-L1	1405	—	—	—	22.88	7.29	10.61	2.80	108.4	0.23	1.531

PURGE STOP TIME:	SAMPLE TIME:
LAB NAME:	SAMPLE ID:

OBSERVATIONS/COMMENTS (NOTE TIMES):

LOW-FLOW WATER PURGING & SAMPLING LOG

TETRA TECH

PROJECT NAME: NERT SFPT FIELD PERSON: Marco W

PROJECT NUMBER: 100-S00-T35000-2016-M05 PROJECT MANAGER: Mark Feldman

PROJECT LOCATION: Henderson, NV DATE: 4-13-16

PUMP / TUBING TYPE: dedicated	WELL NUMBER: TT-TP1-M1
EQUIPMENT CLEANING METHOD:	CASING RADIUS: 2" (in.)
	TOTAL DEPTH (TD): (ft.)
PURGE WATER DISPOSAL:	DEPTH TO WATER (DTW): 24.20 (ft.)
	SCREENED INTERVAL: (ft.)
PURGE START TIME: 1218	PUMP SET AT 30 (ft.)

TIME	PURGE RATE (ml/min)	VOLUME PURGED (ml)	DTW (ft)	TEMP (°C)	pH	COND. (µS/cm)	DO (mg/L)	ORP (mV)	TURB. (NTU)	
1222	240		24.30	22.47	7.92	3.579	1.08	75.9	3.05	
1225			24.30	22.48	8.06	3.151	1.10	10.2	3.01	
1228			24.30	22.42	8.07	3.078	0.87	-33.6	1.82	
1231			24.30	22.40	8.08	3.043	0.85	-45.2	1.73	
1234			24.30	24.36	8.08	3.040	0.88	-46.9	1.63	
1237			24.30	24.34	8.08	3.37	0.90	-45.4	1.58	

PURGE STOP TIME:	SAMPLE TIME: 1237
LAB NAME:	SAMPLE ID: TT-TP1-M1-20160413

OBSERVATIONS/COMMENTS (NOTE TIMES):

FL = 7.173

LOW-FLOW WATER PURGING & SAMPLING LOG

TETRA TECH

PROJECT NAME: NERT SFPT
FIELD PERSON: Mark C.
PROJECT NUMBER: 100-560-35000-2016-7405
PROJECT MANAGER: Mark Feldman
PROJECT LOCATION: Henderson NV
DATE: 4-13-16

PUMP / TUBING TYPE:	WELL NUMBER: TT-TP1-M2
EQUIPMENT CLEANING METHOD:	CASING RADIUS: 2" (in.)
PURGE WATER DISPOSAL:	TOTAL DEPTH (TD): (ft.)
	DEPTH TO WATER (DTW): 25.34 (ft.)
	SCREENED INTERVAL: (ft.)
PURGE START TIME: 1245	PUMP SET AT 30 (ft.)

TIME	PURGE RATE (ml/min)	VOLUME PURGED (ml)	DTW (ft)	TEMP (°C)	pH	COND. (µS/cm)	DO (mg/L)	ORP (mV)	TURB. (NTU)	
~~1248~~	~~Max~~									
1249	210		25.51	24.75	6.81	8.809	1.00	39.1	6.64	
1252	180		25.54	24.90	6.81	8.798	1.30	27.1	9.65	
1255	↓		25.57	24.91	6.82	9.448	2.10	16.5	9.97	
1258			25.60	24.91	6.82	10.05	1.71	31.9	8.65	
1301			25.63	24.93	6.83	10.52	1.66	29.4	7.81	
1304			25.66	24.96	6.84	10.60	1.52	25.5	8.32	
1307			25.69	24.99	6.84	10.71	1.42	22.8	7.67	
1310			25.72	25.05	6.85	10.82	1.35	20.0	7.98	

PURGE STOP TIME:	SAMPLE TIME: 1310
LAB NAME:	SAMPLE ID: TT-TP1-M2-20160413

OBSERVATIONS/COMMENTS (NOTE TIMES):

FL ~ 0.217

LOW-FLOW WATER PURGING & SAMPLING LOG

TETRA TECH

PROJECT NAME: NERT SFPT FIELD PERSON: Mario w.

PROJECT NUMBER: 100-SB-T35000-2010-M05 PROJECT MANAGER: Mark Feldman

PROJECT LOCATION: Henderson NV DATE: 4-13-16

PUMP / TUBING TYPE:	WELL NUMBER: TT-TP1-M3
EQUIPMENT CLEANING METHOD:	CASING RADIUS: 2" (in.)
	TOTAL DEPTH (TD): (ft.)
PURGE WATER DISPOSAL:	DEPTH TO WATER (DTW): 25.60 (ft.)
	SCREENED INTERVAL: (ft.)
PURGE START TIME: 1324	PUMP SET AT 30 (ft.)

TIME	PURGE RATE (ml/min)	VOLUME PURGED (ml)	DTW (ft)	TEMP (°C)	pH	COND. (µS/cm)	DO (mg/L)	ORP (mV)	TURB. (NTU)	
1328	180		25.80	25.49	6.89	11.77	1.03	3.2	1.44	
1331	↓		25.82	25.52	6.91	11.70	0.90	9.8	1.53	
1334			25.86	25.57	6.93	11.69	1.17	26.9	1.54	
1337			25.86	25.54	6.93	11.68	1.25	35.6	1.67	
1340			25.86	25.55	6.93	11.67	1.23	38.4	1.80	
1343	↓		25.86	25.56	6.94	11.66	1.20	40.8	1.49	

PURGE STOP TIME:	SAMPLE TIME: 1343
LAB NAME:	SAMPLE ID: TT-TP1-M3

OBSERVATIONS/COMMENTS (NOTE TIMES):

FL=0.065

LOW-FLOW WATER PURGING & SAMPLING LOG

TETRA TECH

PROJECT NAME: NERT SFPT
FIELD PERSON: Maxx W
PROJECT NUMBER: 100-SBO-T3500-246-MRS
PROJECT MANAGER: Mark Feldman
PROJECT LOCATION: Henderson NV
DATE: 9-14-16

PUMP / TUBING TYPE:	WELL NUMBER: TT-TP2-M1
EQUIPMENT CLEANING METHOD:	CASING RADIUS: 2" (in.)
	TOTAL DEPTH (TD): (ft.)
PURGE WATER DISPOSAL:	DEPTH TO WATER (DTW): 23.62 (ft.)
	SCREENED INTERVAL: (ft.)
PURGE START TIME: 0917	PUMP SET AT 30 (ft.)

TIME	PURGE RATE (ml/min)	VOLUME PURGED (ml)	DTW (ft)	TEMP (°C)	pH	COND. (µS/cm)	DO (mg/L)	ORP (mV)	TURB. (NTU)	
0921	210		23.65	20.26	7.32	8.097	1.17	173.5	2.57	
0924	↓		23.65	20.93	7.29	8.374	1.10	169.8	2.29	
0927			23.65	20.41	7.29	8.417	0.91	165.0	2.32	
0930			23.65	20.40	7.29	8.355	0.87	158.0	2.21	
0933			23.65	20.44	7.29	8.330	0.89	155.4	2.07	
0936	↓		23.65	20.46	7.29	8.321	0.85	152.3	2.34	

PURGE STOP TIME:	SAMPLE TIME: 0936
LAB NAME:	SAMPLE ID: TT-TP2-M2-20160914

OBSERVATIONS/COMMENTS (NOTE TIMES):

FL= 3.568

LOW-FLOW WATER PURGING & SAMPLING LOG

TETRA TECH

PROJECT NAME: NERT SFPT
FIELD PERSON: Maxx w
PROJECT NUMBER: 100-SBO-T35000-2016-0005
PROJECT MANAGER: Mark Feldman
PROJECT LOCATION: Henderson NV
DATE: 4-14-16

PUMP / TUBING TYPE:	WELL NUMBER: TT-TP2-M2
EQUIPMENT CLEANING METHOD:	CASING RADIUS: 2" (in.)
PURGE WATER DISPOSAL:	TOTAL DEPTH (TD): (ft.)
	DEPTH TO WATER (DTW): 24.24 (ft.)
	SCREENED INTERVAL: (ft.)
PURGE START TIME: 0945	PUMP SET AT 30 (ft.)

TIME	PURGE RATE (ml/min)	VOLUME PURGED (ml)	DTW (ft)	TEMP (°C)	pH	COND. (µS/cm)	DO (mg/L)	ORP (mV)	TURB. (NTU)	
0949	200	800	24.25	21.97	7.28	8.653	0.95	146.3	3.22	
0952	↓	1400	24.25	22.05	7.27	8.737	0.59	138.2	3.08	
0955		2000	24.25	22.09	7.30	8.716	0.46	131.9	3.00	
0958		2600	24.25	22.17	7.27	8.704	0.39	122.0	3.13	
1001		3200	24.25	22.15	7.27	8.705	0.37	130.3	3.55	
1004	↓	3800	24.25	22.18	7.26	8.703	0.35	128.2	3.25	

PURGE STOP TIME:	SAMPLE TIME: 1004
LAB NAME:	SAMPLE ID: TT-TP2-M2-20160414

OBSERVATIONS/COMMENTS (NOTE TIMES):

FL = 0.129

PAGE ___ of ___

LOW-FLOW WATER PURGING & SAMPLING LOG

TETRA TECH

PROJECT NAME: NERT SPPT FIELD PERSON: Maxx W

PROJECT NUMBER: 100-SBO-T35000-20160414 PROJECT MANAGER: Mark Feldman

PROJECT LOCATION: Henderson NV DATE: 4-14-16

PUMP / TUBING TYPE:	WELL NUMBER: TT-TP3-M1
EQUIPMENT CLEANING METHOD:	CASING RADIUS: 2" (in.)
	TOTAL DEPTH (TD): ___ (ft.)
PURGE WATER DISPOSAL:	DEPTH TO WATER (DTW): 22.85 (ft.)
	SCREENED INTERVAL: ___ (ft.)
PURGE START TIME: 1018	PUMP SET AT 30 (ft.)

TIME	PURGE RATE (ml/min)	VOLUME PURGED (ml)	DTW (ft)	TEMP (°C)	pH	COND. (µS/cm)	DO (mg/L)	ORP (mV)	TURB. (NTU)	
1022	225		22.90	19.06	7.81	1.196	0.87	112.2	1.58	
1025			22.90	18.84	7.73	1.182	0.50	105.5	1.64	
1028			22.93	18.80	7.70	1.183	0.45	103.9	1.41	
1031			22.90	18.77	7.66	1.193	0.41	100.1	1.17	
1034			22.91	18.81	7.65	1.197	0.40	98.6	1.26	
1037			22.90	18.84	7.64	1.203	0.38	96.9	1.15	

PURGE STOP TIME:	SAMPLE TIME: 1037
LAB NAME:	SAMPLE ID: TT-TP3-M1-20160414

OBSERVATIONS/COMMENTS (NOTE TIMES):

FL= 0.997

LOW-FLOW WATER PURGING & SAMPLING LOG

TETRA TECH

PROJECT NAME: NERT SFPT FIELD PERSON: Maxx W Peter J

PROJECT NUMBER: 100-580-T35000-2016-M05 PROJECT MANAGER: Mark Feldman

PROJECT LOCATION: Henderson, NV DATE: 4-14-16

PUMP / TUBING TYPE:	WELL NUMBER: TT-TP3-M2
EQUIPMENT CLEANING METHOD:	CASING RADIUS: 2" (in.)
PURGE WATER DISPOSAL:	TOTAL DEPTH (TD): (ft.)
	DEPTH TO WATER (DTW): 23.83 (ft.)
	SCREENED INTERVAL: (ft.)
PURGE START TIME: 1046	PUMP SET AT 30 (ft.)

TIME	PURGE RATE (ml/min)	VOLUME PURGED (ml)	DTW (ft)	TEMP (°C)	pH	COND. (µS/cm)	DO (mg/L)	ORP (mV)	TURB. (NTU)	
1050	210		23.85	19.91	7.99	1.983	1.35	180.0	1.51	
1053	↓		23.85	19.82	7.95	2.000	0.73	171.5	1.17	
1056			23.85	19.72	8.02	2.022	0.44	151.7	1.53	
1059			23.85	19.79	8.01	2.023	0.38	147.3	1.25	
1102			23.85	19.83	8.02	2.021	0.35	143.6	1.25	
1105			23.85	19.76	8.02	2.020	0.33	139.1	1.21	

PURGE STOP TIME:	SAMPLE TIME: 1105
LAB NAME:	SAMPLE ID: TT-TP3-M2-20160401Q

OBSERVATIONS/COMMENTS (NOTE TIMES):

FL = 0.211

24.02

LOW-FLOW WATER PURGING & SAMPLING LOG

TETRA TECH

PROJECT NAME: NERT SFDT FIELD PERSON: Maxx w Peter J

PROJECT NUMBER: 100-SBO-T35000-2016-MBS PROJECT MANAGER: Mark Feldman

PROJECT LOCATION: Henderson NV DATE: 4-14-16

PUMP / TUBING TYPE:	WELL NUMBER: TT-TPY-M1
EQUIPMENT CLEANING METHOD:	CASING RADIUS: 2" (in.)
	TOTAL DEPTH (TD): (ft.)
PURGE WATER DISPOSAL:	DEPTH TO WATER (DTW): 24.02 (ft.)
	SCREENED INTERVAL: (ft.)
PURGE START TIME: ~~1113~~ 1115	PUMP SET AT 30 (ft.)

TIME	PURGE RATE (ml/min)	VOLUME PURGED (ml)	DTW (ft)	TEMP (°C)	pH	COND. (µS/cm)	DO (mg/L)	ORP (mV)	TURB. (NTU)	
1119	200	800	24.05	22.08	7.41	6.908	0.75	~~154~~ 151.4	1.52	
1122	↓	1400	24.05	22.01	7.47	6.548	0.37	136.8	1.27	
1125		2000	24.05	21.96	7.49	6.840	0.36	130.4	1.38	
1128		2600	24.05	21.93	7.51	5.744	0.35	113.2	1.25	
1131	↓	3200	24.05	21.89	7.52	5.099	0.039	107.1	1.21	
1134		3800	24.05	21.89	7.53	5.001	0.33	103.8	1.55	

PURGE STOP TIME:	SAMPLE TIME: 1134
LAB NAME:	SAMPLE ID: TT-TPY-M1

OBSERVATIONS/COMMENTS (NOTE TIMES):

FL = 0.211

1053
15

LOW-FLOW WATER PURGING & SAMPLING LOG

TETRA TECH

PROJECT NAME: NERT SFDT
PROJECT NUMBER: 100-580-15000-206-M05
PROJECT LOCATION: Henderson, NV
FIELD PERSON: Maxx
PROJECT MANAGER: Mark Feldman
DATE: 4-14-16

PUMP / TUBING TYPE:	WELL NUMBER: TT-TPY-M2
EQUIPMENT CLEANING METHOD:	CASING RADIUS: 2" (in.)
PURGE WATER DISPOSAL:	TOTAL DEPTH (TD): (ft.)
	DEPTH TO WATER (DTW): 24.10 (ft.)
	SCREENED INTERVAL: (ft.)
PURGE START TIME: 1215	PUMP SET AT 30 (ft.)

TIME	PURGE RATE (ml/min)	VOLUME PURGED (ml)	DTW (ft)	TEMP (°C)	pH	COND. (µS/cm)	DO (mg/L)	ORP (mV)	TURB. (NTU)	
1219	200		24.15	24.12	7.41	5.809	1.28	128.1	1.44	
1222	↓		24.15	24.02	7.40	5.668	0.60	103.8	1.73	
1225			24.16	23.89	7.40	5.645	0.42	92.7	1.04	
1228			24.15	23.96	7.40	5.616	0.34	80.8	1.13	
1231			24.16	23.73	7.40	5.620	0.31	77.5	1.23	
1234	↓		24.15	23.90	7.40	5.619	0.23	73.2	1.42	

PURGE STOP TIME:	SAMPLE TIME: 1234
LAB NAME:	SAMPLE ID: TT-TPY-M2-20160414

OBSERVATIONS/COMMENTS (NOTE TIMES):

FL= 0.089

LOW-FLOW WATER PURGING & SAMPLING LOG

TETRA TECH

PROJECT NAME: NERT SFAT
FIELD PERSON: Maxx W. Peter J
PROJECT NUMBER: 100-SBO-T35000-2016-MWS
PROJECT MANAGER: Mark Feldman
PROJECT LOCATION: Henderson, NV
DATE: 4-14-16

PUMP / TUBING TYPE:	WELL NUMBER: TT-TM-M3
EQUIPMENT CLEANING METHOD:	CASING RADIUS: 2" (in.)
	TOTAL DEPTH (TD): (ft.)
PURGE WATER DISPOSAL:	DEPTH TO WATER (DTW): 23.96 (ft.)
	SCREENED INTERVAL: (ft.)
PURGE START TIME: 1250	PUMP SET AT 30 (ft.)

TIME	PURGE RATE (ml/min)	VOLUME PURGED (ml)	DTW (ft)	TEMP (°C)	pH	COND. (µS/cm)	DO (mg/L)	ORP (mV)	TURB. (NTU)	
1254	210		24.05	24.33	7.29	11.19	1.52	116.5	1.73	
1257	↓		24.05	24.42	7.27	10.95	0.51	92.2	2.34	
1300			24.05	24.44	7.25	10.93	0.35	80.6	2.07	
1303			24.05	24.46	7.25	10.93	0.29	73.0	1.98	
1306			24.05	24.46	7.26	10.99	0.27	69.8	1.62	
1309	↓		24.05	24.48	7.26	10.93	0.25	66.9	1.81	

PURGE STOP TIME:	SAMPLE TIME: 1309
LAB NAME:	SAMPLE ID: TT-TM-M3-20160414

OBSERVATIONS/COMMENTS (NOTE TIMES):

FL = 0.044

LOW-FLOW WATER PURGING & SAMPLING LOG

TETRA TECH

PROJECT NAME: NEAT SFPT
FIELD PERSON:
PROJECT NUMBER:
PROJECT MANAGER:
PROJECT LOCATION:
DATE: 4-14-16

PUMP / TUBING TYPE:	WELL NUMBER:
EQUIPMENT CLEANING METHOD:	CASING RADIUS: (in.)
	TOTAL DEPTH (TD): (ft.)
PURGE WATER DISPOSAL:	DEPTH TO WATER (DTW): (ft.)
	SCREENED INTERVAL: (ft.)
PURGE START TIME:	PUMP SET AT (ft.)

TIME	PURGE RATE (ml/min)	VOLUME PURGED (ml)	~~DTW (ft)~~ Flowmeter	TEMP (°C)	pH	COND. (µS/cm)	DO (mg/L)	ORP (mV)	TURB. (NTU)	well ID
			0.339	19.53	7.29	4.379	2.11	196.5	1.03	TT-TP1-L1
			0.272	18.70	7.18	7.715	2.52	208.8	0.99	TT-TP1-L2
			0.230	18.07	7.64	3.506	2.80	189.6	1.11	TT-TP2-L1
			0.156	18.08	7.33	7.100	3.90	198.7	0.94	TT-TP2-L2
			0.167	19.10	7.53	2.741	3.62	178.2	0.84	TT-TP3-L1
			0.122	19.20	7.84	3.161	2.61	179.9	1.18	TT-TP3L2
			0.189	19.87	7.33	9.094	2.56	180.8	1.07	TT-TP4-L1
			0.281	18.78	7.45	6.598	2.14	170.5	1.02	TT-TP4-L2

PURGE STOP TIME:	SAMPLE TIME:
LAB NAME:	SAMPLE ID:

OBSERVATIONS/COMMENTS (NOTE TIMES):

PAGE 1 of 1

LOW-FLOW WATER PURGING & SAMPLING LOG

TETRA TECH

PROJECT NAME: SFPT NERT
FIELD PERSON: PETER J.
PROJECT NUMBER: T3500-2016-M05.
PROJECT MANAGER: MARK FELDMAN
PROJECT LOCATION: NERT
DATE: 4/19/16

PUMP / TUBING TYPE: Dedicated Low Flow
EQUIPMENT CLEANING METHOD: —
PURGE WATER DISPOSAL: —

WELL NUMBER: TT-TP1-M1
CASING RADIUS: 2 (in.)
TOTAL DEPTH (TD): (ft.)
DEPTH TO WATER (DTW): ~~24.64~~ 24.55 (ft.)
SCREENED INTERVAL: (ft.)

PURGE START TIME:
PUMP SET AT (ft.)

TIME	PURGE RATE (ml/min)	VOLUME PURGED (ml)	DTW (ft)	TEMP (°C)	pH	COND. (µS/cm)	DO (mg/L)	ORP (mV)	TURB. (NTU)
1015	150	~~24.55~~	~~24.55~~	—	—	—	—	—	—
1020	↓	~~24.64~~	24.64	22.83	7.88	4.093	3.31	121.2	1.91
1023		~~24.64~~	24.64	22.85	7.87	4.121	3.09	101.3	1.77
1026			24.64	22.90	7.86	4.293	2.65	98.7	1.36
1029			24.64	22.98	7.85	4.504	2.24	89.1	1.12
1032			24.64	22.99	7.84	4.533	2.13	84.8	0.71
1035	↓		24.64	23.05	7.84	4.561	2.09	82.2	0.98

PURGE STOP TIME:
SAMPLE TIME: 1035
LAB NAME:
SAMPLE ID: TT-TP1-M1-20160419

OBSERVATIONS/COMMENTS (NOTE TIMES):

Water is yellow

FL = 16.46

LOW-FLOW WATER PURGING & SAMPLING LOG

TETRA TECH

PROJECT NAME: NERT SFPT
FIELD PERSON:
PROJECT NUMBER:
PROJECT MANAGER:
PROJECT LOCATION:
DATE: 4-19-16

PUMP / TUBING TYPE:	WELL NUMBER: TT-TP1-M2
EQUIPMENT CLEANING METHOD:	CASING RADIUS: 2 (in.)
	TOTAL DEPTH (TD): (ft.)
PURGE WATER DISPOSAL:	DEPTH TO WATER (DTW): 25.55 (ft.)
	SCREENED INTERVAL: (ft.)
PURGE START TIME:	PUMP SET AT 30 (ft.)

TIME	PURGE RATE (ml/min)	VOLUME PURGED (ml)	DTW (ft)	TEMP (°C)	pH	COND. (µS/cm)	DO (mg/L)	ORP (mV)	TURB. (NTU)	
1106	200	—	25.55	→	—	—	—	—	→	—
1110	↓		25.87	25.30	6.90	10.37	0.73	75.9	0.98	
1113			25.85	25.31	6.92	10.32	0.67	74.1	1.11	
1116			25.85	25.33	6.89	10.54	0.55	66.1	1.97	
1119			25.86	25.39	6.89	10.95	0.49	60.4	2.10	
1122			25.85	25.38	6.90	10.99	0.47	57.9	1.76	
1125			25.88	25.36	6.90	11.17	0.44	54.4	1.44	

PURGE STOP TIME:	SAMPLE TIME: 1125
LAB NAME:	SAMPLE ID: TT-TP1-M2-20160419

OBSERVATIONS/COMMENTS (NOTE TIMES):

water is yellow

FLS 0.911

LOW-FLOW WATER PURGING & SAMPLING LOG

TETRA TECH

PROJECT NAME: NERT SFPT
FIELD PERSON:
PROJECT NUMBER:
PROJECT MANAGER:
PROJECT LOCATION:
DATE: 4-19-16

PUMP / TUBING TYPE:	WELL NUMBER: TT-TP1-M3
EQUIPMENT CLEANING METHOD:	CASING RADIUS: (in.)
	TOTAL DEPTH (TD): (ft.)
PURGE WATER DISPOSAL:	DEPTH TO WATER (DTW): 25.73 (ft.)
	SCREENED INTERVAL: (ft.)
PURGE START TIME:	PUMP SET AT 30 (ft.)

TIME	PURGE RATE (ml/min)	VOLUME PURGED (ml)	DTW (ft)	TEMP (°C)	pH	COND. (µS/cm)	DO (mg/L)	ORP (mV)	TURB. (NTU)	
1143	150		25.73	—	—	—	—	—	—	
1148	↓		25.97	25.78	7.00	11.62	1.38	40.1	1.43	
1151			25.94	25.76	7.00	11.54	0.73	35.6	1.26	
1154			26.00	25.73	7.00	11.47	0.49	34.0	1.94	
1157			26.01	25.72	7.00	11.45	0.42	34.2	1.88	
1200			26.03	25.76	6.99	11.44	0.36	36.1	1.81	
1203	↓		26.05	25.73	6.99	11.44	0.34	36.5	2.01	

PURGE STOP TIME:	SAMPLE TIME: 1203
LAB NAME:	SAMPLE ID: TT-TP1-M3-20160419

OBSERVATIONS/COMMENTS (NOTE TIMES):

yellow water

FD 0.377

LOW-FLOW WATER PURGING & SAMPLING LOG

TETRA TECH

PROJECT NAME: NERT SFPT
FIELD PERSON:
PROJECT NUMBER:
PROJECT MANAGER:
PROJECT LOCATION:
DATE: 4-19-16

PUMP / TUBING TYPE:	WELL NUMBER: TT-TP2-M1
EQUIPMENT CLEANING METHOD:	CASING RADIUS: 2 (in.)
	TOTAL DEPTH (TD): (ft.)
PURGE WATER DISPOSAL:	DEPTH TO WATER (DTW): 24.61 (ft.)
	SCREENED INTERVAL: ~ (ft.)
PURGE START TIME:	PUMP SET AT 30 (ft.)

TIME	PURGE RATE (ml/min)	VOLUME PURGED (ml)	DTW (ft)	TEMP (°C)	pH	COND. (µS/cm)	DO (mg/L)	ORP (mV)	TURB. (NTU)	
1224	150		24.61	~	~	~	~	~	~	
1229			24.63	21.27	7.52	8.816	1.99	19.4	1.41	
1232			24.63	21.30	7.46	8.857	1.57	15.7	1.50	
1235			24.63	21.34	7.41	8.888	1.25	15.3	1.26	
1238			24.63	21.35	7.37	8.901	1.22	15.4	1.33	
1241			24.63	21.35	7.38	8.917	1.18	15.1	1.17	
1244			24.63	21.34	7.38	8.911	1.12	15.3	1.24	

PURGE STOP TIME:	SAMPLE TIME: 1244
LAB NAME:	SAMPLE ID: TT-TP2-M1-20160419

OBSERVATIONS/COMMENTS (NOTE TIMES):
water is Light yellow
FL = 12.92

LOW-FLOW WATER PURGING & SAMPLING LOG

TETRA TECH

PROJECT NAME: NERT SFPT
FIELD PERSON:
PROJECT NUMBER:
PROJECT MANAGER:
PROJECT LOCATION:
DATE: 4-19-16

PUMP / TUBING TYPE:	WELL NUMBER: TT-TP2-M2
EQUIPMENT CLEANING METHOD:	CASING RADIUS: 2 (in.)
	TOTAL DEPTH (TD): — (ft.)
PURGE WATER DISPOSAL:	DEPTH TO WATER (DTW): 24.23 (ft.)
	SCREENED INTERVAL: — (ft.)
PURGE START TIME:	PUMP SET AT 36 (ft.)

TIME	PURGE RATE (ml/min)	VOLUME PURGED (ml)	DTW (ft)	TEMP (°C)	pH	COND. (µS/cm)	DO (mg/L)	ORP (mV)	TURB. (NTU)	
1302			24.23	—	→	—	—	—	—	—
1307			24.24	23.35	7.17	8.704	0.99	62.4	1.97	
1310			24.24	23.45	7.02	8.857	0.47	52.7	2.72	
1313			24.24	23.38	7.02	8.877	0.45	~~0.45~~ 52.1	2.97	
1316			24.24	23.37	7.01	8.880	0.45	50.0	2.62	
1319			24.24	23.38	7.03	8.879	0.43	49.2	2.34	
1322			24.24	23.39	7.03	8.874	0.43	46.9	2.56	

PURGE STOP TIME:	SAMPLE TIME: 1322
LAB NAME:	SAMPLE ID: TT-TP2-M2-20160419

OBSERVATIONS/COMMENTS (NOTE TIMES):

water is yellow

FL = 0.490

LOW-FLOW WATER PURGING & SAMPLING LOG

TETRA TECH

PROJECT NAME: IVERT Soil FPT
FIELD PERSON: PETER J.
PROJECT NUMBER:
PROJECT MANAGER: MARK F.
PROJECT LOCATION:
DATE: 4/ /16

PUMP / TUBING TYPE:	WELL NUMBER: TT-TP3-M1
EQUIPMENT CLEANING METHOD:	CASING RADIUS: 2 (in.)
	TOTAL DEPTH (TD): (ft.)
PURGE WATER DISPOSAL:	DEPTH TO WATER (DTW): 22.60 (ft.)
	SCREENED INTERVAL: (ft.)
PURGE START TIME:	PUMP SET AT 30 (ft.)

TIME	PURGE RATE (ml/min)	VOLUME PURGED (ml)	DTW (ft)	TEMP (°C)	pH	COND. (µS/cm)	DO (mg/L)	ORP (mV)	TURB. (NTU)	
0920	150		22.60	—	—	—	—	—	—	→
0925			22.60	20.48	6.45	1.230	1.89	142.9	1.75	
0928			22.60	20.42	6.71	1.216	1.28	131.6	1.67	
0931			22.60	20.22	7.04	1.206	1.05	118.9	1.81	
0934			22.60	20.34	7.21	1.204	0.90	109.8	1.74	
0937			22.60	20.26	7.30	1.149	0.82	103.2	1.43	
0940			22.60	20.04	7.39	1.132	0.66	97.2	1.39	
0943			22.60	20.00	7.44	1.139	0.62	93.2	1.33	
0946			22.60	19.99	7.47	1.141	0.60	91.7	1.21	

PURGE STOP TIME:	SAMPLE TIME: 0946
LAB NAME:	SAMPLE ID: TT-TP3-M1-20160426

OBSERVATIONS/COMMENTS (NOTE TIMES):

Water is clear

FL=4.859

LOW-FLOW WATER PURGING & SAMPLING LOG

TETRA TECH

PROJECT NAME: NERT SFPT
FIELD PERSON: PETER J
PROJECT NUMBER:
PROJECT MANAGER: MARK F.
PROJECT LOCATION:
DATE: 4/20/16

PUMP / TUBING TYPE:	WELL NUMBER: TT-TP3-M2
EQUIPMENT CLEANING METHOD:	CASING RADIUS: 2 (in.)
PURGE WATER DISPOSAL:	TOTAL DEPTH (TD): (ft.)
	DEPTH TO WATER (DTW): 23.71 (ft.)
	SCREENED INTERVAL: (ft.)
PURGE START TIME:	PUMP SET AT 30 (ft.)

TIME	PURGE RATE (ml/min)	VOLUME PURGED (ml)	DTW (ft)	TEMP (°C)	pH	COND. (µS/cm)	DO (mg/L)	ORP (mV)	TURB. (NTU)	
1004	150		23.71	—	—	—	—	—	—	—
1009	↓		23.73	20.77	7.77	2.015	3.17	113.1	1.61	
1012			23.75	20.51	7.82	2.020	1.56	102.4	1.39	
1015			23.77	20.42	7.86	2.018	0.79	91.8	1.35	
1018			23.79	20.45	7.86	2.015	0.76	90.4	1.37	
1021			23.77	20.42	7.87	2.014	0.63	83.7	1.26	
1024	↓		23.77	20.45	7.88	2.015	0.60	81.3	1.19	

PURGE STOP TIME:	SAMPLE TIME: 1024
LAB NAME:	SAMPLE ID: TT-TP3-M2-20160420

OBSERVATIONS/COMMENTS (NOTE TIMES):

Water is clear

FL = 1.705

LOW-FLOW WATER PURGING & SAMPLING LOG

TETRA TECH

PROJECT NAME: NERT SFPT
FIELD PERSON: _____
PROJECT NUMBER: _____
PROJECT MANAGER: _____
PROJECT LOCATION: _____
DATE: 4/20/16

PUMP / TUBING TYPE:	WELL NUMBER: TT-TP4-M1
EQUIPMENT CLEANING METHOD:	CASING RADIUS: 2 (in.)
	TOTAL DEPTH (TD): _____ (ft.)
PURGE WATER DISPOSAL:	DEPTH TO WATER (DTW): 24.06 (ft.)
	SCREENED INTERVAL: _____ (ft.)
PURGE START TIME:	PUMP SET AT 30 (ft.)

TIME	PURGE RATE (ml/min)	VOLUME PURGED (ml)	DTW (ft)	TEMP (°C)	pH	COND. (µS/cm)	DO (mg/L)	ORP (mV)	TURB. (NTU)	
1046	200		24.06	—	—	—	—	—	—	—
1050			24.09	22.68	7.36	7.654	2.71	128.4	2.19	
1053			24.09	22.57	7.38	7.700	1.90	119.3	2.12	
1056			24.09	22.44	7.40	7.698	1.12	111.4	1.58	
1059			24.09	22.35	7.42	7.812	0.56	93.0	1.33	
1102			24.09	22.33	7.43	6.851	0.52	87.6	1.18	
1105			24.09	22.32	7.43	6.864	0.47	83.0	0.92	

PURGE STOP TIME:	SAMPLE TIME: 1105
LAB NAME:	SAMPLE ID: TT-TP4-M1-20160420

OBSERVATIONS/COMMENTS (NOTE TIMES):
water is yellow

FLC 0.738

LOW-FLOW WATER PURGING & SAMPLING LOG

TETRA TECH

PROJECT NAME: NERT Soil Flush Pilot test
FIELD PERSON:
PROJECT NUMBER:
PROJECT MANAGER:
PROJECT LOCATION:
DATE: 4-20-16

PUMP / TUBING TYPE:	WELL NUMBER: TT-TP4-M2
EQUIPMENT CLEANING METHOD:	CASING RADIUS: 2 (in.)
	TOTAL DEPTH (TD): (ft.)
PURGE WATER DISPOSAL:	DEPTH TO WATER (DTW): 24.09 (ft.)
	SCREENED INTERVAL: (ft.)
PURGE START TIME:	PUMP SET AT (ft.)

TIME	PURGE RATE (ml/min)	VOLUME PURGED (ml)	DTW (ft)	TEMP (°C)	pH	COND. (µS/cm)	DO (mg/L)	ORP (mV)	TURB. (NTU)	
1125	200		24.09	—	—	—	—	—	—	—
1129	↓		24.15	24.49	7.49	5.097	1.10	83.1	1.66	
1132			24.16	24.43	7.46	5.057	0.79	76.6	1.53	
1135			24.16	24.40	7.44	5.049	0.64	68.1	1.39	
1138			24.16	24.38	7.42	5.041	0.54	61.7	1.45	
1141			24.16	24.36	7.40	5.035	0.50	60.1	1.22	
1144	↓		24.16	24.40	7.41	5.037	0.51	56.9	1.20	

PURGE STOP TIME:	SAMPLE TIME: 1144
LAB NAME:	SAMPLE ID: TT-TP4-M2-20160420

OBSERVATIONS/COMMENTS (NOTE TIMES):
Water is light yellow
FL = 0.467

LOW-FLOW WATER PURGING & SAMPLING LOG

TETRA TECH

PROJECT NAME: NERT SFPT
FIELD PERSON:
PROJECT NUMBER: 100-SBO-T35000 2016-M03
PROJECT MANAGER:
PROJECT LOCATION: Henderson NV.
DATE: 4/20/16

PUMP / TUBING TYPE:	WELL NUMBER: TT-TP4-M3
EQUIPMENT CLEANING METHOD:	CASING RADIUS: 2 (in.)
	TOTAL DEPTH (TD): (ft.)
PURGE WATER DISPOSAL:	DEPTH TO WATER (DTW): 23.99 (ft.)
	SCREENED INTERVAL: (ft.)
PURGE START TIME:	PUMP SET AT 30 (ft.)

TIME	PURGE RATE (ml/min)	VOLUME PURGED (ml)	DTW (ft)	TEMP (°C)	pH	COND. (µS/cm)	DO (mg/L)	ORP (mV)	TURB. (NTU)	
1206	200		23.99	—	↘	—	↘	—	↘	
1210	↓		24.07	25.30	7.35	10.50	0.78	82.0	1.51	
1213			24.06	25.14	7.27	10.40	0.44	76.6	1.52	
1216			24.06	25.03	7.24	10.37	0.37	70.2	1.30	
1219			24.06	24.99	7.22	10.38	0.25	64.7	1.24	
1222			24.07	25.00	7.21	10.37	0.21	63.1	1.15	
1225	↓		24.06	25.01	7.22	10.38	0.19	55.8	1.04	

PURGE STOP TIME:	SAMPLE TIME: 1225
LAB NAME:	SAMPLE ID: TT-TP4-M3-20160420

OBSERVATIONS/COMMENTS (NOTE TIMES):
TT-TP4-M3-20160420-DUP
MS/MSD
water is yellow
FL=0.469

LOW-FLOW WATER PURGING & SAMPLING LOG

TETRA TECH

PROJECT NAME: NERT SFPT FIELD PERSON: —

PROJECT NUMBER: — PROJECT MANAGER: —

PROJECT LOCATION: — DATE: —

PUMP / TUBING TYPE: LYSIMETERS	WELL NUMBER:
EQUIPMENT CLEANING METHOD: micro 90	CASING RADIUS: 2 (in.)
PURGE WATER DISPOSAL:	TOTAL DEPTH (TD): — (ft.)
	DEPTH TO WATER (DTW): — (ft.)
	SCREENED INTERVAL: — (ft.)
PURGE START TIME:	PUMP SET AT (ft.)

TIME	PURGE RATE (ml/min)	VOLUME PURGED (ml)	DTW (ft)	TEMP (°C)	pH	COND. (µS/cm)	DO (mg/L)	ORP (mV)	TURB. (NTU)	TP1 FL.
1320	—	200	—	25.13	7.90	3.054	3.46	32.3	0.72	L1
1325	—	500	—	28.62	7.67	6.267	4.86	41.1	1.02	L2
										TP2
1330	—	300	—	~~28.28~~	~~7.78~~ 7.84	3.528	3.75	16.8	0.96	L1
1335	—	425	—	24.04	7.72	5.784	3.69	27.8	1.11	L2
										TP3
1340	—	50	—	—	—	—	—	—	—	L1
1345	—	450	—	22.58	7.85	2.763	2.67	6.2	0.88	L2
										TP4
1350	—	450	—	23.25	7.45	6.392	3.18	54.2	0.67	L1
1355	—	400	—	23.08	7.58	5.860	2.43	48.6	1.17	L2
			—							

PURGE STOP TIME:	SAMPLE TIME: —
LAB NAME:	SAMPLE ID: —

OBSERVATIONS/COMMENTS (NOTE TIMES):

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LOW-FLOW WATER PURGING & SAMPLING LOG

TETRA TECH

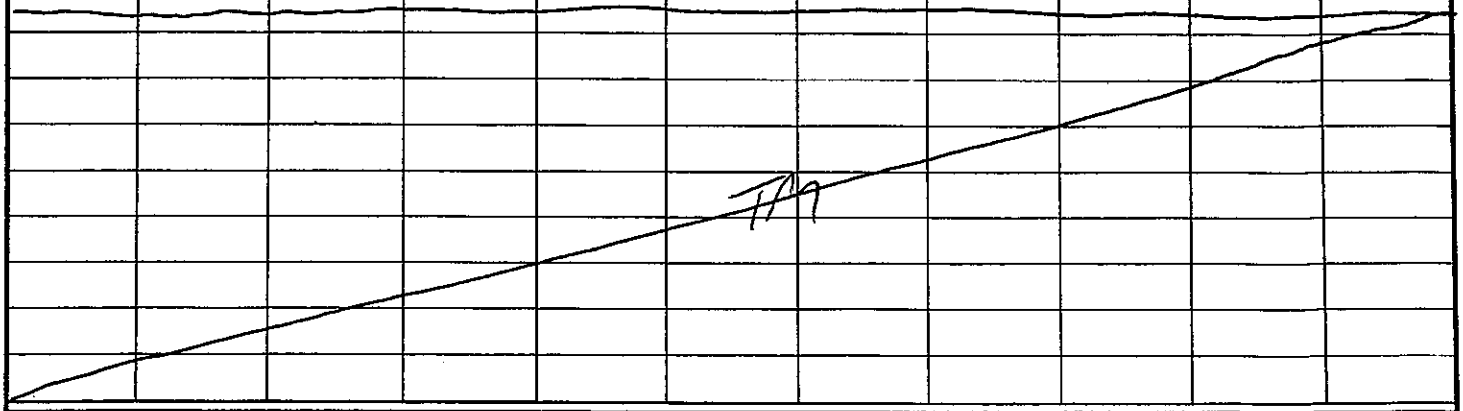
PROJECT NAME: NERT - Soil Flushing GW
FIELD PERSON: Timothy Morse
PROJECT NUMBER:
PROJECT MANAGER:
PROJECT LOCATION: Henderson, NV
DATE: 4/27/16

PUMP / TUBING TYPE: Dedicated micro purge
EQUIPMENT CLEANING METHOD: Alconox / DI water rinse
PURGE WATER DISPOSAL: Treatment pond

WELL NUMBER: TT-TP1-M1
CASING RADIUS: 2 (in.)
TOTAL DEPTH (TD): (ft.)
DEPTH TO WATER (DTW): 24.40 (ft.)
SCREENED INTERVAL: (ft.)

PURGE START TIME: 1023
PUMP SET AT 30.0 (ft.)

TIME	PURGE RATE (ml/min)	VOLUME PURGED (ml)	DTW (ft)	TEMP (°C)	pH	COND. (µS/cm)	DO (mg/L)	ORP (mV)	TURB. (NTU)	
1023	210	—	24.40	—	—	—	—	—	—	—
1027	↓	840	24.49	22.25	7.68	4275	0.84	116.2	0.95	↓
1030		1470	24.53	22.36	7.67	4395	0.86	74.4	0.81	
1033		2100	24.51	22.47	7.66	4431	0.73	64.6	0.51	
1036		2730	24.48	22.54	7.67	4464	0.72	54.7	0.60	
1039		3360	24.49	22.48	7.66	4523	0.66	50.3	0.65	
1042	↓	3990	24.53	22.56	7.64	4627	0.65	47.0	0.61	↓



PURGE STOP TIME: 1043
SAMPLE TIME: 1045
LAB NAME: Test America
SAMPLE ID: TT-TP1-M1-20160427

OBSERVATIONS/COMMENTS (NOTE TIMES):

FL= 12.27

LOW-FLOW WATER PURGING & SAMPLING LOG

TETRA TECH

PROJECT NAME: NERT-Soil Flushing GW
FIELD PERSON: Timothy Morse
PROJECT NUMBER:
PROJECT MANAGER:
PROJECT LOCATION: Henderson, NV
DATE: 4/27/16

PUMP / TUBING TYPE: Dedicated micro purge
EQUIPMENT CLEANING METHOD: Alconox + DI Rinse
PURGE WATER DISPOSAL: Treatment Pond

WELL NUMBER: TT-TP1-M2
CASING RADIUS: 2 (in.)
TOTAL DEPTH (TD): (ft.)
DEPTH TO WATER (DTW): 25.44 (ft.)
SCREENED INTERVAL: (ft.)

PURGE START TIME: 1113
PUMP SET AT 30.0 (ft.)

TIME	PURGE RATE (ml/min)	VOLUME PURGED (ml)	DTW (ft)	TEMP (°C)	pH	COND. (µS/cm)	DO (mg/L)	ORP (mV)	TURB. (NTU)	
1113	210	–	25.44	–	–	–	–	–	–	–
1117	↓	840	25.66	25.35	6.89	8936	1.16	98.8	6.08	↓
1120		1470	25.72	25.04	6.96	8939	1.04	95.7	4.05	
1123		2100	25.78	24.92	7.00	9303	1.04	93.6	2.90	
1126		2730	25.83	24.93	7.03	9624	0.93	91.0	2.01	
1129		3360	25.84	24.95	7.04	9972	0.83	90.5	1.38	
1132		3990	25.90	24.99	7.05	10147	0.40	82.0	1.81	
1135		4620	25.91	25.13	7.04	10253	0.36	78.5	1.47	
1138	↓	5250	25.94	25.14	7.07	10407	0.38	75.6	1.20	↓

TM

PURGE STOP TIME: 1139
SAMPLE TIME: 1140
LAB NAME: Test America
SAMPLE ID: TT-TP1-M2-20160427

OBSERVATIONS/COMMENTS (NOTE TIMES):

FL = 0.841

LOW-FLOW WATER PURGING & SAMPLING LOG

TETRA TECH

PROJECT NAME: NERT SI-PT FIELD PERSON: Mark W.

PROJECT NUMBER: 100-SBO-T35000-2016-1005 PROJECT MANAGER: Mark Feldman

PROJECT LOCATION: Hawthorne NV DATE: 4-27-16

PUMP / TUBING TYPE: dedicated	WELL NUMBER: TT-TP1-MJ
EQUIPMENT CLEANING METHOD: micro 90	CASING RADIUS: 2" (in.)
PURGE WATER DISPOSAL:	TOTAL DEPTH (TD): (ft.)
	DEPTH TO WATER (DTW): 25.89 (ft.)
	SCREENED INTERVAL: (ft.)
PURGE START TIME: 1017	PUMP SET AT 30 (ft.)

TIME	PURGE RATE (ml/min)	VOLUME PURGED (ml)	DTW (ft)	TEMP (°C)	pH	COND. (µS/cm)	DO (mg/L)	ORP (mV)	TURB. (NTU)	
1021	210	840	26.03	24.87	6.72	10.93	0.41	367.7	4.21	
1024			26.06	25.01	6.76	10.85	0.26	306.5	4.73	
1027			26.12	25.04	6.80	10.79	0.17	248.3	3.98	
1030			26.17	25.14	6.81	10.76	0.31	214.6	3.72	
1033			26.20	25.17	6.81	10.75	0.30	209.6	3.39	
1036			26.23	25.20	6.81	10.74	0.28	205.1	3.68	

PURGE STOP TIME:	SAMPLE TIME: 1036
LAB NAME:	SAMPLE ID: TT-TP1-MB 20160427

OBSERVATIONS/COMMENTS (NOTE TIMES):

FL 0.659

PAGE 1 of 1

LOW-FLOW WATER PURGING & SAMPLING LOG

TETRA TECH

PROJECT NAME: NERT SFPT

FIELD PERSON: ~~Mark Feldman~~ Marjorie

PROJECT NUMBER: 100-SBO-T35000-2016-M05

PROJECT MANAGER: Mike Feldman

PROJECT LOCATION: Henderson NV

DATE: 4-27-16

PUMP / TUBING TYPE:

EQUIPMENT CLEANING METHOD:

PURGE WATER DISPOSAL:

WELL NUMBER: TT-TP2-M1

CASING RADIUS: 2" (in.)

TOTAL DEPTH (TD): (ft.)

DEPTH TO WATER (DTW): 23.43 (ft.)

SCREENED INTERVAL: (ft.)

PURGE START TIME: 1128

PUMP SET AT 32 (ft.)

TIME	PURGE RATE (ml/min)	VOLUME PURGED (ml)	DTW (ft)	TEMP (°C)	pH	COND. (μS/cm)	DO (mg/L)	ORP (mV)	TURB. (NTU)	
1132	210		23.43	21.12	7.33	8501	0.80	145.1	1.28	
1135	↓		23.44	21.25	7.23	8.635	0.56	135.8	1.37	
1138			23.44	21.31	7.20	8.681	0.52	131.2	1.10	
1141			23.44	21.33	7.19	8.725	0.50	125.1	1.16	
1144			23.44	21.37	7.17	8.748	0.46	123.1	1.93	
1147			23.44	21.41	7.16	8.776	0.45	121.7	1.22	

PURGE STOP TIME:

SAMPLE TIME: 1147

LAB NAME:

SAMPLE ID: TT-TP2-M1-20160427

OBSERVATIONS/COMMENTS (NOTE TIMES):

FL = 15.91

LOW-FLOW WATER PURGING & SAMPLING LOG

TETRA TECH

PROJECT NAME: NERT SFPT
FIELD PERSON: Mark W
PROJECT NUMBER: 100-SDO-T35000-2016-M05
PROJECT MANAGER: Mark Feldman
PROJECT LOCATION: Henderson NV.
DATE: 4-27-16

PUMP / TUBING TYPE: dedicated
EQUIPMENT CLEANING METHOD: micro 90
PURGE WATER DISPOSAL:

WELL NUMBER: TT-TP2-M2
CASING RADIUS: 2" (in.)
TOTAL DEPTH (TD): (ft.)
DEPTH TO WATER (DTW): 24.05 (ft.)
SCREENED INTERVAL: (ft.)

PURGE START TIME: 1204
PUMP SET AT 30 (ft.)

TIME	PURGE RATE (ml/min)	VOLUME PURGED (ml)	DTW (ft)	TEMP (°C)	pH	COND. (µS/cm)	DO (mg/L)	ORP (mV)	TURB. (NTU)	
1208	240		24.10	22.58	7.17	8.713	0.30	179.9	2.29	
1211	↓		24.10	22.54	7.15	8.766	0.16	170.9	2.31	
1214			24.10	22.52	7.14	8.767	0.14	163.9	1.76	
1217			24.10	22.49	7.12	8.754	0.10	140.0	1.59	
1220			24.10	22.46	7.11	8.751	0.11	137.4	2.51	
1223			24.10	22.46	7.10	8.750	0.09	131.9	2.24	

PURGE STOP TIME:
SAMPLE TIME: 1223
LAB NAME:
SAMPLE ID: TT-TP2-M2-20160427

OBSERVATIONS/COMMENTS (NOTE TIMES):

FL= 1.13'

LOW-FLOW WATER PURGING & SAMPLING LOG

TETRA TECH

PROJECT NAME: NERT-Soil Flushing GW
FIELD PERSON: Timothy Morse
PROJECT NUMBER:
PROJECT MANAGER:
PROJECT LOCATION: Henderson, NV
DATE: 4/27/16

PUMP / TUBING TYPE: Dedicated micro purge
EQUIPMENT CLEANING METHOD: Alconox + DI Rinse
PURGE WATER DISPOSAL: Treatment Pond

WELL NUMBER: TT-TP3-M1
CASING RADIUS: 2 (in.)
TOTAL DEPTH (TD): (ft.)
DEPTH TO WATER (DTW): 22.24 (ft.)
SCREENED INTERVAL: (ft.)

PURGE START TIME: 1240
PUMP SET AT 30.0 (ft.)

TIME	PURGE RATE (ml/min)	VOLUME PURGED (ml)	DTW (ft)	TEMP (°C)	pH	COND. (µS/cm)	DO (mg/L)	ORP (mV)	TURB. (NTU)	
1240	210	—	22.24	—	—	—	—	—	—	—
1244	↓	840	22.26	21.00	7.76	1053	1.31	55.8	2.42	↓
1247		1470	22.27	21.07	7.80	1057	1.20	53.1	2.35	
1250		2100	22.26	20.67	7.80	1057	1.12	50.7	1.86	
1253		2730	22.26	20.57	7.80	1056	1.06	47.1	1.47	
1256		3360	22.26	20.48	7.81	1056	1.02	44.7	1.28	
1259	↓	3990	22.26	21.37	7.81	1055	0.97	42.2	0.97	↓

TP

PURGE STOP TIME: 1300
SAMPLE TIME: 1305
LAB NAME: Test America
SAMPLE ID: TT-TP3-M1-20160427

OBSERVATIONS/COMMENTS (NOTE TIMES):

FL = 6.471

LOW-FLOW WATER PURGING & SAMPLING LOG

TETRA TECH

PROJECT NAME: NERT-Soil Flushing GW
FIELD PERSON: Timothy Horsa
PROJECT NUMBER:
PROJECT MANAGER:
PROJECT LOCATION: Henderson, NV
DATE: 4/27/16

PUMP / TUBING TYPE: Dedicated micro purge	WELL NUMBER: TT-TP3-M2
EQUIPMENT CLEANING METHOD: Alconox + DI Rinse	CASING RADIUS: 2 (in.)
PURGE WATER DISPOSAL: Treatment Pond	TOTAL DEPTH (TD): (ft.)
	DEPTH TO WATER (DTW): 23.42 (ft.)
	SCREENED INTERVAL: (ft.)
PURGE START TIME: 1159	PUMP SET AT 30.0 (ft.)

TIME	PURGE RATE (ml/min)	VOLUME PURGED (ml)	DTW (ft)	TEMP (°C)	pH	COND. (µS/cm)	DO (mg/L)	ORP (mV)	TURB. (NTU)	
1159	210	—	23.42	—	—	—	—	—	—	—
1202	↓	840	23.45	21.09	8.02	1721	1.28	75.8	2.89	↓
1205		1470	23.47	20.94	8.00	1707	1.16	73.7	2.98	
1208		2100	23.47	20.83	8.00	1700	1.10	68.5	3.00	
1211		2730	23.47	20.74	7.99	1697	1.07	62.4	2.84	
1214		3360	23.47	20.66	7.98	1695	1.04	64.6	2.88	
1217	↓	3990	23.47	20.60	7.98	1690	0.99	64.3	2.82	↓

PURGE STOP TIME: 1218	SAMPLE TIME: 1220
LAB NAME: Test America	SAMPLE ID: TT-TP3-M2-20160427

OBSERVATIONS/COMMENTS (NOTE TIMES):

FL= 2.379

LOW-FLOW WATER PURGING & SAMPLING LOG

TETRA TECH

PROJECT NAME: NERT SFPT FIELD PERSON: Mark W

PROJECT NUMBER: 100-580-T35000-2016-1005 PROJECT MANAGER: Mark Feldman

PROJECT LOCATION: Henderson NV DATE: 4-27-16

PUMP / TUBING TYPE:	WELL NUMBER: TT-TP4-M1
EQUIPMENT CLEANING METHOD:	CASING RADIUS: 2" (in.)
	TOTAL DEPTH (TD): (ft.)
PURGE WATER DISPOSAL:	DEPTH TO WATER (DTW): 23.90 (ft.)
	SCREENED INTERVAL: (ft.)
PURGE START TIME: 1327	PUMP SET AT 30 (ft.)

TIME	PURGE RATE (ml/min)	VOLUME PURGED (ml)	DTW (ft)	TEMP (°C)	pH	COND. (µS/cm)	DO (mg/L)	ORP (mV)	TURB. (NTU)	
1331	240		23.90	22.24	7.33	7.969	0.27	136.0	0.87	
1334			23.90	22.04	7.33	7.727	0.15	121.0	0.76	
1337			23.90	22.00	7.34	6.952	0.11	107.6	0.92	
1340			23.90	22.03	7.33	6.555	0.12	105.3	1.06	
1343			23.90	22.02	7.32	6.480	0.11	102.5	0.71	
1346			23.90	22.03	7.32	6.419	0.11	98.3	0.88	

PURGE STOP TIME:	SAMPLE TIME: 1346
LAB NAME:	SAMPLE ID: TT-TP4-M1-20160427

OBSERVATIONS/COMMENTS (NOTE TIMES):

FL = 0.900

LOW-FLOW WATER PURGING & SAMPLING LOG

TETRA TECH

PROJECT NAME: NERT SFDT FIELD PERSON: Maxx W

PROJECT NUMBER: 100-SBG-T35000-206-M05 PROJECT MANAGER: Mark Feldmann

PROJECT LOCATION: Henderson NV DATE: 4-27-16

PUMP / TUBING TYPE:	WELL NUMBER: TT-TP4-M2-
EQUIPMENT CLEANING METHOD:	CASING RADIUS: 2" (in.)
PURGE WATER DISPOSAL:	TOTAL DEPTH (TD): (ft.)
	DEPTH TO WATER (DTW): 23.90 (ft.)
	SCREENED INTERVAL: (ft.)
PURGE START TIME: 1244	PUMP SET AT 30 (ft.)

TIME	PURGE RATE (ml/min)	VOLUME PURGED (ml)	DTW (ft)	TEMP (°C)	pH	COND. (µS/cm)	DO (mg/L)	ORP (mV)	TURB. (NTU)	
1248	240		24.00	23.66	7.50	4.735	0.67	172.1	0.92	
1251	↓		24.00	23.55	7.41	4.665	0.29	150.2	0.89	
1254			24.00	23.53	7.37	4.628	0.18	136.1	1.08	
1257			24.00	23.57	7.35	4.605	0.12	120.3	0.95	
1300			24.00	23.53	7.35	4.599	0.11	117.9	0.77	
1303			24.00	23.50	7.34	4.590	0.15	112.7	0.82	

PURGE STOP TIME:	SAMPLE TIME: ~~TT-TP4-M2-20160427~~ 1303
LAB NAME:	SAMPLE ID: TT-TP4-M2-20160427

OBSERVATIONS/COMMENTS (NOTE TIMES):

FL=0.80'

LOW-FLOW WATER PURGING & SAMPLING LOG

TETRA TECH

PROJECT NAME: NERT-Soil Flushing GW
FIELD PERSON: Timothy Horse
PROJECT NUMBER:
PROJECT MANAGER:
PROJECT LOCATION: Henderson, NV
DATE: 4/27/16

PUMP / TUBING TYPE: Dedicated Micro Purge
EQUIPMENT CLEANING METHOD: Alconox + DI Rinse
PURGE WATER DISPOSAL: Treatment Pond

WELL NUMBER: TT-TP4-M3
CASING RADIUS: 2 (in.)
TOTAL DEPTH (TD): (ft.)
DEPTH TO WATER (DTW): 23.86 (ft.)
SCREENED INTERVAL: (ft.)

PURGE START TIME: 1326
PUMP SET AT (ft.)

TIME	PURGE RATE (ml/min)	VOLUME PURGED (ml)	DTW (ft)	TEMP (°C)	pH	COND. (µS/cm)	DO (mg/L)	ORP (mV)	TURB. (NTU)	
1326	210	—	23.86	—	—	—	—	—	—	—
1330	↓	840	23.90	24.48	7.32	8574	1.27	71.3	1.15	↓
1333		1470	23.91	24.43	7.31	8582	1.18	69.0	0.98	
1336		2100	23.92	24.28	7.31	8598	1.06	67.4	1.07	
1339		2730	23.93	24.32	7.32	8644	0.99	66.5	0.80	
1342		3360	23.93	24.42	7.31	8662	0.76	63.3	0.97	
1345	↓	3990	23.94	24.45	7.33	8684	0.68	58.0	0.91	↓

TP4

PURGE STOP TIME: 1346
SAMPLE TIME: TT-TP4-M3-20160427
LAB NAME: TEST America
SAMPLE ID: 1350

OBSERVATIONS/COMMENTS (NOTE TIMES):

TT-TP4-M3-20160427 is MS/MSD

TT-TP4-M3-20160427-Dup is Duplicate

FL= 0.317

Tetra Tech Inc.

NERT Soil Flush Pilot Test Area
Lysimeter Sampling Log

Lysimeter sample ID	Sample Time	Fluorescein Reading	Temperature (Celsius)	pH	Conductivity (µS/cm)	D.O. (mg/L)	ORP (mV)	Turbidity (NTU)	Volume Purged (mL)
TT-TP1-L1-20160428	1205	9.813	22.24	7.45	2782 ~~2,782~~	2.41	290.5	2.50	350
TT-TP1-L2-20160428	1200	2.555	21.30	7.34	5422	1.57	269.4	1.83	125
TT-TP2-L1-20160428	1215	2.269	20.51	7.61	3549	2.38	226.1	1.99	200
TT-TP2-L2-20160428	1210	1.245	20.87	7.39	5558	2.66	241.5	1.70	275
TT-TP3-L1-20160428	1225	1.478	22.25	8.39	1585	5.11	200.3	1.78	100
TT-TP3-L2-20160428	1220	1.281	22.20	8.02	2577	2.35	208.0	1.58	250
TT-TP4-L1-20160428	1235	1.730	22.53	7.70	2345	2.32	212.2	1.68	275
TT-TP4-L2-20160428	1230	1.349	21.97	7.42	5594	2.07	214.5	1.48	250

Date: 4-28-16
Sampled By: Marx W and Tim Mor

TETRA TECH

LOW-FLOW WATER PURGING & SAMPLING LOG

PROJECT NAME: NERT SOIL FLUSH
FIELD PERSON: M. WILSON/M. WLODARCZYK
PROJECT NUMBER: 100-SBO-T35000-2016.M55
PROJECT MANAGER: Mark Feldam
PROJECT LOCATION: Henderson NV
DATE: 5/4/16

PUMP / TUBING TYPE: dedicated 1/4" tubing
EQUIPMENT CLEANING METHOD: Micro 90
PURGE WATER DISPOSAL:

WELL NUMBER: TT-TP1-m1
CASING RADIUS: 2" (in.)
TOTAL DEPTH (TD): ___ (ft.)
DEPTH TO WATER (DTW): 24.19 (ft.)
SCREENED INTERVAL: ___ (ft.)

PURGE START TIME: 1037
PUMP SET AT ~30 (ft.)

TIME	PURGE RATE (ml/min)	VOLUME PURGED (ml)	DTW (ft)	TEMP (°C)	pH	COND. (µS/cm)	DO (mg/L)	ORP (mV)	TURB. (NTU)	
1037	330	—	24.19	—	—	—	—	—	—	
1041	↓	1320	24.25	22.45	7.94	2.869	0.31	124.6	1.97	
1044		2310	24.26	22.30	8.04	2.577	0.18	106.7	1.86	
1047		3300	24.26	22.24	8.06	2.536	0.11	93.2	1.81	
1050		4290	24.26	22.20	8.05	2.557	0.11	84.7	1.84	
1053		5280	24.26	22.20	7.98	2.829	0.08	79.9	1.85	
1056		6270	24.26	22.27	7.93	3.085	0.09	76.8	1.82	
1059		7260	24.26	22.30	7.90	3.230	0.09	74.8	1.80	
1102		8250	24.26	22.28	7.88	3.366	0.09	71.2	1.75	
1105		9240	24.26	22.33	7.86	3.467	0.11	69.6	1.70	
1108	↓	10230	24.26	22.28	7.84	3.564	0.12	67.5	1.63	

PURGE STOP TIME: 1108
SAMPLE TIME: 1108
LAB NAME: TEST AMERICA
SAMPLE ID: TT-TP1-m1-20160504

OBSERVATIONS/COMMENTS (NOTE TIMES):

FL = 2.273

FILE: LOG FORMS\em-Water Purging & Sampling Log-10-20-09.dwg

LOW-FLOW WATER PURGING & SAMPLING LOG

TETRA TECH

PROJECT NAME: NERT Soil Flush
FIELD PERSON: M. Wilson / M. Wlodarczyk
PROJECT NUMBER: 100-SBO-T35000-2016.M55
PROJECT MANAGER: Mark Feldam
PROJECT LOCATION: Henderson NV
DATE: 5/4/16

PUMP / TUBING TYPE: dedicated 1/4" tubing
EQUIPMENT CLEANING METHOD: Micro 90
PURGE WATER DISPOSAL:

WELL NUMBER: TT-TP1-m2
CASING RADIUS: 2" (in.)
TOTAL DEPTH (TD): ___ (ft.)
DEPTH TO WATER (DTW): 25.18 (ft.)
SCREENED INTERVAL: ___ (ft.)

PURGE START TIME: 1130
PUMP SET AT ~30 (ft.)

TIME	PURGE RATE (ml/min)	VOLUME PURGED (ml)	DTW (ft)	TEMP (°C)	pH	COND. (µS/cm)	DO (mg/L)	ORP (mV)	TURB. (NTU)	
1130	330	—	25.18	—	—	—	—	—	—	
1133	300	990	~~25.62~~ 25.50	25.62	7.02	6.859	0.41	91.3	2.04	
1136	255	~~1980~~ 1890	25.58	25.49	6.95	6.790	0.33	83.7	1.69	
1139	↓	2655	25.63	25.52	6.90	7.893	0.24	80.9	3.42	
1142		3420	25.65	25.62	6.90	8.600	0.19	79.2	1.86	
1145		4185	25.68	25.70	6.90	9094	0.15	76.3	2.46	
1148		4950	25.73	25.71	6.91	9.344	0.13	74.8	1.59	
1151		5715	23.77	25.79	6.91	9.571	0.12	73.5	1.83	
1154	↓	6480	23.79	25.91	6.91	9.793	0.11	72.6	1.43	

PURGE STOP TIME: 1154
SAMPLE TIME: 1154
LAB NAME: TEST AMERICA
SAMPLE ID: TT-TP1-m2-20160504

OBSERVATIONS/COMMENTS (NOTE TIMES):

FL= 0.099

TETRA TECH

LOW-FLOW WATER PURGING & SAMPLING LOG

PROJECT NAME: NERT SOIL FLUSH
FIELD PERSON: M. WILSON / M. WLODARCZYK
PROJECT NUMBER: 100-SBO-T35000-2016.MS5
PROJECT MANAGER: Mark Feldam
PROJECT LOCATION: Henderson NV
DATE: 5/4/16

PUMP / TUBING TYPE: dedicated 1/4" tubing
EQUIPMENT CLEANING METHOD: Micro 90
PURGE WATER DISPOSAL:

WELL NUMBER: TT-TP1-M3
CASING RADIUS: 2" (in.)
TOTAL DEPTH (TD): (ft.)
DEPTH TO WATER (DTW): 25.59 (ft.)
SCREENED INTERVAL: (ft.)

PURGE START TIME: 1208
PUMP SET AT ~30 (ft.)

TIME	PURGE RATE (ml/min)	VOLUME PURGED (ml)	DTW (ft)	TEMP (°C)	pH	COND. (µS/cm)	DO (mg/L)	ORP (mV)	TURB. (NTU)	
1208	225	—	25.59	—	—	—	—	—	—	
1212	↓	900	25.80	26.01	6.93	10.30	0.69	83.2	2.17	
1215		1575	25.82	26.03	6.91	10.14	0.26	73.0	2.05	
1218		2250	25.78	26.50	6.90	10.01	0.18	70.6	1.87	
1221		2925	25.78	25.90	6.90	10.03	0.13	68.2	1.58	
1224		3600	25.76	25.96	6.90	9.981	0.12	67.3	1.51	
1227		4275	25.79	25.90	6.89	9.951	0.09	67.2	1.52	

PURGE STOP TIME: 1227
SAMPLE TIME: 1227
LAB NAME: TEST AMERICA
SAMPLE ID: TT-TP1-M3-20160504

OBSERVATIONS/COMMENTS (NOTE TIMES):

FL = 0.064

LOW-FLOW WATER PURGING & SAMPLING LOG

TETRA TECH

PROJECT NAME: NERT Soil Flush
FIELD PERSON: M.Wilson/M.Wlodarczyk
PROJECT NUMBER: 100-SBO-T35000-206.M05
PROJECT MANAGER: Mark Feldam
PROJECT LOCATION: Henderson NV
DATE: 5/4/16

PUMP / TUBING TYPE: dedicated 1/4" tubing	WELL NUMBER: TT-TP2-m1
EQUIPMENT CLEANING METHOD: Micro 90	CASING RADIUS: 2" (in.)
PURGE WATER DISPOSAL:	TOTAL DEPTH (TD): (ft.)
	DEPTH TO WATER (DTW): 23.05 (ft.)
	SCREENED INTERVAL: (ft.)
PURGE START TIME: 1242	PUMP SET AT ~30 (ft.)

TIME	PURGE RATE (ml/min)	VOLUME PURGED (ml)	DTW (ft)	TEMP (°C)	pH	COND. (µS/cm)	DO (mg/L)	ORP (mV)	TURB. (NTU)	
1242	300	—	23.05	—	—	—	—	—	—	
1245	↓	900	23.20	21.95	7.42	8.315	1.19	53.4	1.65	
1248		1800	23.08	22.03	7.27	8.405	0.42	42.7	1.67	
1251		2700	23.05	21.98	7.24	8.459	0.38	40.7	1.55	
1254		3600	23.08	22.02	7.22	8.496	0.34	39.6	1.53	
1257		4500	23.09	22.04	7.20	8.532	0.34	39.8	2.24	
1300	↓	5400	23.08	21.99	7.19	8.586	0.32	40.2	1.62	

PURGE STOP TIME: 1300	SAMPLE TIME: 1300
LAB NAME: TEST AMERICA	SAMPLE ID: TT-TP2-m1-20160504

OBSERVATIONS/COMMENTS (NOTE TIMES):

FL= 1.993

LOW-FLOW WATER PURGING & SAMPLING LOG

TETRA TECH

PROJECT NAME: NERT SOIL FLUSH
FIELD PERSON: M. Wilson/McCloskey
PROJECT NUMBER: 100-SBO-T35000-2016.M55
PROJECT MANAGER: Mark Feldam
PROJECT LOCATION: Henderson NV
DATE: 5/5/16

PUMP / TUBING TYPE: dedicated 1/4" tubing
EQUIPMENT CLEANING METHOD: Micro 90
PURGE WATER DISPOSAL:

WELL NUMBER: TT-TP2-m2
CASING RADIUS: 2" (in.)
TOTAL DEPTH (TD): ___ (ft.)
DEPTH TO WATER (DTW): 23.75 (ft.)
SCREENED INTERVAL: ___ (ft.)

PURGE START TIME: 0858
PUMP SET AT ~30 (ft.)

TIME	PURGE RATE (ml/min)	VOLUME PURGED (ml)	DTW (ft)	TEMP (°C)	pH	COND. (µS/cm)	DO (mg/L)	ORP (mV)	TURB. (NTU)	
0858	300	—	23.75	—	—	—	—	—	—	
0902	↓	1200	23.75	22.45	6.64	8.600	0.65	149.6	2.71	
0905		2100	23.74	22.39	6.74	8.667	0.23	127.5	1.73	
0908		3000	23.74	22.36	6.82	8.657	0.20	110.2	1.49	
0911		3900	23.74	22.36	6.86	8.648	0.20	98.0	1.37	
0914		4800	23.74	22.39	6.93	8.640	0.15	88.6	1.69	
0917		5700	23.74	22.43	6.96	8.642	0.15	83.4	1.24	
0920		6600	23.74	22.41	6.98	8.646	0.14	77.7	1.13	
0923	↓	7500	23.74	22.45	7.00	8.644	0.14	74.4	1.10	

PURGE STOP TIME: 0923
SAMPLE TIME: 0923
LAB NAME: TEST AMERICA
SAMPLE ID: TT-TP2-m2-20160505

OBSERVATIONS/COMMENTS (NOTE TIMES):

FL = 0.119

LOW-FLOW WATER PURGING & SAMPLING LOG

TETRA TECH

PROJECT NAME: NERT SOIL FLUSH
FIELD PERSON: M.WILSON / M.WLODARCZYK
PROJECT NUMBER: 100-SBO-T35000-2016.MS5
PROJECT MANAGER: Mark Feldam
PROJECT LOCATION: Henderson NV
DATE: 5/5/16

PUMP / TUBING TYPE: dedicated 1/4" tubing
EQUIPMENT CLEANING METHOD: Micro 90
PURGE WATER DISPOSAL:

WELL NUMBER: TT-TP3-M1
CASING RADIUS: 2" (in.)
TOTAL DEPTH (TD): ___ (ft.)
DEPTH TO WATER (DTW): 21.95 (ft.)
SCREENED INTERVAL: ___ (ft.)

PURGE START TIME: 1011
PUMP SET AT ~30 (ft.)

TIME	PURGE RATE (ml/min)	VOLUME PURGED (ml)	DTW (ft)	TEMP (°C)	pH	COND. (µS/cm)	DO (mg/L)	ORP (mV)	TURB. (NTU)	
1011	270	—	21.95	—	—	—	—	—	—	
1014	↓	810	21.85	21.28	7.59	1.163	1.05	49.1	3.36	
1017		1620	21.85	21.23	7.56	1.149	0.53	43.0	1.68	
1020		2430	21.85	21.28	7.55	1.150	0.33	41.0	1.86	
1023		3240	21.85	21.27	7.55	1.151	0.35	39.8	3.07	
1026		4050	21.85	21.42	7.55	1.161	0.23	38.9	1.50	
1029	↓	4860	21.85	21.98	7.55	1.162	0.21	36.5	1.36	

PURGE STOP TIME: 1029
SAMPLE TIME: 1029
LAB NAME: TEST AMERICA
SAMPLE ID: TT-TP3-M1-20160505

OBSERVATIONS/COMMENTS (NOTE TIMES):

FL = 1.297

LOW-FLOW WATER PURGING & SAMPLING LOG

TETRA TECH

PROJECT NAME: NERT Soil Flush
FIELD PERSON: M.Wilson/M.Wlodarczyk
PROJECT NUMBER: 100-SBO-T35000-2016.MBS
PROJECT MANAGER: Mark Feldam
PROJECT LOCATION: Henderson NV
DATE: 5/5/16

PUMP / TUBING TYPE: dedicated 1/4" tubing	WELL NUMBER: TT-TP3-m2
EQUIPMENT CLEANING METHOD: Micro 90	CASING RADIUS: 2" (in.)
PURGE WATER DISPOSAL:	TOTAL DEPTH (TD): ___ (ft.)
	DEPTH TO WATER (DTW): 23.20 (ft.)
	SCREENED INTERVAL: ___ (ft.)
PURGE START TIME: 0938	PUMP SET AT ~30 (ft.)

TIME	PURGE RATE (ml/min)	VOLUME PURGED (ml)	DTW (ft)	TEMP (°C)	pH	COND. (µS/cm)	DO (mg/L)	ORP (mV)	TURB. (NTU)	
0938	210	—	23.20	—	—	—	—	—	—	
0942		840	23.30	20.85	7.80	1.994	1.18	47.6	5.56	
0945		1470	23.30	20.49	7.64	1.823	0.36	51.4	3.40	
0948		2100	23.30	20.46	7.51	1.762	0.26	50.8	2.39	
0951		2730	23.30	20.43	7.51	1.752	0.17	46.0	1.90	
0954		3360	23.30	20.34	7.54	1.748	0.13	41.7	2.69	
0957		3990	23.30	20.33	7.55	1.744	0.14	39.5	2.15	

PURGE STOP TIME: 0957	SAMPLE TIME: 0957
LAB NAME: TestAmerica	SAMPLE ID: TT-TP3-m2-20160505

OBSERVATIONS/COMMENTS (NOTE TIMES):

FL= 0.690

PAGE 1 of ___

LOW-FLOW WATER PURGING & SAMPLING LOG

TETRA TECH

PROJECT NAME: NERT SOIL FLUSH
FIELD PERSON: M.WILSON / M.WLODARCZYK
PROJECT NUMBER: 100-SBO-T35000-2016.M05
PROJECT MANAGER: Mark Feldam
PROJECT LOCATION: Henderson NV
DATE: 5/5/16

PUMP / TUBING TYPE: dedicated 1/4" tubing
EQUIPMENT CLEANING METHOD: Micro 90
PURGE WATER DISPOSAL:

WELL NUMBER: TT-TP4-m1
CASING RADIUS: 2" (in.)
TOTAL DEPTH (TD): ___ (ft.)
DEPTH TO WATER (DTW): ~~23.80~~ 23.60 (ft.)
SCREENED INTERVAL: ___ (ft.)

PURGE START TIME: 1051
PUMP SET AT ~30 (ft.)

TIME	PURGE RATE (ml/min)	VOLUME PURGED (ml)	DTW (ft) 23.60	TEMP (°C)	pH	COND. (µS/cm)	DO (mg/L)	ORP (mV)	TURB. (NTU)	
1051	210	—	~~23.80~~	—	—	—	—	—	—	
1055	↓	840	23.70	22.47	7.35	6.772	0.72	61.9	2.61	
1058		1470	23.55	22.39	7.38	6.673	0.32	53.8	1.42	
1101		2100	23.50	22.41	7.40	6.431	0.21	47.4	1.39	
1104		2730	23.55	22.43	7.40	5.840	0.19	42.4	1.70	
1107		3360	23.55	22.30	7.39	5.521	0.18	40.5	1.21	
1110		3990	23.55	22.29	7.38	5.371	0.16	39.6	1.18	
1113		4800	23.55	22.99	7.38	5.284	0.18	38.8	1.20	
1116	↓	5610	23.55	22.26	7.38	5.235	0.18	38.4	1.19	

PURGE STOP TIME: 1116
SAMPLE TIME: 1116
LAB NAME: TEST AMERICA
SAMPLE ID: TT-TP4-m1-20160505

OBSERVATIONS/COMMENTS (NOTE TIMES):

FL = 0.221

LOW-FLOW WATER PURGING & SAMPLING LOG

TETRA TECH

PROJECT NAME: NERT SOIL FLUSH
FIELD PERSON: M. WILSON / M. WLODARCZYK
PROJECT NUMBER: 100-SBO-T35000-2016.M55
PROJECT MANAGER: Mark Feldam
PROJECT LOCATION: Henderson NV
DATE: 5/5/16

PUMP / TUBING TYPE: dedicated 1/4" tubing
EQUIPMENT CLEANING METHOD: Micro 90
PURGE WATER DISPOSAL:

WELL NUMBER: TT-TP4-M2
CASING RADIUS: 2" (in.)
TOTAL DEPTH (TD): (ft.)
DEPTH TO WATER (DTW): 23.63 (ft.)
SCREENED INTERVAL: (ft.)

PURGE START TIME: 1132
PUMP SET AT ~30 (ft.)

TIME	PURGE RATE (ml/min)	VOLUME PURGED (ml)	DTW (ft)	TEMP (°C)	pH	COND. (µS/cm)	DO (mg/L)	ORP (mV)	TURB. (NTU)	
1132	210	—	23.63	—	—	—	—	—	—	
1136	↓	840	~~23.65~~ ~~24.09~~	24.09	7.52	4.390	1.32	39.2	3.86	
1139		1470	23.67	24.72	7.47	4.288	0.92	36.8	4.02	
1142		~~2100~~ ~~2380~~	23.70	24.26	7.46	4.250	0.62	35.4	4.16	
1145		~~2730~~ ~~3640~~	23.70	24.14	7.45	4.191	0.40	34.2	3.75	
1148		~~3360~~ ~~3920~~	23.70	24.14	7.45	4.164	0.31	32.3	2.95	
1151	↓	3990	23.70	24.08	7.44	4.150	0.32	32.5	1.55	

PURGE STOP TIME: 1151
SAMPLE TIME: 1151
LAB NAME: TEST AMERICA
SAMPLE ID: TT-TP4-M2-2016 0505

OBSERVATIONS/COMMENTS (NOTE TIMES):

FL = 0.020

LOW-FLOW WATER PURGING & SAMPLING LOG

TETRA TECH

PROJECT NAME: NERT SOIL FLUSH
FIELD PERSON: M.WILSON / M.WLODARCZYK
PROJECT NUMBER: 100-SBO-T35000-2016.M05
PROJECT MANAGER: Mark Feldam
PROJECT LOCATION: Henderson NV
DATE: 5/5/16

PUMP / TUBING TYPE: dedicated 1/4" tubing
EQUIPMENT CLEANING METHOD: Micro 90
PURGE WATER DISPOSAL:

WELL NUMBER: TT-TP4-M3
CASING RADIUS: 2" (in.)
TOTAL DEPTH (TD): ___ (ft.)
DEPTH TO WATER (DTW): 23.72 (ft.)
SCREENED INTERVAL: ___ (ft.)

PURGE START TIME: 1205
PUMP SET AT ~30 (ft.)

TIME	PURGE RATE (ml/min)	VOLUME PURGED (ml)	DTW (ft)	TEMP (°C)	pH	COND. (µS/cm)	DO (mg/L)	ORP (mV)	TURB. (NTU)	
1205	255	—	23.72	—	—	—	—	—	—	
1209	↓	1020	23.85	25.08	7.34	8.530	1.30	53.6	2.27	
1212		1785	23.70	25.02	7.26	8.220	0.41	43.0	1.54	
1215		2550	23.68	25.08	7.23	8.190	0.28	38.5	1.42	
1218		3315	23.68	25.00	7.21	8.237	0.27	36.8	1.63	
1221		4080	23.68	24.98	7.21	8.290	0.22	35.4	1.27	
1224	↓	4845	23.68	25.03	7.21	8.331	0.20	34.7	1.26	

PURGE STOP TIME: 1224
SAMPLE TIME: 1224
LAB NAME: TEST AMERICA
SAMPLE ID: TT-TP4-M3-20160505

OBSERVATIONS/COMMENTS (NOTE TIMES):

FL= 0.054

Tetra Tech Inc.

NERT Soil Flush Pilot Test Area
Lysimeter Sampling Log

Lysimeter sample ID	Sample Time	Fluorescein Reading	Temperature (Celsius)	pH	Conductivity (µS/cm)	D.O. (mg/L)	ORP (mV)	Turbidity (NTU)	Volume Purged (mL)
TT-TP1-L1-20160505	1310	0.990	27.77	7.86	3.180	1.78	171.4	1.41	240
TT-TP1-L2-20160505	1312	0.245	28.31	7.73	4.700	1.95	144.5	1.50	320
TT-TP2-L1-20160505	1305	0.464	25.73	7.89	3.330	2.35	118.6	1.36	300
TT-TP2-L2-20160505	1308	0.097	26.88	7.61	4.982	2.17	95.6	1.57	450
TT-TP3-L1-20160505	1301	0.096	25.77	8.61	1.385	3.43	56.6	1.40	125
TT-TP3-L2-20160505	1303	0.186	25.66	8.09	2.464	1.86	76.2	1.75	500
TT-TP4-L1-20160505	1255	0.257	24.62	7.87	2.115	2.03	59.9	1.32	400
TT-TP4-L2-20160505	1258	0.181	25.55	7.59	5.159	2.32	78.1	1.66	400

Date: 5/4/16

Sampled By: M. WILSON / M. WLODARCZYK

Tetra Tech Inc.

NERT Soil Flush Pilot Test Area
Lysimeter Sampling Log

Lysimeter sample ID	Sample Time	Fluorescein Reading	Temperature (Celsius)	pH	Conductivity (µS/cm)	D.O. (mg/L)	ORP (mV)	Turbidity (NTU)	Volume Purged (mL)
TT-TP1-L1-20160511	1300	2.305	26.41	6.82	2.886	3.50	73.7	1.02	200
TT-TP1-L2-20160511	1305	0.260	29.42	6.96	4.307	4.37	66.6	0.99	20
TT-TP2-L1-20160511	1310	4.881	~~23.12~~ ~~24.63~~	~~7.28~~ ~~6.80~~	~~3.279~~ ~~4.650~~	~~3.97~~ ~~3.46~~	~~40.1~~ ~~75.5~~	1.31	300
TT-TP2-L2-20160511	1315	0.198	24.63	6.80	4.650	3.46	75.5	1.28	410
TT-TP3-L1-20160511	1320	0.143	24.91	7.86	1.235	4.77	37.1	1.33	140
TT-TP3-L2-20160511	1325	0.362	26.00	7.43	2.249	4.14	45.1	1.40	810
TT-TP4-L1-20160511	1330	4.251	25.98	7.61	1.995	2.60	30.2	1.51	300
TT-TP4-L2-20160511	1335	0.229	26.12	7.35	4.499	2.84	54.9	1.12	~~300~~ 350

Date: 5-11-16

Sampled By: Peter J.

LOW-FLOW WATER PURGING & SAMPLING LOG

TETRA TECH

PROJECT NAME: NERT SFPT FIELD PERSON: PETER J.

PROJECT NUMBER: 100-SBO-T35000-2016.M05 PROJECT MANAGER: Mark Feldam

PROJECT LOCATION: Henderson NV DATE: 5/10/16

PUMP / TUBING TYPE: dedicated 1/4" tubing	WELL NUMBER: TT-TP1-M1
EQUIPMENT CLEANING METHOD: Micro 90	CASING RADIUS: 2" (in.)
PURGE WATER DISPOSAL:	TOTAL DEPTH (TD): (ft.)
	DEPTH TO WATER (DTW): 24.29 (ft.)
	SCREENED INTERVAL: (ft.)
PURGE START TIME: 1209	PUMP SET AT ~30 (ft.)

TIME	PURGE RATE (ml/min)	VOLUME PURGED (ml)	DTW (ft)	TEMP (°C)	pH	COND. (µS/cm)	DO (mg/L)	ORP (mV)	TURB. (NTU)	
1215	300	1800	24.40	22.96	7.60	4.135	1.99	173.7	1.60	
1218	↓	2700	24.40	22.62	7.60	4.174	1.45	170.4	1.53	
1221		3600	24.40	22.65	7.58	4.243	1.22	166.3	1.08	
1224		4500	24.40	22.58	7.57	4.289	1.14	162.6	1.12	
1227		5400	24.40	22.55	7.56	4.287	1.07	159.7	1.01	
1230	↓	6300	24.40	22.63	7.54	4.298	1.07	156.2	0.89	

PURGE STOP TIME:	SAMPLE TIME: 1230
LAB NAME: TEST AMERICA	SAMPLE ID: TT-TP1-M1-20160510

OBSERVATIONS/COMMENTS (NOTE TIMES):

FL = 12.55

LOW-FLOW WATER PURGING & SAMPLING LOG

TETRA TECH

PROJECT NAME: NERT SFPT
FIELD PERSON:
PROJECT NUMBER: 100-SBO-T35000-2016.M05
PROJECT MANAGER: Mark Feldam
PROJECT LOCATION: Henderson NV
DATE: 5-10-16

PUMP / TUBING TYPE: dedicated 1/4" tubing	WELL NUMBER: TT-TP1-M2
EQUIPMENT CLEANING METHOD: Micro 90	CASING RADIUS: 2" (in.)
PURGE WATER DISPOSAL:	TOTAL DEPTH (TD): (ft.)
	DEPTH TO WATER (DTW): 25.27 (ft.)
	SCREENED INTERVAL: (ft.)
PURGE START TIME: 1245	PUMP SET AT ~30 (ft.)

TIME	PURGE RATE (ml/min)	VOLUME PURGED (ml)	DTW (ft)	TEMP (°C)	pH	COND. (µS/cm)	DO (mg/L)	ORP (mV)	TURB. (NTU)	
1250	180		25.55	25.69	7.09	6.370	2.11	138.8	1.57	
1253			25.58	25.53	7.09	7.096	1.38	137.5	1.34	
1256			25.62	25.53	7.06	7.621	1.19	136.3	1.41	
1259			25.64	25.55	7.03	8.038	1.10	134.5	1.55	
1302			25.67	25.58	7.01	8.619	1.06	133.3	1.47	
1305			25.70	25.56	7.00	8.777	0.97	131.5	1.22	
1308			25.73	25.65	6.98	8.929	0.87	129.7	1.17	
1311			25.76	25.68	6.97	9.187	0.74	127.7	1.09	
1315			25.79	25.69	6.97	9.318	0.69	126.3	1.13	
1318			25.82	25.75	6.95	9.496	0.58	124.6	1.11	
1321			25.83	25.65	6.96	9.584	0.54	123.6	1.14	

PURGE STOP TIME:	SAMPLE TIME: 1324
LAB NAME:	SAMPLE ID: TT-TP1-M2-20160510

OBSERVATIONS/COMMENTS (NOTE TIMES):

FL = ~0.065

multiple calibrations checked out OK. sample would not read positive

LOW-FLOW WATER PURGING & SAMPLING LOG

TETRA TECH

PROJECT NAME: NERT SFRT FIELD PERSON: PETER J.

PROJECT NUMBER: 100-SBO-T35000-2016.M05 PROJECT MANAGER: Mark Feldam

PROJECT LOCATION: Henderson NV DATE: 5/10/16

PUMP / TUBING TYPE: dedicated 1/4" tubing	WELL NUMBER: TT-TP1-M3
EQUIPMENT CLEANING METHOD: Micro 90	CASING RADIUS: 2" (in.)
PURGE WATER DISPOSAL:	TOTAL DEPTH (TD): (ft.)
	DEPTH TO WATER (DTW): 25.60 (ft.)
	SCREENED INTERVAL: (ft.)
PURGE START TIME: 1338	PUMP SET AT ~30 (ft.)

TIME	PURGE RATE (ml/min)	VOLUME PURGED (ml)	DTW (ft)	TEMP (°C)	pH	COND. (µS/cm)	DO (mg/L)	ORP (mV)	TURB. (NTU)	
1343	200		25.87	25.66	6.92	8.933	0.59	125.1	2.53	
1346	↓		25.95	25.62	6.91	8.895	0.57	124.7	2.57	
1349	↓		26.04	25.63	6.89	8.826	0.48	122.1	2.24	
1352	150		26.04	25.69	6.89	8.814	0.46	121.4	3.27	
1355	↓		26.03	25.75	6.89	8.813	0.41	120.2	3.36	
1358	↓		26.03	25.73	6.89	8.815	0.38	119.2	3.22	

PURGE STOP TIME:	SAMPLE TIME: 1358
LAB NAME: TEST AMERICA	SAMPLE ID: TT-TP1-M3-20160510

OBSERVATIONS/COMMENTS (NOTE TIMES):

FL = -0.509

Flowrimeter will calibrate to 9.998 but read a negative number upon analyzing sample.

LOW-FLOW WATER PURGING & SAMPLING LOG

TETRA TECH

PROJECT NAME: NERT FIELD PERSON:

PROJECT NUMBER: 100-SBO-T35000-2016.M05 PROJECT MANAGER: Mark Feldam

PROJECT LOCATION: Henderson NV DATE: 5-11-16

PUMP / TUBING TYPE: dedicated 1/4" tubing	WELL NUMBER: TT-TP2-M1
EQUIPMENT CLEANING METHOD: Micro 90	CASING RADIUS: 2" (in.)
PURGE WATER DISPOSAL:	TOTAL DEPTH (TD): (ft.)
	DEPTH TO WATER (DTW): 23.19 (ft.)
	SCREENED INTERVAL: (ft.)
PURGE START TIME: 0834	PUMP SET AT ~30 (ft.)

TIME	PURGE RATE (ml/min)	VOLUME PURGED (ml)	DTW (ft)	TEMP (°C)	pH	COND. (µS/cm)	DO (mg/L)	ORP (mV)	TURB. (NTU)	
0838	200		23.21	21.09	6.73	8.365	2.16	203.7	2.56	
0841	↓		23.25	21.13	6.92	8.571	1.00	192.4	2.44	
0844			23.21	21.17	6.99	8.655	0.84	187.3	2.21	
0847			23.22	21.15	7.03	8.691	0.75	184.7	2.27	
0850			23.22	21.22	7.08	8.770	0.72	176.4	2.12	
0853			23.21	21.28	7.11	8.807	0.67	171.0	1.96	
0856			23.22	21.33	7.13	8.847	0.66	164.8	2.40	
0859			23.22	21.32	7.14	8.855	0.65	163.8	2.25	
0902			23.22	21.34	7.15	8.894	0.62	158.0	2.19	

PURGE STOP TIME:	SAMPLE TIME: 0902
LAB NAME:	SAMPLE ID: TT-TP2-M1-20160511

OBSERVATIONS/COMMENTS (NOTE TIMES):

FL = 3.353

LOW-FLOW WATER PURGING & SAMPLING LOG

TETRA TECH

PROJECT NAME: NERT FIELD PERSON:

PROJECT NUMBER: 100-SBO-T35000-2016.M05 PROJECT MANAGER: Mark Feldam

PROJECT LOCATION: Henderson NV DATE: 5-11-16

PUMP / TUBING TYPE: dedicated 1/4" tubing	WELL NUMBER: TT-TP2-M2
EQUIPMENT CLEANING METHOD: Micro 90	CASING RADIUS: 2" (in.)
PURGE WATER DISPOSAL:	TOTAL DEPTH (TD): (ft.)
	DEPTH TO WATER (DTW): 23.84 (ft.)
	SCREENED INTERVAL: (ft.)
PURGE START TIME: 0922	PUMP SET AT ~30 (ft.)

TIME	PURGE RATE (ml/min)	VOLUME PURGED (ml)	DTW (ft)	TEMP (°C)	pH	COND. (µS/cm)	DO (mg/L)	ORP (mV)	TURB. (NTU)	
0926	220		23.85	22.27	7.25	8.630	0.64	150.9	3.48	
0929			23.85	22.22	7.20	8.637	0.23	146.7	3.00	
0932			23.85	22.21	7.19	8.640	0.26	145.2	3.60	
0935			23.85	22.23	7.17	8.637	0.23	141.1	3.32	
0938			23.85	22.23	7.16	8.635	0.23	139.0	2.77	
0941			23.85	22.26	7.17	8.633	0.22	137.2	3.03	
									~~3.48~~ (NTU)	

PURGE STOP TIME:	SAMPLE TIME: 0941
LAB NAME:	SAMPLE ID: TT-TP2-M2-20160511

OBSERVATIONS/COMMENTS (NOTE TIMES):

FL= 0.271

LOW-FLOW WATER PURGING & SAMPLING LOG

TETRA TECH

PROJECT NAME: NERT FIELD PERSON:

PROJECT NUMBER: 100-SBO-T35000-2016.M05 PROJECT MANAGER: Mark Feldam

PROJECT LOCATION: Henderson NV DATE: 5-11-16

PUMP / TUBING TYPE: dedicated 1/4" tubing	WELL NUMBER: TT-TP3-M1
EQUIPMENT CLEANING METHOD: Micro 90	CASING RADIUS: 2" (in.)
PURGE WATER DISPOSAL:	TOTAL DEPTH (TD): (ft.)
	DEPTH TO WATER (DTW): 21.90 (ft.)
	SCREENED INTERVAL: (ft.)
PURGE START TIME: 1027	PUMP SET AT ~30 (ft.)

TIME	PURGE RATE (ml/min)	VOLUME PURGED (ml)	DTW (ft)	TEMP (°C)	pH	COND. (µS/cm)	DO (mg/L)	ORP (mV)	TURB. (NTU)	
1031	210		21.95	21.65	7.69	1.133	2.85	94.0	7.89	
1034			21.95	21.51	7.66	1.135	1.08	72.2	7.55	
1037			21.95	21.54	7.64	1.138	0.60	91.5	7.65	
1040			21.95	21.53	7.62	1.137	0.32	88.3	7.62	
1043			21.95	21.51	7.63	1.137	0.26	81.4	5.85	
1046			21.95	21.50	7.63	1.135	0.26	79.0	5.20	
									~~4.98~~ DUP	

PURGE STOP TIME:	SAMPLE TIME: 1046
LAB NAME:	SAMPLE ID: TT-TP3-M1-20160511

OBSERVATIONS/COMMENTS (NOTE TIMES):

FL = 1.110

LOW-FLOW WATER PURGING & SAMPLING LOG

TETRA TECH

PROJECT NAME: NERT FIELD PERSON:

PROJECT NUMBER: 100-SBO-T35000-2016.M05 PROJECT MANAGER: Mark Feldam

PROJECT LOCATION: Henderson NV DATE: 5-11-16

PUMP / TUBING TYPE: dedicated 1/4" tubing

EQUIPMENT CLEANING METHOD: Micro 90

PURGE WATER DISPOSAL:

WELL NUMBER: TT-TP3-M2

CASING RADIUS: 2" (in.)

TOTAL DEPTH (TD): (ft.)

DEPTH TO WATER (DTW): 23.15 (ft.)

SCREENED INTERVAL: (ft.)

PURGE START TIME: 0953 PUMP SET AT ~30 (ft.)

TIME	PURGE RATE (ml/min)	VOLUME PURGED (ml)	DTW (ft)	TEMP (°C)	pH	COND. (µS/cm)	DO (mg/L)	ORP (mV)	TURB. (NTU)	
0957	220		23.20	21.06	7.86	1.788	0.61	104.7	3.06	
1000	↓		23.20	20.95	7.80	1.737	0.37	104.6	2.96	
1003			23.20	20.98	7.74	1.712	0.29	104.9	2.94	
1006			23.20	20.94	7.73	1.680	0.25	102.1	3.00	
1009			23.20	20.95	7.73	1.679	0.24	100.0	3.21	
1012	↓		23.20	20.95	7.74	1.678	0.23	98.3	2.88	

PURGE STOP TIME: SAMPLE TIME: 1012

LAB NAME: SAMPLE ID: TT-TP3-M2-2016 0511

OBSERVATIONS/COMMENTS (NOTE TIMES):

FL = 0.480

LOW-FLOW WATER PURGING & SAMPLING LOG

TETRA TECH

PROJECT NAME: NERT FIELD PERSON:

PROJECT NUMBER: 100-SBO-T35000-2016.M05 PROJECT MANAGER: Mark Feldam

PROJECT LOCATION: Henderson NV DATE: 5-11-16

PUMP / TUBING TYPE: dedicated 1/4" tubing	WELL NUMBER: TT-TP4-M1
EQUIPMENT CLEANING METHOD: Micro 90	CASING RADIUS: 2" (in.)
PURGE WATER DISPOSAL: /	TOTAL DEPTH (TD): (ft.)
	DEPTH TO WATER (DTW): 23.58 (ft.)
	SCREENED INTERVAL: (ft.)
PURGE START TIME: 1110	PUMP SET AT ~30 (ft.)

TIME	PURGE RATE (ml/min)	VOLUME PURGED (ml)	DTW (ft)	TEMP (°C)	pH	COND. (µS/cm)	DO (mg/L)	ORP (mV)	TURB. (NTU)	
1114	**210**		23.62	**22.26**	**7.46**	**7.075**	**0.47**	**120.2**	3.72	
1117			23.62	22.11	7.44	6.555	030	114.1	3.59	
1120			23.62	22.09	7.43	6.497	0.30	113.3	3.47	
1123			23.62	22.04	7.43	6.025	0.24	106.5	3.52	
1126			23.62	22.00	7.41	5.867	0.23	103.3	3.26	
1129			23.62	21.89	7.39	5.761	0.21	99.0	2.91	
1132			23.62	21.85	7.39	5.702	0.20	97.5	2.66	

PURGE STOP TIME:	SAMPLE TIME: 1132
LAB NAME:	SAMPLE ID: TT-TP4-M1-2016 0511

OBSERVATIONS/COMMENTS (NOTE TIMES):

FL = 0.134

LOW-FLOW WATER PURGING & SAMPLING LOG

TETRA TECH

PROJECT NAME: NERT
FIELD PERSON:
PROJECT NUMBER: 100-SBO-T35000-2016.M05
PROJECT MANAGER: Mark Feldam
PROJECT LOCATION: Henderson NV
DATE: 5-11-16

PUMP / TUBING TYPE: dedicated 1/4" tubing	WELL NUMBER: TT-TP4-M2
EQUIPMENT CLEANING METHOD: Micro 90	CASING RADIUS: 2" (in.)
PURGE WATER DISPOSAL:	TOTAL DEPTH (TD): (ft.)
	DEPTH TO WATER (DTW): 23.61 (ft.)
	SCREENED INTERVAL: (ft.)
PURGE START TIME: 1155	PUMP SET AT ~30 (ft.)

TIME	PURGE RATE (ml/min)	VOLUME PURGED (ml)	DTW (ft)	TEMP (°C)	pH	COND. (µS/cm)	DO (mg/L)	ORP (mV)	TURB. (NTU)	
1159	216		23.71	23.55	7.58	4.041	2.02	93.0	2.56	
1202	↓	23.7~~23.48~~	23.48	7.47	3.948	1.21	91.7	2.61		
1205			23.74	23.45	7.45	3.931	1.16	90.3	2.39	
1208		23.71~~23.[illegible]~~	23.39	7.45	3.916	0.97	86.9	2.15		
1211			23.72	23.40	7.45	3.911	0.89	85.0	2.91	
1214	↓		23.75	23.38	7.45	3.906	0.87	83.2	2.46	

PURGE STOP TIME:
SAMPLE TIME: 1214
LAB NAME:
SAMPLE ID: TT-TP4-M2-20160511

OBSERVATIONS/COMMENTS (NOTE TIMES):

FL= 0.086

PAGE 1 of 1

LOW-FLOW WATER PURGING & SAMPLING LOG

TETRA TECH

PROJECT NAME: NERT
FIELD PERSON:
PROJECT NUMBER: 100-SBO-T35000-2016.M05
PROJECT MANAGER: Mark Feldam
PROJECT LOCATION: Henderson NV
DATE: 5-11-16

PUMP / TUBING TYPE: dedicated 1/4" tubing	WELL NUMBER: TT-TP4-M3
EQUIPMENT CLEANING METHOD: Micro 90	CASING RADIUS: 2" (in.)
PURGE WATER DISPOSAL:	TOTAL DEPTH (TD): (ft.)
	DEPTH TO WATER (DTW): 23.68 (ft.)
	SCREENED INTERVAL: (ft.)
PURGE START TIME: 1236	PUMP SET AT ~30 (ft.)

TIME	PURGE RATE (ml/min)	VOLUME PURGED (ml)	DTW (ft)	TEMP (°C)	pH	COND. (µS/cm)	DO (mg/L)	ORP (mV)	TURB. (NTU)	
1240	210		23.80	25.12	7.36	7.678	0.95	110.1	2.37	
1243			23.81	25.07	7.32	7.561	0.62	107.9	2.55	
1245			23.80	25.00	7.27	7.456	0.38	104.3	2.11	
1248			23.80	24.93	7.27	7.467	0.32	102.4	2.01	
1251			23.81	24.93	7.25	7.494	0.31	100.2	1.90	
1254			23.80	24.90	7.24	7.515	0.28	98.1	2.26	

PURGE STOP TIME:	SAMPLE TIME: 1254
LAB NAME:	SAMPLE ID: TT-TP4-M3-20160511

OBSERVATIONS/COMMENTS (NOTE TIMES):

TT-TP4-M3-20160511-Dup

FL = 0.123

FILE: LOG FORMS\em-Water Purging & Sampling Log-10-20-09.dwg

Tetra Tech Inc.

NERT Soil Flush Pilot Test Area
Lysimeter Sampling Log

Lysimeter sample ID	Sample Time	Fluorescein Reading	Temperature (Celsius)	pH	Conductivity (µS/cm)	D.O. (mg/L)	ORP (mV)	Turbidity (NTU)	Volume Purged (mL)
TT-TP1-L1- 20160519	1310	1.240	27.76	7.24	2.726	3.42	109.3	1.64	250
TT-TP1-L2- 20160519	1305	0.144	29.67	7.49	3.677 ~~+10.~~	4.08	108.7	1.80	300
TT-TP2-L1-20160519	1325	9.981	24.29	7.52	3.207	3.07	102.8	2.06	290
TT-TP2-L2-20160519	1315	0.128	27.31	7.52	4.001	2.88	106.8	1.79	400
TT-TP3-L1-20160519	1345	0.181	26.74	8.19	1.456	4.06	79.0	1.88	150
TT-TP3-L2-20160519	1340	0.381	27.33	8.04	2.381	3.82	85.5	1.53	500
TT-TP4-L1-20160519	1400	55.89	26.97	7.99	1.968	2.73	84.4	1.38	310
TT-TP4-L2-20160519	1350	0.200	27.11	7.74	4.078	4.20	110.4	1.21	350

Date: 5-19-16

Sampled By: Maxx W. Peter J.

LOW-FLOW WATER PURGING & SAMPLING LOG

TETRA TECH

PROJECT NAME: NERT SFPT
FIELD PERSON: Mark L.
PROJECT NUMBER: 100-SBO-T35000-2016-M05
PROJECT MANAGER: Mark Feldman
PROJECT LOCATION: Henderson, NV
DATE: 5/19/2016

PUMP / TUBING TYPE: Dedicated pump / 1/4" tubing
EQUIPMENT CLEANING METHOD: Micro 90
PURGE WATER DISPOSAL:

WELL NUMBER: TT-TP1-M1
CASING RADIUS: 2" (in.)
TOTAL DEPTH (TD): (ft.)
DEPTH TO WATER (DTW): 24.61 (ft.)
SCREENED INTERVAL: (ft.)

PURGE START TIME: 1002
PUMP SET AT ~30 (ft.)

TIME	PURGE RATE (ml/min)	VOLUME PURGED (ml)	DTW (ft)	TEMP (°C)	pH	COND. (µS/cm)	DO (mg/L)	ORP (mV)	TURB. (NTU)
1006	210		25.70	22.96	7.91	3.594	1.16	102.5	2.37
1009	|		25.71	22.68	7.67	3.590	0.81	113.7	2.81
1012	|		25.69	22.86	7.53	3.801	0.68	117.3	2.62
1015	|		25.71	22.96	7.54	3.910	0.60	113.0	2.53
1018	|		25.70	23.00	7.57	3.992	0.56	108.2	2.59
1021	|		25.71	22.97	7.59	4.023	0.54	109.6	2.18
1024	|		25.70	22.99	7.60	4.052	0.50	102.1	2.38

PURGE STOP TIME:
SAMPLE TIME: 1024
LAB NAME: Test America
SAMPLE ID: TT-TP1-M1-20160519

OBSERVATIONS/COMMENTS (NOTE TIMES):

FI = 2.473

LOW-FLOW WATER PURGING & SAMPLING LOG

TETRA TECH

PROJECT NAME: NERT SFPT
FIELD PERSON: Maxx W.
PROJECT NUMBER: 100-SBO-T35000-2016-M05
PROJECT MANAGER: Mark Feldman
PROJECT LOCATION: Henderson, NV
DATE: 5/19/2016

PUMP / TUBING TYPE: Dedicated pump / 1/4" tubing
EQUIPMENT CLEANING METHOD: Micro 90
PURGE WATER DISPOSAL:

WELL NUMBER: TT-TP1-M2
CASING RADIUS: 2" (in.)
TOTAL DEPTH (TD): (ft.)
DEPTH TO WATER (DTW): 25.55 (ft.)
SCREENED INTERVAL: (ft.)

PURGE START TIME: 0924
PUMP SET AT ~30 (ft.)

TIME	PURGE RATE (ml/min)	VOLUME PURGED (ml)	DTW (ft)	TEMP (°C)	pH	COND. (µS/cm)	DO (mg/L)	ORP (mV)	TURB. (NTU)	
0928	195		25.95	25.32	6.78	7.418	1.70	154.7	2.64	
0931			25.99	25.38	6.79	7.852	1.62	153.7	2.46	
0934			26.00	25.40	6.77	8.787	1.49	154.9	2.50	
0937			26.00	25.51	6.75	10.21	1.22	153.4	2.21	
0940			26.00	25.60	6.78	10.71	0.95	146.3	2.32	
0943			26.05	25.59	6.78	10.82	0.90	144.2	2.26	
0946			26.06	25.61	6.79	10.93	0.83	141.6	2.11	

PURGE STOP TIME:
SAMPLE TIME: 0946
LAB NAME: Test America
SAMPLE ID: TT-TP1-M2-20160519

OBSERVATIONS/COMMENTS (NOTE TIMES):
FI = 0.048

LOW-FLOW WATER PURGING & SAMPLING LOG

TETRA TECH

PROJECT NAME: NERT SFPT
FIELD PERSON: Maxx w.
PROJECT NUMBER: 100-SBO-T35000-2016-M05
PROJECT MANAGER: Mark Feldman
PROJECT LOCATION: Henderson, NV
DATE: 5/19/2016

PUMP / TUBING TYPE: Dedicated pump / 1/4" tubing
EQUIPMENT CLEANING METHOD: Micro 90
PURGE WATER DISPOSAL:

WELL NUMBER: TT-TP1-M3
CASING RADIUS: 2" (in.)
TOTAL DEPTH (TD): (ft.)
DEPTH TO WATER (DTW): 25.67 (ft.)
SCREENED INTERVAL: (ft.)

PURGE START TIME: 1025
PUMP SET AT ~30 (ft.)

TIME	PURGE RATE (ml/min)	VOLUME PURGED (ml)	DTW (ft)	TEMP (°C)	pH	COND. (µS/cm)	DO (mg/L)	ORP (mV)	TURB. (NTU)	
1029	180		25.95	25.90	6.92	10.09	1.01	105.3	2.03	
1032			25.94	25.88	6.91	9.912	0.51	100.6	1.81	
1035			25.05	25.98	6.92	9.876	0.50	98.9	1.72	
1038			26.06	25.97	6.92	9.862	0.46	96.5	1.75	
1041			26.02	25.95	6.92	9.851	0.44	95.1	1.78	
1044			26.12	25.93	6.92	9.831	0.39	94.2	1.66	

PURGE STOP TIME:
SAMPLE TIME: 1044
LAB NAME: Test America
SAMPLE ID: TT-TP1-M3-20160519

OBSERVATIONS/COMMENTS (NOTE TIMES):

FI = 0.103

LOW-FLOW WATER PURGING & SAMPLING LOG

TETRA TECH

PROJECT NAME: NERT SFPT
FIELD PERSON: Mark W.
PROJECT NUMBER: 100-SBO-T35000-2016-M05
PROJECT MANAGER: Mark Feldman
PROJECT LOCATION: Henderson, NV
DATE: 5/19/2016

PUMP / TUBING TYPE: Dedicated pump / 1/4" tubing
EQUIPMENT CLEANING METHOD: Micro 90
PURGE WATER DISPOSAL:

WELL NUMBER: TT-TP2-M1
CASING RADIUS: 2" (in.)
TOTAL DEPTH (TD): (ft.)
DEPTH TO WATER (DTW): 23.24 (ft.)
SCREENED INTERVAL: (ft.)

PURGE START TIME: 1047
PUMP SET AT ~30 (ft.)

TIME	PURGE RATE (ml/min)	VOLUME PURGED (ml)	DTW (ft)	TEMP (°C)	pH	COND. (µS/cm)	DO (mg/L)	ORP (mV)	TURB. (NTU)
1051	240		23.79	22.13	7.28	9.698	0.69	81.7	1.71
1054			23.79	22.14	7.17	9.833	0.62	82.9	2.30
1057			23.78	22.18	7.10	9.886	0.55	84.3	2.25
1100			23.78	22.23	7.07	9.885	0.52	82.4	2.61
1103			23.78	22.22	7.07	9.907	0.51	81.3	2.55
1106			23.78	22.25	7.06	9.931	0.50	80.8	2.53

PURGE STOP TIME:
SAMPLE TIME: 1106
LAB NAME: Test America
SAMPLE ID: TT-TP2-M1-20160519

OBSERVATIONS/COMMENTS (NOTE TIMES):
FI = 0.338

LOW-FLOW WATER PURGING & SAMPLING LOG

TETRA TECH

PROJECT NAME: NERT SFPT
FIELD PERSON: Maxx V.
PROJECT NUMBER: 100-SBO-T35000-2016-M05
PROJECT MANAGER: Mark Feldman
PROJECT LOCATION: Henderson, NV
DATE: 5 / 19 / 2016

PUMP / TUBING TYPE: Dedicated pump / 1/4" tubing
EQUIPMENT CLEANING METHOD: Micro 90
PURGE WATER DISPOSAL:

WELL NUMBER: TT-TP2-M2
CASING RADIUS: 2" (in.)
TOTAL DEPTH (TD): (ft.)
DEPTH TO WATER (DTW): 24.28 (ft.)
SCREENED INTERVAL: (ft.)

PURGE START TIME: 1105
PUMP SET AT ~30 (ft.)

TIME	PURGE RATE (ml/min)	VOLUME PURGED (ml)	DTW (ft)	TEMP (°C)	pH	COND. (µS/cm)	DO (mg/L)	ORP (mV)	TURB. (NTU)	
1109	200		24.28	22.74	7.18	8.712	0.50	79.6	1.99	
1112	↓		24.28	22.83	7.18	8.737	0.44	77.6	1.57	
1115			24.28	22.91	7.18	8.796	0.41	76.0	1.44	
1118			24.28	22.91	7.17	8.755	0.37	69.4	1.39	
1121			24.28	22.90	7.17	8.749	0.35	69.1	1.21	
1124	↓		24.28	22.92	7.17	8.743	0.36	68.2	1.17	

PURGE STOP TIME:
SAMPLE TIME: 1124
LAB NAME: Test America
SAMPLE ID: TT-TP2-M2-20160519

OBSERVATIONS/COMMENTS (NOTE TIMES):
FI = 0.040

LOW-FLOW WATER PURGING & SAMPLING LOG

TETRA TECH

PROJECT NAME: NERT SFPT
FIELD PERSON: Maxp w.
PROJECT NUMBER: 100-SBO-T35000-2016-M05
PROJECT MANAGER: Mark Feldman
PROJECT LOCATION: Henderson, NV
DATE: 5 / 19 / 2016

PUMP / TUBING TYPE: Dedicated pump / 1/4" tubing
EQUIPMENT CLEANING METHOD: Micro 90
PURGE WATER DISPOSAL:

WELL NUMBER: TT-TP3-M1
CASING RADIUS: 2" (in.)
TOTAL DEPTH (TD): (ft.)
DEPTH TO WATER (DTW): 23.17 (ft.)
SCREENED INTERVAL: (ft.)

PURGE START TIME: 1120
PUMP SET AT ~30 (ft.)

TIME	PURGE RATE (ml/min)	VOLUME PURGED (ml)	DTW (ft)	TEMP (°C)	pH	COND. (µS/cm)	DO (mg/L)	ORP (mV)	TURB. (NTU)	
1124	225		23.18	22.11	7.77	1.549	0.92	27.3	1.62	
1127			23.19	22.40	7.72	1.332	0.57	28.8	2.04	
1130			23.20	22.62	7.66	1.281	0.48	28.8	1.83	
1133			23.21	22.64	7.61	1.289	0.42	26.0	1.58	
1136			23.21	22.61	7.60	1.292	0.40	22.2	1.74	
1139			23.22	22.63	7.59	1.309	0.39	20.3	1.76	

PURGE STOP TIME:
SAMPLE TIME: 1139
LAB NAME: Test America
SAMPLE ID: TT-TP3-M1-20160519

OBSERVATIONS/COMMENTS (NOTE TIMES):
FI = 0.615

LOW-FLOW WATER PURGING & SAMPLING LOG

TETRA TECH

PROJECT NAME: NERT SFPT
FIELD PERSON:
PROJECT NUMBER: 100-SBO-T35000-2016-M05
PROJECT MANAGER: Mark Feldman
PROJECT LOCATION: Henderson, NV
DATE: 5/19/2016

PUMP / TUBING TYPE: Dedicated pump / 1/4" tubing
EQUIPMENT CLEANING METHOD: Micro 90
PURGE WATER DISPOSAL:

WELL NUMBER: TT-TP3-M2
CASING RADIUS: 2" (in.)
TOTAL DEPTH (TD): (ft.)
DEPTH TO WATER (DTW): 23.94 (ft.)
SCREENED INTERVAL: (ft.)

PURGE START TIME: 1140
PUMP SET AT ~30 (ft.)

TIME	PURGE RATE (ml/min)	VOLUME PURGED (ml)	DTW (ft)	TEMP (°C)	pH	COND. (µS/cm)	DO (mg/L)	ORP (mV)	TURB. (NTU)	
1144	200		23.98	21.53	7.72	1.777	0.58	36.5	0.98	
1147			23.98	21.51	7.67	1.725	0.52	37.3	1.01	
1150			23.98	21.46	7.62	1.774	0.51	38.7	0.94	
1153			23.98	21.45	7.59	1.773	0.48	39.8	0.88	
1156			23.98	21.44	7.55	1.771	0.45	40.1	0.82	
1159			23.98	21.45	7.50	1.770	0.47	42.7	0.67	

PURGE STOP TIME:
SAMPLE TIME: 1159
LAB NAME: Test America
SAMPLE ID: TT-TP3-M2-20160519

OBSERVATIONS/COMMENTS (NOTE TIMES):
FI=0.204

LOW-FLOW WATER PURGING & SAMPLING LOG

TETRA TECH

PROJECT NAME: NERT SFPT
FIELD PERSON: Mark W.
PROJECT NUMBER: 100-SBO-T35000-2016-M05
PROJECT MANAGER: Mark Feldman
PROJECT LOCATION: Henderson, NV
DATE: 5 / 19 / 2016

PUMP / TUBING TYPE: Dedicated pump / 1/4" tubing
EQUIPMENT CLEANING METHOD: Micro 90
PURGE WATER DISPOSAL:

WELL NUMBER: TT-TP4-M1
CASING RADIUS: 2" (in.)
TOTAL DEPTH (TD): (ft.)
DEPTH TO WATER (DTW): 24.00 (ft.)
SCREENED INTERVAL: (ft.)

PURGE START TIME: 1154
PUMP SET AT ~30 (ft.)

TIME	PURGE RATE (ml/min)	VOLUME PURGED (ml)	DTW (ft)	TEMP (°C)	pH	COND. (µS/cm)	DO (mg/L)	ORP (mV)	TURB. (NTU)	
1158	240		24.06	22.10	7.44	5.043	0.55	41.3	1.66	
1201	|		24.07	22.07	7.44	4.132	0.41	34.5	1.71	
1204	|		24.06	21.94	7.43	3.900	0.38	30.9	1.87	
1207	|		24.07	21.93	7.42	3.832	0.36	29.6	2.02	
1210	|		24.07	21.87	7.42	3.829	0.31	27.6	1.51	
1213			24.08	21.85	7.42	3.820	0.30	25.2	1.44	

PURGE STOP TIME:
SAMPLE TIME: 1213
LAB NAME: Test America
SAMPLE ID: TT-TP4-M1-20160519

OBSERVATIONS/COMMENTS (NOTE TIMES):
FI= 0.082

LOW-FLOW WATER PURGING & SAMPLING LOG

TETRA TECH

PROJECT NAME: NERT SFPT
FIELD PERSON: [illegible]
PROJECT NUMBER: 100-SBO-T35000-2016-M05
PROJECT MANAGER: Mark Feldman
PROJECT LOCATION: Henderson, NV
DATE: 5 / 19 / 2016

PUMP / TUBING TYPE: Dedicated pump / 1/4" tubing
EQUIPMENT CLEANING METHOD: Micro 90
PURGE WATER DISPOSAL:

WELL NUMBER: TT-TP4-M2
CASING RADIUS: 2" (in.)
TOTAL DEPTH (TD): (ft.)
DEPTH TO WATER (DTW): 24.12 (ft.)
SCREENED INTERVAL: (ft.)

PURGE START TIME: 1216
PUMP SET AT ~30 (ft.)

TIME	PURGE RATE (ml/min)	VOLUME PURGED (ml)	DTW (ft)	TEMP (°C)	pH	COND. (µS/cm)	DO (mg/L)	ORP (mV)	TURB. (NTU)	
1220	200		24.18	23.69	7.50	4.051	0.96	37.6	0.89	
1223			24.18	23.72	7.47	4.060	0.61	34.9	0.72	
1226			24.18	23.60	7.47	4.064	0.54	31.0	0.76	
1229			24.18	23.55	7.46	4.062	0.49	30.2	0.59	
1232			24.18	23.57	7.47	4.059	0.45	29.3	0.55	
1235			24.18	23.55	7.47	4.057	0.41	27.8	0.36	

PURGE STOP TIME:
SAMPLE TIME: 1235
LAB NAME: Test America
SAMPLE ID: TT-TP4-M2-20160519

OBSERVATIONS/COMMENTS (NOTE TIMES):

FI = 0.055

LOW-FLOW WATER PURGING & SAMPLING LOG

TETRA TECH

PROJECT NAME: NERT SFPT
FIELD PERSON: Maxx W.
PROJECT NUMBER: 100-SBO-T35000-2016-M05
PROJECT MANAGER: Mark Feldman
PROJECT LOCATION: Henderson, NV
DATE: 5/11/2016

PUMP / TUBING TYPE: Dedicated pump / 1/4" tubing
EQUIPMENT CLEANING METHOD: Micro 90
PURGE WATER DISPOSAL:

WELL NUMBER: TT-TP4-M3
CASING RADIUS: 2" (in.)
TOTAL DEPTH (TD): (ft.)
DEPTH TO WATER (DTW): 23.84 (ft.)
SCREENED INTERVAL: (ft.)

PURGE START TIME: 1233
PUMP SET AT ~30 (ft.)

TIME	PURGE RATE (ml/min)	VOLUME PURGED (ml)	DTW (ft)	TEMP (°C)	pH	COND. (µS/cm)	DO (mg/L)	ORP (mV)	TURB. (NTU)	
1237	195		23.94	24.51	7.26	6.984	0.80	34.2	1.80	
1240			23.95	24.85	7.26	7.019	0.38	32.0	1.33	
1243			23.96	24.83	7.27	7.112	0.32	30.2	1.79	
1246			23.96	25.06	7.27	7.165	0.34	27.3	2.07	
1249			23.96	24.91	7.27	7.193	0.31	26.8	1.89	
1252		(MV) 23.96	23.90	24.80	7.27	7.241	0.29	24.0	1.71	

PURGE STOP TIME:
SAMPLE TIME: 1252
LAB NAME: Test America
SAMPLE ID: TT-TP4-M3-20160519

OBSERVATIONS/COMMENTS (NOTE TIMES):
FF = 0.037

FILE: LOG FORMS\em-Water Purging & Sampling Log-10-20-09.dwg

LOW-FLOW WATER PURGING & SAMPLING LOG

TETRA TECH

PROJECT NAME: NERT Soil flush
FIELD PERSON: M. WILSON / V. CARDER
PROJECT NUMBER: 35000-2016-MOS-MOS.01
PROJECT MANAGER: MARK FELDMAN
PROJECT LOCATION: NERT Site / Henderson, NV
DATE: 6.1.16

PUMP / TUBING TYPE: DEDICATED	WELL NUMBER: Tt-TP1-M1
EQUIPMENT CLEANING METHOD: MICRO 90 / DEION BUCKETS	CASING RADIUS: 2 (in.)
PURGE WATER DISPOSAL:	TOTAL DEPTH (TD): 225 (ft.)
	DEPTH TO WATER (DTW): 24.38 (ft.)
	SCREENED INTERVAL: (ft.)
PURGE START TIME: 1029	PUMP SET AT (ft.)

TIME	PURGE RATE (ml/min)	VOLUME PURGED (ml)	DTW (ft)	TEMP (°C)	pH	COND. (µS/cm)	DO (mg/L)	ORP (mV)	TURB. (NTU)	
1029	240	—	24.38	—	—	—	—	—	—	
1032	↓	720	24.47	23.61	7.461	5.726	1.26	168.8	1.30	
1035		1440	24.48	23.23	7.34	5.849	0.66	173.7	0.48	
1038		2160	24.49	23.28	7.31	5.855	0.37	177.9	0.37	
1041		2880	24.50	23.27	7.29	5.796	0.29	184.2	0.57	
1044		3600	24.49	23.27	7.24	5.747	0.27	187.3	0.45	
1047	↓	4320	24.50	23.16	7.19	5.715	0.27	191.1	0.26	

PURGE STOP TIME: 1047	SAMPLE TIME: 1047
LAB NAME: TEST AMERICA	SAMPLE ID: Tt-TP1-M1-20160601

OBSERVATIONS/COMMENTS (NOTE TIMES):

FL = 1.221

LOW-FLOW WATER PURGING & SAMPLING LOG

TETRA TECH

PROJECT NAME: NERT SOIL FLUSH
FIELD PERSON: M. WILSON / V. CALDER
PROJECT NUMBER: 35000-2016-MOS-MOS.01
PROJECT MANAGER: MARK FELDMAN
PROJECT LOCATION: NERT site, Henderson NV
DATE: 6/1/16

PUMP / TUBING TYPE: DEDICATED
EQUIPMENT CLEANING METHOD: micro 90 / DECON BUCKETS
PURGE WATER DISPOSAL:

WELL NUMBER: TT-TP1-MW2
CASING RADIUS: 2 (In.)
TOTAL DEPTH (TD): (ft.)
DEPTH TO WATER (DTW): 25.38 (ft.)
SCREENED INTERVAL: (ft.)

PURGE START TIME: 1115
PUMP SET AT (ft.)

TIME	PURGE RATE (ml/min)	VOLUME PURGED (ml)	DTW (ft)	TEMP (°C)	pH	COND. (µS/cm)	DO (mg/L)	ORP (mV)	TURB. (NTU)	
1115	195	—	25.38	—	—	—	—	—	—	
1119	165	780	25.58	27.12	6.98	9.647	2.11	181.8	1.08	
1122	↓	1275	25.65	26.56	6.97	8.782	0.91	184.2	0.52	
1125		1770	25.90	26.26	6.98	9.180	0.69	186.4	1.65	
1128		2265	25.71	26.28	6.98	9.861	0.53	185.4	1.05	
1131		2760	25.72	26.27	6.99	10.29	0.45	186.9	0.60	
1134		3255	25.74	26.22	6.99	10.78	0.38	186.9	0.50	
1137		3750	25.77	26.14	7.00	10.90	0.36	185.7	0.52	
1140	↓	4245	25.78	26.17	7.00	11.09	0.34	184.3	0.54	

PURGE STOP TIME: 1140
SAMPLE TIME: 1140
LAB NAME: TEST AMERICA
SAMPLE ID: TT-TP1-MW2-20160601

OBSERVATIONS/COMMENTS (NOTE TIMES):

FL= 0.041

LOW-FLOW WATER PURGING & SAMPLING LOG

TETRA TECH

PROJECT NAME: NERT Soil flush
FIELD PERSON: M. WILSON / V. CALDER
PROJECT NUMBER: 35000-2016-MOS/MOS.01
PROJECT MANAGER: MARC FELDMAN
PROJECT LOCATION: NERT, Henderson, NV
DATE: 6/1/16

PUMP / TUBING TYPE: DEDICATED	WELL NUMBER: Tt-TP1-M3
EQUIPMENT CLEANING METHOD: MICRO 90 / DECON BUCKETS	CASING RADIUS: 2 (In.)
PURGE WATER DISPOSAL:	TOTAL DEPTH (TD): (ft.)
	DEPTH TO WATER (DTW): 25.65 (ft.)
	SCREENED INTERVAL: (ft.)
PURGE START TIME: 0946	PUMP SET AT (ft.)

TIME	PURGE RATE (ml/min)	VOLUME PURGED (ml)	DTW (ft)	TEMP (°C)	pH	COND. (µS/cm)	DO (mg/L)	ORP (mV)	TURB. (NTU)	
0946	240	—	25.65	—	—	—	—	—	—	
0949	↓	720	25.90	26.59	6.98	9.584	1.16	196.7	0.20	
0952	210	1440	25.98	26.45	6.97	9.517	0.67	195.1	0.13	
0955		2070	26.03	26.62	6.97	9.424	0.52	195.1	0.03	
0958		2700	26.05	26.56	6.97	9.409	0.55	195.6	0.15	
1001		3330	26.06	26.48	6.97	9.396	0.58	197.2	0.02	
1004	↓	3960	26.07	26.48	6.97	9.365	0.57	195.5	0.69	

PURGE STOP TIME: 1004	SAMPLE TIME: 1004
LAB NAME: TEST AMERICA	SAMPLE ID: Tt-TP1-M3-20160601

OBSERVATIONS/COMMENTS (NOTE TIMES):

FL= 0.080

LOW-FLOW WATER PURGING & SAMPLING LOG

TETRA TECH

PROJECT NAME: NERT Soil Flush
FIELD PERSON: M. Wilson / V. Calder
PROJECT NUMBER: 35000-2016-mos-mos.01
PROJECT MANAGER: Mark Feldman
PROJECT LOCATION: NERT Site, Henderson NV
DATE: 6/1/16

PUMP / TUBING TYPE: DEDICATED
EQUIPMENT CLEANING METHOD: micro 90 / Decon Buckets
PURGE WATER DISPOSAL:

WELL NUMBER: Tt-TP2-M1
CASING RADIUS: 2 (in.)
TOTAL DEPTH (TD): (ft.)
DEPTH TO WATER (DTW): 23.22 (ft.)
SCREENED INTERVAL: (ft.)

PURGE START TIME: 1252
PUMP SET AT (ft.)

TIME	PURGE RATE (ml/min)	VOLUME PURGED (ml)	DTW (ft)	TEMP (°C)	pH	COND. (µS/cm)	DO (mg/L)	ORP (mV)	TURB. (NTU)	
1252	180	~~23.22~~	23.22	—	—	—	—	—	—	
1256	↓	720	23.23	23.87	7.48	9.520	1.92	178.6	10.98	
1259		1260	23.23	23.14	7.37	9.544	0.79	179.4	7.64	
1302		1800	23.23	22.87	7.32	9.552	0.53	180.1	4.78	
1305		2340	23.23	22.74	7.28	9.562	0.49	181.1	3.18	
1308		2880	23.23	22.74	7.25	9.577	0.42	181.7	2.71	
1311	↓	3420	23.23	22.75	7.19	9.600	0.89	184.7	1.93	

PURGE STOP TIME: 1311
SAMPLE TIME: 1311
LAB NAME: TEST AMERICA
SAMPLE ID: Tt-TP2-M1-20160601

OBSERVATIONS/COMMENTS (NOTE TIMES):

FL = 2.343

TETRA TECH

LOW-FLOW WATER PURGING & SAMPLING LOG

PROJECT NAME: NERT SOIL FLUSH

FIELD PERSON: M. WILSON / V. ZALDER

PROJECT NUMBER: 35000-2016-M05-M05.01

PROJECT MANAGER: MARK FEUMAN

PROJECT LOCATION: NERT SITE HENDERSON NV

DATE: 6/1/16

PUMP / TUBING TYPE: DEDICATED

EQUIPMENT CLEANING METHOD: MICRO 90 / DECON BUCKETS

PURGE WATER DISPOSAL:

WELL NUMBER: TZ-TP2-M2

CASING RADIUS: 2 (in.)

TOTAL DEPTH (TD): (ft.)

DEPTH TO WATER (DTW): 23.88 (ft.)

SCREENED INTERVAL: (ft.)

PURGE START TIME: 1208

PUMP SET AT (ft.)

TIME	PURGE RATE (ml/min)	VOLUME PURGED (ml)	DTW (ft)	TEMP (°C)	pH	COND. (µS/cm)	DO (mg/L)	ORP (mV)	TURB. (NTU)	
1208	195	—	23.88	—	—	—	—	—	—	
1212	↓	780	23.88	24.49	7.57	9.245	2.44	160.3	0.66	
1215		1365	23.90	23.42	7.38	9.309	0.63	162.7	0.63	
1218		1950	23.89	23.44	7.33	9.301	0.45	161.9	0.86	
1221		2535	23.89	23.46	7.30	9.301	0.41	160.7	0.59	
1224		3120	23.90	23.55	7.28	9.288	0.37	159.3	0.49	
1227		3705	23.89	23.66	7.26	9.279	0.34	158.1	0.54	

PURGE STOP TIME: 1227

SAMPLE TIME: 1227

LAB NAME: TEST AMERICA

SAMPLE ID: TZ-TP2-M2-20160601

OBSERVATIONS/COMMENTS (NOTE TIMES):

FL= 0.108

LOW-FLOW WATER PURGING & SAMPLING LOG

TETRA TECH

PROJECT NAME: NERT SOIL PILOT FIELD PERSON: M. WILSON / V. CALDER

PROJECT NUMBER: 35000-2016-M05-M05.01 PROJECT MANAGER: MARK FRIEDMAN

PROJECT LOCATION: NERT Site Henderson, NV DATE: 6/1/16

PUMP / TUBING TYPE: DEDICATED	WELL NUMBER: TT-TP3-M1
EQUIPMENT CLEANING METHOD: MICRO 90 / DECON BUCKETS	CASING RADIUS: 2 (In.)
PURGE WATER DISPOSAL:	TOTAL DEPTH (TD): (ft.)
	DEPTH TO WATER (DTW): 22.10 (ft.)
	SCREENED INTERVAL: (ft.)
PURGE START TIME: 1335	PUMP SET AT (ft.)

TIME	PURGE RATE (ml/min)	VOLUME PURGED (ml)	DTW (ft)	TEMP (°C)	pH	COND. (µS/cm)	DO (mg/L)	ORP (mV)	TURB. (NTU)	
1335	225	—	22.10	—	—	—	—	—	—	
1339	↓	900	22.13	24.74	7.87	1.341	1.15	135.7	1.46	
1342		1575	22.13	24.32	7.79	1.259	0.41	137.8	0.63	
1345		2250	22.13	24.19	7.74	1.200	0.28	138.0	0.50	
1348		2925	22.13	24.17	7.73	1.185	0.24	136.6	0.53	
1351		3600	22.13	24.23	7.73	1.178	0.23	133.0	0.61	
1354	↓	4275	22.13	24.20	7.71	1.177	0.22	130.9	0.66	

PURGE STOP TIME: 1354	SAMPLE TIME: 1354
LAB NAME: TEST AMERICA	SAMPLE ID: TT-TP3-M1-20160601

OBSERVATIONS/COMMENTS (NOTE TIMES):

FL: 1.077

LOW-FLOW WATER PURGING & SAMPLING LOG

TETRA TECH

PROJECT NAME: NERT SOILFLUSH
FIELD PERSON: M. WILSON / V. CALDER
PROJECT NUMBER: 35000-2016-MOS-MOS.01
PROJECT MANAGER: MARK FELDMAN
PROJECT LOCATION: NERT Site, Henderson NV
DATE: 6/2/16

PUMP / TUBING TYPE: DEDICATED
EQUIPMENT CLEANING METHOD: MICRO 90 / DECON BUCKETS
PURGE WATER DISPOSAL:

WELL NUMBER: Tt-TP3-M2
CASING RADIUS: 2 (In.)
TOTAL DEPTH (TD): (ft.)
DEPTH TO WATER (DTW): 23.18 (ft.)
SCREENED INTERVAL: (ft.)

PURGE START TIME: 1031
PUMP SET AT (ft.)

TIME	PURGE RATE (ml/min)	VOLUME PURGED (ml)	DTW (ft)	TEMP (°C)	pH	COND. (µS/cm)	DO (mg/L)	ORP (mV)	TURB. (NTU)	
1031	165	—	23.18	—	—	—	—	—	—	
1036		825	23.21	23.65	7.69	1.684	1.37	134.1	1.44	
1039		1320	23.22	23.14	7.62	1.642	0.60	127.7	0.94	
1042		1815	23.22	22.90	7.21	1.637	0.45	142.8	1.02	
1045		2310	23.22	22.81	7.24	1.633	0.40	131.9	1.18	
1048		2805	23.22	22.74	7.32	1.629	0.37	118.9	0.76	
1051		3300	23.22	22.75	7.37	1.627	0.34	109.2	0.49	
1054		3795	23.22	22.71	7.40	1.627	0.32	102.8	0.58	
1057		4290	23.22	22.65	7.42	1.627	0.33	96.1	0.24	
1100		4785	23.22	22.70	7.46	1.623	0.32	88.8	0.31	
1103		5280	23.22	22.86	7.50	1.621	0.29	81.6	0.38	
1106		5775	23.22	22.83	7.54	1.623	0.30	74.5	0.47	
1109		6270	23.22	22.78	7.60	1.623	0.26	67.6	0.54	
1112		6765	23.22	22.89	7.62	1.623	0.26	61.6	0.35	
1115	↓	7260	23.22	22.95	7.64	1.623	0.26	57.6	0.60	

PURGE STOP TIME: 1115
SAMPLE TIME: 1115
LAB NAME: TEST AMERICA
SAMPLE ID: Tt-TP3-M2-20160602

OBSERVATIONS/COMMENTS (NOTE TIMES):

FL = 1059

LOW-FLOW WATER PURGING & SAMPLING LOG

TETRA TECH

PROJECT NAME: NERT SOIL FLUSH FIELD PERSON: M. WILSON | V. CALDER

PROJECT NUMBER: 35000-2016-M05-M05.01 PROJECT MANAGER: DEREK FELDMAN

PROJECT LOCATION: NERT Site Henderson, NV DATE: 6/2/16

PUMP / TUBING TYPE: DEDICATED	WELL NUMBER: Tt-TP4-M1
EQUIPMENT CLEANING METHOD: Micro 90 / DECON BUCKETS	CASING RADIUS: 2 (In.)
PURGE WATER DISPOSAL:	TOTAL DEPTH (TD): (ft.)
	DEPTH TO WATER (DTW): 23.63 (ft.)
	SCREENED INTERVAL: (ft.)
PURGE START TIME: 1235	PUMP SET AT (ft.)

TIME	PURGE RATE (ml/min)	VOLUME PURGED (ml)	DTW (ft)	TEMP (°C)	pH	COND. (µS/cm)	DO (mg/L)	ORP (mV)	TURB. (NTU)	
1235	225	—	23.63	—	—	—	—	—	—	
1238		675	23.66	23.30	7.59	6.079	1.12	97.3	1.61	
1241		1350	23.67	22.89	7.58	6.012	0.38	93.1	1.13	
1244		2025	23.67	22.72	7.58	5.812	0.29	88.9	0.43	
1247		2700	23.67	22.66	7.52	5.361	0.25	85.4	0.49	
1250		3375	23.67	22.53	7.44	5.153	0.23	83.9	0.35	
1253		4050	23.67	22.47	7.43	5.071	0.22	81.0	0.34	
1256	✓	4725	23.67	22.33	7.43	5.019	0.20	77.0	0.33	

PURGE STOP TIME: 1256	SAMPLE TIME: 1256
LAB NAME: TEST AMERICA	SAMPLE ID: Tt-TP4-M1-20160602

OBSERVATIONS/COMMENTS (NOTE TIMES):

FL= 0.091

LOW-FLOW WATER PURGING & SAMPLING LOG

TETRA TECH

PROJECT NAME: NERT Soil Flush
FIELD PERSON: M. Wilson / V. Gruber
PROJECT NUMBER: 35000-2016-MS-MS.01
PROJECT MANAGER: Marc Feldman
PROJECT LOCATION: NERT Site Henderson, NV
DATE: 6/2/16

PUMP / TUBING TYPE: DEDICATED
EQUIPMENT CLEANING METHOD: micro 90 / DECON BUCKETS
PURGE WATER DISPOSAL:

WELL NUMBER: Tt-TP4-ML2
CASING RADIUS: 2 (In.)
TOTAL DEPTH (TD): (ft.)
DEPTH TO WATER (DTW): 23.65 (ft.)
SCREENED INTERVAL: (ft.)

PURGE START TIME: 1148
PUMP SET AT (ft.)

TIME	PURGE RATE (ml/min)	VOLUME PURGED (ml)	DTW (ft)	TEMP (°C)	pH	COND. (µS/cm)	DO (mg/L)	ORP (mV)	TURB. (NTU)	
1148	225	—	23.65	—	—	—	—	—	—	
1151	↓	675	23.72	23.96	7.72	3.403	1.93	116.1	1.15	
1154		1350	23.73	23.59	7.67	3.377	0.96	110.2	0.86	
1157		2025	23.73	23.38	7.64	3.342	0.67	104.4	0.70	
1200		2700	23.73	23.44	7.63	3.319	0.56	99.3	0.47	
1203		3375	23.73	23.54	7.62	3.313	0.51	94.1	0.43	
1206	↓	4050	23.73	23.53	7.62	3.318	0.49	89.8	0.40	

PURGE STOP TIME: 1206
SAMPLE TIME: 1206
LAB NAME: TEST AMERICA
SAMPLE ID: Tt-TP4-ML-20160602

OBSERVATIONS/COMMENTS (NOTE TIMES):

Tt-TP4-ML-20160602-DUP

FL = 0.168

LOW-FLOW WATER PURGING & SAMPLING LOG

TETRA TECH

PROJECT NAME: NERT SOIL FLUSH GW
FIELD PERSON: M. WILSON | VICALDER
PROJECT NUMBER: 35[illegible]-2016-m05-m5.01
PROJECT MANAGER: MARK FELDMAN
PROJECT LOCATION: NERT site, Henderson, NV
DATE: 6/2/16

PUMP / TUBING TYPE: DEDICATED
EQUIPMENT CLEANING METHOD: MICRO 90 | DECON BUCKETS
PURGE WATER DISPOSAL:

WELL NUMBER: TT-TP4-M3
CASING RADIUS: 2 (In.)
TOTAL DEPTH (TD): (ft.)
DEPTH TO WATER (DTW): 23.84 (ft.)
SCREENED INTERVAL: (ft.)

PURGE START TIME: 1329
PUMP SET AT (ft.)

TIME	PURGE RATE (ml/min)	VOLUME PURGED (ml)	DTW (ft)	TEMP (°C)	pH	COND. (µS/cm)	DO (mg/L)	ORP (mV)	TURB. (NTU)	
1329	225	—	23.84	—	—	—	—	—	—	
1332	↓	675	23.72	26.07	7.65	6.678	1.70	73.6	1.46	
1335		1350	23.73	25.60	7.48	6.420	0.45	71.4	1.25	
1338		2025	23.74	25.33	7.43	6.353	0.30	68.0	1.00	
1341		2700	23.74	25.30	7.41	6.371	0.25	64.6	0.90	
1344		3375	23.74	25.21	7.40	6.424	0.23	61.5	0.76	
1347	↓	4050	23.74	25.20	7.39	6.485	0.21	59.2	0.44	

PURGE STOP TIME: 1347
SAMPLE TIME: 1347
LAB NAME: TEST AMERICA
SAMPLE ID: TT-TP4-M3-20160602

OBSERVATIONS/COMMENTS (NOTE TIMES):

FL: 0.036

Tetra Tech Inc.

NERT Soil Flush Pilot Test Area
Lysimeter Sampling Log

Lysimeter sample ID	Sample Time	Fluorescein Reading	Temperature (Celsius)	pH	Conductivity (mS/cm)	D.O. (mg/L)	ORP (mV)	Turbidity (NTU)	Volume Purged (mL)
TT-TP1-L1-20160602	1332	2.029	28.86	7.58	2.713	2.76	143.8	0.58	155
TT-TP1-L2-20160602	1325	0.258	29.05	7.80	3.462	3.33	153.6	0.40	260
TT-TP2-L1-20160602	1340	~~0.258~~ 52.33	25.33 ~~29.05~~	7.97 ~~7.80~~	3.164 ~~3.462~~	2.49 ~~3.33~~	138.4 ~~153.6~~	5.20 ~~0.40~~	230
TT-TP2-L2-20160602	1336	0.161	26.00	7.82	3.664	2.40	145.1	0.43	260
TT-TP3-L1-20160602	1347	0.181	28.78	8.30	1.373	3.65	97.6	0.54	200
TT-TP3-L2-20160602	1343	1.957	29.05	7.93	2.114	3.70	110.4	0.52	260
TT-TP4-L1-20160602	1409	43.67	30.87	8.19	1.616	1.49	130.2	4.64	260
TT-TP4-L2-20160602	1402	0.230	30.75	7.86	3.521	2.50	152.2	0.43	10

Date: 6/2/16

Sampled By: M. WILSON / V. CALDER

LOW-FLOW WATER PURGING & SAMPLING LOG

TETRA TECH

PROJECT NAME: VFRT SFPT
FIELD PERSON: J. Cook
PROJECT NUMBER: 103G0-T35000-2016-MOS-0105.01
PROJECT MANAGER: Mark Feldman
PROJECT LOCATION: Henderson, NV
DATE: 6-8-16

PUMP / TUBING TYPE:	WELL NUMBER: VFRT SFPT MW1
EQUIPMENT CLEANING METHOD:	CASING RADIUS: (In.)
PURGE WATER DISPOSAL:	TOTAL DEPTH (TD): (ft.)
	DEPTH TO WATER (DTW): 24.27 (ft.)
	SCREENED INTERVAL: (ft.)
PURGE START TIME: 0914	PUMP SET AT (ft.)

TIME	PURGE RATE (ml/min)	VOLUME PURGED (ml)	DTW (ft)	TEMP (°C)	pH	COND. (µS/cm)	DO (mg/L)	ORP (mV)	TURB. (NTU)	
0914	255									Start
0918		1020	24.40	23.24	7.31	5.966	0.82	225.7	0.59	
0921		1785	24.40	23.25	7.29	5.960	0.54	225.6	0.69	
0924		2550	24.42	23.24	7.26	5.945	0.49	224.1	0.81	
0927		3315	24.41	23.23	7.24	5.932	0.50	222.9	0.82	
0930		4080	24.42	23.27	7.24	5.942	0.48	222.8	0.63	
0933	↓	4845	24.42	23.26	7.23	5.963	0.49	222.6	0.77	Sample

PURGE STOP TIME: 0933
SAMPLE TIME: 0933
LAB NAME: Test America
SAMPLE ID: VFRT SFPT MW1-20160608

OBSERVATIONS/COMMENTS (NOTE TIMES):

FL= 0.040

PAGE 1 of 1

LOW-FLOW WATER PURGING & SAMPLING LOG

TETRA TECH

PROJECT NAME: NERT SFPA — FIELD PERSON: J. Cook

PROJECT NUMBER: 100-SBD-T35000-2016-MOS-MOS.01 — PROJECT MANAGER: Mark Edman

PROJECT LOCATION: Henderson, NV — DATE: 6-8-16

PUMP / TUBING TYPE:	WELL NUMBER: 11-MPI-MZ
EQUIPMENT CLEANING METHOD:	CASING RADIUS: (In.)
	TOTAL DEPTH (TD): (ft.)
PURGE WATER DISPOSAL:	DEPTH TO WATER (DTW): 25.28 (ft.)
	SCREENED INTERVAL: (ft.)
PURGE START TIME:	PUMP SET AT (ft.)

TIME	PURGE RATE (ml/min)	VOLUME PURGED (ml)	DTW (ft)	TEMP (°C)	pH	COND. (µS/cm)	DO (mg/L)	ORP (mV)	TURB. (NTU)	
0946	255									Start
0950		1020	25.57	26.83	6.96	8.171	1.17	200.7	1.02	
0953		1785	25.66	25.88	6.89	7.935	0.84	230.0	3.66	
0956		2550	25.80	25.79	6.89	6.199	0.73	230.3	2.13	
0959		3315	25.75	25.75	6.87	8.997	0.64	233.0	1.36	
1002		4080	25.80	25.71	6.88	4.487	0.61	231.4	1.21	
1005		4845	25.85	25.80	6.89	9.717	0.54	229.8	1.16	
1008		5610	25.87	25.81	6.90	10.06	0.57	230.6	1.21	
1011		6375	25.88	25.78	6.89	10.24	0.55	228.0	0.83	
1014	↓	7140	25.88	25.78	6.91	10.35	0.54	229.0	0.91	Sample

PURGE STOP TIME: 1014 — SAMPLE TIME: 1014

LAB NAME: Test America — SAMPLE ID: 11-MPI-MZ-20160608

OBSERVATIONS/COMMENTS (NOTE TIMES):

FL: 0.024

LOW-FLOW WATER PURGING & SAMPLING LOG

TETRA TECH

PROJECT NAME: NERT SFPT

FIELD PERSON: J. Cook

PROJECT NUMBER:

PROJECT MANAGER:

PROJECT LOCATION:

DATE: 6-8-16

PUMP / TUBING TYPE:

WELL NUMBER: tt-TP1-M3

EQUIPMENT CLEANING METHOD:

CASING RADIUS: ____ (in.)

TOTAL DEPTH (TD): ____ (ft.)

DEPTH TO WATER (DTW): 25.57 (ft.)

PURGE WATER DISPOSAL:

SCREENED INTERVAL: ____ (ft.)

PURGE START TIME: 0838

PUMP SET AT ____ (ft.)

TIME	PURGE RATE (ml/min)	VOLUME PURGED (ml)	DTW (ft)	TEMP (°C)	pH	COND. (µS/cm)	DO (mg/L)	ORP (mV)	TURB. (NTU)	
0838	240									Start
0841	↓	720	25.93	26.08	6.90	9.344	0.50	227.7	0.38	
0844		1440	25.94	26.04	6.92	9.325	0.48	224.8	0.63	
0847		2160	25.95	25.96	6.94	9.293	0.44	225.5	0.49	
0850		2880	25.97	25.94	6.95	9.255	0.41	227.8	0.83	
0853		3600	25.99	25.95	6.96	9.240	0.43	225.8	0.73	
0856		4320	26.02	25.91	6.97	9.229	0.49	221.0	0.38	
0900	↓	5040	26.04	25.89	6.99	9.213	0.47	228.1	0.62	Sample

PURGE STOP TIME: 0900

SAMPLE TIME: 0900

LAB NAME: Test America

SAMPLE ID: Tt-TP1-M3-20160608

OBSERVATIONS/COMMENTS (NOTE TIMES):

FL = 0.643

LOW-FLOW WATER PURGING & SAMPLING LOG

TETRA TECH

PROJECT NAME: NERT Soil Flush Pilot Test FIELD PERSON: J Cook, V Calder

PROJECT NUMBER: 100-580-T35000-20160-MOS-MOS.01 PROJECT MANAGER: Mark Feldman

PROJECT LOCATION: Henderson, NV DATE: 6-8-16

PUMP / TUBING TYPE:	WELL NUMBER: H-HPZ-M1
EQUIPMENT CLEANING METHOD:	CASING RADIUS: (In.)
	TOTAL DEPTH (TD): (ft.)
PURGE WATER DISPOSAL:	DEPTH TO WATER (DTW): 23.05 (ft.)
	SCREENED INTERVAL: (ft.)
PURGE START TIME:	PUMP SET AT (ft.)

TIME	PURGE RATE (ml/min)	VOLUME PURGED (ml)	DTW (ft)	TEMP (°C)	pH	COND. (µS/cm)	DO (mg/L)	ORP (mV)	TURB. (NTU)	
1056	180									Start
1100	↓	720	23.11	22.98	7.91	8.422	0.31	222.7	15.9	
1103		1260	23.11	22.71	7.33	8.539	0.70	229.7	12.1	
1106		1800	23.11	22.64	7.27	8.655	0.66	222.2	7.45	
1109		2340	23.11	22.50	7.24	8.742	0.67	206.3	4.91	
1112		2880	23.11	22.48	7.26	8.803	0.60	248.5	3.67	
1115		3420	23.11	22.44	7.24	8.867	0.59	223.7	2.73	
1118	↓	3960	23.11	22.48	7.22	8.894	0.57	224.8	2.55	Sample

PURGE STOP TIME: 1118 SAMPLE TIME: 1118

LAB NAME: Test America SAMPLE ID: H-HPZ-M1-20160608

OBSERVATIONS/COMMENTS (NOTE TIMES):

FL-0.935

LOW-FLOW WATER PURGING & SAMPLING LOG

TETRA TECH

PROJECT NAME: NAPT SFPT FIELD PERSON: J. Cook / V Calder

PROJECT NUMBER: 100-SBD-T35000-2016-MOS-MOS.01 PROJECT MANAGER: Mark Feldman

PROJECT LOCATION: Henderson, NV DATE: 6-8-16

PUMP / TUBING TYPE:	WELL NUMBER: ++-TP2-M2
EQUIPMENT CLEANING METHOD:	CASING RADIUS: (in.)
	TOTAL DEPTH (TD): (ft.)
PURGE WATER DISPOSAL:	DEPTH TO WATER (DTW): 23.71 (ft.)
	SCREENED INTERVAL: (ft.)
PURGE START TIME:	PUMP SET AT (ft.)

TIME	PURGE RATE (ml/min)	VOLUME PURGED (ml)	DTW (ft)	TEMP (°C)	pH	COND. (µS/cm)	DO (mg/L)	ORP (mV)	TURB. (NTU)	
1029	240									Start to
1028	↑	960	23.75	23.37	7.39	9.146	0.62	224.1	3.42	
1031		1680	23.74	23.19	7.32	9.156	0.41	219.0	2.32	
1034		2400	23.76	23.05	7.26	9.150	0.48	221.7	1.23	
1037		3120	23.76	23.08	7.25	9.140	0.46	219.0	1.31	
1040		3840	23.78	22.96	7.24	9.110	0.48	213.3	5.01	
1043	↓	4560	23.75	23.00	7.23	9.109	0.46	217.5	3.78	Sample

PURGE STOP TIME: 1043 SAMPLE TIME: 1043

LAB NAME: Test America SAMPLE ID: ++-TP2-M2-20160608

OBSERVATIONS/COMMENTS (NOTE TIMES):

FI = 0.065

LOW-FLOW WATER PURGING & SAMPLING LOG

TETRA TECH

PROJECT NAME: NERT Soil Flush Pilot Test FIELD PERSON: J. Cook V. Calder

PROJECT NUMBER: 112-SBD-135000-2016-M05-M05.01 PROJECT MANAGER: Mark Feldman

PROJECT LOCATION: Henderson, NV DATE: 6-8-16

PUMP / TUBING TYPE:	WELL NUMBER: ++-TP3-M1
EQUIPMENT CLEANING METHOD:	CASING RADIUS: (in.)
	TOTAL DEPTH (TD): (ft.)
PURGE WATER DISPOSAL:	DEPTH TO WATER (DTW): 21.82 (ft.)
	SCREENED INTERVAL: (ft.)
PURGE START TIME:	PUMP SET AT (ft.)

TIME	PURGE RATE (ml/min)	VOLUME PURGED (ml)	DTW (ft)	TEMP (°C)	pH	COND. (µS/cm)	DO (mg/L)	ORP (mV)	TURB. (NTU)	
1137	255									Start
1141		1020	21.90	25.38	7.82	1.260	0.73	198.9	3.01	
1144		1785	21.91	25.08	7.73	1.197	0.54	201.5	1.73	
1147		2550	21.91	25.03	7.71	1.186	0.53	208.4	1.43	
1150		3315	21.91	24.99	7.68	1.171	0.49	215.5	1.47	
1153		4080	21.91	25.08	7.67	1.161	0.47	222.7	1.17	
1156	↓	4845	21.86	24.98	7.66	1.161	0.48	223.4	1.03	Sample

PURGE STOP TIME: 1156 SAMPLE TIME: 1156

LAB NAME: Test America SAMPLE ID: ++-TP3-M1-20160608

OBSERVATIONS/COMMENTS (NOTE TIMES):

FL - 0.60 U

PAGE 1 of 1

LOW-FLOW WATER PURGING & SAMPLING LOG

TETRA TECH

PROJECT NAME: NERT SFPT

FIELD PERSON: S. Cook, V. Calder

PROJECT NUMBER: (1)SBO-T35000-2016-M05-M05.0)

PROJECT MANAGER: Mark Feldman

PROJECT LOCATION: Henderson, NV

DATE: 6-8-16

PUMP / TUBING TYPE:

EQUIPMENT CLEANING METHOD:

PURGE WATER DISPOSAL:

WELL NUMBER: ++-TP3-M2

CASING RADIUS: (in.)

TOTAL DEPTH (TD): (ft.)

DEPTH TO WATER (DTW): 22.97 (ft.)

SCREENED INTERVAL: (ft.)

PURGE START TIME:

PUMP SET AT (ft.)

TIME	PURGE RATE (ml/min)	VOLUME PURGED (ml)	DTW (ft)	TEMP (°C)	pH	COND. (µS/cm)	DO (mg/L)	ORP (mV)	TURB. (NTU)	
1208	255		?							Start
1212	↓	1020	23.10	23.61	7.74	1.542	0.59	221.2	1.19	
1215	↓	1785	23.05	23.64	7.71	1.537	0.54	228.3	1.39	
1218	↓	2550	23.05	23.48	7.71	1.532	0.53	229.0	1.16	
1221	↓	3315	23.06	23.42	7.72	1.524	0.50	230.2	0.96	
1224	↓	4080	23.05	23.36	7.74	1.529	0.52	232.4	0.81	
1227	↓	4845	23.05	23.39	7.73	1.530	0.49	233.1	0.48	Sample

PURGE STOP TIME:

SAMPLE TIME: 1227

LAB NAME: Test America

SAMPLE ID: ++-TP3-M2-20160608

OBSERVATIONS/COMMENTS (NOTE TIMES):

F1 -- 0.860

PAGE 1 of 1

LOW-FLOW WATER PURGING & SAMPLING LOG

TETRA TECH

PROJECT NAME: NERT SERT — FIELD PERSON: S. Cook - V. Calder

PROJECT NUMBER: 100-580-T35000-2016-1105.M05.01 — PROJECT MANAGER: Mark Feldman

PROJECT LOCATION: Henderson, NV — DATE: 6-9-2016

PUMP / TUBING TYPE:	WELL NUMBER: T+-TP4-MI
EQUIPMENT CLEANING METHOD:	CASING RADIUS: (In.)
PURGE WATER DISPOSAL:	TOTAL DEPTH (TD): (ft.)
	DEPTH TO WATER (DTW): 23.46 (ft.)
	SCREENED INTERVAL: (ft.)
PURGE START TIME:	PUMP SET AT (ft.)

TIME	PURGE RATE (ml/min)	VOLUME PURGED (ml)	DTW (ft)	TEMP (°C)	pH	COND. (µS/cm)	DO (mg/L)	ORP (mV)	TURB. (NTU)	
0911	285									
0915		1140	23.55	22.52	6.99	6.038	0.74	207.1	1.06	Start
0918		1995	23.55	22.42	7.04	5.638	0.70	198.1	0.77	
0921		2850	23.55	22.28	7.07	5.208	0.68	192.8	0.51	
0924		3705	23.55	22.15	7.07	5.100	0.63	184.3	0.46	
0927		4560	23.55	22.15	7.09	5.033	0.62	177.3	1.02	
0930		5415	23.55	22.16	7.12	4.985	0.59	166.5	0.88	
0933		6270	23.55	22.22	7.14	4.928	0.58	158.6	0.68	
0936		7125	23.55	22.08	7.18	4.906	0.52	150.2	0.65	
0939		7980	23.55	22.12	7.17	4.891	0.51	147.0	0.57	
0942		8835	23.55	22.09	7.18	4.885	0.50	145.1	0.59	end

PURGE STOP TIME: 0942 — SAMPLE TIME: 0942

LAB NAME: Test America — SAMPLE ID: T+-TP4-MI-20160609

OBSERVATIONS/COMMENTS (NOTE TIMES):

FI - 3.764

LOW-FLOW WATER PURGING & SAMPLING LOG

TETRA TECH

PROJECT NAME: NERT SEPT

FIELD PERSON: S.Conk, V. Calder

PROJECT NUMBER: 100-SBD-T35000-2016-H05-M05-01

PROJECT MANAGER: Mark Feldman

PROJECT LOCATION: Henderson, NV

DATE: 06/08/2016

PUMP / TUBING TYPE: Dedicated pump, 1/4" tubing

EQUIPMENT CLEANING METHOD:

PURGE WATER DISPOSAL:

WELL NUMBER: H-TP4-M2

CASING RADIUS: 2" (in.)

TOTAL DEPTH (TD): (ft.)

DEPTH TO WATER (DTW): 23.48 (ft.)

SCREENED INTERVAL: (ft.)

PURGE START TIME: 1249

PUMP SET AT (ft.)

TIME	PURGE RATE (ml/min)	VOLUME PURGED (ml)	DTW (ft)	TEMP (°C)	pH	COND. (µS/cm)	DO (mg/L)	ORP (mV)	TURB. (NTU)
1249	270	1080							~~4.85~~
1253	↓	1890	23.58	23.92	7.64	3.213	5.15	220.7	4.85
1256		2700	23.58	23.82	7.60	3.200	2.10	219.5	2.89
1259		3510	23.59	23.77	7.61	3.195	1.70	216.3	2.06
1302		4320	23.60	23.82	7.60	3.192	1.32	209.9	0.89
1305		5130	23.59	23.73	7.60	3.197	1.09	211.3	0.92
1308		5940	23.58	23.59	7.62	3.200	0.90	216.6	1.08
1311	↓	6750	23.59	23.61	7.61	3.199	0.88	217.9	0.90

PURGE STOP TIME: 1311

SAMPLE TIME: 1311

LAB NAME: Test America

SAMPLE ID: H-TP4-M2-20160608

OBSERVATIONS/COMMENTS (NOTE TIMES):

FI = 0.419

TETRA TECH

LOW-FLOW WATER PURGING & SAMPLING LOG

PROJECT NAME: NERT SFPT

FIELD PERSON: S Cody / Gaffor

PROJECT NUMBER: 100-SBD-T35000-2016-MOS-MOS.1

PROJECT MANAGER: Mark Feldman

PROJECT LOCATION: Henderson, NV

DATE: 6.9.16

PUMP / TUBING TYPE:

WELL NUMBER: TT-TP4-M3

EQUIPMENT CLEANING METHOD:

CASING RADIUS: (in.)

TOTAL DEPTH (TD): (ft.)

PURGE WATER DISPOSAL:

DEPTH TO WATER (DTW): 23.61 (ft.)

SCREENED INTERVAL: (ft.)

PURGE START TIME:

PUMP SET AT (ft.)

TIME	PURGE RATE (ml/min)	VOLUME PURGED (ml)	DTW (ft)	TEMP (°C)	pH	COND. (µS/cm)	DO (mg/L)	ORP (mV)	TURB. (NTU)	
1001	270									
1005	↓	1080	23.73	24.99	7.43	5.984	0.37	90.6	1.66	
1008		1890	23.72	25.25	7.42	5.985	0.44	89.7	1.02	
1011		2700	23.72	25.37	7.40	6.047	0.47	87.3	1.06	
1014		3510	23.72	25.43	7.39	6.077	0.46	85.4	0.84	
1017		4320	23.72	25.40	7.38	6.111	0.44	83.7	0.60	
1020		5130	23.70	25.44	7.38	6.134	0.49	81.5	0.63	

PURGE STOP TIME: 1020

SAMPLE TIME: 1020

LAB NAME: Test America

SAMPLE ID: TT-TP4-M3-20160608

OBSERVATIONS/COMMENTS (NOTE TIMES):

TT-TP4-M3-20160608-DUP

Dup & MS/MSD

FL=2,140

Tetra Tech Inc.

NERT Soil Flush Pilot Test Area
Lysimeter Sampling Log

Lysimeter sample ID	Sample Time	Fluorescein Reading	Temperature (Celsius)	pH	Conductivity (mS/cm)	D.O. (mg/L)	ORP (mV)	Turbidity (NTU)	Volume Purged (mL)
TT-TP1-L1-	Pump	Broke							
TT-TP1-L2-	↓								
TT-TP2-L1-									
TT-TP2-L2-									
TT-TP3-L1-	1057	4,464	29.54	8.20	1,240	3.34	110.9		
TT-TP3-L2-	1101	2281	29.47	7.97	1,840	1.73	112.9		
TT-TP4-L1-	(P) 1047	667.3	29.71	8.01	1.422	1.55	124.9		
TT-TP4-L2-	1052 No Water								

Date: 06/09/2016
Sampled By: V. Calder / J. Cook

PAGE 1 of 1

LOW-FLOW WATER PURGING & SAMPLING LOG

TETRA TECH

PROJECT NAME: SOIL FLUSH
FIELD PERSON: PETER/MAXX
PROJECT NUMBER: P35000-2016-MOS
PROJECT MANAGER: MARK F.
PROJECT LOCATION: HENDERSON, NV
DATE: 6/21/16

PUMP / TUBING TYPE: Dedicated Bladder
WELL NUMBER: TT-TP1-M1
EQUIPMENT CLEANING METHOD: MICRO 90
CASING RADIUS: 2 (in.)
PURGE WATER DISPOSAL:
TOTAL DEPTH (TD): (ft.)
DEPTH TO WATER (DTW): 24.23 (ft.)
SCREENED INTERVAL: (ft.)

PURGE START TIME: 1320
PUMP SET AT: 30 (ft.)

TIME	PURGE RATE (ml/min)	VOLUME PURGED (ml)	DTW (ft)	TEMP (°C)	pH	COND. (µS/cm)	DO (mg/L)	ORP (mV)	TURB. (NTU)	
1325	~~200~~ 150	750	24.30	25.71	6.89	6.090	0.38	83.0	1.29	
1328	150	1200	24.30	25.76	6.85	6.104	0.32	88.3	1.32	
1331	↓	1650	24.30	25.68	6.89	6.121	0.26	81.7	1.16	
1334		2100	24.30	25.71	6.93	6.126	0.21	79.7	1.03	
1337		2550	24.30	25.73	6.98	6.128	0.21	76.3	0.98	
1340	↓	3000	24.30	25.76	6.99	6.135	0.18	73.5	0.91	

PURGE STOP TIME:
SAMPLE TIME: 1320
LAB NAME: TEST AMERICA
SAMPLE ID: TT-TP1-M1-20160621

OBSERVATIONS/COMMENTS (NOTE TIMES):

FL = 5.035

yellow water

PAGE 1 of 1

LOW-FLOW WATER PURGING & SAMPLING LOG

TETRA TECH

PROJECT NAME: SOIL FLUSH
PROJECT NUMBER: T35000-2016-M05
PROJECT LOCATION: HENDERSON, NV
FIELD PERSON: PETER/MAXL
PROJECT MANAGER: MARK FELDMAN
DATE: 6/21/16

PUMP / TUBING TYPE: DEDICATED BLADDER
EQUIPMENT CLEANING METHOD: MICRO 90 / DISTILLED WATER
PURGE WATER DISPOSAL: HOLDING TREATMENT POND

WELL NUMBER: TT-TP1-M2
CASING RADIUS: 2 (in.)
TOTAL DEPTH (TD): (ft.)
DEPTH TO WATER (DTW): 25.20 (ft.)
SCREENED INTERVAL: (ft.)

PURGE START TIME: 1349
PUMP SET AT 30 (ft.)

TIME	PURGE RATE (ml/min)	VOLUME PURGED (ml)	DTW (ft)	TEMP (°C)	pH	COND. (µS/cm)	DO (mg/L)	ORP (mV)	TURB. (NTU)	
1354	150	750	25.45	28.04	6.76	7.349	0.58	69.5	3.27	
1357	150	1250	25.50	27.61	6.76	8.153	0.38	69.7	1.33	
1400	150	1650	25.51	27.73	6.77	8.617	0.26	69.6	1.39	
1402	150	2100	25.51	27.79	6.77	8.999	0.27	69.9	1.26	
1405	150	2550	25.51	28.06	6.77	9.189	0.24	69.5	1.12	
1408	150	3000	25.51	28.22	6.77	9.546	0.23	68.8	1.01	
1411	150	3450	25.51	28.20	6.78	9.836	0.18	67.5	0.96	
1414	150	3900	25.51	28.41	6.78	9.967	0.21	66.4	0.99	
1418	150	4500	25.51	28.43	6.79	10.13	0.19	66.1	1.02	

PURGE STOP TIME:
SAMPLE TIME: 1418
LAB NAME: TEST AMERICA
SAMPLE ID: TT-TP1-M2-20160621

OBSERVATIONS/COMMENTS (NOTE TIMES):

FC = 1,758

WATER IS YELLOW

PAGE 1 of 1

LOW-FLOW WATER PURGING & SAMPLING LOG

TETRA TECH

PROJECT NAME: SOIL FLUSH PILOT TEST
FIELD PERSON: PETER/MAXX
PROJECT NUMBER: T3500-2016-MOS
PROJECT MANAGER: MIKE F.
PROJECT LOCATION: HENDERSON, NV
DATE: 6/21/16

PUMP / TUBING TYPE: dedicated / 1/4" tubing
WELL NUMBER: TT-TP1-M3
EQUIPMENT CLEANING METHOD: micro 90
CASING RADIUS: 2 (in.)
PURGE WATER DISPOSAL:
TOTAL DEPTH (TD): (ft.)
DEPTH TO WATER (DTW): 25.50 (ft.)
SCREENED INTERVAL: (ft.)

PURGE START TIME: 1454
PUMP SET AT ~30 (ft.)

TIME	PURGE RATE (ml/min)	VOLUME PURGED (ml)	DTW (ft)	TEMP (°C)	pH	COND. (µS/cm)	DO (mg/L)	ORP (mV)	TURB. (NTU)
1458	180	720	25.68	28.13	6.90	9.215	0.28	49.6	1.89
1501	↓	1260	25.72	28.20	6.87	9.187	0.20	49.3	0.96
1504		1800	25.75	28.12	6.89	9.160	0.18	49.1	1.32
1507		2340	25.77	28.13	6.89	9.133	0.15	48.1	1.15
1510		2880	25.79	28.01	6.87	9.097	0.14	47.3	1.02
1513		3420	25.82	27.90	6.88	9.071	6.16	46.9	0.89
1516		3960	25.84	27.82	6.88	9.032	0.14	46.3	0.79

PURGE STOP TIME:
SAMPLE TIME: 1516
LAB NAME:
SAMPLE ID: TT-TP1-M3-20160621

OBSERVATIONS/COMMENTS (NOTE TIMES):
FL = 0.550
water is yellow

FILE: LOG FORMS\pm-Water Purging & Sampling Log-10-20-08.dwg

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LOW-FLOW WATER PURGING & SAMPLING LOG

TETRA TECH

PROJECT NAME: Nort SFPT
PROJECT NUMBER:
PROJECT LOCATION:
FIELD PERSON:
PROJECT MANAGER: Mark Feldman
DATE: 6-22-16

PUMP / TUBING TYPE:
EQUIPMENT CLEANING METHOD:
PURGE WATER DISPOSAL:

WELL NUMBER: TT-TP2-M1-
CASING RADIUS: 2" (In.)
TOTAL DEPTH (TD): (ft.)
DEPTH TO WATER (DTW): 23.00 (ft.)
SCREENED INTERVAL: (ft.)

PURGE START TIME: 0856
PUMP SET AT ~30 (ft.)

TIME	PURGE RATE (ml/min)	VOLUME PURGED (ml)	DTW (ft)	TEMP (°C)	pH	COND. (µS/cm)	DO (mg/L)	ORP (mV)	TURB. (NTU)	
0900	210	840	23.00	23.15	7.35	7.895	1.50	20.1	11.38	
0903	↓	1470	23.03	23.10	7.16	8.031	0.86	21.4	11.05	
0906		2100	23.03	23.09	7.00	8.321	0.27	21.1	11.6	
0909		2730	23.03	23.10	6.99	8.313	0.26	20.6	9.74	
0912		3360	23.03	23.05	6.99	8.309	0.25	20.2	9.05	
0915		3990	23.03	23.02	6.99	8.298	0.24	19.0	8.96	

PURGE STOP TIME:
LAB NAME:
SAMPLE TIME: 0915
SAMPLE ID: TT-TP2-M1-20160622

OBSERVATIONS/COMMENTS (NOTE TIMES):

FL: 1.435

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LOW-FLOW WATER PURGING & SAMPLING LOG

TETRA TECH

PROJECT NAME: NERT SFPT
PROJECT NUMBER:
PROJECT LOCATION:
FIELD PERSON:
PROJECT MANAGER: Mark Feldman
DATE: 6-22-16

PUMP / TUBING TYPE:
EQUIPMENT CLEANING METHOD:
PURGE WATER DISPOSAL:

WELL NUMBER: TT-TP2-M2
CASING RADIUS: 2" (in.)
TOTAL DEPTH (TD): (ft.)
DEPTH TO WATER (DTW): 23.61 (ft.)
SCREENED INTERVAL: (ft.)

PURGE START TIME: 0936
PUMP SET AT ~30 (ft.)

TIME	PURGE RATE (ml/min)	VOLUME PURGED (ml)	DTW (ft)	TEMP (°C)	pH	COND. (µS/cm)	DO (mg/L)	ORP (mV)	TURB. (NTU)	
0940	210	840	23.65	24.01	7.28	8.503	0.63	22.3	1.79	
0943		1470	23.65	24.04	7.27	8.510	0.34	21.7	1.52	
0949		2100	23.66	24.01	7.26	8.514	0.57	21.2	1.65	
0950		2730	23.66	24.00	7.22	8.512	0.40	18.2	1.63	
0953		3360	23.66	23.87	7.21	8.492	0.31	12.3	1.50	
0956		3990	23.67	23.74	7.19	8.486	0.21	15.7	1.51	

PURGE STOP TIME:
LAB NAME:
SAMPLE TIME: 0956
SAMPLE ID: TT-TP2-M2-20160622

OBSERVATIONS/COMMENTS (NOTE TIMES):

FL= 0.122

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LOW-FLOW WATER PURGING & SAMPLING LOG

TETRA TECH

PROJECT NAME: NERT SEPT

PROJECT NUMBER:

PROJECT LOCATION:

FIELD PERSON:

PROJECT MANAGER: Mark F.

DATE: 6-22-16

PUMP / TUBING TYPE:

EQUIPMENT CLEANING METHOD:

PURGE WATER DISPOSAL:

WELL NUMBER: TT-TP3-M1

CASING RADIUS: 2" (in.)

TOTAL DEPTH (TD): (ft.)

DEPTH TO WATER (DTW): 21.75 (ft.)

SCREENED INTERVAL: (ft.)

PURGE START TIME: 1005

PUMP SET AT ~30 (ft.)

TIME	PURGE RATE (ml/min)	VOLUME PURGED (ml)	DTW (ft)	TEMP (°C)	pH	COND. (µS/cm)	DO (mg/L)	ORP (mV)	TURB. (NTU)	
1009	210	840	21.77	28.19	7.69	1.209	1.01	11.2	4.73	
1012		1470	21.77	28.27	7.65	1.149	0.56	9.6	3.38	
1015		2100	21.77	28.24	7.62	1.131	0.27	7.9	3.09	
1018		2730	21.77	28.26	7.60	1.128	0.26	6.1	2.73	
1021		3360	21.77	28.25	7.60	1.129	0.25	5.3	2.89	
1024		3990	21.77	28.30	7.59	1.127	0.21	5.1	2.62	

PURGE STOP TIME:

LAB NAME:

SAMPLE TIME: 1024

SAMPLE ID: TT-TP3-M1-20160622

OBSERVATIONS/COMMENTS (NOTE TIMES):

FL=1.294

LOW-FLOW WATER PURGING & SAMPLING LOG

TETRA TECH

PROJECT NAME: _____ FIELD PERSON: _____

PROJECT NUMBER: _____ PROJECT MANAGER: _____

PROJECT LOCATION: _____ DATE: 6-27-16

PUMP / TUBING TYPE:	WELL NUMBER: TT-TP3-M2
EQUIPMENT CLEANING METHOD:	CASING RADIUS: _____ (in.)
PURGE WATER DISPOSAL:	TOTAL DEPTH (TD): _____ (ft.)
	DEPTH TO WATER (DTW): 22.85 (ft.)
	SCREENED INTERVAL: _____ (ft.)
PURGE START TIME: 1029	PUMP SET AT (ft.)

TIME	PURGE RATE (ml/min)	VOLUME PURGED (ml)	DTW (ft)	TEMP (°C)	pH	COND. (µS/cm)	DO (mg/L)	ORP (mV)	TURB. (NTU)	
1033	210	840	22.87	25.72	7.65	1.395	0.67	9.5	1.36	
1036		1470	22.87	25.49	7.67	1.380	0.24	3.8	1.22	
1039		2100	22.87	25.50	7.67	1.376	0.23	2.9	1.47	
1042		2730	22.87	25.65	7.67	1.379	0.23	1.1	1.53	
1045		3360	22.87	25.84	7.68	1.381	0.23	0.8	1.51	
1048		3990	22.87	25.70	7.68	1.383	0.21	-0.3	1.39	

PURGE STOP TIME:	SAMPLE TIME: 1048
LAB NAME:	SAMPLE ID: TT-TP3-M2-20160622

OBSERVATIONS/COMMENTS (NOTE TIMES):

FL = 0.473

WATER IS CLEAR

LOW-FLOW WATER PURGING & SAMPLING LOG

TETRA TECH

PROJECT NAME: NERT SFPT
FIELD PERSON:
PROJECT NUMBER:
PROJECT MANAGER:
PROJECT LOCATION:
DATE: 6-22-16

PUMP / TUBING TYPE:
WELL NUMBER: TT-TP4-M1
EQUIPMENT CLEANING METHOD:
CASING RADIUS: 2" (in.)
TOTAL DEPTH (TD): (ft.)
PURGE WATER DISPOSAL:
DEPTH TO WATER (DTW): 23.29 (ft.)
SCREENED INTERVAL: (ft.)

PURGE START TIME: 1100
PUMP SET AT 30 (ft.)

TIME	PURGE RATE (ml/min)	VOLUME PURGED (ml)	DTW (ft)	TEMP (°C)	pH	COND. (µS/cm)	DO (mg/L)	ORP (mV)	TURB. (NTU)	
1104	210	840	23.34	23.25	7.56	4.260	0.86	22.8	1.35	
1107		1470	23.34	23.80	7.46	3.635	0.32	12.1	1.22	
1110		2100	23.34	23.57	7.39	3.522	0.26	13.8	1.15	
1113		2730	23.34	23.94	7.35	3.463	0.25	11.8	1.11	
1116		3360	23.34	23.85	7.84	3.464	0.26	11.0	1.12	
1119		3990	23.34	23.95	7.33	3.441	0.17	10.4	1.38	

PURGE STOP TIME:
SAMPLE TIME: 1119
LAB NAME:
SAMPLE ID: TT-TP4-M1-20160622

OBSERVATIONS/COMMENTS (NOTE TIMES):

FL= 0.095

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LOW-FLOW WATER PURGING & SAMPLING LOG

TETRA TECH

PROJECT NAME: NEXT SFPT
FIELD PERSON:
PROJECT NUMBER:
PROJECT MANAGER:
PROJECT LOCATION:
DATE: 6-22-16

PUMP / TUBING TYPE:
WELL NUMBER: TT-TP4-M2
EQUIPMENT CLEANING METHOD:
CASING RADIUS: 2" (In.)
TOTAL DEPTH (TD): (ft.)
PURGE WATER DISPOSAL:
DEPTH TO WATER (DTW): 23.30 (ft.)
SCREENED INTERVAL: (ft.)

PURGE START TIME: 1129
PUMP SET AT ~30 (ft.)

TIME	PURGE RATE (ml/min)	VOLUME PURGED (ml)	DTW (ft)	TEMP (°C)	pH	COND. (µS/cm)	DO (mg/L)	ORP (mV)	TURB. (NTU)	
1133	210	840	23.38	24.69	7.58	2.881	1.03	15.2	1.73	
1136		1470	23.40	24.75	7.57	2.872	0.83	14.5	1.89	
1139		2100	23.40	24.44	7.58	2.850	0.82	10.7	1.92	
1142		2730	23.40	24.69	7.58	2.836	0.68	8.8	1.80	
1145		3360	23.40	24.82	7.58	2.840	0.63	7.9	1.77	
1148		3990	23.40	24.91	7.58	2.839	0.52	6.2	1.68	

PURGE STOP TIME:
SAMPLE TIME: 1148
LAB NAME:
SAMPLE ID: TT-TP4-M2-20160622

OBSERVATIONS/COMMENTS (NOTE TIMES):

FL=0.062

PAGE 1 of 1

LOW-FLOW WATER PURGING & SAMPLING LOG

TETRA TECH

PROJECT NAME: IVERT SFPT

PROJECT NUMBER: _____

PROJECT LOCATION: _____

FIELD PERSON: _____

PROJECT MANAGER: _____

DATE: 6-22-16

PUMP / TUBING TYPE: _____

EQUIPMENT CLEANING METHOD: _____

PURGE WATER DISPOSAL: _____

WELL NUMBER: TT-TP4-M3

CASING RADIUS: _____ (in.)

TOTAL DEPTH (TD): _____ (ft.)

DEPTH TO WATER (DTW): 23.44 (ft.)

SCREENED INTERVAL: _____ (ft.)

PURGE START TIME: 1155

PUMP SET AT ~30 (ft.)

TIME	PURGE RATE (ml/min)	VOLUME PURGED (ml)	DTW (ft)	TEMP (°C)	pH	COND. (µS/cm)	DO (mg/L)	ORP (mV)	TURB. (NTU)
1159	180	720	23.48	26.08	7.45	6.168	1.21	26.7	1.30
1202	↓	1260	23.50	26.16	7.33	6.007	0.49	20.3	1.32
1205		1800	23.51	26.01	7.32	6.006	0.39	19.4	1.28
1208		2340	23.5	25.99	7.31	5.998	0.26	17.5	1.17
1211		2880	23.5	25.96	7.31	6.008	0.27	15.7	1.04
1214		3420	23.5	25.98	7.30	6.010	0.30	13.8	1.42

PURGE STOP TIME: _____

SAMPLE TIME: 1214

LAB NAME: _____

SAMPLE ID: TT-TP4-M3-20160622

OBSERVATIONS/COMMENTS (NOTE TIMES):

FL = 0.038

TT-TP4-M3-20160622-Dup

MS/MSD

Tetra Tech Inc.

NERT Soil Flush Pilot Test Area
Lysimeter Sampling Log

Lysimeter sample ID	Sample Time	Fluorescein Reading	Temperature (Celsius)	pH	Conductivity (µS/cm)	D.O. (mg/L)	ORP (mV)	Turbidity (NTU)	Volume Purged (mL)
TT-TP1-L1-20160622	1300	5.711	31.04	7.79	2.522	3.87	21.5	1.65	250
TT-TP1-L2-20160622	1305	0.210	27.48	7.95	2.782	227	35.3	1.72	310
TT-TP2-L1-20160622	1310	29.43	~~28.11~~ ~~30.12~~	~~7.86~~ ~~7.87~~	~~2.933~~ ~~3.040~~	~~4.31~~ ~~3.20~~	~~9.0~~ ~~10.3~~	2.21	230
TT-TP2-L2-20160622	1315	~~0.753~~ ~~0.755~~	30.12	7.87	3,046	3.20	10.3	2.05	250
TT-TP3-L1-20160622	1320	0.021	32.15	8.09	1.350	5.64	5.3	1.78	200
TT-TP3-L2-20160622	1325	0.161	29.94	8.00	1.893	4.91	5.5	1.92	260
TT-TP4-L1-20160622	1330	0.001	29.25	7.98	1,480	5.42	12.1	1.32	260
TT-TP4-L2-20160622	1335	0.167	27.54	7.83	2.942	4.90	16.5	2.01	200

Date: 6-22-16

Sampled By: _____

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LOW-FLOW WATER PURGING & SAMPLING LOG

TETRA TECH

PROJECT NAME: NERT
FIELD PERSON: S. Cook
PROJECT NUMBER: 100-SBO-T35000-MOS-2016-MOLS
PROJECT MANAGER: M. Feldman
PROJECT LOCATION: Henderson, NV
DATE: 7-5-16

PUMP / TUBING TYPE: Dedicated	WELL NUMBER: TT-TPI-M1
EQUIPMENT CLEANING METHOD: Micro 90 / DI	CASING RADIUS: 2 (in.)
PURGE WATER DISPOSAL: Onsite	TOTAL DEPTH (TD): (ft.)
	DEPTH TO WATER (DTW): 24.98 (ft.)
	SCREENED INTERVAL: (ft.)
PURGE START TIME: 1105	PUMP SET AT ~30 (ft.)

TIME	PURGE RATE (ml/min)	VOLUME PURGED (ml)	DTW (ft)	TEMP (°C)	pH	COND. (µS/cm)	DO (mg/L)	ORP (mV)	TURB. (NTU)	
1109	210	840	25.05	25.03	7.02	5.478	0.36	151.3	3.21	
1112	↓	1470	25.05	24.84	7.16	5.436	0.41	147.8	2.89	
1115		2100	25.05	25.02	7.20	5.410	0.52	139.4	3.01	
1118		2730	25.05	24.99	7.25	5.416	0.90	133.0	2.09	
1121		3360	25.05	24.93	7.26	5.417	0.67	130.5	2.54	
1124	↓	3990	25.05	24.82	7.28	5.425	0.38	127.5	2.71	Sample

PURGE STOP TIME: 1124	SAMPLE TIME: 1124
LAB NAME: Test America	SAMPLE ID: TT-TPI-M1-20160705

OBSERVATIONS/COMMENTS (NOTE TIMES):

FL: 0.351

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LOW-FLOW WATER PURGING & SAMPLING LOG

TETRA TECH

PROJECT NAME: NERT soil flush pilot test
FIELD PERSON: Mark & Jason
PROJECT NUMBER: T35000-2016-005
PROJECT MANAGER: Mark F.
PROJECT LOCATION: Henderson NV
DATE: 7-5-16

PUMP / TUBING TYPE: dedicated
EQUIPMENT CLEANING METHOD: micro 90 / DI
PURGE WATER DISPOSAL: onsite

WELL NUMBER: TT-TP1-M2
CASING RADIUS: 2" (in.)
TOTAL DEPTH (TD): (ft.)
DEPTH TO WATER (DTW): 25.83 (ft.)
SCREENED INTERVAL: (ft.)

PURGE START TIME: 1105
PUMP SET AT ~30 (ft.)

TIME	PURGE RATE (ml/min)	VOLUME PURGED (ml)	DTW (ft)	TEMP (°C)	pH	COND. (µS/cm)	DO (mg/L)	ORP (mV)	TURB. (NTU)	
1109	~~180~~	720	26.11	26.43	6.67	7.624	0.42	27.7	3.81	
~~1110~~ 1112	180	1260	26.15	26.56	6.67	7.797	0.40	28.4	4.38	
1115	180	1800	26.17	27.05	6.67	9.459	0.28	32.6	4.16	
1118	180	2340	26.18	27.16	6.71	10.56	0.26	33.6	3.87	
1121	180	2880	26.19	27.21	6.72	10.70	0.24	34.3	3.63	
1124	180	3420	26.20	27.33	6.73	10.78	0.21	35.2	3.72	

PURGE STOP TIME:
SAMPLE TIME: 1124
LAB NAME:
SAMPLE ID: TT-TP1-M2-20160705

OBSERVATIONS/COMMENTS (NOTE TIMES):

FL= 0.061

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LOW-FLOW WATER PURGING & SAMPLING LOG

TETRA TECH

PROJECT NAME: Nest
PROJECT NUMBER: 100 SBU T35000
PROJECT LOCATION: Henderson, NV

FIELD PERSON: J. Cook
PROJECT MANAGER: M. Fedman
DATE: 7-5-16

PUMP / TUBING TYPE: Dedicated
EQUIPMENT CLEANING METHOD: Micro 90 / DI
PURGE WATER DISPOSAL: Onsite

WELL NUMBER: TT-JPI-M3
CASING RADIUS: 2 (in.)
TOTAL DEPTH (TD): (ft.)
DEPTH TO WATER (DTW): 25.81 (ft.)
SCREENED INTERVAL: (ft.)

PURGE START TIME: 1138
PUMP SET AT ~30 (ft.)

TIME	PURGE RATE (ml/min)	VOLUME PURGED (ml)	DTW (ft)	TEMP (°C)	pH	COND. (µS/cm)	DO (mg/L)	ORP (mV)	TURB. (NTU)	
1138	180									
1144		1080	26.12	26.67	7.11	8.450	0.36	112.9	2.83	
1147		1620	26.13	26.63	7.10	8.410	0.45	111.4	3.01	
1150		2160	26.13	26.66	7.09	8.397	0.34	110.9	2.97	
1153		2700	26.13	26.64	7.08	8.365	0.24	108.8	2.97	
1156		3240	26.13	26.62	7.08	8.375	0.20	108.1	1.93	
1159	↓	3780	26.13	26.60	7.08	8.345	0.20	107.6	2.37	Sample

PURGE STOP TIME: 1159
SAMPLE TIME: 1159
LAB NAME: Test America
SAMPLE ID: TT-TP-M3-20160705

OBSERVATIONS/COMMENTS (NOTE TIMES):

FI: 0.108

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LOW-FLOW WATER PURGING & SAMPLING LOG

TETRA TECH

PROJECT NAME: NERT
PROJECT NUMBER: 100-5130-T35000
PROJECT LOCATION: Henderson, NV
FIELD PERSON: B. Cook
PROJECT MANAGER: M. Feldman
DATE: 7-5-16

PUMP / TUBING TYPE: Dedicated
EQUIPMENT CLEANING METHOD: Micro 90 / DI
PURGE WATER DISPOSAL: onsite

WELL NUMBER: TT-TPZ-M1
CASING RADIUS: 2" (in.)
TOTAL DEPTH (TD): ___ (ft.)
DEPTH TO WATER (DTW): 24.33 (ft.)
SCREENED INTERVAL: ___ (ft.)

PURGE START TIME: 1207
PUMP SET AT ~30 (ft.)

TIME	PURGE RATE (ml/min)	VOLUME PURGED (ml)	DTW (ft)	TEMP (°C)	pH	COND. (µS/cm)	DO (mg/L)	ORP (mV)	TURB. (NTU)	
1207	210									
1210	↓	630	24.35	24.05	7.35	8.595	0.26	97.2	3.46	
1213		1260	24.35	24.03	7.33	8.613	0.26	95.7	3.49	
1216		1890	24.35	23.98	7.32	8.618	0.23	93.9	3.82	
1219		2520	24.35	23.86	7.31	8.613	0.21	90.9	3.49	
1221		3150	24.35	23.85	7.31	8.602	0.21	89.9	3.22	
1224		3780	24.35	23.85	7.30	8.577	0.18	88.3	3.18	sample

PURGE STOP TIME: 1224
SAMPLE TIME: 1224
LAB NAME: Test America
SAMPLE ID: TT-TPZ-M1-20160705

OBSERVATIONS/COMMENTS (NOTE TIMES):

FLC 0.238

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LOW-FLOW WATER PURGING & SAMPLING LOG

TETRA TECH

PROJECT NAME: Next SFPT
PROJECT NUMBER: T35000-2016-M05
PROJECT LOCATION: Henderson NV
FIELD PERSON: Mason & Team
PROJECT MANAGER: Mark F.
DATE: 7-5-16

PUMP / TUBING TYPE: dedicated
EQUIPMENT CLEANING METHOD: micro 90 / DI
PURGE WATER DISPOSAL: onsite

WELL NUMBER: TT-TP2-M2
CASING RADIUS: 2" (in.)
TOTAL DEPTH (TD): (ft.)
DEPTH TO WATER (DTW): 24.75 (ft.)
SCREENED INTERVAL: (ft.)

PURGE START TIME: 1140
PUMP SET AT ~30 (ft.)

TIME	PURGE RATE (ml/min)	VOLUME PURGED (ml)	DTW (ft)	TEMP (°C)	pH	COND. (µS/cm)	DO (mg/L)	ORP (mV)	TURB. (NTU)	
1144	240	960	24.80	23.89	7.20	7.983	0.42	-10.8	2.99	
1147		1680	24.81	23.67	7.13	7.994	0.23	-10.6	2.82	
1150		2400	24.80	23.58	7.12	7.991	0.19	-10.5	2.76	
1153		3120	24.80	23.71	7.10	7.980	0.15	-10.4	2.66	
1156	↓	3840	24.81	23.82	7.09	7.978	0.17	-10.5	2.69	
1159		4560	24.80	23.91	7.08	7.973	0.20	-10.7	2.32	

PURGE STOP TIME:
SAMPLE TIME: 1159
LAB NAME:
SAMPLE ID: TT-TP2-M2-20160705

OBSERVATIONS/COMMENTS (NOTE TIMES):

FL= 0.058

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LOW-FLOW WATER PURGING & SAMPLING LOG

TETRA TECH

PROJECT NAME: Nest
PROJECT NUMBER: 100-SDO-T35000
PROJECT LOCATION: Henderson, NV
FIELD PERSON: J. Cook
PROJECT MANAGER: M. Feldman
DATE: 7-5-16

PUMP / TUBING TYPE: Dedicated
EQUIPMENT CLEANING METHOD: Micro 90 / DI
PURGE WATER DISPOSAL: Onsite

WELL NUMBER: ~~T-TP3-M1~~
CASING RADIUS: 2" (in.)
TOTAL DEPTH (TD): (ft.)
DEPTH TO WATER (DTW): 24.26 (ft.)
SCREENED INTERVAL: (ft.)

PURGE START TIME: 1235
PUMP SET AT ~30 (ft.)

TIME	PURGE RATE (ml/min)	VOLUME PURGED (ml)	DTW (ft)	TEMP (°C)	pH	COND. (µS/cm)	DO (mg/L)	ORP (mV)	TURB. (NTU)	
1235	225									
1240		1125	24.30	28.94	7.69	1.099	0.28	63.7	2.82	
1243		1800	24.31	28.72	7.67	1.121	0.24	62.9	2.88	
1246		2475	24.31	28.55	7.64	1.146	0.20	62.8	2.71	
1249		3150	24.31	28.66	7.62	1.174	0.16	61.7	3.29	
1252		3825	24.31	28.66	7.61	1.182	0.17	60.8	3.67	
1255	↓	4500	24.31	28.62	7.61	1.191	0.16	60.4	3.05	Sample
~~[illegible]~~										

PURGE STOP TIME: 1255
LAB NAME: Test America
SAMPLE TIME: 1255
SAMPLE ID: T+TP3-M1-20160705

OBSERVATIONS/COMMENTS (NOTE TIMES):

FL= 0.918

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LOW-FLOW WATER PURGING & SAMPLING LOG

TETRA TECH

PROJECT NAME: Next SFPT

PROJECT NUMBER: T35000-2016-M05

PROJECT LOCATION: Henderson NV

FIELD PERSON: Maxx & Jason

PROJECT MANAGER: Mark F

DATE: 7-5-16

PUMP / TUBING TYPE: dedicated

EQUIPMENT CLEANING METHOD: micro 90

PURGE WATER DISPOSAL: onsite

WELL NUMBER: TT-TP3-M2

CASING RADIUS: 2" (in.)

TOTAL DEPTH (TD): (ft.)

DEPTH TO WATER (DTW): 24.71 (ft.)

SCREENED INTERVAL: (ft.)

PURGE START TIME: 1208

PUMP SET AT ~30 (ft.)

TIME	PURGE RATE (ml/min)	VOLUME PURGED (ml)	DTW (ft)	TEMP (°C)	pH	COND. (µS/cm)	DO (mg/L)	ORP (mV)	TURB. (NTU)	
1212	270	1080	24.76	25.87	7.48	1.652	0.21	-27.6	2.32	
1215	↓	1890	24.76	25.88	7.48	1.655	0.17	-28.0	2.21	
1218		2700	24.76	25.82	7.47	1.662	0.17	-28.2	2.41	
1221		3510	24.76	25.85	7.47	1.664	0.15	-28.1	2.36	
1224	↓	4320	24.77	25.90	7.46	1.672	0.15	-29.0	2.31	
1227		5130	24.76	25.93	7.46	1.670	0.15	-29.3	2.27	

PURGE STOP TIME:

SAMPLE TIME: 1227

LAB NAME:

SAMPLE ID: TT-TP3-M2-20160705

OBSERVATIONS/COMMENTS (NOTE TIMES):

FL= 0.378

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LOW-FLOW WATER PURGING & SAMPLING LOG

TETRA TECH

PROJECT NAME: Nest
PROJECT NUMBER: 100-530-T35000
PROJECT LOCATION: Henderson, NV
FIELD PERSON: J. Cook
PROJECT MANAGER: M. Feldman
DATE: 7-6-16

PUMP / TUBING TYPE: Dedicated
EQUIPMENT CLEANING METHOD: Micro 90/DI
PURGE WATER DISPOSAL: Onsite

WELL NUMBER: FT-TP4-MI
CASING RADIUS: 2" (in.)
TOTAL DEPTH (TD): (ft.)
DEPTH TO WATER (DTW): 24.90 (ft.)
SCREENED INTERVAL: (ft.)

PURGE START TIME: 0843
PUMP SET AT ~30 (ft.)

TIME	PURGE RATE (ml/min)	VOLUME PURGED (ml)	DTW (ft)	TEMP (°C)	pH	COND. (µS/cm)	DO (mg/L)	ORP (mV)	TURB. (NTU)	
0843	180									
0848	↓	900	24.92	24.70	7.54	3.605	0.40	43.7	2.67	
0851		1440	24.92	24.69	7.42	3.501	0.34	45.8	2.83	
0854		1980	24.92	24.70	7.19	3.300	0.30	46.0	2.71	
0857		2520	24.92	24.71	7.27	3.217	0.33	44.2	2.66	
0900		3060	24.92	24.75	7.26	3.189	0.32	43.3	2.52	
0903		3600	24.92	24.76	7.27	3.187	0.45	40.9	2.49	

PURGE STOP TIME: 0903
SAMPLE TIME: 0907
LAB NAME: Test America
SAMPLE ID: FT-TP4-MI-20160706

OBSERVATIONS/COMMENTS (NOTE TIMES):

FI= 0.619

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LOW-FLOW WATER PURGING & SAMPLING LOG

TETRA TECH

PROJECT NAME: NERT SFPT
PROJECT NUMBER: T35000-2016-M05
PROJECT LOCATION: Henderson NV
FIELD PERSON: Mark + Jason
PROJECT MANAGER: Mark F.
DATE: 7-5-16

PUMP / TUBING TYPE: dedicated
EQUIPMENT CLEANING METHOD: ~~dedicated~~ micro 90
PURGE WATER DISPOSAL: Onsite

WELL NUMBER: TT-TP4-M2
CASING RADIUS: 2 11 (in.)
TOTAL DEPTH (TD): (ft.)
DEPTH TO WATER (DTW): 24.83 (ft.)
SCREENED INTERVAL: (ft.)

PURGE START TIME: 1250
PUMP SET AT ~30 (ft.)

TIME	PURGE RATE (ml/min)	VOLUME PURGED (ml)	DTW (ft)	TEMP (°C)	pH	COND. (µS/cm)	DO (mg/L)	ORP (mV)	TURB. (NTU)	
1254	210	840	24.90	24.46	7.50	2.845	0.94	-18.5	2.16	
1257	↓	1470	24.90	24.43	7.49	2.844	0.80	-18.7	1.83	
1300		2100	24.90	24.22	7.47	2.818	0.47	-20.8	2.17	
1303		2730	24.91	24.23	7.46	2.812	0.43	-20.9	1.92	
1306		3360	24.91	24.25	7.45	2.810	0.41	-21.0	2.31	
1309		3990	24.91	24.17	7.44	2.814	0.32	-22.3	2.26	

PURGE STOP TIME:
SAMPLE TIME: 1309
LAB NAME:
SAMPLE ID: TT-TP4-M2-20160705

OBSERVATIONS/COMMENTS (NOTE TIMES):

FL= 0.131

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LOW-FLOW WATER PURGING & SAMPLING LOG

TETRA TECH

PROJECT NAME: Nest
PROJECT NUMBER: 100-SR0-T35000
PROJECT LOCATION: Henderson, NV
FIELD PERSON: J. Cook
PROJECT MANAGER: M. Feldman
DATE: 7-6-2016

PUMP / TUBING TYPE: Dedicated
EQUIPMENT CLEANING METHOD: Micro 90/DI
PURGE WATER DISPOSAL: Onsite

WELL NUMBER: ++-TP4-M3
CASING RADIUS: 2 (in.)
TOTAL DEPTH (TD): (ft.)
DEPTH TO WATER (DTW): 24.46 (ft.)
SCREENED INTERVAL: (ft.)

PURGE START TIME: 0914
PUMP SET AT ~30 (ft.)

TIME	PURGE RATE (ml/min)	VOLUME PURGED (ml)	DTW (ft)	TEMP (°C)	pH	COND. (µS/cm)	DO (mg/L)	ORP (mV)	TURB. (NTU)	
0914	210									
0918	↓	840	24.50	25.44	7.52	6.627	0.52	68.0	7.23	
0921		1470	24.53	25.35	7.45	6.789	0.24	62.6	2.46	
0924		2100	24.55	25.35	7.43	6.819	0.23	59.1	1.46	
0927		2730	24.55	25.30	7.43	6.834	0.25	57.8	1.68	
0930		3360	24.55	25.37	7.42	6.858	0.38	56.0	1.80	
0933		3990	24.55	25.40	7.42	6.873	0.38	55.0	1.44	

PURGE STOP TIME: 0933
SAMPLE TIME: 0933
LAB NAME: Test America
SAMPLE ID: ++-TP4-M3-20160706

OBSERVATIONS/COMMENTS (NOTE TIMES):
Fl= 0.040

++-TP4-M3-20160706-DUP
Sample is a MS/MSD

Tetra Tech Inc.

NERT Soil Flush Pilot Test Area
Lysimeter Sampling Log

Lysimeter sample ID	Sample Time	Fluorescein Reading	Temperature (Celsius)	pH	Conductivity (µS/cm)	D.O. (mg/L)	ORP (mV)	Turbidity (NTU)	Volume Purged (mL)
TT-TP1-L1-20160705	1340	meter would	31.20	7.92	2.656	2.00	-51.1	1.26	250
TT-TP1-L2-20160705	1345	not turn on	30.34	8.27	2.546	2.05	-66.1	1.11	250
TT-TP2-L1-20160705	1330		27.48	8.34	2.671	4.16	111.6	1.23	240
TT-TP2-L2-20160705	1335		27.52	8.40	2.663	2.71	99.8	1.05	60
TT-TP3-L1-20160705	1320		30.23	8.56	1.314	3.22	137.5	1.53	200
TT-TP3-L2-20160705	1325		30.87	8.43	1.568	2.00	125.3	1.31	230
TT-TP4-L1-20160705	1310		30.93	8.53	1.615	9.89	54.4	1.62	250
TT-TP4-L2-20160705	1315		28.64	8.34	2.633	2.88	161.8	1.09	260

Date: 7-5-16

Sampled By: Jasm & Maxx

LOW-FLOW WATER PURGING & SAMPLING LOG

TETRA TECH

PROJECT NAME: NERT SFPT FIELD PERSON: Maxx W.

PROJECT NUMBER: 100-SBO-T3S600-2016-MES PROJECT MANAGER: Mark F.

PROJECT LOCATION: Henderson NV DATE: 7-22-16

PUMP / TUBING TYPE: dedicated 1/4 tubing

EQUIPMENT CLEANING METHOD:

PURGE WATER DISPOSAL:

WELL NUMBER: TT-TP1-M1

CASING RADIUS: 2" (in.)

TOTAL DEPTH (TD): (ft.)

DEPTH TO WATER (DTW): 25.61 (ft.)

SCREENED INTERVAL: (ft.)

PURGE START TIME: 1102 PUMP SET AT ~30 (ft.)

TIME	PURGE RATE (ml/min)	VOLUME PURGED (ml)	DTW (ft)	TEMP (°C)	pH	COND. (µS/cm)	DO (mg/L)	ORP (mV)	TURB. (NTU)	
1106	210		25.80	26.62	7.14	6.415	0.21	29.9	2.32	
1109	↓		25.81	26.53	7.16	6.417	0.20	29.7	2.01	
1112			25.80	26.35	7.17	6.424	0.16	29.9	1.93	
1115			25.81	26.35	7.17	6.435	0.15	30.2	2.14	
1118			25.81	26.33	7.17	6.451	0.14	30.8	2.10	
1121	↓		25.81	26.36	7.17	6.459	0.13	31.5	2.07	

PURGE STOP TIME: SAMPLE TIME: 1121

LAB NAME: SAMPLE ID: TT-TP1-M1-20160722

OBSERVATIONS/COMMENTS (NOTE TIMES):

*FL= 0.142

LOW-FLOW WATER PURGING & SAMPLING LOG

TETRA TECH

PROJECT NAME: INERT SFPT
FIELD PERSON: Maxx W.
PROJECT NUMBER: 100-580-T35000-2016-1005
PROJECT MANAGER: MARK F.
PROJECT LOCATION: Henderson NV
DATE: 7-27-16

PUMP / TUBING TYPE: dedicated
EQUIPMENT CLEANING METHOD:
PURGE WATER DISPOSAL:

WELL NUMBER: TT-TP1-M2
CASING RADIUS: 2" (in.)
TOTAL DEPTH (TD): (ft.)
DEPTH TO WATER (DTW): 26.50 (ft.)
SCREENED INTERVAL: (ft.)

PURGE START TIME: 1016
PUMP SET AT ~30 (ft.)

TIME	PURGE RATE (ml/min)	VOLUME PURGED (ml)	DTW (ft)	TEMP (°C)	pH	COND. (mS/cm)	DO (mg/L)	ORP (mV)	TURB. (NTU)	
1020	180		26.80	27.87	6.82	10.30	0.43	65.4	2.00	
1023	↓		26.85	28.26	6.88	11.21	0.26	65.2	1.81	
1026			26.90	28.25	6.90	11.42	0.25	63.5	1.75	
1029			22.73	28.23	6.91	11.60	0.23	61.7	1.87	
1032			22.95	28.45	6.92	11.61	0.22	61.3	2.05	
1035	↓		22.95	28.57	6.99	11.62	0.20	60.6	1.93	

PURGE STOP TIME:
SAMPLE TIME: 1035
LAB NAME:
SAMPLE ID: TT-TP1-M2-20160727

OBSERVATIONS/COMMENTS (NOTE TIMES):

FL= 0.136

LOW-FLOW WATER PURGING & SAMPLING LOG

TETRA TECH

PROJECT NAME: NERT SFPT FIELD PERSON: Maxx L.

PROJECT NUMBER: 100-SDO-T35000-2016-M05 PROJECT MANAGER: Mark F.

PROJECT LOCATION: Henderson, NV DATE: 7-27-16

PUMP / TUBING TYPE: dedicated 1/4	WELL NUMBER: TT-TP1-M3
EQUIPMENT CLEANING METHOD:	CASING RADIUS: 2" (in.)
	TOTAL DEPTH (TD): (ft.)
PURGE WATER DISPOSAL:	DEPTH TO WATER (DTW): 26.10 (ft.)
	SCREENED INTERVAL: (ft.)
PURGE START TIME: 1140	PUMP SET AT ~ 30 (ft.)

TIME	PURGE RATE (ml/min)	VOLUME PURGED (ml)	DTW (ft)	TEMP (°C)	pH	COND. (mS/cm)	DO (mg/L)	ORP (mV)	TURB. (NTU)	
1144	180		26.35	29.51	7.04	9.037	0.35	19.1	1.80	
1147	↓		26.35	29.46	7.04	9.032	0.31	19.6	1.76	
1150			26.35	29.36	7.02	9.010	0.26	20.7	1.78	
1153			26.36	29.28	7.01	8.918	0.18	23.2	1.86	
1156			26.35	29.30	7.00	8.9	0.19	24.1	1.73	
1159			26.35	29.31	6.99	8.9	0.18	24.9	1.98	

PURGE STOP TIME:	SAMPLE TIME: 1159
LAB NAME:	SAMPLE ID: TT-TP1-M3-20160727

OBSERVATIONS/COMMENTS (NOTE TIMES):

FL = 0.179

LOW-FLOW WATER PURGING & SAMPLING LOG

TETRA TECH

PROJECT NAME: NERT SFPT
FIELD PERSON: Mark W
PROJECT NUMBER: 100-SBO-T35000-2016-MES
PROJECT MANAGER: Mark F.
PROJECT LOCATION: Henderson NV
DATE: 7-27-16

PUMP / TUBING TYPE: dedicated 1/4" tubing
WELL NUMBER: TT-TP2-M1
EQUIPMENT CLEANING METHOD:
CASING RADIUS: 2" (in.)
TOTAL DEPTH (TD): (ft.)
PURGE WATER DISPOSAL:
DEPTH TO WATER (DTW): 24.95 (ft.)
SCREENED INTERVAL: (ft.)

PURGE START TIME: 1212
PUMP SET AT ~30 (ft.)

TIME	PURGE RATE (ml/min)	VOLUME PURGED (ml)	DTW (ft)	TEMP (°C)	pH	COND. (µS/cm)	DO (mg/L)	ORP (mV)	TURB. (NTU)	
1216	210		25.01	26.55	7.37	6.939	0.21	1.2	1.50	
1219	↓		25.02	24.29	7.36	6.928	0.20	1.1	1.48	
1222			25.02	26.30	7.33	6.823	0.16	2.5	1.32	
1225			25.02	26.31	7.30	6.811	0.14	3.4	1.44	
1228			25.02	26.38	7.28	6.812	0.14	4.9	1.21	
1231			25.02	26.36	7.27	6.811	0.12	5.0	1.16	

PURGE STOP TIME:
SAMPLE TIME: 1231
LAB NAME:
SAMPLE ID: TT-TP2-M1-20160727

OBSERVATIONS/COMMENTS (NOTE TIMES):

FL = 0.117

LOW-FLOW WATER PURGING & SAMPLING LOG

TETRA TECH

PROJECT NAME: NERT SFPT
FIELD PERSON: Maxx W.
PROJECT NUMBER: 100-SBO-T35000-2016-M05
PROJECT MANAGER: Mark F.
PROJECT LOCATION: Henderson NV
DATE: 7-28-16

PUMP / TUBING TYPE: dedicated 1/4" tubing
EQUIPMENT CLEANING METHOD:
PURGE WATER DISPOSAL:

WELL NUMBER: TT-TP2-M2
CASING RADIUS: 2" (in.)
TOTAL DEPTH (TD): (ft.)
DEPTH TO WATER (DTW): 25.47 (ft.)
SCREENED INTERVAL: (ft.)

PURGE START TIME: 1000
PUMP SET AT ~30 (ft.)

TIME	PURGE RATE (ml/min)	VOLUME PURGED (ml)	DTW (ft)	TEMP (°C)	pH	COND. (µS/cm)	DO (mg/L)	ORP (mV)	TURB. (NTU)	
1004	150		25.45	26.18	7.45	7.481	1.14	20.3	2.08	
1007	↓		25.45	26.01	7.40	7.410	0.85	21.3	2.69	
1010			25.45	25.93	7.31	7.329	0.62	22.8	2.13	
1013			25.45	25.74	7.30	7.372	0.40	23.4	1.98	
1016			25.45	25.25	7.26	7.384	0.19	24.9	1.83	
1019	↓		25.45	25.71	7.27	7.383	0.20	25.3	1.95	

PURGE STOP TIME:
SAMPLE TIME: 1019
LAB NAME:
SAMPLE ID: TT-TP2-M2-20160728

OBSERVATIONS/COMMENTS (NOTE TIMES):

FL = 0.134

LOW-FLOW WATER PURGING & SAMPLING LOG

TETRA TECH

PROJECT NAME: NERT SFPT
FIELD PERSON: Maxx W.
PROJECT NUMBER: 100-SBO-T35000-20160725
PROJECT MANAGER: Mark F.
PROJECT LOCATION: Henderson, NV
DATE: 7-28-16

PUMP / TUBING TYPE: dedicated 1/4" tubing
EQUIPMENT CLEANING METHOD:
PURGE WATER DISPOSAL:

WELL NUMBER: TT-TP3-M1
CASING RADIUS: 2" (in.)
TOTAL DEPTH (TD): (ft.)
DEPTH TO WATER (DTW): 25.15 (ft.)
SCREENED INTERVAL: (ft.)

PURGE START TIME: 1120
PUMP SET AT ~30 (ft.)

TIME	PURGE RATE (ml/min)	VOLUME PURGED (ml)	DTW (ft)	TEMP (°C)	pH	COND. (mS/cm)	DO (mg/L)	ORP (mV)	TURB. (NTU)	
1124	210		25.18	30.24	7.25	3.974	0.26	17.8	1.23	
1127	↓		25.18	30.08	7.24	4.120	0.24	17.7	1.20	
1130			25.18	29.77	7.23	4.187	0.21	17.5	1.38	
1133			25.18	30.08	7.23	4.196	0.21	17.7	1.42	
1136			25.18	30.18	7.22	4.217	0.19	17.5	1.68	
1139	↓		25.16	30.31	7.22	4.223	0.18	17.6	1.46	

PURGE STOP TIME:
SAMPLE TIME: 1139
LAB NAME:
SAMPLE ID: TT-TP3-M1-20160728

OBSERVATIONS/COMMENTS (NOTE TIMES):

FL= 0.264

LOW-FLOW WATER PURGING & SAMPLING LOG

TETRA TECH

PROJECT NAME: NEXT SFPT
FIELD PERSON: Maxx W.
PROJECT NUMBER:
PROJECT MANAGER: Mark F.
PROJECT LOCATION:
DATE: 7-28-16

PUMP / TUBING TYPE: dedicated 1/4" tubing
EQUIPMENT CLEANING METHOD:
PURGE WATER DISPOSAL:

WELL NUMBER: TT-TP3-M2
CASING RADIUS: 2" (in.)
TOTAL DEPTH (TD): (ft.)
DEPTH TO WATER (DTW): 25.57 (ft.)
SCREENED INTERVAL: (ft.)

PURGE START TIME: 1040
PUMP SET AT ~30 (ft.)

TIME	PURGE RATE (ml/min)	VOLUME PURGED (ml)	DTW (ft)	TEMP (°C)	pH	COND. (mS/cm)	DO (mg/L)	ORP (mV)	TURB. (NTU)	
1044	240		25.61	27.48	7.38	5.207	0.42	18.7	1.51	
1047	↓		25.61	27.54	7.35	5.221	0.30	19.1	1.32	
1050			25.61	27.51	7.34	5.229	0.25	19.5	1.68	
1053			25.61	27.68	7.32	5.225	0.23	19.8	1.81	
1056			25.61	27.28	7.30	5.356	0.21	20.1	1.74	
1059			25.61	27.36	7.29	5.363	0.20	20.0	1.71	

PURGE STOP TIME:
SAMPLE TIME: 1059
LAB NAME:
SAMPLE ID: TT-TP3-M2-20160728

OBSERVATIONS/COMMENTS (NOTE TIMES):

FL = 0.094

LOW-FLOW WATER PURGING & SAMPLING LOG

TETRA TECH

PROJECT NAME: NERT SFPT
FIELD PERSON: Mapp W.
PROJECT NUMBER: 100-580-T35000-206-M05
PROJECT MANAGER: Mark F.
PROJECT LOCATION: Henderson, NV
DATE: 7-28-16

PUMP / TUBING TYPE: dedicated 1/4" tubing
EQUIPMENT CLEANING METHOD:
PURGE WATER DISPOSAL:

WELL NUMBER: TT-TP4-M1
CASING RADIUS: 2" (in.)
TOTAL DEPTH (TD): (ft.)
DEPTH TO WATER (DTW): 25.60 (ft.)
SCREENED INTERVAL: (ft.)

PURGE START TIME: 1202
PUMP SET AT ~ 30 (ft.)

TIME	PURGE RATE (ml/min)	VOLUME PURGED (ml)	DTW (ft)	TEMP (°C)	pH	COND. (mS/cm)	DO (mg/L)	ORP (mV)	TURB. (NTU)	
1206	240		25.78	28.00	7.51	5.197	1.30	6.7	2.05	
1209	↓		25.75	26.57	7.47	5.489	0.53	8.9	1.82	
1212			25.76	26.09	7.41	5.641	0.32	10.8	1.65	
1215			25.78	26.13	7.37	5.719	0.29	15.9	1.68	
1218			25.78	26.07	7.36	5.726	0.31	16.5	1.72	
1221	↓		25.78	26.01	7.35	5.743	0.30	17.0	1.53	

PURGE STOP TIME:
SAMPLE TIME: 1221
LAB NAME:
SAMPLE ID: TT-TP4-M1-20160728

OBSERVATIONS/COMMENTS (NOTE TIMES):

FL= 0.255

LOW-FLOW WATER PURGING & SAMPLING LOG

TETRA TECH

PROJECT NAME: NERT SFPT FIELD PERSON: Maxx L.

PROJECT NUMBER: 100-GBO-T35000-2016-MOS PROJECT MANAGER: Mark F.

PROJECT LOCATION: Henderson, NV DATE: 7-28-16

PUMP / TUBING TYPE: dedicated 1/4" tubing

EQUIPMENT CLEANING METHOD:

PURGE WATER DISPOSAL:

WELL NUMBER: TT-TP4-M2

CASING RADIUS: 2" (in.)

TOTAL DEPTH (TD): (ft.)

DEPTH TO WATER (DTW): 25.63 (ft.)

SCREENED INTERVAL: (ft.)

PURGE START TIME: 1243 PUMP SET AT ~30 (ft.)

TIME	PURGE RATE (ml/min)	VOLUME PURGED (ml)	DTW (ft)	TEMP (°C)	pH	COND. (mS/cm)	DO (mg/L)	ORP (mV)	TURB. (NTU)	
1247	240		25.70	28.29	7.59	4.071	1.30	-4.0	1.42	
1250	↓		25.71	27.20	7.57	4.070	0.61	-3.1	1.15	
1253			25.70	27.18	7.56	4.158	0.40	-1.5	1.82	
1256			25.71	26.61	7.52	4.273	0.42	-0.4	1.53	
1259			25.72	26.77	7.51	4.320	0.36	0.0	1.57	
1302	↓		25.70	26.86	7.50	4.333	0.34	0.5	1.40	

PURGE STOP TIME: SAMPLE TIME: 1302

LAB NAME: SAMPLE ID: TT-TP4-M2-20160728

OBSERVATIONS/COMMENTS (NOTE TIMES):

FL= 0.112

LOW-FLOW WATER PURGING & SAMPLING LOG

TETRA TECH

PROJECT NAME: NERT SFPT
FIELD PERSON: Mark W.
PROJECT NUMBER: 100-580-T35000-206-M05
PROJECT MANAGER: Mark F.
PROJECT LOCATION: Henderson, NV
DATE: 7-28-16

PUMP / TUBING TYPE: dedicated 1/4" tubing
EQUIPMENT CLEANING METHOD:
PURGE WATER DISPOSAL:

WELL NUMBER: TT-TP4-M3
CASING RADIUS: 2" (in.)
TOTAL DEPTH (TD): (ft.)
DEPTH TO WATER (DTW): 25.00 (ft.)
SCREENED INTERVAL: (ft.)

PURGE START TIME: 1320
PUMP SET AT ~30 (ft.)

TIME	PURGE RATE (ml/min)	VOLUME PURGED (ml)	DTW (ft)	TEMP (°C)	pH	COND. (µS/cm)	DO (mg/L)	ORP (mV)	TURB. (NTU)	
1324	210		25.10	29.06	7.31	9.163	0.64	8.6	1.87	
1327	↓		25.16	28.83	7.24	9.325	0.24	15.3	2.05	
1330			25.10	28.76	7.23	9.373	0.20	16.2	1.78	
1333			25.16	28.53	7.22	9.399	0.16	17.7	1.96	
1336			25.10	28.66	7.21	9.417	0.14	18.9	1.62	
1336			25.10	28.55	7.20	9.426	0.13	19.3	1.26	

PURGE STOP TIME:
SAMPLE TIME: 1336
LAB NAME:
SAMPLE ID: TT-TP4-M3-20160728

OBSERVATIONS/COMMENTS (NOTE TIMES):
FL = 0.082 Dup & MS/MSD

Tetra Tech Inc.

NERT Soil Flush Pilot Test Area
Lysimeter Sampling Log

Lysimeter sample ID	Sample Time	Fluorescein Reading	Temperature (Celsius)	pH	Conductivity (µS/cm)	D.O. (mg/L)	ORP (mV)	Turbidity (NTU)	Volume Purged (mL)
TT-TP1-L1-20160728	1305	0.507	32.98	6.92	3.631	1.51	-122.1	75.72	100
TT-TP1-L2-20160728	1300	0.161	33.62	7.78	2.562	3.22	4.0	1.79	300
TT-TP2-L1-20160728	1315	22.02	28.49	7.27	3.217	2.08	5.3	4.09	200
TT-TP2-L2-20160728	1310	0.218	30.91	7.76	2.926	2.20	8.9	1.77	250
TT-TP3-L1-20160728	1325	1.083	32.11	7.63	1.400	1.65	-6.6	1.31	200
TT-TP3-L2-20160728	1320	0.343	31.73	7.53	1.529	1.61	-11.9	1.45	250
TT-TP4-L1-20160728	1335	4.616	35.16	7.92	2.203	1.70	-12.6	1.81	200
TT-TP4-L2-20160728	1330	0.188	29.18	7.68	2.677	1.70	22.0	1.27	250

Date: 7-27-16

Sampled By: Maxx W-

Appendix C
Permits

BRIAN SANDOVAL
Governor

LEO DROZDOFF
Director

STATE OF NEVADA

JASON KING, P.E.
State Engineer

JOHN GUILLORY, P.E.
Supervising Engineer

DEPARTMENT OF CONSERVATION AND NATURAL RESOURCES
DIVISION OF WATER RESOURCES
SOUTHERN NEVADA BRANCH OFFICE
400 Shadow Lane, Suite 201
Las Vegas, Nevada 89106
(702) 486-2770 • Fax (702) 486-2781
http://water.nv.gov

March 18, 2015

MO-3034

Mr. Jay A. Steinberg
President
Nevada Environmental Response Trust
35 E. Wacker Drive, #1550
Chicago, Illinois 60601

RE: Request for waiver to install ten (10) temporary monitor wells to measure groundwater levels and test the quality of the groundwater for future development of the property located at 501 South Fourth Street, Henderson, Nevada, within the NW¼ of the SE¼ of Section 12, T.22S, R.62E and within the Las Vegas Valley Basin (212).

Dear Mr. Steinberg:

As provided in Nevada Administrative Code (NAC) § 534.450 of the Regulation for Water Well and Related Drilling, permission is herewith **granted** to install ten (10) temporary monitor wells to assess water conditions as described in your request received March 13, 2015. Your statement ensuring Nevada Environmental Response Trust responsibility for abandonment of the well upon project completion was received in this office on March 13, 2015.

The ten (10) proposed monitor wells referenced in your letter are listed below:

Well Name	Legal Description	GPS Coordinates (NAD 83/ WGS 84)
MW-1	NW¼, SE¼ Section 12, T.22S, R62E	36.0468025° N, -115.0028190° W
MW-2	NW¼, SE¼ Section 12, T.22S, R62E	36.0468923° N, -115.0026495° W
MW-3	NW¼, SE¼ Section 12, T.22S, R62E	36.0469754° N, -115.0026451° W
MW-4	NW¼, SE¼ Section 12, T.22S, R62E	36.0470032° N, -115.0024132° W
MW-5	NW¼, SE¼ Section 12, T.22S, R62E	36.0469217° N, -115.0024166° W
MW-6	NW¼, SE¼ Section 12, T.22S, R62E	36.0469503° N, -115.0021847° W
MW-7	NW¼, SE¼ Section 12, T.22S, R62E	36.0470341° N, -115.0021822° W
MW-8	NW¼, SE¼ Section 12, T.22S, R62E	36.0470619° N, -115.0019512° W
MW-9	NW¼, SE¼ Section 12, T.22S, R62E	36.0469804° N, -115.0019546° W
MW-10	NW¼, SE¼ Section 12, T.22S, R62E	36.0469353° N, -115.0017598° W

This office also waives the provisions that require a mandate to install monitoring wells, NAC § 534.4351 (1)(c). The purpose of these wells is to measure groundwater levels and test the quality of the groundwater for future development of the property located at 501 South Fourth Street, Henderson, Nevada. The wellhead shall be protected from damage due to vandalism or sunlight. If polyvinyl chloride (PVC) casing is used, then these wells must be completed with ASTM F-480 (Sch. 40 or heavier) well casing as provided in NAC § 534.362.

Glued casing joint connections will not be allowed. Full compliance with the remainder of the statute and regulation is required.

A plot map showing the actual location of the completed wells must be submitted upon completion of the drilling operations. Please include an accurate description of the location of the monitor well on the completion reports (GPS coordinates are required).

The well driller's reports shall bear this waiver number: MO-3034.

Authorization to drill under this waiver expires one (1) year from the date of this letter.

The well driller must have a copy of this waiver in possession at all times during drilling activities pertaining to this project. This well may only be pumped when necessary to obtain samples.

Please note that you must notify the Nevada Division of Environmental Protection (NDEP) for possible permitting requirements for groundwater or temporary surface discharge permits, which may include Underground Injection Control (UIC) or National Pollution Discharge Elimination System (NPDES) Permit Numbers. For more information regarding the permitting process with NDEP, please contact Mr. Cliff Lawson at (775) 687-4670.

The wells shall be plugged and abandoned, as provided by regulation, upon project completion. The current owner of Assessor's Parcel Number 178-12-701-004 is shown as Nevada Environmental Response Trust by the records of the Clark County Assessor's office. This waiver does not imply or grant any land use agreements between Nevada Environmental Response Trust and any land owners. It is expressly understood that this authorization does not relieve the operator of the requirements of any other state, federal or local agencies.

If you have any questions, please contact this office at 702-486-2770.

Sincerely,

Tracy Geter
Drilling Supervisor

cc: File
Carson City Office
Christi Cooper, SNBO Office
Luis Torres, NV Licensed Driller, Gregg Drilling and Testing, Signal Hill, California
Kyle Hansen, Field Operations Manager/Geologist, Tetra Tech, Henderson, Nevada (e-mail)
Cliff Lawson, NDEP-Permits Group, Carson City, Nevada

NEVADA DIVISION OF
ENVIRONMENTAL PROTECTION

STATE OF NEVADA
Department of Conservation & Natural Resources
Brian Sandoval, Governor
Leo M. Drozdoff, P.E., Director
David Emme, Administrator

December 21, 2015

Andrew W. Steinberg
Nevada Environmental Response Trust
35 E. Wacker Drive, Suite 1550
Chicago, IL 60601

RE: Short-Term UIC General Permit GU07RS-52029: Nevada Environmental Response Trust Henderson

Dear Mr. Steinberg:

The Nevada Division of Environmental Protection (NDEP) has reviewed your Notice of Intent for inclusion under the short-term remediation underground injection control (UIC) General Permit GU07RS for the remediation activities identified in the UIC application. Authorization for inclusion under the permit is granted. Inclusion under this permit is issued only once per site for six months or less. If you need to continue remediation beyond six months, you must apply for the UIC General Permit for Long-term Remediation GU07RL or an individual UIC permit. Please submit necessary forms to allow sufficient process time for one of these permits if necessary. I have enclosed a signed copy of the general permit authorizing the activities as identified in the approved workplan. The responsible party must meet all conditions of this permit.

Please note the following sections of the permit:

1. This is a Category 1 project; please follow only Category 1 requirements. Monitoring and sampling will be pursuant to the January 7, 2015 workplan.
2. The effective date of permit is **December 28, 2015** and expires **June 27, 2016**.
3. I.A.1 – Authorized injectate is identified on the cover of the permit.
4. I.A.3 Reporting – monitoring reports are not required for the UIC general permit for short-term remediation. All requirements in this permit will be summarized and reported in the Corrective Action Workplan reports to Bureau of Corrective Actions. However, if you are planning on obtaining a long-term UIC permit, you will need to submit the injection activities of the pilot in that application.

If you have any questions please contact me at (775) 687-9419 or briana.johnson@ndep.nv.gov.

Sincerely,

Briana Johnson
Bureau of Water Pollution Control

Enclosure: GU07RS-52029

ecc: Weiquan Dong, NDEP Bureau of Corrective Actions
cc: Kyle Hansen, Tetra Tech, Inc., 1489 W. Warm Springs Rd., Ste. 110, Henderson, NV 89014
Mark Feldman, Tetra Tech, Inc., 301 E. Vanderbilt Way, Ste. 450, San Bernardino, CA 92408

NEVADA DIVISION OF ENVIRONMENTAL PROTECTION

UIC GENERAL PERMIT GU07RS ID# 52029

SHORT TERM REMEDIATION – Six months or less

AUTHORIZATION TO INJECT

In compliance with the provisions of the Nevada Revised Statutes (NRS) and the Nevada Underground Injection Control (UIC) Regulations, Nevada Administrative Code (NAC) 445A.810 through 445A.925, eligible applicants are authorized to inject the following compounds and/or water from a treatment facility operated in conjunction with a corrective action (CA) project overseen by the Nevada Division of Environmental Protection Bureau of Corrective Actions or other CA agency into Class V injection wells in accordance with limitations, requirements and other conditions set forth in Parts I and II hereof.

This General Permit is for corrective action (remediation) projects lasting **six months or less** and allows injection of 1) those materials identified below in Category 1; and/or 2) water which has been treated to meet groundwater quality criteria.

Facility/Site Name: **Nevada Environmental Response Trust (NERT) Site**

Facility Address: **501 South Fourth Street, Henderson, NV** Facility CA ID: **H-000539**

Legal Description: **T22S R62E Sec 12, NE SE**

Well Owner Name: **Nevada Environmental Response Trust**

Address: **35 E. Wacker Drive, Suite 1550, Chicago, IL 60601**

Operator Name & Address: **Tetra Tech, 1489 W. Warm Springs Rd., Ste 110, Henderson, NV 89014**

Authorized injection wells: **4 injection wells – Plot 1, Plot 2, Plot 3, Plot 4**

Authorized rates/volumes: **Max Volume: 600,000 gallons/plot. Max Injection Rate: Plot 1- 25 gpm, Plot 2- 45 gpm, Plot 3- 45 gpm, Plot 4- 25 gpm.**

Required for Quarterly sampling: ☒ Per approved State or County Corrective Action Workplan

☐ See UIC permit issuance cover letter Approved plan date: **January 7, 2015**

☐ Additional UIC Sampling required: _____

Coverage under this general permit will be authorized if a Notice of Intent (NOI) is submitted and the following injection occurs at a specific site:

CATEGORY 1 - One of the following is injected:

☐ Low-percentage solution of hydrogen peroxide (H_2O_2). Injection shall not exceed 350 gallons/well per month;

☐ Potassium and sodium permanganate;

☐ Ozone;

☐ Oxygen infusers (note: direct oxygen injection – no infuser);

☐ Sulfate or Polysulfide;

X Nutrients: nitrate, ammonia, phosphate, vitamins;

☐ Hydrogen releasing compounds;

X Carbon sources/electron donors (including, but not limited to acetate, lactate, glucose, and complex sugars);

☐ Surfactant;

☐ Chemical oxidation compounds

CATEGORY 2 - Injection of water that has been treated to meet groundwater quality criteria.

Modifications to the above requirements must be pre-approved by the UIC Program pursuant to Part I.A.8. The Permittee shall comply with all provisions of this permit and any letter of authorization issued pursuant to it.

This general permit was issued on **October 10, 2012**. This general permit shall expire on: **October 9, 2017** Effective date for the project above is: **December 28, 2015.** The authorization issued under this permit shall expire at midnight 180 days from the effective date.

Signed this 21st day of December.

Briana Johnson
Bureau of Water Pollution Control

PART I

The UIC General Permit for Short-Term Remediation is **issued only once per site for six months or less.** If a Permittee is required to continue remediation longer than six months, the Permittee shall submit an application for the UIC General Permit for Long-Term Remediation at least 30 days prior to expiration of permit authorization.

A. LIMITATIONS, MONITORING AND OTHER REQUIREMENTS

Subject to the Nevada Administrative Code (NAC) 445A.894, the director may require any person authorized to inject by a general permit to apply for and obtain an individual permit. **Upon review of the facts, if the Underground Injection Control (UIC) Program staff is concerned about any aspects of the project (such as a public water system supply well or domestic well), the applicant may be required to obtain an individual permit and application will be processed as a UIC UNEV permit.** The Permittee is only authorized to inject what is listed on page 1 of this permit; any actions other than the discharges listed will require an individual UIC UNEV Permit. If an individual permit is issued to a person holding a general permit for the same activity and discharge points, the general permit is automatically terminated on the effective date of the individual permit.

1. During the period beginning on the effective date of this permit for a specific project and lasting through the expiration date, the Permittee is authorized to inject:
   a. **CATEGORY 1**: Compounds which are injected into a well for remediation purposes per approved rates specified and authorized on page 1; and/or
   b. **CATEGORY 2**: Water that has been treated for remediation purposes to meet groundwater quality criteria.

2. **Injection shall not occur in a well that has had free product light non-aqueous phase liquids (LNAPL) and/or dense non-aqueous phase liquids (DNAPL)) during the previous 3 months.**

3. Extraction, treatment, and injection must prevent introduction of any foreign materials or unapproved additives to the injection zone. The use of any other additive(s) requires written authorization from the Nevada Division of Environmental Protection (the Division) prior to injection. **Sodium thiosulfate utilized to dechlorinate potable water may be used for injection under this general permit.**

4. Injection practices shall not cause injectate and/or groundwater to surface at or near the injection points, nor cause any physical, biological, or chemical degradation of groundwater pursuant to the UIC regulations. Surface discharges are not authorized by this permit. Injection practices shall not cause objectionable odors or any surface hazards.

5. The injectate shall be limited and groundwater monitored by the Permittee pursuant to the criteria listed below.
   a. **Category 1:** Monitoring reports **are not** required for injection activities covered under Category 1. All requirements related to this activity shall be summarized and reported in the Corrective Action reports.
   b. **Category 2:** Monitoring and reporting covered under Category 2 shall be conducted pursuant to the following: 1) the approved CA Plan; 2) the sampling required in Part I.A.6.; and 3) any additional UIC monitoring requirements identified on page 1 of this permit.
   c. Only the approved compounds or water extracted and/or generated on-site shall be injected, and only in the volumes and injection rates authorized following appropriate treatment to meet groundwater quality criteria. Other water generated as part of the facility's CA project may also be authorized under this permit. These additional waters shall be produced from an on-site activity, treated to meet groundwater quality criteria, and receive prior Division approval. All facilities encompassed by this permit shall conform to the plans and

specifications filed with the Division and shall be maintained in good working order at all times.

d. A laboratory certified by the state of Nevada must perform analyses. Testing methods for constituents must be EPA or Division approved. It must be clearly stated on all reports which analyses were performed.
e. The analytical method reporting limits for all chemical constituents must be at least as low as primary or secondary drinking water standards when applicable.
f. The Division may decrease or increase monitoring of any parameter for good cause.

6. **Monitoring and Reporting Requirements (for Category 2 only):**

The Permittee shall submit reports for the following two reporting periods: 1) initial authorization to 90 days after authorization and 2) 90 to 180 days after authorization to inject. The reports shall be in accordance with Part I.A.7. for UIC activities in a UIC Summary Report submitted to the UIC Program on a continuous basis, whether actively injecting or not.

The required sampling type, frequency and location are as follows:

Table 1: Category 2 – Pump and Treat

Parameter and Location	Frequency	Limitations	Sampling Location
Injectate Flow Rate, gpm	Total monthly	See authorization on page 1 (daily average)	Injection well
UIC Sample List 3 – Organics (Attachment I)	Day 7, 90 & 180 of pumping / injection	Monitor and Report	Inlet of treatment system
UIC Sample List 3 – Organics (Attachment I)	Day 7, 90 & 180 of pumping / injection,	Drinking Water Standards	Outfall of treatment system
Depth to Groundwater, feet	Monthly	Monitor and Report, water level shall not rise to within three (3) feet of ground surface.	---
Groundwater Elevation, amsl	Monthly	Monitor and Report	---

gpm: Gallons per minute amsl: Above mean sea level

a. The UIC Summary Report for **Category 2** shall at a minimum contain the following:

1. UIC General Permit and unique ID number.
2. Reporting period: semi-annual period and year; and date submitted.
3. Individual/company reporting.
4. Project name and address.
5. Corrective Action Case Officer name and Facility ID #.
6. Identify which wells were used for injection, which wells were used for extraction (if applicable) and injection rate. If no injection occurred, state so in report.
7. The results of the sampling analyses and monitoring as required by the table above.
8. Is free product present on-site? If free product is encountered, indicate free product type(s) and date(s) observed.
9. Brief summary detailing normal and any unusual activities.

10. Statement that all required Corrective Action Reports have been provided to the appropriate regulatory agency.
11. Name, title and signature of authorized reporting individual.
12. The UIC Summary Report is recommended to be no longer than five (5) pages.

The chain-of-custody documents and laboratory analytical data shall not be submitted with the UIC Summary Report. These documents shall be held on site and made available upon request by the Division.

7. Monitoring results and other requirements obtained during the previous reporting period, whether injection has occurred or not, shall be summarized for each month and reported **no later than 45 days** following the end of the reporting period (0-90 and 90-180 days after authorization).

Signed copies of only the UIC Summary Report shall be submitted to the UIC program at the following address:

Nevada Division of Environmental Protection
Bureau of Water Pollution Control
901 South Stewart Street, Suite 4001
Carson City, Nevada 89701

8. If, during operation of this facility, the Permittee or their representatives become aware of any condition which degrades the quality of the aquifer (outside of the treatment zone for injection), injection shall cease immediately and the UIC Program shall be notified pursuant to Part II.B.2.

9. The Permittee shall operate and maintain the system per established procedures and as approved by the Division. Any modification to the injection practices which is not approved on page 1 of this permit requires submission of changes and re-issuance of this permit by the UIC Program prior to implementation.

10. Nothing in this authorization shall be construed to eliminate the responsibility for remediation of this site. Remediation shall be accomplished in accordance with plans approved by the BCA, or other State-approved corrective action program.

11. All facilities encompassed by this permit shall conform to the plans and specifications filed with the UIC Program and shall be maintained in good working order at all times.

12. The UIC General Permit for Short-Term Remediation does not require an annual review and services fee.

13. The Permittee shall comply with all provisions of the UIC regulations, NAC 445A.810 through 445A.925, and all pertinent laws and regulations. Nothing in this permit relieves the Permittee from responsibilities, liabilities or penalties established by any other state, federal or local jurisdiction.

14. **Notice of Termination:** Upon completion of injection activities, the Permittee shall submit to the Division a Notice of Termination (NOT) U310 form.

15. Upon completion of the remediation project, all wells shall be abandoned pursuant to current Division of Water Resources (DWR) regulations (NAC 534) and by UIC regulations by filling them with cement grout from total depth to land surface. A driller licensed in the state of Nevada shall perform all abandonment work.

B. SCHEDULE OF COMPLIANCE

1. The Permittee shall implement and comply with the provisions of the schedule of compliance after approval by the Administrator, including in said implementation and compliance, any additions or modifications which the Administrator may make in approving the schedule of compliance.

   a. The Permittee shall achieve compliance with the conditions, limitations and requirements of the permit at the commencement of relevant activity.
   b. The Permittee shall submit any items listed in this general permit issuance letter as required.

PART II

A. RECORDKEEPING AND OTHER MONITORING REQUIREMENTS

1. Sampling and Test Procedures

   Samples and measurements taken as required herein shall be representative of the volume and/or nature of the subject of interest. Test procedures for the analyses of required constituents shall comply with applicable analytical methods cited and described in Tables IA - IE of 40 CFR part 136 or in Appendix III of 40 CFR part 261 unless the Administrator approves other procedures.

   A laboratory certified by the state of Nevada must perform all analyses conducted pursuant to permit requirements.

2. Recording of Results

   For each measurement or sample taken pursuant to the requirements of this permit, the Permittee shall record the following information:

   a. Chain-of-custody sheets with the exact place, date, and time of sampling;
   b. The dates the analyses were performed;
   c. The person(s) who performed the analyses;
   d. The analytical techniques or methods used;
   e. The results of all required analyses;
   f. The precision and accuracy of the analytical data; and
   g. Raw laboratory data result sheets.

3. Additional Monitoring by Permittee

   If the Permittee monitors any constituent at the location(s) designated herein more frequently than required by this permit, or monitors additional constituents other than those required by this permit, using approved analytical methods as specified above, the results of such monitoring shall be made available to the Division.

4. Records Retention

   All records and information resulting from the monitoring activities required by this permit, including all records and analyses performed, calibration and maintenance of instrumentation, and recordings from continuous monitoring instrumentation, **shall be retained for a minimum of three (3) years**, or longer if required by the Administrator.

5. Modification of Monitoring Frequency, Location and Sample Type

   After considering monitoring data, discharge flow or receiving water conditions, the Division may, for just cause, modify the monitoring frequency, location and/or sample type by issuing a Notice or

an Administrative Order to the Permittee.

B. MANAGEMENT REQUIREMENTS

1. Change in Effluents or Discharge

All effluents or discharges authorized herein shall be consistent with the terms and conditions of this permit. The discharge of any constituent identified in this permit more frequently than or at a level in excess of that authorized shall constitute a violation of the permit. Any anticipated facility expansions, or treatment modifications which will result in new, different, or increased effluents or discharges must be reported by submission of a new application or, if such changes will not violate the limitations specified in this permit, by notice to the permit issuing authority of such changes. Following such notice, the permit may be modified to specify and limit any constituents not previously limited.

2. Noncompliance Notification

If, for any reason, the Permittee does not comply with or will be unable to comply with the conditions, requirements and limitations specified in this permit, the Permittee shall provide the Administrator with the following information, in writing, within five (5) days of becoming aware of such conditions:

a. A description of the noncompliance or violation.
b. The period of noncompliance, including exact dates and times, or if not corrected, the time the noncompliance is expected to continue, and steps being taken to reduce, eliminate and prevent recurrence of the noncompliance.
c. Notification shall be provided verbally as soon as possible but not later than the end of the first working day after learning of the violation.

3. Facilities Operation

The Permittee shall at all times maintain in good working order and operate as efficiently as possible, all treatment or control facilities, devices or systems installed or used by the Permittee to achieve compliance with the terms and conditions of this permit.

4. Adverse Impact

The Permittee shall take all reasonable steps, including such accelerated or additional monitoring as necessary to determine the nature and impact of the non-complying effluent or discharge, to minimize any adverse impact to waters of the State resulting from noncompliance with any limitations specified in this permit.

5. Bypass

Any diversion from or bypass of facilities necessary to maintain compliance with the terms and conditions of this permit is prohibited except where unavoidable to prevent loss of life or severe property damage. The Division will have the final authority in the determination of whether a discharge is deemed unavoidable. The Permittee shall promptly notify the Administrator in writing of each such diversion or bypass, in accordance with the procedure specified in Part II.B.2 above.

C. RESPONSIBILITIES

1. Right of Entry

Pursuant to NRS 445A.655, the Permittee shall allow the Administrator and/or his authorized

representatives, upon the presentation of credentials:

a. To enter upon the Permittee's premises where a source is located or in which any records are required to be kept under the terms and conditions of this permit;
b. To have access to and copy any records required to be kept under the terms and conditions of this permit;
c. To inspect any monitoring equipment or monitoring method required in this permit; and
d. To perform any necessary sampling to determine compliance with this permit or to sample any effluent or discharge.

2. Transfer of Ownership or Control

In the event of any change in ownership or control, the Permittee shall notify the succeeding owner of the existence of this permit, in writing, at the earliest possible date to allow sufficient time for the succeeding owner to demonstrate financial responsibility to the Division within 30 days prior to transfer of ownership. The letter shall include the date agreed upon by both parties for the transfer of ownership. A copy of the letter shall be forwarded to the Administrator. The Administrator of the Division of Environmental Protection shall approve all transfers of permits. The Administrator may require modification, or revocation with subsequent reissuance of the permit, to change the name of the new Permittee and incorporate additional requirements as deemed necessary due to any changes made to the injection wells or system by the new Permittee.

3. Availability of Reports

Except for data determined to be confidential under NRS 445A.665, all reports prepared in accordance with the terms of this permit shall be available for public inspection. Knowingly making any false statement on any such report may result in the imposition of criminal penalties as provided for in NRS 445A.710.

4. Permit Modification, Suspension or Revocation

After notice and opportunity for a hearing, this permit may be modified, suspended, or revoked in whole or in part during its term for cause including, but not limited to, the following:

a. Violation of any terms or conditions of this permit;
b. Obtaining this permit by misrepresentation or failure to disclose fully all relevant facts; or
c. A change in any condition that requires either a temporary or permanent reduction or elimination of the effluent or discharge.

5. Civil and Criminal Liability

a. Nothing in this permit shall be construed to relieve the Permittee from civil or criminal penalties for noncompliance.
b. Nothing in this permit shall be construed to preclude the institution of any legal action or relieve the Permittee from any responsibilities, liabilities, or penalties established pursuant to any applicable State law or regulation.
c. The issuance of this permit does not convey any property rights, in either real or personal property, or any exclusive privileges, nor does it authorize any injury to private property or any invasion of personal rights, nor any infringement of federal, State or local laws or regulations.

Attachment I

Nevada Division of Environmental Protection
Underground Injection Control Program - Sampling and Monitoring Report Form

Facility Name :	**Depth of sampled water's origin :**
Facility Owner:	**County:**
NDEP UIC Permit # :	**Location :** Lattitude Longitude
Well ID # :	**Sampler :**
Type of Well : Monitor Production Injection	**Date Sampled :**

UIC Sample List 3 - Organic EPA Method 8260B (page 1 of 2)

Parameter	IRIS RfD ug/kg-d	DW Health Advisories ug/L	DW Standards mg/L	DW Standards ug/L	Measured Values
Acetone	100				
Dichlorodifluoromethane (Freon 12)	200	1,000			
Chloromethane	4	3			
Vinyl chloride			0.002	2	
Chloroethane					
Bromomethane (Methyl Bromide)	1	10			
Trichlorofluoromethane (Freon 11)	300	2,000			
1,1-Dichloroethene			0.007	7	
Tertiary Butyl Alcohol (TBA)					
Dichloromethane (Methylene chloride)			0.005	5	
tran-1,2-Dichloroethene			0.1	100	
Methyl tert-butyl ether (MTBE)			0.20 or 0.020*	200 or 20	
1,1-Dichloroethane					
Di-isopropyl Ether (DIPE)					
cis-1,2-Dichloroethene			0.07	70	
Bromochloromethane	13	90			
Chloroform			0.08	80	
Ethyl Tertiary Butyl Ether (ETBE)					
2,2-Dichloropropane					
1,2-Dichloroethane			0.005	5	
1,1,1-Trichloroethane (TCA)			0.2	200	
1,1-Dichloropropene					
Carbon tetrachloride			0.005	5	
Benzene			0.005	5	
Tertiary Amyl Methyl Ether (TAME)					
Dibromomethane					
1,2-Dichloropropane			0.005	5	
Trichloroethene (TCE)			0.005	5	
Bromodichloromethane			0.0**	0.0**	
cis and trans-1,3-Dichloropropene	30	0.4			
1,1,2-Trichloroethane			0.005	5	
Toluene			1	1,000	
1,3-Dichloropropane					
Dibromochloromethane			0.060**	60**	
1,2-Dibromoethane (EDB)			0.00005	0.5	
Tetrachloroethene (PCE)			0.005	5	
1,1,1,2-Tetrachloroethane	30	1-70			
Chlorobenzene			0.1	100	
Ethylbenzene			0.7	700	
o-Xylene & m,p-Xylene			10.0***	10,000***	

IRIS RfD and DW Health Advisories (chronic) are from USEPA Region 9, Drinking Water Standards and Health Advisories Table, February 2004. These values are provided for guidance when there is not a Federal Maximum Contaminant Level (MCL).

* State of Nevada Action Level dependant on distance to sensitive receptors.

** MCLG. This compound is one of the Total Trihalomethanes whose MCL is 0.080 mg/L or 80 ug/L.

*** The MCL for the sum of all xylenes is 10.0 mg/L or 10,000 ug/L.

Nevada Division of Environmental Protection Underground Injection Control Program - Sampling and Monitoring Report Form	
Facility Name :	**Depth of sampled water's origin :**
Facility Owner:	**County:**
NDEP UIC Permit # :	**Location :**
Well ID # :	**Sampler :**
Type of Well : Monitor Production Injection	**Date Sampled :**

UIC Sample List 3 - Organic EPA Method 8260B (page 2 of 2)

Parameter	IRIS RfD ug/kg-d	DW Health Advisories ug/L	DW Standards mg/L	DW Standards ug/L	Measured Values
Bromoform			0**	0.0**	
Styrene			0.1	100	
1,1,2,2-Tetrachloroethane	0.05	0.2-0.3			
1,2,3-Trichloropropane	6	40			
Isopropylbenzene (cumene)	100	11,000 (acute)			
Bromobenzene		4,000 (acute)			
n-Propylbenzene					
2- and 4-Chlorotoluene (o and p)	20	100			
1,3,5-Trimethylbenzene					
tert-Butylbenzene					
1,2,4-Trimethylbenzene					
sec-Butylbenzene					
1,3-Dichlorobenzene (m)	90	600			
1,4-Dichlorobenzene (p)			0.075	75	
4-Isopropyltoluene					
1,2-Dichlorobenzene (o)			0.6	600	
n-Butylbenzene					
1,2-Dibromo-3-chloropropane (DBCP)			0.0002	0.2	
1,2,4-Trichlorobenzene			0.07	70	
Naphthalene	20	100			
Hexachlorobutadiene	2	1			
1,2,3-Trichlorobenzene					
tert-Butyl formate (TBF)					

IRIS RfD and DW Health Advisories (chronic) are from USEPA Region 9, Drinking Water Standards and Health Advisories Table, February 2004. These values are provided for guidance when there is not a Federal Maximum Contaminant Level (MCL).

* State of Nevada Action Level dependant on distance to sensitive receptors.

** MCLG. This compound is one of the Total Trihalomethanes whose MCL is 0.080 mg/L or 80 ug/L.

*** The MCL for the sum of all xylenes is 10.0 mg/L or 10,000 ug/L.

Appendix D
Validated Analytical Data

Report Data Summary Table
Soil Flushing Treatability Study
Comprehensive

Location	Sample	Date	SDG	Carbonate (as CO3) (mg/L) SM2320B	Chloride (as Cl) (mg/L) E300.0	Chlorate (ug/L) E300.1B	Perchlorate (mg/Kg) E314.0	Perchlorate (ug/L) E314.0	Bicarbonate ion as HCO3 (mg/L) SM2320B	Hydroxide as OH (mg/L) SM2320B	Alkalinity, Total (as CaCO3) (mg/L) SM2320B	Carbon, Total Organic (mg/Kg) SW9060	Carbon, Total Organic (mg/L) SM5310B	Total Dissolved Solids (Residue, Filterable) (mg/L) SM2540C	Nitrogen, Nitrate (as N) (mg/L) E300.0	Sulfate (as So4) (mg/L) E300.0	Antimony (mg/Kg) SW6020	Antimony (ug/L) SW6020	Arsenic (mg/Kg) SW6020	Arsenic (ug/L) SW6020	Barium (mg/Kg) SW6020	Barium (ug/L) SW6020	Beryllium (mg/Kg) SW6020	Beryllium (ug/L) SW6020	Boron (mg/Kg) SW6010B	Boron (mg/L) SW6010B	Cadmium (mg/Kg) SW6020	Cadmium (ug/L) SW6020	Calcium (mg/L) SW6010B	Calcium (mg/L) SW6010B_LCH
TT-TP1-B1	TT-TP1-B1-10	2015-03-17	440-104698-1		**0.59**	<10	2.4				120	<2500		210	95	1.5	<0.54		6.2		110 J+c		0.41		6.3		<0.27			6.0
TT-TP1-B1	TT-TP1-B1-14	2015-03-17	440-104698-1				3.7							310																
TT-TP1-B1	TT-TP1-B1-18	2015-03-17	440-104698-1		**0.83**	17 Jq	7.4				370	<2500		340	26	6.1	<0.53		7.5		130		0.27 Jq		6.4		<0.27			10
TT-TP1-B1	TT-TP1-B1-2	2015-03-17	440-104698-1				0.81							82																
TT-TP1-B1	TT-TP1-B1-22	2015-03-17	440-104698-1				44							210																
TT-TP1-B1	TT-TP1-B1-26	2015-03-17	440-104698-1				210							740																
TT-TP1-B1	TT-TP1-B1-6	2015-03-17	440-104698-1				2.0							69																
TT-TP1-B1A	TT-TP1-B1A-10	2016-08-11	440-155501-1		**0.97**	36	1.0				28	4800		180	0.42 Jsp	0.89	<1.4		4.8		160		<0.75		5.7		<1.3			11
TT-TP1-B1A	TT-TP1-B1A-14	2016-08-11	440-155501-1				0.35							220																
TT-TP1-B1A	TT-TP1-B1A-18	2016-08-11	440-155501-1		**0.97**	23	0.41				56	9700		250	<0.25	8.2	<1.3		11		96		<0.75		9.6		<1.2			10
TT-TP1-B1A	TT-TP1-B1A-2	2016-08-11	440-155501-1				23							89																
TT-TP1-B1A	TT-TP1-B1A-22	2016-08-11	440-155501-1				10							490																
TT-TP1-B1A	TT-TP1-B1A-26	2016-08-11	440-155501-1				430							350																
TT-TP1-B1A	TT-TP1-B1A-6	2016-08-11	440-155501-1				0.53							120																
TT-TP1-B2	TT-TP1-B2-10	2015-03-17	440-104832-1				2.6							280																
TT-TP1-B2	TT-TP1-B2-14	2015-03-17	440-104832-1				2.3							150																
TT-TP1-B2	TT-TP1-B2-18	2015-03-17	440-104832-1				5.6							250																
TT-TP1-B2	TT-TP1-B2-2	2015-03-17	440-104832-1				2.3							140																
TT-TP1-B2	TT-TP1-B2-22	2015-03-17	440-104832-1		**3.5**	29000	15				65	6700		170	95	15	<0.53		16		180		0.39		11		<0.26			14
TT-TP1-B2	TT-TP1-B2-26	2015-03-17	440-104832-1				610							420																
TT-TP1-B2	TT-TP1-B2-6	2015-03-17	440-104832-1		**0.94**	<50	4.2				45	<2500		240	180	2.6	2.4 J-c		47 J-c		160		0.59		24 J-c		2.4			25
TT-TP1-B2A	TT-TP1-B2A-10	2016-08-12	440-155575-1				5.9							220																
TT-TP1-B2A	TT-TP1-B2A-14	2016-08-12	440-155575-1				0.22							220																
TT-TP1-B2A	TT-TP1-B2A-18	2016-08-12	440-155575-1				0.62							380																
TT-TP1-B2A	TT-TP1-B2A-2	2016-08-12	440-155575-1				6.4							110																
TT-TP1-B2A	TT-TP1-B2A-22	2016-08-12	440-155575-1		**2.2**	510	17				44	15000		210	2.7	6.2	<0.27		13		180		0.30		7.1 Jsp		<0.25			6.9
TT-TP1-B2A	TT-TP1-B2A-6	2016-08-12	440-155575-1		**2.1**	<10	0.096				30	4700		100	0.31 Jsp	4.3	<0.27		4.1		140		0.45		7.2		<0.25			25
TT-TP1-B3	TT-TP1-B3-10	2015-03-18	440-104832-1				15							580																
TT-TP1-B3	TT-TP1-B3-14	2015-03-18	440-104832-1				4.6							320																
TT-TP1-B3	TT-TP1-B3-18	2015-03-18	440-104832-1		**0.62**	26	4.7				62	<2500		230	37	2.5	<0.52		4.9		120		0.36		6.2		<0.26			1.8
TT-TP1-B3	TT-TP1-B3-2	2015-03-18	440-104832-1				1.4							67																
TT-TP1-B3	TT-TP1-B3-22	2015-03-18	440-104832-1				38							220																
TT-TP1-B3	TT-TP1-B3-26	2015-03-18	440-104832-1				310							470																
TT-TP1-B3	TT-TP1-B3-6	2015-03-18	440-104832-1		**1.2**	<100	11 J-c				16	<2500		330	190	8.4	<0.56		6.3		240		0.58		5.7		<0.28			52 J-c
TT-TP1-B3A	TT-TP1-B3A-10	2016-08-11	440-155501-1				0.54							250																
TT-TP1-B3A	TT-TP1-B3A-14	2016-08-11	440-155501-1				0.71							560																

Report Data Summary Table
Soil Flushing Treatability Study
Comprehensive

Location	Sample	Date	SDG	Chromium, Hexavalent (mg/Kg) SW7199	Chromium, Hexavalent (ug/L) SW7199	Chromium, Total (mg/Kg) SW6020	Chromium, Total (ug/L) SW6020	Cobalt (mg/Kg) SW6020	Cobalt (ug/L) SW6020	Copper (mg/Kg) SW6020	Copper (ug/L) SW6020	Iron (mg/Kg) SW6010B	Iron (mg/L) SW6010B	Lead (mg/Kg) SW6020	Lead (ug/L) SW6020	Magnesium (mg/L) SW6010B	Magnesium (mg/L) SW6010B_LCH	Manganese (mg/Kg) SW6010B	Manganese (mg/L) SW6010B	Mercury (mg/Kg) SW7471A	Mercury (mg/L) SW7470A	Molybdenum (mg/Kg) SW6020	Molybdenum (ug/L) SW6020	Nickel (mg/Kg) SW6020	Nickel (ug/L) SW6020	Potassium (mg/L) SW6010B	Potassium (mg/L) SW6010B_LCH	Selenium (mg/Kg) SW6020	Selenium (ug/L) SW6020
TT-TP1-B1	TT-TP1-B1-10	2015-03-17	440-104698-1	<0.44		12		4.9		27 J-c		12000 J-c		5.3			0.87	190 J-c		0.014 Jq		0.85 Jq		17			0.94	<0.22	
TT-TP1-B1	TT-TP1-B1-14	2015-03-17	440-104698-1																										
TT-TP1-B1	TT-TP1-B1-18	2015-03-17	440-104698-1	<0.42		9.3		3.6		7.9		8500		5.0			0.56	160		0.043		0.92 Jq		9.6			1.0	<0.21	
TT-TP1-B1	TT-TP1-B1-2	2015-03-17	440-104698-1																										
TT-TP1-B1	TT-TP1-B1-22	2015-03-17	440-104698-1																										
TT-TP1-B1	TT-TP1-B1-26	2015-03-17	440-104698-1																										
TT-TP1-B1	TT-TP1-B1-6	2015-03-17	440-104698-1																										
TT-TP1-B1A	TT-TP1-B1A-10	2016-08-11	440-155501-1	<0.16		14		5.1		12		14000		6.0			1.3 Jsp	250		<0.013		<2.5		13			<3.7	1.3 Jsp	
TT-TP1-B1A	TT-TP1-B1A-14	2016-08-11	440-155501-1																										
TT-TP1-B1A	TT-TP1-B1A-18	2016-08-11	440-155501-1	<0.17		14		4.7		12		14000		6.1			1.3 Jsp	200		1.2		<2.5		13			<3.7	1.5 Jsp	
TT-TP1-B1A	TT-TP1-B1A-2	2016-08-11	440-155501-1																										
TT-TP1-B1A	TT-TP1-B1A-22	2016-08-11	440-155501-1																										
TT-TP1-B1A	TT-TP1-B1A-26	2016-08-11	440-155501-1																										
TT-TP1-B1A	TT-TP1-B1A-6	2016-08-11	440-155501-1																										
TT-TP1-B2	TT-TP1-B2-10	2015-03-17	440-104832-1																										
TT-TP1-B2	TT-TP1-B2-14	2015-03-17	440-104832-1																										
TT-TP1-B2	TT-TP1-B2-18	2015-03-17	440-104832-1																										
TT-TP1-B2	TT-TP1-B2-2	2015-03-17	440-104832-1																										
TT-TP1-B2	TT-TP1-B2-22	2015-03-17	440-104832-1	<0.43		13		4.1		9.4		10000		5.4			2.1	200		0.015 Jq		0.82 Jq		11			0.85	<0.21	
TT-TP1-B2	TT-TP1-B2-26	2015-03-17	440-104832-1																										
TT-TP1-B2	TT-TP1-B2-6	2015-03-17	440-104832-1	<0.46		13		6.6		23 J-c		18000 J-c		7.7			3.9	330 J-c		0.058		5.3		24 J-c			0.38 Jq	0.80 Jq	
TT-TP1-B2A	TT-TP1-B2A-10	2016-08-12	440-155575-1																										
TT-TP1-B2A	TT-TP1-B2A-14	2016-08-12	440-155575-1																										
TT-TP1-B2A	TT-TP1-B2A-18	2016-08-12	440-155575-1																										
TT-TP1-B2A	TT-TP1-B2A-2	2016-08-12	440-155575-1																										
TT-TP1-B2A	TT-TP1-B2A-22	2016-08-12	440-155575-1	<0.17		18		4.0		10		15000		4.3			2.2 Jsp	220		<0.013		1.1		10			<3.7	<0.20	
TT-TP1-B2A	TT-TP1-B2A-6	2016-08-12	440-155575-1	<0.18		21		5.8		13		21000		6.2			2.6 Jsp	300		0.015 Jsp		<0.50		13			<3.7	<0.20	
TT-TP1-B3	TT-TP1-B3-10	2015-03-18	440-104832-1																										
TT-TP1-B3	TT-TP1-B3-14	2015-03-18	440-104832-1																										
TT-TP1-B3	TT-TP1-B3-18	2015-03-18	440-104832-1	<0.42		8.5		4.1		11		11000		6.0			0.27 Jq	180		0.015 Jq		0.68 Jq		11			<0.37	<0.21	
TT-TP1-B3	TT-TP1-B3-2	2015-03-18	440-104832-1																										
TT-TP1-B3	TT-TP1-B3-22	2015-03-18	440-104832-1																										
TT-TP1-B3	TT-TP1-B3-26	2015-03-18	440-104832-1																										
TT-TP1-B3	TT-TP1-B3-6	2015-03-18	440-104832-1	<0.45		17		5.9		15		18000		7.0			7.7	290		0.022 Jq		<0.56		15			<0.37	<0.22	
TT-TP1-B3A	TT-TP1-B3A-10	2016-08-11	440-155501-1																										
TT-TP1-B3A	TT-TP1-B3A-14	2016-08-11	440-155501-1																										

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Location	Sample	Date	SDG	Silver (mg/Kg) SW6020	Silver (ug/L) SW6020	Sodium (mg/L) SW6010B	Sodium (mg/L) SW6010B_LCH	Titanium (mg/Kg) SW6010B	Titanium (mg/L) SW6010B	Zinc (mg/Kg) SW6020	Zinc (ug/L) SW6020	pH (pH) SW9045C
TT-TP1-B1	TT-TP1-B1-10	2015-03-17	440-104698-1	<0.11			23	600 J+c		41		8.08
TT-TP1-B1	TT-TP1-B1-14	2015-03-17	440-104698-1									
TT-TP1-B1	TT-TP1-B1-18	2015-03-17	440-104698-1	<0.11			23	470		19		8.63
TT-TP1-B1	TT-TP1-B1-2	2015-03-17	440-104698-1									
TT-TP1-B1	TT-TP1-B1-22	2015-03-17	440-104698-1									
TT-TP1-B1	TT-TP1-B1-26	2015-03-17	440-104698-1									
TT-TP1-B1	TT-TP1-B1-6	2015-03-17	440-104698-1									
TT-TP1-B1A	TT-TP1-B1A-10	2016-08-11	440-155501-1	<0.50			18	850		27 Jsp		8.4
TT-TP1-B1A	TT-TP1-B1A-14	2016-08-11	440-155501-1									
TT-TP1-B1A	TT-TP1-B1A-18	2016-08-11	440-155501-1	<0.50			10	730		26 Jsp		8.8
TT-TP1-B1A	TT-TP1-B1A-2	2016-08-11	440-155501-1									
TT-TP1-B1A	TT-TP1-B1A-22	2016-08-11	440-155501-1									
TT-TP1-B1A	TT-TP1-B1A-26	2016-08-11	440-155501-1									
TT-TP1-B1A	TT-TP1-B1A-6	2016-08-11	440-155501-1									
TT-TP1-B2	TT-TP1-B2-10	2015-03-17	440-104832-1									
TT-TP1-B2	TT-TP1-B2-14	2015-03-17	440-104832-1									
TT-TP1-B2	TT-TP1-B2-18	2015-03-17	440-104832-1									
TT-TP1-B2	TT-TP1-B2-2	2015-03-17	440-104832-1									
TT-TP1-B2	TT-TP1-B2-22	2015-03-17	440-104832-1	0.11 Jq			14	480		22		8.32
TT-TP1-B2	TT-TP1-B2-26	2015-03-17	440-104832-1									
TT-TP1-B2	TT-TP1-B2-6	2015-03-17	440-104832-1	0.19 Jq			13	470 J+c		110 J-c		7.59
TT-TP1-B2A	TT-TP1-B2A-10	2016-08-12	440-155575-1									
TT-TP1-B2A	TT-TP1-B2A-14	2016-08-12	440-155575-1									
TT-TP1-B2A	TT-TP1-B2A-18	2016-08-12	440-155575-1									
TT-TP1-B2A	TT-TP1-B2A-2	2016-08-12	440-155575-1									
TT-TP1-B2A	TT-TP1-B2A-22	2016-08-12	440-155575-1	<0.099			99	850		20		8.9
TT-TP1-B2A	TT-TP1-B2A-6	2016-08-12	440-155575-1	<0.10			9.1	1100		31		8.4
TT-TP1-B3	TT-TP1-B3-10	2015-03-18	440-104832-1									
TT-TP1-B3	TT-TP1-B3-14	2015-03-18	440-104832-1									
TT-TP1-B3	TT-TP1-B3-18	2015-03-18	440-104832-1	<0.10			54	550		24		9.42
TT-TP1-B3	TT-TP1-B3-2	2015-03-18	440-104832-1									
TT-TP1-B3	TT-TP1-B3-22	2015-03-18	440-104832-1									
TT-TP1-B3	TT-TP1-B3-26	2015-03-18	440-104832-1									
TT-TP1-B3	TT-TP1-B3-6	2015-03-18	440-104832-1	<0.11			14	740		33		7.75
TT-TP1-B3A	TT-TP1-B3A-10	2016-08-11	440-155501-1									
TT-TP1-B3A	TT-TP1-B3A-14	2016-08-11	440-155501-1									

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Location	Sample	Date	SDG	Carbonate (as CO3) (mg/L) SM2320B	Chloride (as Cl) (mg/L) E300.0	Chlorate (ug/L) E300.1B	Perchlorate (mg/Kg) E314.0	Perchlorate (ug/L) E314.0	Bicarbonate ion as HCO3 (mg/L) SM2320B	Hydroxide as OH (mg/L) SM2320B	Alkalinity, Total (as CaCO3) (mg/L) SM2320B	Carbon, Total Organic (mg/Kg) SW9060	Carbon, Total Organic (mg/L) SM5310B	Total Dissolved Solids (Residue, Filterable) (mg/L) SM2540C	Nitrogen, Nitrate (as N) (mg/L) E300.0	Sulfate (as So4) (mg/L) E300.0	Antimony (mg/Kg) SW6020	Antimony (ug/L) SW6020	Arsenic (mg/Kg) SW6020	Arsenic (ug/L) SW6020	Barium (mg/Kg) SW6020	Barium (ug/L) SW6020	Beryllium (mg/Kg) SW6020	Beryllium (ug/L) SW6020	Boron (mg/Kg) SW6010B	Boron (mg/L) SW6010B	Cadmium (mg/Kg) SW6020	Cadmium (ug/L) SW6020	Calcium (mg/L) SW6010B	Calcium (mg/L) SW6010B_LCH
TT-TP1-B3A	TT-TP1-B3A-18	2016-08-11	440-155501-1		**4.9**	11 Jsp	0.057				94	14000		360	<0.25	6.5	<1.3		16		85		<0.75		12		<1.2			6.9
TT-TP1-B3A	TT-TP1-B3A-2	2016-08-11	440-155501-1				0.15							63																
TT-TP1-B3A	TT-TP1-B3A-26	2016-08-11	440-155501-1				420							500																
TT-TP1-B3A	TT-TP1-B3A-6	2016-08-11	440-155501-1		**1.5**	<10	0.066				71	5500		210	0.27 Jsp	0.56	<1.3		4.8		130		<0.74		7.1		<1.2			61
TT-TP1-B4	TT-TP1-B4-10	2015-03-18	440-104832-1				1.3							200																
TT-TP1-B4	TT-TP1-B4-14	2015-03-18	440-104832-1				1.4							230																
TT-TP1-B4	TT-TP1-B4-18	2015-03-18	440-104832-1				1.3							260																
TT-TP1-B4	TT-TP1-B4-2	2015-03-18	440-104832-1		**1.6**	310	1.9				48	<2500		58	1.6	3.7	<0.54		4.2		280		0.66		4.3 Jq		<0.27			7.4
TT-TP1-B4	TT-TP1-B4-22	2015-03-18	440-104832-1				3.8							280																
TT-TP1-B4	TT-TP1-B4-26	2015-03-18	440-104832-1		**42**	130000	440				18	<2500		440	6.7	51	<0.80		21		110		0.98		30		<0.40			6.7
TT-TP1-B4	TT-TP1-B4-6	2015-03-18	440-104832-1				0.77 J+c							72																
TT-TP1-B4A	TT-TP1-B4A-10	2016-08-11	440-155501-1				0.16 J-m							170																
TT-TP1-B4A	TT-TP1-B4A-14	2016-08-11	440-155501-1				0.15							140																
TT-TP1-B4A	TT-TP1-B4A-18	2016-08-11	440-155501-1				0.20							480																
TT-TP1-B4A	TT-TP1-B4A-2	2016-08-11	440-155501-1		**0.74**	<10	0.19				20	5700		62	0.44 Jsp	5.2	<1.3		4.7		300		<0.75		5.5		<1.2			10
TT-TP1-B4A	TT-TP1-B4A-22	2016-08-11	440-155501-1				57							190																
TT-TP1-B4A	TT-TP1-B4A-26	2016-08-11	440-155501-1		**25**	88000	780				16	11000		440	12	28	<1.3		11		54		<0.74		23		<1.2			7.6
TT-TP1-B4A	TT-TP1-B4A-6	2016-08-11	440-155501-1				0.12							72																
TT-TP1-L1	TT-TP1-L1-20151210	2015-12-10	440-130588-1	**<2.4**	**140**			25000 J-c	240	<1.4	200		6.3	22000	3500	990														
TT-TP1-L1	TT-TP1-L1-20160120	2016-01-20	440-135664-1					24000						24000																
TT-TP1-L1	TT-TP1-L1-20160204	2016-02-04	440-137358-1					16000						6200																
TT-TP1-L1	TT-TP1-L1-20160211	2016-02-11	440-138059-1					11000																						
TT-TP1-L1	TT-TP1-L1-20160218	2016-02-18	440-138657-1					7300																						
TT-TP1-L1	TT-TP1-L1-20160225	2016-02-25	440-139326-1					6000						8000																
TT-TP1-L1	TT-TP1-L1-20160303	2016-03-03	440-139965-1					4400						6100																
TT-TP1-L1	TT-TP1-L1-20160310	2016-03-10	440-140826-1					2800						4700																
TT-TP1-L1	TT-TP1-L1-20160317	2016-03-17	440-141827-1					3000						4100																
TT-TP1-L1	TT-TP1-L1-20160323	2016-03-23	440-142439-1					2600						3800																
TT-TP1-L1	TT-TP1-L1-20160331	2016-03-31	440-143078-1					2200						3400																
TT-TP1-L1	TT-TP1-L1-20160405	2016-04-05	440-143458-1					1900						3200																
TT-TP1-L1	TT-TP1-L1-20160420	2016-04-20	440-145023-1					1900																						
TT-TP1-L1	TT-TP1-L1-20160428	2016-04-28	440-145766-1					1600						2100																
TT-TP1-L1	TT-TP1-L1-20160505	2016-05-05	440-146524-1					1200						2400																
TT-TP1-L1	TT-TP1-L1-20160511	2016-05-11	440-147243-1					1200						2300																
TT-TP1-L1	TT-TP1-L1-20160519	2016-05-19	440-147992-1					1400						2000																
TT-TP1-L1	TT-TP1-L1-20160525	2016-05-25	440-148383-1					1600						2100																

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Location	Sample	Date	SDG	Chromium, Hexavalent (mg/Kg) SW7199	Chromium, Hexavalent (ug/L) SW7199	Chromium, Total (mg/Kg) SW6020	Chromium, Total (ug/L) SW6020	Cobalt (mg/Kg) SW6020	Cobalt (ug/L) SW6020	Copper (mg/Kg) SW6020	Copper (ug/L) SW6020	Iron (mg/Kg) SW6010B	Iron (mg/L) SW6010B	Lead (mg/Kg) SW6020	Lead (ug/L) SW6020	Magnesium (mg/L) SW6010B	Magnesium (mg/L) SW6010B_LCH	Manganese (mg/Kg) SW6010B	Manganese (mg/L) SW6010B	Mercury (mg/Kg) SW7471A	Mercury (mg/L) SW7470A	Molybdenum (mg/Kg) SW6020	Molybdenum (ug/L) SW6020	Nickel (mg/Kg) SW6020	Nickel (ug/L) SW6020	Potassium (mg/L) SW6010B	Potassium (mg/L) SW6010B_LCH	Selenium (mg/Kg) SW6020	Selenium (ug/L) SW6020
TT-TP1-B3A	TT-TP1-B3A-18	2016-08-11	440-155501-1	<0.19		21		3.6		11		9400		4.1			1.9 Jsp	150		<0.015		<2.5		11			<3.7	1.0 Jsp	
TT-TP1-B3A	TT-TP1-B3A-2	2016-08-11	440-155501-1																										
TT-TP1-B3A	TT-TP1-B3A-26	2016-08-11	440-155501-1																										
TT-TP1-B3A	TT-TP1-B3A-6	2016-08-11	440-155501-1	<0.17		16		7.4		16		19000		6.9			8.8	310		<0.013		<2.5		16			<3.7	1.5 Jsp	
TT-TP1-B4	TT-TP1-B4-10	2015-03-18	440-104832-1																										
TT-TP1-B4	TT-TP1-B4-14	2015-03-18	440-104832-1																										
TT-TP1-B4	TT-TP1-B4-18	2015-03-18	440-104832-1																										
TT-TP1-B4	TT-TP1-B4-2	2015-03-18	440-104832-1	1.0		17		7.5		16		20000		9.1			0.88	420		0.025		0.56 Jq		16			<0.37	<0.22	
TT-TP1-B4	TT-TP1-B4-22	2015-03-18	440-104832-1																										
TT-TP1-B4	TT-TP1-B4-26	2015-03-18	440-104832-1	7.4		40		8.3		17		20000		14			3.6	410		<0.019		1.1 Jq		18			2.5	<0.32	
TT-TP1-B4	TT-TP1-B4-6	2015-03-18	440-104832-1																										
TT-TP1-B4A	TT-TP1-B4A-10	2016-08-11	440-155501-1																										
TT-TP1-B4A	TT-TP1-B4A-14	2016-08-11	440-155501-1																										
TT-TP1-B4A	TT-TP1-B4A-18	2016-08-11	440-155501-1																										
TT-TP1-B4A	TT-TP1-B4A-2	2016-08-11	440-155501-1	<0.16		17		8.0		17		19000		6.8			1.0 Jsp	320		0.014 Jsp		<2.5		17			<3.7	1.5 Jsp	
TT-TP1-B4A	TT-TP1-B4A-22	2016-08-11	440-155501-1																										
TT-TP1-B4A	TT-TP1-B4A-26	2016-08-11	440-155501-1	5.2		19		4.5		11		12000		6.2			4.5	210		<0.019		<2.5		11			<3.7	<0.99	
TT-TP1-B4A	TT-TP1-B4A-6	2016-08-11	440-155501-1																										
TT-TP1-L1	TT-TP1-L1-20151210	2015-12-10	440-130588-1		<0.25 UJe																								
TT-TP1-L1	TT-TP1-L1-20160120	2016-01-20	440-135664-1		<0.25 UJc																								
TT-TP1-L1	TT-TP1-L1-20160204	2016-02-04	440-137358-1		37 J-c																								
TT-TP1-L1	TT-TP1-L1-20160211	2016-02-11	440-138059-1																										
TT-TP1-L1	TT-TP1-L1-20160218	2016-02-18	440-138657-1																										
TT-TP1-L1	TT-TP1-L1-20160225	2016-02-25	440-139326-1		<0.25																								
TT-TP1-L1	TT-TP1-L1-20160303	2016-03-03	440-139965-1		<0.25																								
TT-TP1-L1	TT-TP1-L1-20160310	2016-03-10	440-140826-1		<0.25																								
TT-TP1-L1	TT-TP1-L1-20160317	2016-03-17	440-141827-1		<0.25																								
TT-TP1-L1	TT-TP1-L1-20160323	2016-03-23	440-142439-1		<0.25																								
TT-TP1-L1	TT-TP1-L1-20160331	2016-03-31	440-143078-1		<0.25																								
TT-TP1-L1	TT-TP1-L1-20160405	2016-04-05	440-143458-1		<0.25																								
TT-TP1-L1	TT-TP1-L1-20160420	2016-04-20	440-145023-1		<0.25																								
TT-TP1-L1	TT-TP1-L1-20160428	2016-04-28	440-145766-1		<0.25																								
TT-TP1-L1	TT-TP1-L1-20160505	2016-05-05	440-146524-1		<0.25																								
TT-TP1-L1	TT-TP1-L1-20160511	2016-05-11	440-147243-1		<0.25																								
TT-TP1-L1	TT-TP1-L1-20160519	2016-05-19	440-147992-1		<0.25																								
TT-TP1-L1	TT-TP1-L1-20160525	2016-05-25	440-148383-1		<0.25																								

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Location	Sample	Date	SDG	Silver (mg/Kg) SW6020	Silver (ug/L) SW6020	Sodium (mg/L) SW6010B	Sodium (mg/L) SW6010B_LCH	Titanium (mg/Kg) SW6010B	Titanium (mg/L) SW6010B	Zinc (mg/Kg) SW6020	Zinc (ug/L) SW6020	pH (pH) SW9045C
TT-TP1-B3A	TT-TP1-B3A-18	2016-08-11	440-155501-1	<0.50			150	600		<25		9.0
TT-TP1-B3A	TT-TP1-B3A-2	2016-08-11	440-155501-1									
TT-TP1-B3A	TT-TP1-B3A-26	2016-08-11	440-155501-1									
TT-TP1-B3A	TT-TP1-B3A-6	2016-08-11	440-155501-1	<0.50			12	870		36 Jsp		8.0
TT-TP1-B4	TT-TP1-B4-10	2015-03-18	440-104832-1									
TT-TP1-B4	TT-TP1-B4-14	2015-03-18	440-104832-1									
TT-TP1-B4	TT-TP1-B4-18	2015-03-18	440-104832-1									
TT-TP1-B4	TT-TP1-B4-2	2015-03-18	440-104832-1	<0.11			4.5	830		41		8.35
TT-TP1-B4	TT-TP1-B4-22	2015-03-18	440-104832-1									
TT-TP1-B4	TT-TP1-B4-26	2015-03-18	440-104832-1	<0.16			83	790		56		7.72
TT-TP1-B4	TT-TP1-B4-6	2015-03-18	440-104832-1									
TT-TP1-B4A	TT-TP1-B4A-10	2016-08-11	440-155501-1									
TT-TP1-B4A	TT-TP1-B4A-14	2016-08-11	440-155501-1									
TT-TP1-B4A	TT-TP1-B4A-18	2016-08-11	440-155501-1									
TT-TP1-B4A	TT-TP1-B4A-2	2016-08-11	440-155501-1	<0.50			6.5	1100		35 Jsp		9.0
TT-TP1-B4A	TT-TP1-B4A-22	2016-08-11	440-155501-1									
TT-TP1-B4A	TT-TP1-B4A-26	2016-08-11	440-155501-1	<0.49			74	550		37 Jsp		7.6
TT-TP1-B4A	TT-TP1-B4A-6	2016-08-11	440-155501-1									
TT-TP1-L1	TT-TP1-L1-20151210	2015-12-10	440-130588-1									
TT-TP1-L1	TT-TP1-L1-20160120	2016-01-20	440-135664-1									
TT-TP1-L1	TT-TP1-L1-20160204	2016-02-04	440-137358-1									
TT-TP1-L1	TT-TP1-L1-20160211	2016-02-11	440-138059-1									
TT-TP1-L1	TT-TP1-L1-20160218	2016-02-18	440-138657-1									
TT-TP1-L1	TT-TP1-L1-20160225	2016-02-25	440-139326-1									
TT-TP1-L1	TT-TP1-L1-20160303	2016-03-03	440-139965-1									
TT-TP1-L1	TT-TP1-L1-20160310	2016-03-10	440-140826-1									
TT-TP1-L1	TT-TP1-L1-20160317	2016-03-17	440-141827-1									
TT-TP1-L1	TT-TP1-L1-20160323	2016-03-23	440-142439-1									
TT-TP1-L1	TT-TP1-L1-20160331	2016-03-31	440-143078-1									
TT-TP1-L1	TT-TP1-L1-20160405	2016-04-05	440-143458-1									
TT-TP1-L1	TT-TP1-L1-20160420	2016-04-20	440-145023-1									
TT-TP1-L1	TT-TP1-L1-20160428	2016-04-28	440-145766-1									
TT-TP1-L1	TT-TP1-L1-20160505	2016-05-05	440-146524-1									
TT-TP1-L1	TT-TP1-L1-20160511	2016-05-11	440-147243-1									
TT-TP1-L1	TT-TP1-L1-20160519	2016-05-19	440-147992-1									
TT-TP1-L1	TT-TP1-L1-20160525	2016-05-25	440-148383-1									

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Location	Sample	Date	SDG	Carbonate (as CO3) (mg/L) SM2320B	Chloride (as Cl) (mg/L) E300.0	Chlorate (ug/L) E300.1B	Perchlorate (mg/Kg) E314.0	Perchlorate (ug/L) E314.0	Bicarbonate ion as HCO3 (mg/L) SM2320B	Hydroxide as OH (mg/L) SM2320B	Alkalinity, Total (as CaCO3) (mg/L) SM2320B	Carbon, Total Organic (mg/Kg) SW9060	Carbon, Total Organic (mg/L) SM5310B	Total Dissolved Solids (Residue, Filterable) (mg/L) SM2540C	Nitrogen, Nitrate (as N) (mg/L) E300.0	Sulfate (as So4) (mg/L) E300.0	Antimony (mg/Kg) SW6020	Antimony (ug/L) SW6020	Arsenic (mg/Kg) SW6020	Arsenic (ug/L) SW6020	Barium (mg/Kg) SW6020	Barium (ug/L) SW6020	Beryllium (mg/Kg) SW6020	Beryllium (ug/L) SW6020	Boron (mg/Kg) SW6010B	Boron (mg/L) SW6010B	Cadmium (mg/Kg) SW6020	Cadmium (ug/L) SW6020	Calcium (mg/L) SW6010B	Calcium (mg/L) SW6010B_LCH
TT-TP1-L1	TT-TP1-L1-20160602	2016-06-02	440-149036-1					890																							
TT-TP1-L1	TT-TP1-L1-20160608	2016-06-08	440-149621-1					800																							
TT-TP1-L1	TT-TP1-L1-20160622	2016-06-22	440-150775-1					790						1900																	
TT-TP1-L1	TT-TP1-L1-20160705	2016-07-05	440-151701-1					140						2000																	
TT-TP1-L1	TT-TP1-L1-20160727	2016-07-27	440-153790-1					<50						2500																	
TT-TP1-L2	TT-TP1-L2-10	2015-03-26	440-105406-1				1.6							250																	
TT-TP1-L2	TT-TP1-L2-14	2015-03-26	440-105406-1				1.3 Jf							220																	
TT-TP1-L2	TT-TP1-L2-18	2015-03-26	440-105406-1		**0.61**	15 Jq	1.9				75	<2500		210	30	2.9	<0.53		6.2		93		0.31 Jq		6.3		<0.26			8.6
TT-TP1-L2	TT-TP1-L2-2	2015-03-26	440-105406-1				1.1							68																	
TT-TP1-L2	TT-TP1-L2-20151210	2015-12-10	440-130588-1	**<2.4**	**190**			82000	550	<1.4	450		4.2	15000	2300	980															
TT-TP1-L2	TT-TP1-L2-20160120	2016-01-20	440-135664-1					81000						18000																	
TT-TP1-L2	TT-TP1-L2-20160204	2016-02-04	440-137358-1					37000					5.8	22000																	
TT-TP1-L2	TT-TP1-L2-20160211	2016-02-11	440-138059-1					38000						22000																	
TT-TP1-L2	TT-TP1-L2-20160218	2016-02-18	440-138657-1					45000						23000																	
TT-TP1-L2	TT-TP1-L2-20160225	2016-02-25	440-139326-1					35000						22000																	
TT-TP1-L2	TT-TP1-L2-20160303	2016-03-03	440-139965-1					30000						20000																	
TT-TP1-L2	TT-TP1-L2-20160310	2016-03-10	440-140826-1					21000						17000																	
TT-TP1-L2	TT-TP1-L2-20160317	2016-03-17	440-141827-1					20000						13000																	
TT-TP1-L2	TT-TP1-L2-20160323	2016-03-23	440-142439-1					17000						12000																	
TT-TP1-L2	TT-TP1-L2-20160331	2016-03-31	440-143078-1					12000						9300																	
TT-TP1-L2	TT-TP1-L2-20160405	2016-04-05	440-143458-1					10000						8000																	
TT-TP1-L2	TT-TP1-L2-20160420	2016-04-20	440-145023-1					5300																							
TT-TP1-L2	TT-TP1-L2-20160428	2016-04-28	440-145766-1					4800						3800																	
TT-TP1-L2	TT-TP1-L2-20160505	2016-05-05	440-146524-1					2900						3300																	
TT-TP1-L2	TT-TP1-L2-20160511	2016-05-11	440-147243-1					3300																							
TT-TP1-L2	TT-TP1-L2-20160519	2016-05-19	440-147992-1					3000						2900																	
TT-TP1-L2	TT-TP1-L2-20160525	2016-05-25	440-148383-1					2700						2400																	
TT-TP1-L2	TT-TP1-L2-20160602	2016-06-02	440-149036-1					1700																							
TT-TP1-L2	TT-TP1-L2-20160608	2016-06-08	440-149621-1					1900																							
TT-TP1-L2	TT-TP1-L2-20160622	2016-06-22	440-150775-1					1500						2000																	
TT-TP1-L2	TT-TP1-L2-20160705	2016-07-05	440-151701-1					1500						2000																	
TT-TP1-L2	TT-TP1-L2-20160727	2016-07-27	440-153790-1					1200						1800																	
TT-TP1-L2	TT-TP1-L2-22	2015-03-26	440-105406-1				46							1100																	
TT-TP1-L2	TT-TP1-L2-26	2015-03-26	440-105406-1				420							460																	
TT-TP1-L2	TT-TP1-L2-6	2015-03-26	440-105406-1		**0.71**	26	1.0				20	<2500		80	13	5.1	<0.56		5.6		210		0.60		6.7		<0.28			6.8
TT-TP1-L2A	TT-TP1-L2A-10	2016-08-12	440-155575-1				0.31							190																	

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Location	Sample	Date	SDG	Chromium, Hexavalent (mg/Kg) SW7199	Chromium, Hexavalent (ug/L) SW7199	Chromium, Total (mg/Kg) SW6020	Chromium, Total (ug/L) SW6020	Cobalt (mg/Kg) SW6020	Cobalt (ug/L) SW6020	Copper (mg/Kg) SW6020	Copper (ug/L) SW6020	Iron (mg/Kg) SW6010B	Iron (mg/L) SW6010B	Lead (mg/Kg) SW6020	Lead (ug/L) SW6020	Magnesium (mg/L) SW6010B	Magnesium (mg/L) SW6010B_LCH	Manganese (mg/Kg) SW6010B	Manganese (mg/L) SW6010B	Mercury (mg/Kg) SW7471A	Mercury (mg/L) SW7470A	Molybdenum (mg/Kg) SW6020	Molybdenum (ug/L) SW6020	Nickel (mg/Kg) SW6020	Nickel (ug/L) SW6020	Potassium (mg/L) SW6010B	Potassium (mg/L) SW6010B_LCH	Selenium (mg/Kg) SW6020	Selenium (ug/L) SW6020
TT-TP1-L1	TT-TP1-L1-20160602	2016-06-02	440-149036-1		<0.25																								
TT-TP1-L1	TT-TP1-L1-20160608	2016-06-08	440-149621-1		<0.25																								
TT-TP1-L1	TT-TP1-L1-20160622	2016-06-22	440-150775-1		<0.25																								
TT-TP1-L1	TT-TP1-L1-20160705	2016-07-05	440-151701-1		<0.25																								
TT-TP1-L1	TT-TP1-L1-20160727	2016-07-27	440-153790-1		<0.25																								
TT-TP1-L2	TT-TP1-L2-10	2015-03-26	440-105406-1																										
TT-TP1-L2	TT-TP1-L2-14	2015-03-26	440-105406-1																										
TT-TP1-L2	TT-TP1-L2-18	2015-03-26	440-105406-1	<0.42		6.8		2.8		8.8		7500		4.6			0.72	140		<0.013		<0.53		8.5			0.67	<0.21	
TT-TP1-L2	TT-TP1-L2-2	2015-03-26	440-105406-1																										
TT-TP1-L2	TT-TP1-L2-20151210	2015-12-10	440-130588-1		<0.25 UJe																								
TT-TP1-L2	TT-TP1-L2-20160120	2016-01-20	440-135664-1		<0.25 UJc		3.1																						
TT-TP1-L2	TT-TP1-L2-20160204	2016-02-04	440-137358-1		<0.25 UJc		5.2 Jq																						
TT-TP1-L2	TT-TP1-L2-20160211	2016-02-11	440-138059-1				8.4 Jq																						
TT-TP1-L2	TT-TP1-L2-20160218	2016-02-18	440-138657-1				<2.5																						
TT-TP1-L2	TT-TP1-L2-20160225	2016-02-25	440-139326-1		<0.25		<5.0																						
TT-TP1-L2	TT-TP1-L2-20160303	2016-03-03	440-139965-1		<0.25		1.3 Jq																						
TT-TP1-L2	TT-TP1-L2-20160310	2016-03-10	440-140826-1		<0.25		12																						
TT-TP1-L2	TT-TP1-L2-20160317	2016-03-17	440-141827-1		<0.25																								
TT-TP1-L2	TT-TP1-L2-20160323	2016-03-23	440-142439-1		<0.25																								
TT-TP1-L2	TT-TP1-L2-20160331	2016-03-31	440-143078-1		<0.25																								
TT-TP1-L2	TT-TP1-L2-20160405	2016-04-05	440-143458-1		<0.25																								
TT-TP1-L2	TT-TP1-L2-20160420	2016-04-20	440-145023-1		2.3		100																						
TT-TP1-L2	TT-TP1-L2-20160428	2016-04-28	440-145766-1		<0.25																								
TT-TP1-L2	TT-TP1-L2-20160505	2016-05-05	440-146524-1		<0.25																								
TT-TP1-L2	TT-TP1-L2-20160511	2016-05-11	440-147243-1																										
TT-TP1-L2	TT-TP1-L2-20160519	2016-05-19	440-147992-1		<0.25		8.5																						
TT-TP1-L2	TT-TP1-L2-20160525	2016-05-25	440-148383-1		<0.25		<0.50																						
TT-TP1-L2	TT-TP1-L2-20160602	2016-06-02	440-149036-1		<0.25																								
TT-TP1-L2	TT-TP1-L2-20160608	2016-06-08	440-149621-1																										
TT-TP1-L2	TT-TP1-L2-20160622	2016-06-22	440-150775-1		<0.25		2.2																						
TT-TP1-L2	TT-TP1-L2-20160705	2016-07-05	440-151701-1		<0.25																								
TT-TP1-L2	TT-TP1-L2-20160727	2016-07-27	440-153790-1		<0.25																								
TT-TP1-L2	TT-TP1-L2-22	2015-03-26	440-105406-1																										
TT-TP1-L2	TT-TP1-L2-26	2015-03-26	440-105406-1																										
TT-TP1-L2	TT-TP1-L2-6	2015-03-26	440-105406-1	<0.45		14		6.8		16		16000		7.3			0.75	290		<0.013		<0.56		16			<0.37	<0.22	
TT-TP1-L2A	TT-TP1-L2A-10	2016-08-12	440-155575-1																										

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Location	Sample	Date	SDG	Silver (mg/Kg) SW6020	Silver (ug/L) SW6020	Sodium (mg/L) SW6010B	Sodium (mg/L) SW6010B_LCH	Titanium (mg/Kg) SW6010B	Titanium (mg/L) SW6010B	Zinc (mg/Kg) SW6020	Zinc (ug/L) SW6020	pH (pH) SW9045C
TT-TP1-L1	TT-TP1-L1-20160602	2016-06-02	440-149036-1									
TT-TP1-L1	TT-TP1-L1-20160608	2016-06-08	440-149621-1									
TT-TP1-L1	TT-TP1-L1-20160622	2016-06-22	440-150775-1									
TT-TP1-L1	TT-TP1-L1-20160705	2016-07-05	440-151701-1									
TT-TP1-L1	TT-TP1-L1-20160727	2016-07-27	440-153790-1									
TT-TP1-L2	TT-TP1-L2-10	2015-03-26	440-105406-1									
TT-TP1-L2	TT-TP1-L2-14	2015-03-26	440-105406-1									
TT-TP1-L2	TT-TP1-L2-18	2015-03-26	440-105406-1	<0.11			73	450		18		8.46
TT-TP1-L2	TT-TP1-L2-2	2015-03-26	440-105406-1									
TT-TP1-L2	TT-TP1-L2-20151210	2015-12-10	440-130588-1									
TT-TP1-L2	TT-TP1-L2-20160120	2016-01-20	440-135664-1									
TT-TP1-L2	TT-TP1-L2-20160204	2016-02-04	440-137358-1									
TT-TP1-L2	TT-TP1-L2-20160211	2016-02-11	440-138059-1									
TT-TP1-L2	TT-TP1-L2-20160218	2016-02-18	440-138657-1									
TT-TP1-L2	TT-TP1-L2-20160225	2016-02-25	440-139326-1									
TT-TP1-L2	TT-TP1-L2-20160303	2016-03-03	440-139965-1									
TT-TP1-L2	TT-TP1-L2-20160310	2016-03-10	440-140826-1									
TT-TP1-L2	TT-TP1-L2-20160317	2016-03-17	440-141827-1									
TT-TP1-L2	TT-TP1-L2-20160323	2016-03-23	440-142439-1									
TT-TP1-L2	TT-TP1-L2-20160331	2016-03-31	440-143078-1									
TT-TP1-L2	TT-TP1-L2-20160405	2016-04-05	440-143458-1									
TT-TP1-L2	TT-TP1-L2-20160420	2016-04-20	440-145023-1									
TT-TP1-L2	TT-TP1-L2-20160428	2016-04-28	440-145766-1									
TT-TP1-L2	TT-TP1-L2-20160505	2016-05-05	440-146524-1									
TT-TP1-L2	TT-TP1-L2-20160511	2016-05-11	440-147243-1									
TT-TP1-L2	TT-TP1-L2-20160519	2016-05-19	440-147992-1									
TT-TP1-L2	TT-TP1-L2-20160525	2016-05-25	440-148383-1									
TT-TP1-L2	TT-TP1-L2-20160602	2016-06-02	440-149036-1									
TT-TP1-L2	TT-TP1-L2-20160608	2016-06-08	440-149621-1									
TT-TP1-L2	TT-TP1-L2-20160622	2016-06-22	440-150775-1									
TT-TP1-L2	TT-TP1-L2-20160705	2016-07-05	440-151701-1									
TT-TP1-L2	TT-TP1-L2-20160727	2016-07-27	440-153790-1									
TT-TP1-L2	TT-TP1-L2-22	2015-03-26	440-105406-1									
TT-TP1-L2	TT-TP1-L2-26	2015-03-26	440-105406-1									
TT-TP1-L2	TT-TP1-L2-6	2015-03-26	440-105406-1	<0.11			54	770		36		8.16
TT-TP1-L2A	TT-TP1-L2A-10	2016-08-12	440-155575-1									

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Location	Sample	Date	SDG	Carbonate (as CO3) (mg/L) SM2320B	Chloride (as Cl) (mg/L) E300.0	Chlorate (ug/L) E300.1B	Perchlorate (mg/Kg) E314.0	Perchlorate (ug/L) E314.0	Bicarbonate ion as HCO3 (mg/L) SM2320B	Hydroxide as OH (mg/L) SM2320B	Alkalinity, Total (as CaCO3) (mg/L) SM2320B	Carbon, Total Organic (mg/Kg) SW9060	Carbon, Total Organic (mg/L) SM5310B	Total Dissolved Solids (Residue, Filterable) (mg/L) SM2540C	Nitrogen, Nitrate (as N) (mg/L) E300.0	Sulfate (as So4) (mg/L) E300.0	Antimony (mg/Kg) SW6020	Antimony (ug/L) SW6020	Arsenic (mg/Kg) SW6020	Arsenic (ug/L) SW6020	Barium (mg/Kg) SW6020	Barium (ug/L) SW6020	Beryllium (mg/Kg) SW6020	Beryllium (ug/L) SW6020	Boron (mg/Kg) SW6010B	Boron (mg/L) SW6010B	Cadmium (mg/Kg) SW6020	Cadmium (ug/L) SW6020	Calcium (mg/L) SW6010B	Calcium (mg/L) SW6010B_LCH
TT-TP1-L2A	TT-TP1-L2A-14	2016-08-12	440-155575-1				0.90 J+m							330																
TT-TP1-L2A	TT-TP1-L2A-18	2016-08-12	440-155575-1		**2.7**	2400	24				48	4100		130	1.8	3.8	<0.27		6.8		110		0.38		10		<0.25			13
TT-TP1-L2A	TT-TP1-L2A-2	2016-08-12	440-155575-1				77							140																
TT-TP1-L2A	TT-TP1-L2A-22	2016-08-12	440-155575-1				50							1400																
TT-TP1-L2A	TT-TP1-L2A-26	2016-08-12	440-155575-1				380							680																
TT-TP1-L2A	TT-TP1-L2A-6	2016-08-12	440-155575-1		**1.0**	150	1.3				27	1300		91	0.39 Jsp	1.9	<0.27		3.7		100		0.39		5.8 Jsp		<0.25			11
TT-TP1-M1	TT-TP1-M1	2016-02-24	440-139185-1					430000					10	6200																
TT-TP1-M1	TT-TP1-M1-20151210	2015-12-10	440-130588-1	<2.4	**1500**	3800000		740000	230	<1.4	190		1.5	10000	51	1300		<2.5		100		38		<1.3		4.1		<1.3	480 J-c	
TT-TP1-M1	TT-TP1-M1-2016	2016-04-04	440-143273-1	<2.4	**740**	1400000		1500000	480	<1.4	390		3.8	7300	190	880		<0.50		38		12		<0.25		2.9		<0.25	300	
TT-TP1-M1	TT-TP1-M1-20160120	2016-01-20	440-135664-1					800000					1.3	9900																
TT-TP1-M1	TT-TP1-M1-20160203	2016-02-03	440-137164-1					580000					2.6	12000																
TT-TP1-M1	TT-TP1-M1-20160210	2016-02-10	440-137910-1	<2.4	**780**	1900000		590000	490	<1.4	400		3.2	10000		990		<2.5		120		60		<1.3		4.9		<1.3	470	
TT-TP1-M1	TT-TP1-M1-20160217	2016-02-17	440-138539-1					1200000					8.6	8200																
TT-TP1-M1	TT-TP1-M1-20160302	2016-03-02	440-139843-1					360000					8.1	5300																
TT-TP1-M1	TT-TP1-M1-20160309	2016-03-09	440-140696-1	<2.4	**570**	1100000		490000	770	<1.4	630		5.2	5400	170	670		<2.5		380		56		<1.3		19		<1.3	1100	
TT-TP1-M1	TT-TP1-M1-20160309	2016-03-09	440-140826-1					420000																						
TT-TP1-M1	TT-TP1-M1-20160316	2016-03-16	440-141586-1					560000					3.9	5700																
TT-TP1-M1	TT-TP1-M1-20160323	2016-03-23	440-142439-1					880000					3.4	6700																
TT-TP1-M1	TT-TP1-M1-20160330	2016-03-30	440-142922-1					980000					2.8	7600																
TT-TP1-M1	TT-TP1-M1-20160413	2016-04-13	440-144411-1					3500					6.1	1500																
TT-TP1-M1	TT-TP1-M1-20160427	2016-04-27	440-145639-1					500000					3.6	4000																
TT-TP1-M1	TT-TP1-M1-20160504	2016-05-04	440-146375-1	<2.4	**190**	320000		210000	810	<1.4	660		4.3	2400	52	400		<0.50		290		21		<0.25		1.3		<0.25	44	
TT-TP1-M1	TT-TP1-M1-20160510	2016-05-10	440-147006-1					460000					3.7	4600																
TT-TP1-M1	TT-TP1-M1-20160519	2016-05-19	440-147992-1					1600000					2.8	12000																
TT-TP1-M1	TT-TP1-M1-20160524	2016-05-24	440-148308-1					470000					3.8	3500																
TT-TP1-M1	TT-TP1-M1-20160601	2016-06-01	440-148926-1	<2.4	**480**	750000		680000	450	<1.4	370		2.7	5100	79	570		<0.50		180		49		<0.25		1.9		<0.25	150	
TT-TP1-M1	TT-TP1-M1-20160608	2016-06-08	440-149621-1					770000					2.7	4900																
TT-TP1-M1	TT-TP1-M1-20160621	2016-06-21	440-150680-1					880000					1.8	5200																
TT-TP1-M1	TT-TP1-M1-20160705	2016-07-05	440-151701-1					740000					2.2	5100																
TT-TP1-M1	TT-TP1-M1-20160727	2016-07-27	440-153790-1	<2.4	**510 J-m**	890000		850000	390	<1.4	320		2.1	5800	140 J-m	750 J-m		<0.50		160		60		<0.25		2.2		<0.25	210	
TT-TP1-M2	TT-TP1-M2	2016-02-24	440-139185-1					1300000					1.7	11000																
TT-TP1-M2	TT-TP1-M2-20151210	2015-12-10	440-130588-1	<2.4	**1600**	3900000		1400000	200	<1.4	160		1.5	11000	43	1500		<2.5		110		44		<1.3		4.0		<1.3	520 J-c	
TT-TP1-M2	TT-TP1-M2-2016	2016-04-04	440-143273-1	<2.4	**1200**	2600000		1900000	240	<1.4	200		3.5	12000	220	1300		<0.50		22		10		<0.25		4.4		<0.25	600	
TT-TP1-M2	TT-TP1-M2-20160120	2016-01-20	440-135664-1					1300000					1.4	11000																
TT-TP1-M2	TT-TP1-M2-20160203	2016-02-03	440-137164-1					1200000					1.4	12000																
TT-TP1-M2	TT-TP1-M2-20160210	2016-02-10	440-137910-1	<2.4	**1300**	3900000		1300000	200	<1.4	160		1.7	11000		1500		<2.5		100		47		<1.3		4.3		<1.3	550	

Report Data Summary Table
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Location	Sample	Date	SDG	Chromium, Hexavalent (mg/Kg) SW7199	Chromium, Hexavalent (ug/L) SW7199	Chromium, Total (mg/Kg) SW6020	Chromium, Total (ug/L) SW6020	Cobalt (mg/Kg) SW6020	Cobalt (ug/L) SW6020	Copper (mg/Kg) SW6020	Copper (ug/L) SW6020	Iron (mg/Kg) SW6010B	Iron (mg/L) SW6010B	Lead (mg/Kg) SW6020	Lead (ug/L) SW6020	Magnesium (mg/L) SW6010B	Magnesium (mg/L) SW6010B_LCH	Manganese (mg/Kg) SW6010B	Manganese (mg/L) SW6010B	Mercury (mg/Kg) SW7471A	Mercury (mg/L) SW7470A	Molybdenum (mg/Kg) SW6020	Molybdenum (ug/L) SW6020	Nickel (mg/Kg) SW6020	Nickel (ug/L) SW6020	Potassium (mg/L) SW6010B	Potassium (mg/L) SW6010B_LCH	Selenium (mg/Kg) SW6020	Selenium (ug/L) SW6020
TT-TP1-L2A	TT-TP1-L2A-14	2016-08-12	440-155575-1																										
TT-TP1-L2A	TT-TP1-L2A-18	2016-08-12	440-155575-1	0.27 Jsp		16		4.1		10		14000		5.1			4.0	210		<0.013		0.68 Jsp		12			<3.7	<0.20	
TT-TP1-L2A	TT-TP1-L2A-2	2016-08-12	440-155575-1																										
TT-TP1-L2A	TT-TP1-L2A-22	2016-08-12	440-155575-1																										
TT-TP1-L2A	TT-TP1-L2A-26	2016-08-12	440-155575-1																										
TT-TP1-L2A	TT-TP1-L2A-6	2016-08-12	440-155575-1	<0.18		11		4.6		8.2		17000		4.2			1.3 Jsp	250		<0.014		<0.50		9.4			<3.7	<0.20	
TT-TP1-M1	TT-TP1-M1	2016-02-24	440-139185-1		2800		2800																						
TT-TP1-M1	TT-TP1-M1-20151210	2015-12-10	440-130588-1		15000 J-e		14000 J-c		<2.5		<2.5		<0.050		<2.5	250 J-c			<0.050		<0.00010		24		<2.5	35 J-c			4.6 Jq
TT-TP1-M1	TT-TP1-M1-2016	2016-04-04	440-143273-1		6300		1300		<0.50		0.72 Jq		0.013 Jq		<0.50	160			0.019 Jq		<0.00010		6.4		1.3 Jq	28			0.53 Jq
TT-TP1-M1	TT-TP1-M1-20160120	2016-01-20	440-135664-1		15000 J-c		13000																						
TT-TP1-M1	TT-TP1-M1-20160203	2016-02-03	440-137164-1		9200 J-c		8400 Jc																						
TT-TP1-M1	TT-TP1-M1-20160210	2016-02-10	440-137910-1				7100		5.0		<3.1 Ua		<0.10		<2.5	240			<0.10		<0.00010		32		6.6 Jq	40			4.6 Jq
TT-TP1-M1	TT-TP1-M1-20160217	2016-02-17	440-138539-1				2600 J-c																						
TT-TP1-M1	TT-TP1-M1-20160302	2016-03-02	440-139843-1		2900 J-c		2800																						
TT-TP1-M1	TT-TP1-M1-20160309	2016-03-09	440-140696-1		4700 J-c		5300		5.7		4.3 Jq		<0.25		<2.5	580			<0.25		0.00013 Jq		43		3.6 Jq	100			4.0 Jq
TT-TP1-M1	TT-TP1-M1-20160309	2016-03-09	440-140826-1																										
TT-TP1-M1	TT-TP1-M1-20160316	2016-03-16	440-141586-1		5200		5100																						
TT-TP1-M1	TT-TP1-M1-20160323	2016-03-23	440-142439-1		4800		5400																						
TT-TP1-M1	TT-TP1-M1-20160330	2016-03-30	440-142922-1		6300 J-c		6800 J-c																						
TT-TP1-M1	TT-TP1-M1-20160413	2016-04-13	440-144411-1		10 J-c		13																						
TT-TP1-M1	TT-TP1-M1-20160427	2016-04-27	440-145639-1		2900		2500																						
TT-TP1-M1	TT-TP1-M1-20160504	2016-05-04	440-146375-1		1200		1100 J-c		2.6		1.4 Jq		<0.010		<0.50	21			<0.010		<0.00010		20		1.0 Jq	6.6			1.8 Jq
TT-TP1-M1	TT-TP1-M1-20160510	2016-05-10	440-147006-1		2900		2400																						
TT-TP1-M1	TT-TP1-M1-20160519	2016-05-19	440-147992-1		14000		11000																						
TT-TP1-M1	TT-TP1-M1-20160524	2016-05-24	440-148308-1		2200 J-c		2300 Jc																						
TT-TP1-M1	TT-TP1-M1-20160601	2016-06-01	440-148926-1		3400		3000		0.98 Jq		0.81 Jq		<0.010		<0.50	80			<0.010		<0.00010		28		1.5 Jq	18			2.2
TT-TP1-M1	TT-TP1-M1-20160608	2016-06-08	440-149621-1		3800		3900 J+c																						
TT-TP1-M1	TT-TP1-M1-20160621	2016-06-21	440-150680-1		3700		3600																						
TT-TP1-M1	TT-TP1-M1-20160705	2016-07-05	440-151701-1		3300		3300																						
TT-TP1-M1	TT-TP1-M1-20160727	2016-07-27	440-153790-1		3900		3500		0.78 Jsp		<0.50		<0.010		<0.50	95			<0.010		<0.00010		30		0.75 Jsp	21			1.8 Jsp
TT-TP1-M2	TT-TP1-M2	2016-02-24	440-139185-1		15000		14000																						
TT-TP1-M2	TT-TP1-M2-20151210	2015-12-10	440-130588-1		16000 J-e		15000 J-c		<2.5		<2.5		<0.050		<2.5	250 J-c			<0.050		<0.00010		24		<2.5	42 J-c			4.4 Jq
TT-TP1-M2	TT-TP1-M2-2016	2016-04-04	440-143273-1		13000		2700		<0.50		1.1 Jq		<0.010		<0.50	290			0.011 Jq		<0.00010		5.6		1.8 Jq	58			0.68 Jq
TT-TP1-M2	TT-TP1-M2-20160120	2016-01-20	440-135664-1		16000 J-c		14000																						
TT-TP1-M2	TT-TP1-M2-20160203	2016-02-03	440-137164-1		15000 J-c		16000																						
TT-TP1-M2	TT-TP1-M2-20160210	2016-02-10	440-137910-1				14000		<2.5		<4.0 Ua		<0.10		<2.5	270			<0.10		<0.00010		24		6.5 Jq	52			5.5 Jq

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Location	Sample	Date	SDG	Silver (mg/Kg) SW6020	Silver (ug/L) SW6020	Sodium (mg/L) SW6010B	Sodium (mg/L) SW6010B_LCH	Titanium (mg/Kg) SW6010B	Titanium (mg/L) SW6010B	Zinc (mg/Kg) SW6020	Zinc (ug/L) SW6020	pH (pH) SW9045C
TT-TP1-L2A	TT-TP1-L2A-14	2016-08-12	440-155575-1									
TT-TP1-L2A	TT-TP1-L2A-18	2016-08-12	440-155575-1	<0.10			100	680		23		8.6
TT-TP1-L2A	TT-TP1-L2A-2	2016-08-12	440-155575-1									
TT-TP1-L2A	TT-TP1-L2A-22	2016-08-12	440-155575-1									
TT-TP1-L2A	TT-TP1-L2A-26	2016-08-12	440-155575-1									
TT-TP1-L2A	TT-TP1-L2A-6	2016-08-12	440-155575-1	<0.10			99	790		25		8.6
TT-TP1-M1	TT-TP1-M1	2016-02-24	440-139185-1									
TT-TP1-M1	TT-TP1-M1-20151210	2015-12-10	440-130588-1		<2.5	1500 J-c			<0.013		<13	
TT-TP1-M1	TT-TP1-M1-2016	2016-04-04	440-143273-1		<0.50	1300			<0.0025		<2.5	
TT-TP1-M1	TT-TP1-M1-20160120	2016-01-20	440-135664-1									
TT-TP1-M1	TT-TP1-M1-20160203	2016-02-03	440-137164-1									
TT-TP1-M1	TT-TP1-M1-20160210	2016-02-10	440-137910-1		<2.5	1700			<0.025		<13	
TT-TP1-M1	TT-TP1-M1-20160217	2016-02-17	440-138539-1									
TT-TP1-M1	TT-TP1-M1-20160302	2016-03-02	440-139843-1									
TT-TP1-M1	TT-TP1-M1-20160309	2016-03-09	440-140696-1		<2.5	5700			<0.063		<13	
TT-TP1-M1	TT-TP1-M1-20160309	2016-03-09	440-140826-1									
TT-TP1-M1	TT-TP1-M1-20160316	2016-03-16	440-141586-1									
TT-TP1-M1	TT-TP1-M1-20160323	2016-03-23	440-142439-1									
TT-TP1-M1	TT-TP1-M1-20160330	2016-03-30	440-142922-1									
TT-TP1-M1	TT-TP1-M1-20160413	2016-04-13	440-144411-1									
TT-TP1-M1	TT-TP1-M1-20160427	2016-04-27	440-145639-1									
TT-TP1-M1	TT-TP1-M1-20160504	2016-05-04	440-146375-1		<0.50	520			<0.0025		<2.5	
TT-TP1-M1	TT-TP1-M1-20160510	2016-05-10	440-147006-1									
TT-TP1-M1	TT-TP1-M1-20160519	2016-05-19	440-147992-1									
TT-TP1-M1	TT-TP1-M1-20160524	2016-05-24	440-148308-1									
TT-TP1-M1	TT-TP1-M1-20160601	2016-06-01	440-148926-1		<0.50	800			<0.0025		<2.5	
TT-TP1-M1	TT-TP1-M1-20160608	2016-06-08	440-149621-1									
TT-TP1-M1	TT-TP1-M1-20160621	2016-06-21	440-150680-1									
TT-TP1-M1	TT-TP1-M1-20160705	2016-07-05	440-151701-1									
TT-TP1-M1	TT-TP1-M1-20160727	2016-07-27	440-153790-1		<0.50	900			<0.0025		<2.5	
TT-TP1-M2	TT-TP1-M2	2016-02-24	440-139185-1									
TT-TP1-M2	TT-TP1-M2-20151210	2015-12-10	440-130588-1		<2.5	1500 J-c			<0.013		<13	
TT-TP1-M2	TT-TP1-M2-2016	2016-04-04	440-143273-1		<0.50	1800			<0.0025		<2.5	
TT-TP1-M2	TT-TP1-M2-20160120	2016-01-20	440-135664-1									
TT-TP1-M2	TT-TP1-M2-20160203	2016-02-03	440-137164-1									
TT-TP1-M2	TT-TP1-M2-20160210	2016-02-10	440-137910-1		<2.5	1800			<0.025		<13	

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Location	Sample	Date	SDG	Carbonate (as CO3) (mg/L) SM2320B	Chloride (as Cl) (mg/L) E300.0	Chlorate (ug/L) E300.1B	Perchlorate (mg/Kg) E314.0	Perchlorate (ug/L) E314.0	Bicarbonate ion as HCO3 (mg/L) SM2320B	Hydroxide as OH (mg/L) SM2320B	Alkalinity, Total (as CaCO3) (mg/L) SM2320B	Carbon, Total Organic (mg/Kg) SW9060	Carbon, Total Organic (mg/L) SM5310B	Total Dissolved Solids (Residue, Filterable) (mg/L) SM2540C	Nitrogen, Nitrate (as N) (mg/L) E300.0	Sulfate (as So4) (mg/L) E300.0	Antimony (mg/Kg) SW6020	Antimony (ug/L) SW6020	Arsenic (mg/Kg) SW6020	Arsenic (ug/L) SW6020	Barium (mg/Kg) SW6020	Barium (ug/L) SW6020	Beryllium (mg/Kg) SW6020	Beryllium (ug/L) SW6020	Boron (mg/Kg) SW6010B	Boron (mg/L) SW6010B	Cadmium (mg/Kg) SW6020	Cadmium (ug/L) SW6020	Calcium (mg/L) SW6010B	Calcium (mg/L) SW6010B_LCH
TT-TP1-M2	TT-TP1-M2-20160217	2016-02-17	440-138539-1					1600000					1.6	11000																
TT-TP1-M2	TT-TP1-M2-20160302	2016-03-02	440-139843-1					1400000					1.7	12000																
TT-TP1-M2	TT-TP1-M2-20160309	2016-03-09	440-140696-1	<2.4	1300	3600000		1400000	210	<1.4	180		2.0	11000	130	1400		<2.5		97		50		<1.3		24		<1.3	2900	
TT-TP1-M2	TT-TP1-M2-20160309	2016-03-09	440-140826-1					1100000																						
TT-TP1-M2	TT-TP1-M2-20160316	2016-03-16	440-141586-1					1400000					1.6	11000																
TT-TP1-M2	TT-TP1-M2-20160323	2016-03-23	440-142439-1					1400000					1.3	12000																
TT-TP1-M2	TT-TP1-M2-20160330	2016-03-30	440-142922-1					1000000					2.2	12000																
TT-TP1-M2	TT-TP1-M2-20160413	2016-04-13	440-144411-1					1300000					3.6	9800																
TT-TP1-M2	TT-TP1-M2-20160427	2016-04-27	440-145639-1					1400000					2.2	11000																
TT-TP1-M2	TT-TP1-M2-20160504	2016-05-04	440-146375-1	<2.4	1100	1800000		1400000	270	<1.4	220		3.0	10000	190	1200		<0.50		160		51		<0.25		4.0		<0.25	520 J+c	
TT-TP1-M2	TT-TP1-M2-20160510	2016-05-10	440-147006-1					1300000					2.5	12000																
TT-TP1-M2	TT-TP1-M2-20160519	2016-05-19	440-147992-1					330000					3.3	3100																
TT-TP1-M2	TT-TP1-M2-20160524	2016-05-24	440-148308-1					1500000					2.7	9400																
TT-TP1-M2	TT-TP1-M2-20160601	2016-06-01	440-148926-1	<2.4	1300	2500000		1600000	350	<1.4	290		2.2	10000	150	1100		<0.50		140		43		<0.25		4.1		<0.25	490	
TT-TP1-M2	TT-TP1-M2-20160608	2016-06-08	440-149621-1					1400000					2.2	11000																
TT-TP1-M2	TT-TP1-M2-20160621	2016-06-21	440-150680-1					1000000					2.6	9500																
TT-TP1-M2	TT-TP1-M2-20160705	2016-07-05	440-151701-1					1200000					2.7	9500																
TT-TP1-M2	TT-TP1-M2-20160727	2016-07-27	440-153790-1	<2.4	1300	2600000		1800000	240	<1.4	200		1.8	11000	150	1200		<2.5		110		58		<1.3		4.1		<1.3	510 J-m	
TT-TP1-M3	TT-TP1-M3	2016-02-24	440-139185-1					750000					1.7	10000																
TT-TP1-M3	TT-TP1-M3-20151210	2015-12-10	440-130588-1	<2.4	1300 J-c	3600000 J-c		940000 J-c	220	<1.4	180		1.5	9600	62 J-c	1400 J-c		<2.5		110		41		<1.3		4.2		<1.3	530 J-c	
TT-TP1-M3	TT-TP1-M3-2016	2016-04-04	440-143273-1	<2.4	960	2400000		840000	340	<1.4	280		2.6	10000	410	1200		<0.50		25		10		<0.25		4.4		<0.25	610	
TT-TP1-M3	TT-TP1-M3-20160203	2016-02-03	440-137164-1					820000					1.4	10000																
TT-TP1-M3	TT-TP1-M3-20160210	2016-02-10	440-137910-1	<2.4	1400	3400000		810000	230	<1.4	180		1.6	9900		1600		<2.5		120		43		<1.3		4.4		<1.3	520	
TT-TP1-M3	TT-TP1-M3-20160217	2016-02-17	440-138539-1					810000					1.5	10000																
TT-TP1-M3	TT-TP1-M3-20160302	2016-03-02	440-139843-1					780000					2.0	11000																
TT-TP1-M3	TT-TP1-M3-20160309	2016-03-09	440-140696-1	<2.4	1200	2800000		810000	280	<1.4	230		2.7	11000	330	1300		<2.5		110		48		<1.3		24		<1.3	2900	
TT-TP1-M3	TT-TP1-M3-20160309	2016-03-09	440-140826-1					690000																						
TT-TP1-M3	TT-TP1-M3-20160316	2016-03-16	440-141586-1					670000					2.1	9900																
TT-TP1-M3	TT-TP1-M3-20160323	2016-03-23	440-142439-1					840000					1.9	10000																
TT-TP1-M3	TT-TP1-M3-20160330	2016-03-30	440-142922-1					830000					2.3	11000																
TT-TP1-M3	TT-TP1-M3-20160413	2016-04-13	440-144411-1					840000					2.7	11000																
TT-TP1-M3	TT-TP1-M3-20160427	2016-04-27	440-145639-1					810000					2.5	9700																
TT-TP1-M3	TT-TP1-M3-20160504	2016-05-04	440-146375-1	<2.4	860	2000000		770000	410	<1.4	330		3.1	9400	330	1200		<0.50		130		45		<0.25		4.5		<0.25	470	
TT-TP1-M3	TT-TP1-M3-20160510	2016-05-10	440-147006-1					700000					2.9	9400																
TT-TP1-M3	TT-TP1-M3-20160519	2016-05-19	440-147992-1					1100000					2.8	8500																
TT-TP1-M3	TT-TP1-M3-20160524	2016-05-24	440-148308-1					750000					2.7	8500																

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Location	Sample	Date	SDG	Chromium, Hexavalent (mg/Kg) SW7199	Chromium, Hexavalent (ug/L) SW7199	Chromium, Total (mg/Kg) SW6020	Chromium, Total (ug/L) SW6020	Cobalt (mg/Kg) SW6020	Cobalt (ug/L) SW6020	Copper (mg/Kg) SW6020	Copper (ug/L) SW6020	Iron (mg/Kg) SW6010B	Iron (mg/L) SW6010B	Lead (mg/Kg) SW6020	Lead (ug/L) SW6020	Magnesium (mg/L) SW6010B	Magnesium (mg/L) SW6010B_LCH	Manganese (mg/Kg) SW6010B	Manganese (mg/L) SW6010B	Mercury (mg/Kg) SW7471A	Mercury (mg/L) SW7470A	Molybdenum (mg/Kg) SW6020	Molybdenum (ug/L) SW6020	Nickel (mg/Kg) SW6020	Nickel (ug/L) SW6020	Potassium (mg/L) SW6010B	Potassium (mg/L) SW6010B_LCH	Selenium (mg/Kg) SW6020	Selenium (ug/L) SW6020
TT-TP1-M2	TT-TP1-M2-20160217	2016-02-17	440-138539-1				15000																						
TT-TP1-M2	TT-TP1-M2-20160302	2016-03-02	440-139843-1		16000		14000																						
TT-TP1-M2	TT-TP1-M2-20160309	2016-03-09	440-140696-1		15000		14000		<2.5		4.2 Jq		<0.25		<2.5	1500			<0.25		0.00012 Jq		24		6.2 Jq	260			3.1 Jq
TT-TP1-M2	TT-TP1-M2-20160309	2016-03-09	440-140826-1																										
TT-TP1-M2	TT-TP1-M2-20160316	2016-03-16	440-141586-1		15000		14000																						
TT-TP1-M2	TT-TP1-M2-20160323	2016-03-23	440-142439-1		13000		15000																						
TT-TP1-M2	TT-TP1-M2-20160330	2016-03-30	440-142922-1		10000		14000																						
TT-TP1-M2	TT-TP1-M2-20160413	2016-04-13	440-144411-1		8800		8000																						
TT-TP1-M2	TT-TP1-M2-20160427	2016-04-27	440-145639-1		12000		11000																						
TT-TP1-M2	TT-TP1-M2-20160504	2016-05-04	440-146375-1		13000		9900		1.3		6.3		0.058 Jq		<0.50	230 J+c			<0.050		<0.00010		29		0.92 Jq	42			3.9
TT-TP1-M2	TT-TP1-M2-20160510	2016-05-10	440-147006-1		10000		13000																						
TT-TP1-M2	TT-TP1-M2-20160519	2016-05-19	440-147992-1		1800		1500																						
TT-TP1-M2	TT-TP1-M2-20160524	2016-05-24	440-148308-1		12000		13000																						
TT-TP1-M2	TT-TP1-M2-20160601	2016-06-01	440-148926-1		11000		11000		1.1		1.2 Jq		<0.010		<0.50	230			0.012 Jq		<0.00010		25		2.7	46			3.7
TT-TP1-M2	TT-TP1-M2-20160608	2016-06-08	440-149621-1		12000		11000																						
TT-TP1-M2	TT-TP1-M2-20160621	2016-06-21	440-150680-1		7500		7100																						
TT-TP1-M2	TT-TP1-M2-20160705	2016-07-05	440-151701-1		11000		10000																						
TT-TP1-M2	TT-TP1-M2-20160727	2016-07-27	440-153790-1		9100		10000		<2.5		16		<0.010		<2.5	230 J-m			0.010 Jsp		<0.00010		25		<2.5	46			2.7 Jsp
TT-TP1-M3	TT-TP1-M3	2016-02-24	440-139185-1		12000		12000																						
TT-TP1-M3	TT-TP1-M3-20151210	2015-12-10	440-130588-1		15000 Je, c		13000 J-c		<2.5		<2.5		<0.050		<2.5	260 J-c			<0.050		<0.00010		19		<2.5	35 J-c			5.3 Jq
TT-TP1-M3	TT-TP1-M3-2016	2016-04-04	440-143273-1		9700		1900		<0.50		1.0 Jq		<0.010		<0.50	280			<0.010		<0.00010		4.1		1.6 Jq	48			0.81 Jq
TT-TP1-M3	TT-TP1-M3-20160203	2016-02-03	440-137164-1		14000 J-c		12000																						
TT-TP1-M3	TT-TP1-M3-20160210	2016-02-10	440-137910-1				13000		<2.5		6.4 Jq		<0.10		<2.5	270			<0.10		<0.00010		21		6.4 Jq	40			5.0 Jq
TT-TP1-M3	TT-TP1-M3-20160217	2016-02-17	440-138539-1				12000																						
TT-TP1-M3	TT-TP1-M3-20160302	2016-03-02	440-139843-1		13000		11000																						
TT-TP1-M3	TT-TP1-M3-20160309	2016-03-09	440-140696-1		11000 J-e		10000		<2.5		2.8 Jq		<0.25		<2.5	1500			<0.25		0.00012 Jq		19		5.3 Jq	220			4.2 Jq
TT-TP1-M3	TT-TP1-M3-20160309	2016-03-09	440-140826-1																										
TT-TP1-M3	TT-TP1-M3-20160316	2016-03-16	440-141586-1		11000		9700																						
TT-TP1-M3	TT-TP1-M3-20160323	2016-03-23	440-142439-1		8300		9900																						
TT-TP1-M3	TT-TP1-M3-20160330	2016-03-30	440-142922-1		9600		10000																						
TT-TP1-M3	TT-TP1-M3-20160413	2016-04-13	440-144411-1		10000		8600																						
TT-TP1-M3	TT-TP1-M3-20160427	2016-04-27	440-145639-1		9000		8600																						
TT-TP1-M3	TT-TP1-M3-20160504	2016-05-04	440-146375-1		7600		7000		0.96 Jq		<1.0		<0.050		<0.50	230			<0.050		<0.00010		23		0.73 Jq	40			3.7
TT-TP1-M3	TT-TP1-M3-20160510	2016-05-10	440-147006-1		7100		8000																						
TT-TP1-M3	TT-TP1-M3-20160519	2016-05-19	440-147992-1		7300		6000																						
TT-TP1-M3	TT-TP1-M3-20160524	2016-05-24	440-148308-1		6800		7300																						

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Location	Sample	Date	SDG	Silver (mg/Kg) SW6020	Silver (ug/L) SW6020	Sodium (mg/L) SW6010B	Sodium (mg/L) SW6010B_LCH	Titanium (mg/Kg) SW6010B	Titanium (mg/L) SW6010B	Zinc (mg/Kg) SW6020	Zinc (ug/L) SW6020	pH (pH) SW9045C
TT-TP1-M2	TT-TP1-M2-20160217	2016-02-17	440-138539-1									
TT-TP1-M2	TT-TP1-M2-20160302	2016-03-02	440-139843-1									
TT-TP1-M2	TT-TP1-M2-20160309	2016-03-09	440-140696-1		<2.5	9300			<0.063		<13	
TT-TP1-M2	TT-TP1-M2-20160309	2016-03-09	440-140826-1									
TT-TP1-M2	TT-TP1-M2-20160316	2016-03-16	440-141586-1									
TT-TP1-M2	TT-TP1-M2-20160323	2016-03-23	440-142439-1									
TT-TP1-M2	TT-TP1-M2-20160330	2016-03-30	440-142922-1									
TT-TP1-M2	TT-TP1-M2-20160413	2016-04-13	440-144411-1									
TT-TP1-M2	TT-TP1-M2-20160427	2016-04-27	440-145639-1									
TT-TP1-M2	TT-TP1-M2-20160504	2016-05-04	440-146375-1		<0.50	1500 Jc			<0.013		<2.5	
TT-TP1-M2	TT-TP1-M2-20160510	2016-05-10	440-147006-1									
TT-TP1-M2	TT-TP1-M2-20160519	2016-05-19	440-147992-1									
TT-TP1-M2	TT-TP1-M2-20160524	2016-05-24	440-148308-1									
TT-TP1-M2	TT-TP1-M2-20160601	2016-06-01	440-148926-1		<0.50	1500			<0.0025		2.7 Jq	
TT-TP1-M2	TT-TP1-M2-20160608	2016-06-08	440-149621-1									
TT-TP1-M2	TT-TP1-M2-20160621	2016-06-21	440-150680-1									
TT-TP1-M2	TT-TP1-M2-20160705	2016-07-05	440-151701-1									
TT-TP1-M2	TT-TP1-M2-20160727	2016-07-27	440-153790-1		<2.5	1500 Jm			<0.0025		<13	
TT-TP1-M3	TT-TP1-M3	2016-02-24	440-139185-1									
TT-TP1-M3	TT-TP1-M3-20151210	2015-12-10	440-130588-1		<2.5	1400 J-c			<0.013		<13	
TT-TP1-M3	TT-TP1-M3-2016	2016-04-04	440-143273-1		<0.50	1700			<0.0025		<2.5	
TT-TP1-M3	TT-TP1-M3-20160203	2016-02-03	440-137164-1									
TT-TP1-M3	TT-TP1-M3-20160210	2016-02-10	440-137910-1		<2.5	1600			<0.025		<13	
TT-TP1-M3	TT-TP1-M3-20160217	2016-02-17	440-138539-1									
TT-TP1-M3	TT-TP1-M3-20160302	2016-03-02	440-139843-1									
TT-TP1-M3	TT-TP1-M3-20160309	2016-03-09	440-140696-1		<2.5	8400			<0.063		<13	
TT-TP1-M3	TT-TP1-M3-20160309	2016-03-09	440-140826-1									
TT-TP1-M3	TT-TP1-M3-20160316	2016-03-16	440-141586-1									
TT-TP1-M3	TT-TP1-M3-20160323	2016-03-23	440-142439-1									
TT-TP1-M3	TT-TP1-M3-20160330	2016-03-30	440-142922-1									
TT-TP1-M3	TT-TP1-M3-20160413	2016-04-13	440-144411-1									
TT-TP1-M3	TT-TP1-M3-20160427	2016-04-27	440-145639-1									
TT-TP1-M3	TT-TP1-M3-20160504	2016-05-04	440-146375-1		<0.50	1400			<0.013		<2.5	
TT-TP1-M3	TT-TP1-M3-20160510	2016-05-10	440-147006-1									
TT-TP1-M3	TT-TP1-M3-20160519	2016-05-19	440-147992-1									
TT-TP1-M3	TT-TP1-M3-20160524	2016-05-24	440-148308-1									

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Location	Sample	Date	SDG	Carbonate (as CO3) (mg/L) SM2320B	Chloride (as Cl) (mg/L) E300.0	Chlorate (ug/L) E300.1B	Perchlorate (mg/Kg) E314.0	Perchlorate (ug/L) E314.0	Bicarbonate ion as HCO3 (mg/L) SM2320B	Hydroxide as OH (mg/L) SM2320B	Alkalinity, Total (as CaCO3) (mg/L) SM2320B	Carbon, Total Organic (mg/Kg) SW9060	Carbon, Total Organic (mg/L) SM5310B	Total Dissolved Solids (Residue, Filterable) (mg/L) SM2540C	Nitrogen, Nitrate (as N) (mg/L) E300.0	Sulfate (as So4) (mg/L) E300.0	Antimony (mg/Kg) SW6020	Antimony (ug/L) SW6020	Arsenic (mg/Kg) SW6020	Arsenic (ug/L) SW6020	Barium (mg/Kg) SW6020	Barium (ug/L) SW6020	Beryllium (mg/Kg) SW6020	Beryllium (ug/L) SW6020	Boron (mg/Kg) SW6010B	Boron (mg/L) SW6010B	Cadmium (mg/Kg) SW6020	Cadmium (ug/L) SW6020	Calcium (mg/L) SW6010B	Calcium (mg/L) SW6010B_LCH
TT-TP1-M3	TT-TP1-M3-20160601	2016-06-01	440-148926-1	<2.4	**850**	1500000		760000	420	<1.4	350		2.8	8500	300	1000		<0.50		140		43		<0.25		3.8		<0.25	340 J+c	
TT-TP1-M3	TT-TP1-M3-20160608	2016-06-08	440-149621-1					720000					2.5	8100																
TT-TP1-M3	TT-TP1-M3-20160621	2016-06-21	440-150680-1					830000					2.2	8000																
TT-TP1-M3	TT-TP1-M3-20160705	2016-07-05	440-151701-1					970000					2.5	8300																
TT-TP1-M3	TT-TP1-M3-20160727	2016-07-27	440-153790-1	<2.4	**780**	1400000		910000	340	<1.4	280		2.3	7900	220	1100		<2.5		150		44		<1.3		3.4		<1.3	340	
TT-TP2-B1	TT-TP2-B1-10	2015-03-18	440-104832-1				19000							4700																
TT-TP2-B1	TT-TP2-B1-14	2015-03-18	440-104832-1		**130**	10000	12000				54	<2500		1700	4.9	28	<0.54		9.7		390		0.41		5.7		<0.27			26
TT-TP2-B1	TT-TP2-B1-18	2015-03-18	440-104832-1				7200							1100																
TT-TP2-B1	TT-TP2-B1-2	2015-03-18	440-104832-1		**55**	3500	2100				20	<2500		550	85	49	<0.55		4.1		250		0.58		5.2 Jq		<0.28			42
TT-TP2-B1	TT-TP2-B1-22	2015-03-18	440-104832-1				520 J+c							600																
TT-TP2-B1	TT-TP2-B1-26	2015-03-18	440-104832-1				390							480																
TT-TP2-B1	TT-TP2-B1-6	2015-03-18	440-104832-1				20000							4800																
TT-TP2-B1A	TT-TP2-B1A-10	2016-08-13	440-155631-1				110							320																
TT-TP2-B1A	TT-TP2-B1A-14	2016-08-13	440-155631-1		**4.1**	87	21				58	2800		220	2.5	33	<0.27		3.9		150		0.32		6.7		<0.25			6.4
TT-TP2-B1A	TT-TP2-B1A-18	2016-08-13	440-155631-1				1.1							240																
TT-TP2-B1A	TT-TP2-B1A-2	2016-08-13	440-155631-1		**1.5**	85	13				70	6000		220	0.76	5.4	<0.27		2.7		150		0.43		6.5		<0.25			17
TT-TP2-B1A	TT-TP2-B1A-22	2016-08-13	440-155631-1				22							1700																
TT-TP2-B1A	TT-TP2-B1A-26	2016-08-13	440-155631-1				260							350																
TT-TP2-B1A	TT-TP2-B1A-6	2016-08-13	440-155631-1				12 J+m							320																
TT-TP2-B2	TT-TP2-B2-10	2015-03-18	440-104832-1		**4.8**	100	130				100	<2500		250	0.94	1.8	<0.53		4.2		140		0.49		4.1 Jq		<0.27			8.0
TT-TP2-B2	TT-TP2-B2-14	2015-03-18	440-104832-1				140							240																
TT-TP2-B2	TT-TP2-B2-18	2015-03-18	440-104832-1				570							410																
TT-TP2-B2	TT-TP2-B2-2	2015-03-18	440-104832-1				1500							660																
TT-TP2-B2	TT-TP2-B2-22	2015-03-18	440-104832-1				260							420																
TT-TP2-B2	TT-TP2-B2-26	2015-03-18	440-104832-1		**17**	48000	71				<4.0	<2500		160	1.1	18	<0.57		4.7		120		0.31 Jq		3.1 Jq		<0.29			1.6
TT-TP2-B2	TT-TP2-B2-6	2015-03-18	440-104832-1				260							350																
TT-TP2-B2A	TT-TP2-B2A-10	2016-08-13	440-155631-1		**6.6**	270	40				40	9100		190	8.2	25	<0.27		3.9		150		0.44		6.2		<0.25			9.6
TT-TP2-B2A	TT-TP2-B2A-14	2016-08-13	440-155631-1				0.52							160																
TT-TP2-B2A	TT-TP2-B2A-18	2016-08-13	440-155631-1				0.37							250																
TT-TP2-B2A	TT-TP2-B2A-2	2016-08-13	440-155631-1				2.3							140																
TT-TP2-B2A	TT-TP2-B2A-22	2016-08-13	440-155631-1				700							320																
TT-TP2-B2A	TT-TP2-B2A-26	2016-08-13	440-155631-1		**31**	54000	400				40	910		620	6.1	36	<0.27		4.4		120		0.32		7.4		<0.25			7.4
TT-TP2-B2A	TT-TP2-B2A-6	2016-08-13	440-155631-1				2.5							180																
TT-TP2-B3	TT-TP2-B3-10	2015-03-18	440-104925-1				8700							1500																
TT-TP2-B3	TT-TP2-B3-14	2015-03-18	440-104925-1		**150 J-c**	47000 J-c	5600 J-c				14	<2500		2400	33	500 J-c	<0.58 UJc		25		68 J+c		0.56		26		<0.29			540 Jc
TT-TP2-B3	TT-TP2-B3-18	2015-03-18	440-104925-1				1700							1400																

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Location	Sample	Date	SDG	Chromium, Hexavalent (mg/Kg) SW7199	Chromium, Hexavalent (ug/L) SW7199	Chromium, Total (mg/Kg) SW6020	Chromium, Total (ug/L) SW6020	Cobalt (mg/Kg) SW6020	Cobalt (ug/L) SW6020	Copper (mg/Kg) SW6020	Copper (ug/L) SW6020	Iron (mg/Kg) SW6010B	Iron (mg/L) SW6010B	Lead (mg/Kg) SW6020	Lead (ug/L) SW6020	Magnesium (mg/L) SW6010B	Magnesium (mg/L) SW6010B_LCH	Manganese (mg/Kg) SW6010B	Manganese (mg/L) SW6010B	Mercury (mg/Kg) SW7471A	Mercury (mg/L) SW7470A	Molybdenum (mg/Kg) SW6020	Molybdenum (ug/L) SW6020	Nickel (mg/Kg) SW6020	Nickel (ug/L) SW6020	Potassium (mg/L) SW6010B	Potassium (mg/L) SW6010B_LCH	Selenium (mg/Kg) SW6020	Selenium (ug/L) SW6020
TT-TP1-M3	TT-TP1-M3-20160601	2016-06-01	440-148926-1		6400		5700		1.1		1.2 Jq		<0.010		<0.50	180 J-c			<0.010		<0.00010		23		2.2	33			2.9
TT-TP1-M3	TT-TP1-M3-20160608	2016-06-08	440-149621-1		5800		6600																						
TT-TP1-M3	TT-TP1-M3-20160621	2016-06-21	440-150680-1		5500		5300																						
TT-TP1-M3	TT-TP1-M3-20160705	2016-07-05	440-151701-1		5500		5000																						
TT-TP1-M3	TT-TP1-M3-20160727	2016-07-27	440-153790-1		5900		5500		<2.5		<2.5		<0.010		<2.5	160			<0.010		<0.00010		30		<2.5	29			<2.5
TT-TP2-B1	TT-TP2-B1-10	2015-03-18	440-104832-1																										
TT-TP2-B1	TT-TP2-B1-14	2015-03-18	440-104832-1	<0.43		9.4		4.1		12		12000		6.5			5.8	200		<0.013		0.66 Jq		11			17	<0.22	
TT-TP2-B1	TT-TP2-B1-18	2015-03-18	440-104832-1																										
TT-TP2-B1	TT-TP2-B1-2	2015-03-18	440-104832-1	0.72 Jq		31		8.2		20		18000		13			10	410		0.027		0.83 Jq		17			3.6	<0.22	
TT-TP2-B1	TT-TP2-B1-22	2015-03-18	440-104832-1																										
TT-TP2-B1	TT-TP2-B1-26	2015-03-18	440-104832-1																										
TT-TP2-B1	TT-TP2-B1-6	2015-03-18	440-104832-1																										
TT-TP2-B1A	TT-TP2-B1A-10	2016-08-13	440-155631-1																										
TT-TP2-B1A	TT-TP2-B1A-14	2016-08-13	440-155631-1	<0.18		12		4.0		9.8		13000		5.1			1.9 Jsp	210		<0.015		0.59 Jsp		9.5			<3.7	<0.20	
TT-TP2-B1A	TT-TP2-B1A-18	2016-08-13	440-155631-1																										
TT-TP2-B1A	TT-TP2-B1A-2	2016-08-13	440-155631-1	0.34		15		6.0		20		18000		7.1			12	350		<0.014		0.51 Jsp		13			<3.7	<0.20	
TT-TP2-B1A	TT-TP2-B1A-22	2016-08-13	440-155631-1																										
TT-TP2-B1A	TT-TP2-B1A-26	2016-08-13	440-155631-1																										
TT-TP2-B1A	TT-TP2-B1A-6	2016-08-13	440-155631-1																										
TT-TP2-B2	TT-TP2-B2-10	2015-03-18	440-104832-1	<0.43		11		6.3		19		15000		5.9			1.4	240		<0.013		0.65 Jq		16			0.58	<0.21	
TT-TP2-B2	TT-TP2-B2-14	2015-03-18	440-104832-1																										
TT-TP2-B2	TT-TP2-B2-18	2015-03-18	440-104832-1																										
TT-TP2-B2	TT-TP2-B2-2	2015-03-18	440-104832-1																										
TT-TP2-B2	TT-TP2-B2-22	2015-03-18	440-104832-1																										
TT-TP2-B2	TT-TP2-B2-26	2015-03-18	440-104832-1	1.8		14		4.3		11		13000		7.9			0.72	210		<0.014		0.62 Jq		14			1.4	<0.23	
TT-TP2-B2	TT-TP2-B2-6	2015-03-18	440-104832-1																										
TT-TP2-B2A	TT-TP2-B2A-10	2016-08-13	440-155631-1	<0.18		18		6.2		14		18000		6.6			3.0 Jsp	260		<0.014		0.60 Jsp		13			<3.7	<0.20	
TT-TP2-B2A	TT-TP2-B2A-14	2016-08-13	440-155631-1																										
TT-TP2-B2A	TT-TP2-B2A-18	2016-08-13	440-155631-1																										
TT-TP2-B2A	TT-TP2-B2A-2	2016-08-13	440-155631-1																										
TT-TP2-B2A	TT-TP2-B2A-22	2016-08-13	440-155631-1																										
TT-TP2-B2A	TT-TP2-B2A-26	2016-08-13	440-155631-1	2.0		25		2.7		7.0		11000		5.3			2.1 Jsp	110		<0.017		<0.50		7.9			<3.7	<0.20	
TT-TP2-B2A	TT-TP2-B2A-6	2016-08-13	440-155631-1																										
TT-TP2-B3	TT-TP2-B3-10	2015-03-18	440-104925-1																										
TT-TP2-B3	TT-TP2-B3-14	2015-03-18	440-104925-1	1.2		18		4.3		9.5		12000 J+c		5.8			9.6	230 J-c		0.021 Jq		0.84 Jq		13			0.83 Jq	<0.23	
TT-TP2-B3	TT-TP2-B3-18	2015-03-18	440-104925-1																										

Report Data Summary Table
Soil Flushing Treatability Study
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Location	Sample	Date	SDG	Silver (mg/Kg) SW6020	Silver (ug/L) SW6020	Sodium (mg/L) SW6010B	Sodium (mg/L) SW6010B_LCH	Titanium (mg/Kg) SW6010B	Titanium (mg/L) SW6010B	Zinc (mg/Kg) SW6020	Zinc (ug/L) SW6020	pH (pH) SW9045C
TT-TP1-M3	TT-TP1-M3-20160601	2016-06-01	440-148926-1		<0.50	1300 J-c			<0.0025		2.8 Jq	
TT-TP1-M3	TT-TP1-M3-20160608	2016-06-08	440-149621-1									
TT-TP1-M3	TT-TP1-M3-20160621	2016-06-21	440-150680-1									
TT-TP1-M3	TT-TP1-M3-20160705	2016-07-05	440-151701-1									
TT-TP1-M3	TT-TP1-M3-20160727	2016-07-27	440-153790-1		<2.5	1200			<0.0025		<13	
TT-TP2-B1	TT-TP2-B1-10	2015-03-18	440-104832-1									
TT-TP2-B1	TT-TP2-B1-14	2015-03-18	440-104832-1	<0.11			240	480		25		7.65
TT-TP2-B1	TT-TP2-B1-10	2015-03-18	440-104832-1									
TT-TP2-B1	TT-TP2-B1-14	2015-03-18	440-104832-1	<0.11			240	480		25		7.65
TT-TP2-B1	TT-TP2-B1-18	2015-03-18	440-104832-1									
TT-TP2-B1	TT-TP2-B1-2	2015-03-18	440-104832-1	<0.11			69	710		41		7.67
TT-TP2-B1	TT-TP2-B1-22	2015-03-18	440-104832-1									
TT-TP2-B1	TT-TP2-B1-26	2015-03-18	440-104832-1									
TT-TP2-B1	TT-TP2-B1-6	2015-03-18	440-104832-1									
TT-TP2-B1A	TT-TP2-B1A-10	2016-08-13	440-155631-1									
TT-TP2-B1A	TT-TP2-B1A-14	2016-08-13	440-155631-1	<0.10			160	790		22		9.3
TT-TP2-B1A	TT-TP2-B1A-18	2016-08-13	440-155631-1									
TT-TP2-B1A	TT-TP2-B1A-2	2016-08-13	440-155631-1	<0.099			120	980		31		7.8
TT-TP2-B1A	TT-TP2-B1A-22	2016-08-13	440-155631-1									
TT-TP2-B1A	TT-TP2-B1A-26	2016-08-13	440-155631-1									
TT-TP2-B1A	TT-TP2-B1A-6	2016-08-13	440-155631-1									
TT-TP2-B2	TT-TP2-B2-10	2015-03-18	440-104832-1	<0.11			48	530		32		9.21
TT-TP2-B2	TT-TP2-B2-14	2015-03-18	440-104832-1									
TT-TP2-B2	TT-TP2-B2-18	2015-03-18	440-104832-1									
TT-TP2-B2	TT-TP2-B2-2	2015-03-18	440-104832-1									
TT-TP2-B2	TT-TP2-B2-22	2015-03-18	440-104832-1									
TT-TP2-B2	TT-TP2-B2-26	2015-03-18	440-104832-1	<0.11			39	670		25		8.29
TT-TP2-B2	TT-TP2-B2-6	2015-03-18	440-104832-1									
TT-TP2-B2A	TT-TP2-B2A-10	2016-08-13	440-155631-1	<0.10			200	930		29		8.7
TT-TP2-B2A	TT-TP2-B2A-14	2016-08-13	440-155631-1									
TT-TP2-B2A	TT-TP2-B2A-18	2016-08-13	440-155631-1									
TT-TP2-B2A	TT-TP2-B2A-2	2016-08-13	440-155631-1									
TT-TP2-B2A	TT-TP2-B2A-22	2016-08-13	440-155631-1									
TT-TP2-B2A	TT-TP2-B2A-26	2016-08-13	440-155631-1	<0.099			230	670		20		8.6
TT-TP2-B2A	TT-TP2-B2A-6	2016-08-13	440-155631-1									
TT-TP2-B3	TT-TP2-B3-10	2015-03-18	440-104925-1									
TT-TP2-B3	TT-TP2-B3-14	2015-03-18	440-104925-1	<0.12			60	560 J+c		30		7.60
TT-TP2-B3	TT-TP2-B3-18	2015-03-18	440-104925-1									

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Location	Sample	Date	SDG	Carbonate (as CO3) (mg/L) SM2320B	Chloride (as Cl) (mg/L) E300.0	Chlorate (ug/L) E300.1B	Perchlorate (mg/Kg) E314.0	Perchlorate (ug/L) E314.0	Bicarbonate ion as HCO3 (mg/L) SM2320B	Hydroxide as OH (mg/L) SM2320B	Alkalinity, Total (as CaCO3) (mg/L) SM2320B	Carbon, Total Organic (mg/Kg) SW9060	Carbon, Total Organic (mg/L) SM5310B	Total Dissolved Solids (Residue, Filterable) (mg/L) SM2540C	Nitrogen, Nitrate (as N) (mg/L) E300.0	Sulfate (as So4) (mg/L) E300.0	Antimony (mg/Kg) SW6020	Antimony (ug/L) SW6020	Arsenic (mg/Kg) SW6020	Arsenic (ug/L) SW6020	Barium (mg/Kg) SW6020	Barium (ug/L) SW6020	Beryllium (mg/Kg) SW6020	Beryllium (ug/L) SW6020	Boron (mg/Kg) SW6010B	Boron (mg/L) SW6010B	Cadmium (mg/Kg) SW6020	Cadmium (ug/L) SW6020	Calcium (mg/L) SW6010B	Calcium (mg/L) SW6010B_LCH
TT-TP2-B3	TT-TP2-B3-2	2015-03-18	440-104925-1		59	2600 J-c	2100				10	<2500		850	170	34	<0.56		4.2		230		0.60		11		<0.28			66
TT-TP2-B3	TT-TP2-B3-22	2015-03-18	440-104925-1				2300							620																
TT-TP2-B3	TT-TP2-B3-26	2015-03-18	440-104925-1				86							370																
TT-TP2-B3	TT-TP2-B3-6	2015-03-18	440-104925-1				6700							1300																
TT-TP2-B3A	TT-TP2-B3A-10	2016-08-12	440-155570-1				8.3							250																
TT-TP2-B3A	TT-TP2-B3A-14	2016-08-12	440-155570-1		0.91 J+m	18 Jsp	4.1				8.3	3700		1800	0.29 J+m, sp	830 Jm, ld	<0.27 UJm		16 J-m		120 J+m		0.41 J-m		18		<0.25			430 J+m, ld
TT-TP2-B3A	TT-TP2-B3A-18	2016-08-12	440-155570-1				28							2400																
TT-TP2-B3A	TT-TP2-B3A-2	2016-08-12	440-155570-1		1.9	15 Jsp	1.5				45	6000		140	0.42 Jsp	3.4	<0.27		2.8		160		0.46		7.5		<0.25			15
TT-TP2-B3A	TT-TP2-B3A-22	2016-08-12	440-155570-1				240							700																
TT-TP2-B3A	TT-TP2-B3A-26	2016-08-12	440-155570-1				77							740																
TT-TP2-B3A	TT-TP2-B3A-6	2016-08-12	440-155570-1				20							250																
TT-TP2-B4	TT-TP2-B4-10	2015-03-19	440-104925-1				13000							1800																
TT-TP2-B4	TT-TP2-B4-14	2015-03-19	440-104925-1				10000							1600																
TT-TP2-B4	TT-TP2-B4-18	2015-03-19	440-104925-1				13000							1900																
TT-TP2-B4	TT-TP2-B4-2	2015-03-19	440-104925-1				1100							630																
TT-TP2-B4	TT-TP2-B4-22	2015-03-19	440-104925-1		22	11000	320				160	7600		500	4.2	24	<0.60		7.9		160		0.39		11		<0.30			5.9
TT-TP2-B4	TT-TP2-B4-26	2015-03-19	440-104925-1				71							240																
TT-TP2-B4	TT-TP2-B4-6	2015-03-19	440-104925-1		240	41000	28000				82	<2500		2100	5.5	55	<0.55		5.0		190		0.58		10		<0.27			27
TT-TP2-B4A	TT-TP2-B4A-10	2016-08-12	440-155575-1				42							580																
TT-TP2-B4A	TT-TP2-B4A-14	2016-08-12	440-155575-1				22							1700																
TT-TP2-B4A	TT-TP2-B4A-18	2016-08-12	440-155575-1				45							680																
TT-TP2-B4A	TT-TP2-B4A-2	2016-08-12	440-155575-1				210							140																
TT-TP2-B4A	TT-TP2-B4A-22	2016-08-12	440-155575-1		3.9	46	1.2				150	2800		340	0.31 Jsp	3.0	<0.27		9.4		84		0.27 Jsp		21		<0.25			9.6
TT-TP2-B4A	TT-TP2-B4A-26	2016-08-12	440-155575-1				38							290																
TT-TP2-B4A	TT-TP2-B4A-6	2016-08-12	440-155575-1		0.85	120	4.3				49	5900		190	0.85	3.1	<0.27		3.3		170		0.45		5.0 Jsp		<0.25			8.1
TT-TP2-L1	TT-TP2-L1-20151210	2015-12-10	440-130588-1	<2.4	240 J-c			170000	360	<1.4	300		3.0	1800	31 J-c	580 J-c														
TT-TP2-L1	TT-TP2-L1-20160103	2016-01-03	440-132876-1					180000						2100																
TT-TP2-L1	TT-TP2-L1-20160120	2016-01-20	440-135664-1					300000						2500																
TT-TP2-L1	TT-TP2-L1-20160204	2016-02-04	440-137358-1					880000						4400																
TT-TP2-L1	TT-TP2-L1-20160211	2016-02-11	440-138059-1					2200000																						
TT-TP2-L1	TT-TP2-L1-20160218	2016-02-18	440-138657-1					2600000						6600																
TT-TP2-L1	TT-TP2-L1-20160225	2016-02-25	440-139326-1					1700000						5700																
TT-TP2-L1	TT-TP2-L1-20160303	2016-03-03	440-139965-1					1100000						4800																
TT-TP2-L1	TT-TP2-L1-20160310	2016-03-10	440-140826-1					780000						4100																
TT-TP2-L1	TT-TP2-L1-20160317	2016-03-17	440-141827-1					700000						3600																
TT-TP2-L1	TT-TP2-L1-20160323	2016-03-23	440-142439-1					500000						3400																

Report Data Summary Table
Soil Flushing Treatability Study
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Location	Sample	Date	SDG	Chromium, Hexavalent (mg/Kg) SW7199	Chromium, Hexavalent (ug/L) SW7199	Chromium, Total (mg/Kg) SW6020	Chromium, Total (ug/L) SW6020	Cobalt (mg/Kg) SW6020	Cobalt (ug/L) SW6020	Copper (mg/Kg) SW6020	Copper (ug/L) SW6020	Iron (mg/Kg) SW6010B	Iron (mg/L) SW6010B	Lead (mg/Kg) SW6020	Lead (ug/L) SW6020	Magnesium (mg/L) SW6010B	Magnesium (mg/L) SW6010B_LCH	Manganese (mg/Kg) SW6010B	Manganese (mg/L) SW6010B	Mercury (mg/Kg) SW7471A	Mercury (mg/L) SW7470A	Molybdenum (mg/Kg) SW6020	Molybdenum (ug/L) SW6020	Nickel (mg/Kg) SW6020	Nickel (ug/L) SW6020	Potassium (mg/L) SW6010B	Potassium (mg/L) SW6010B_LCH	Selenium (mg/Kg) SW6020	Selenium (ug/L) SW6020
TT-TP2-B3	TT-TP2-B3-2	2015-03-18	440-104925-1	1.2		29		8.9		23		20000		12			12	500		0.043		1.1		18			1.3	<0.22	
TT-TP2-B3	TT-TP2-B3-22	2015-03-18	440-104925-1																										
TT-TP2-B3	TT-TP2-B3-26	2015-03-18	440-104925-1																										
TT-TP2-B3	TT-TP2-B3-6	2015-03-18	440-104925-1																										
TT-TP2-B3A	TT-TP2-B3A-10	2016-08-12	440-155570-1																										
TT-TP2-B3A	TT-TP2-B3A-14	2016-08-12	440-155570-1	0.20 Jsp		16		3.4		7.7		14000 J+m		5.0			5.6	200 J+m		<0.015		0.65 Jsp		9.5			<3.7	<0.20	
TT-TP2-B3A	TT-TP2-B3A-18	2016-08-12	440-155570-1																										
TT-TP2-B3A	TT-TP2-B3A-2	2016-08-12	440-155570-1	0.25 Jsp		22		6.0		14		20000		7.1			2.9 Jsp	390		<0.014		0.59 Jsp		13			<3.7	0.22 Jsp	
TT-TP2-B3A	TT-TP2-B3A-22	2016-08-12	440-155570-1																										
TT-TP2-B3A	TT-TP2-B3A-26	2016-08-12	440-155570-1																										
TT-TP2-B3A	TT-TP2-B3A-6	2016-08-12	440-155570-1																										
TT-TP2-B4	TT-TP2-B4-10	2015-03-19	440-104925-1																										
TT-TP2-B4	TT-TP2-B4-14	2015-03-19	440-104925-1																										
TT-TP2-B4	TT-TP2-B4-18	2015-03-19	440-104925-1																										
TT-TP2-B4	TT-TP2-B4-2	2015-03-19	440-104925-1																										
TT-TP2-B4	TT-TP2-B4-22	2015-03-19	440-104925-1	2.4		19		3.5		9.1		11000		5.5			2.2	150		<0.015		<0.60		11			1.6	<0.24	
TT-TP2-B4	TT-TP2-B4-26	2015-03-19	440-104925-1																										
TT-TP2-B4	TT-TP2-B4-6	2015-03-19	440-104925-1	<0.44		15		7.5		16		17000		7.9			5.5	310		0.013 Jq		<0.55		15			1.9	<0.22	
TT-TP2-B4A	TT-TP2-B4A-10	2016-08-12	440-155575-1																										
TT-TP2-B4A	TT-TP2-B4A-14	2016-08-12	440-155575-1																										
TT-TP2-B4A	TT-TP2-B4A-18	2016-08-12	440-155575-1																										
TT-TP2-B4A	TT-TP2-B4A-2	2016-08-12	440-155575-1																										
TT-TP2-B4A	TT-TP2-B4A-22	2016-08-12	440-155575-1	<0.20		32		4.5		5.5		8400		3.6			2.5 Jsp	370		<0.016		<0.50		8.9			8.8	<0.20	
TT-TP2-B4A	TT-TP2-B4A-26	2016-08-12	440-155575-1																										
TT-TP2-B4A	TT-TP2-B4A-6	2016-08-12	440-155575-1	<0.17		14		6.4		14		22000		6.5			7.3	290		<0.014		<0.49		14			<3.7	<0.20	
TT-TP2-L1	TT-TP2-L1-20151210	2015-12-10	440-130588-1		1.5 J-e, q																								
TT-TP2-L1	TT-TP2-L1-20160103	2016-01-03	440-132876-1				4.9																						
TT-TP2-L1	TT-TP2-L1-20160120	2016-01-20	440-135664-1		4.4 J-c																								
TT-TP2-L1	TT-TP2-L1-20160204	2016-02-04	440-137358-1		5.8 J-c																								
TT-TP2-L1	TT-TP2-L1-20160211	2016-02-11	440-138059-1																										
TT-TP2-L1	TT-TP2-L1-20160218	2016-02-18	440-138657-1																										
TT-TP2-L1	TT-TP2-L1-20160225	2016-02-25	440-139326-1		25																								
TT-TP2-L1	TT-TP2-L1-20160303	2016-03-03	440-139965-1		25																								
TT-TP2-L1	TT-TP2-L1-20160310	2016-03-10	440-140826-1		19 J-e																								
TT-TP2-L1	TT-TP2-L1-20160317	2016-03-17	440-141827-1		18																								
TT-TP2-L1	TT-TP2-L1-20160323	2016-03-23	440-142439-1		16																								

Report Data Summary Table
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Location	Sample	Date	SDG	Silver (mg/Kg) SW6020	Silver (ug/L) SW6020	Sodium (mg/L) SW6010B	Sodium (mg/L) SW6010B_LCH	Titanium (mg/Kg) SW6010B	Titanium (mg/L) SW6010B	Zinc (mg/Kg) SW6020	Zinc (ug/L) SW6020	pH (pH) SW9045C
TT-TP2-B3	TT-TP2-B3-2	2015-03-18	440-104925-1	0.11 Jq			60	760		45		7.64
TT-TP2-B3	TT-TP2-B3-22	2015-03-18	440-104925-1									
TT-TP2-B3	TT-TP2-B3-26	2015-03-18	440-104925-1									
TT-TP2-B3	TT-TP2-B3-6	2015-03-18	440-104925-1									
TT-TP2-B3A	TT-TP2-B3A-10	2016-08-12	440-155570-1									
TT-TP2-B3A	TT-TP2-B3A-14	2016-08-12	440-155570-1	<0.099			110 J-m	780 J+m		22		7.9
TT-TP2-B3A	TT-TP2-B3A-18	2016-08-12	440-155570-1									
TT-TP2-B3A	TT-TP2-B3A-2	2016-08-12	440-155570-1	<0.099			7.7	950		29		8.0
TT-TP2-B3A	TT-TP2-B3A-22	2016-08-12	440-155570-1									
TT-TP2-B3A	TT-TP2-B3A-26	2016-08-12	440-155570-1									
TT-TP2-B3A	TT-TP2-B3A-6	2016-08-12	440-155570-1									
TT-TP2-B4	TT-TP2-B4-10	2015-03-19	440-104925-1									
TT-TP2-B4	TT-TP2-B4-14	2015-03-19	440-104925-1									
TT-TP2-B4	TT-TP2-B4-18	2015-03-19	440-104925-1									
TT-TP2-B4	TT-TP2-B4-2	2015-03-19	440-104925-1									
TT-TP2-B4	TT-TP2-B4-22	2015-03-19	440-104925-1	<0.12			47	620		22		8.22
TT-TP2-B4	TT-TP2-B4-26	2015-03-19	440-104925-1									
TT-TP2-B4	TT-TP2-B4-6	2015-03-19	440-104925-1	<0.11			300	710		35		7.71
TT-TP2-B4A	TT-TP2-B4A-10	2016-08-12	440-155575-1									
TT-TP2-B4A	TT-TP2-B4A-14	2016-08-12	440-155575-1									
TT-TP2-B4A	TT-TP2-B4A-18	2016-08-12	440-155575-1									
TT-TP2-B4A	TT-TP2-B4A-2	2016-08-12	440-155575-1									
TT-TP2-B4A	TT-TP2-B4A-22	2016-08-12	440-155575-1	<0.10			72	500		13		8.0
TT-TP2-B4A	TT-TP2-B4A-26	2016-08-12	440-155575-1									
TT-TP2-B4A	TT-TP2-B4A-6	2016-08-12	440-155575-1	<0.099			130	980		32		9.3
TT-TP2-L1	TT-TP2-L1-20151210	2015-12-10	440-130588-1									
TT-TP2-L1	TT-TP2-L1-20160103	2016-01-03	440-132876-1									
TT-TP2-L1	TT-TP2-L1-20160120	2016-01-20	440-135664-1									
TT-TP2-L1	TT-TP2-L1-20160204	2016-02-04	440-137358-1									
TT-TP2-L1	TT-TP2-L1-20160211	2016-02-11	440-138059-1									
TT-TP2-L1	TT-TP2-L1-20160218	2016-02-18	440-138657-1									
TT-TP2-L1	TT-TP2-L1-20160225	2016-02-25	440-139326-1									
TT-TP2-L1	TT-TP2-L1-20160303	2016-03-03	440-139965-1									
TT-TP2-L1	TT-TP2-L1-20160310	2016-03-10	440-140826-1									
TT-TP2-L1	TT-TP2-L1-20160317	2016-03-17	440-141827-1									
TT-TP2-L1	TT-TP2-L1-20160323	2016-03-23	440-142439-1									

Report Data Summary Table
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Location	Sample	Date	SDG	Carbonate (as CO3) (mg/L) SM2320B	Chloride (as Cl) (mg/L) E300.0	Chlorate (ug/L) E300.1B	Perchlorate (mg/Kg) E314.0	Perchlorate (ug/L) E314.0	Bicarbonate ion as HCO3 (mg/L) SM2320B	Hydroxide as OH (mg/L) SM2320B	Alkalinity, Total (as CaCO3) (mg/L) SM2320B	Carbon, Total Organic (mg/Kg) SW9060	Carbon, Total Organic (mg/L) SM5310B	Total Dissolved Solids (Residue, Filterable) (mg/L) SM2540C	Nitrogen, Nitrate (as N) (mg/L) E300.0	Sulfate (as So4) (mg/L) E300.0	Antimony (mg/Kg) SW6020	Antimony (ug/L) SW6020	Arsenic (mg/Kg) SW6020	Arsenic (ug/L) SW6020	Barium (mg/Kg) SW6020	Barium (ug/L) SW6020	Beryllium (mg/Kg) SW6020	Beryllium (ug/L) SW6020	Boron (mg/Kg) SW6010B	Boron (mg/L) SW6010B	Cadmium (mg/Kg) SW6020	Cadmium (ug/L) SW6020	Calcium (mg/L) SW6010B	Calcium (mg/L) SW6010B_LCH
TT-TP2-L1	TT-TP2-L1-20160405	2016-04-05	440-143458-1					310000						2700																	
TT-TP2-L1	TT-TP2-L1-20160420	2016-04-20	440-145023-1					190000																							
TT-TP2-L1	TT-TP2-L1-20160428	2016-04-28	440-145766-1					220000						2500																	
TT-TP2-L1	TT-TP2-L1-20160505	2016-05-05	440-146524-1					140000						2500																	
TT-TP2-L1	TT-TP2-L1-20160511	2016-05-11	440-147243-1					150000						2600																	
TT-TP2-L1	TT-TP2-L1-20160519	2016-05-19	440-147992-1					130000						2300																	
TT-TP2-L1	TT-TP2-L1-20160525	2016-05-25	440-148383-1					120000						2200																	
TT-TP2-L1	TT-TP2-L1-20160602	2016-06-02	440-149036-1					110000																							
TT-TP2-L1	TT-TP2-L1-20160608	2016-06-08	440-149621-1					110000																							
TT-TP2-L1	TT-TP2-L1-20160622	2016-06-22	440-150775-1					96000						2100																	
TT-TP2-L1	TT-TP2-L1-20160705	2016-07-05	440-151701-1					90000						2100																	
TT-TP2-L1	TT-TP2-L1-20160727	2016-07-27	440-153790-1					77000						2200																	
TT-TP2-L2	TT-TP2-L2-10	2015-03-26	440-105406-1				15							190																	
TT-TP2-L2	TT-TP2-L2-14	2015-03-26	440-105406-1				240							160																	
TT-TP2-L2	TT-TP2-L2-18	2015-03-26	440-105406-1				990							420																	
TT-TP2-L2	TT-TP2-L2-2	2015-03-26	440-105406-1		**40**	2600	2200				20	<2500		530	73	40	<0.55		4.2		270		0.62		8.3		<0.28			31
TT-TP2-L2	TT-TP2-L2-20151210	2015-12-10	440-130588-1	**<2.4**	**1300**			1800000 J-c	360	<1.4	290		3.9	8100	99	1400															
TT-TP2-L2	TT-TP2-L2-20160103	2016-01-03	440-132876-1					1800000					2.5	9900																	
TT-TP2-L2	TT-TP2-L2-20160120	2016-01-20	440-135664-1					1900000						10000																	
TT-TP2-L2	TT-TP2-L2-20160204	2016-02-04	440-137358-1					2500000						13000																	
TT-TP2-L2	TT-TP2-L2-20160211	2016-02-11	440-138059-1					2900000						13000																	
TT-TP2-L2	TT-TP2-L2-20160218	2016-02-18	440-138657-1					2800000						12000																	
TT-TP2-L2	TT-TP2-L2-20160225	2016-02-25	440-139326-1					2900000						9100																	
TT-TP2-L2	TT-TP2-L2-20160303	2016-03-03	440-139965-1					3700000						11000																	
TT-TP2-L2	TT-TP2-L2-20160310	2016-03-10	440-140826-1					2800000						11000																	
TT-TP2-L2	TT-TP2-L2-20160317	2016-03-17	440-141827-1					3000000						8800																	
TT-TP2-L2	TT-TP2-L2-20160323	2016-03-23	440-142439-1					2400000						9000																	
TT-TP2-L2	TT-TP2-L2-20160331	2016-03-31	440-143078-1					2100000						7900																	
TT-TP2-L2	TT-TP2-L2-20160405	2016-04-05	440-143458-1					1600000						7300																	
TT-TP2-L2	TT-TP2-L2-20160420	2016-04-20	440-145023-1					970000																							
TT-TP2-L2	TT-TP2-L2-20160428	2016-04-28	440-145766-1					950000						4800																	
TT-TP2-L2	TT-TP2-L2-20160505	2016-05-05	440-146524-1					620000						4500																	
TT-TP2-L2	TT-TP2-L2-20160511	2016-05-11	440-147243-1					570000						4100																	
TT-TP2-L2	TT-TP2-L2-20160519	2016-05-19	440-147992-1					360000						3200																	
TT-TP2-L2	TT-TP2-L2-20160525	2016-05-25	440-148383-1					370000						3100																	
TT-TP2-L2	TT-TP2-L2-20160602	2016-06-02	440-149036-1					300000																							

Report Data Summary Table
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Location	Sample	Date	SDG	Chromium, Hexavalent (mg/Kg) SW7199	Chromium, Hexavalent (ug/L) SW7199	Chromium, Total (mg/Kg) SW6020	Chromium, Total (ug/L) SW6020	Cobalt (mg/Kg) SW6020	Cobalt (ug/L) SW6020	Copper (mg/Kg) SW6020	Copper (ug/L) SW6020	Iron (mg/Kg) SW6010B	Iron (mg/L) SW6010B	Lead (mg/Kg) SW6020	Lead (ug/L) SW6020	Magnesium (mg/L) SW6010B	Magnesium (mg/L) SW6010B_LCH	Manganese (mg/Kg) SW6010B	Manganese (mg/L) SW6010B	Mercury (mg/Kg) SW7471A	Mercury (mg/L) SW7470A	Molybdenum (mg/Kg) SW6020	Molybdenum (ug/L) SW6020	Nickel (mg/Kg) SW6020	Nickel (ug/L) SW6020	Potassium (mg/L) SW6010B	Potassium (mg/L) SW6010B_LCH	Selenium (mg/Kg) SW6020	Selenium (ug/L) SW6020
TT-TP2-L1	TT-TP2-L1-20160405	2016-04-05	440-143458-1		17																								
TT-TP2-L1	TT-TP2-L1-20160420	2016-04-20	440-145023-1		7.9																								
TT-TP2-L1	TT-TP2-L1-20160428	2016-04-28	440-145766-1		8.2																								
TT-TP2-L1	TT-TP2-L1-20160505	2016-05-05	440-146524-1		7.5																								
TT-TP2-L1	TT-TP2-L1-20160511	2016-05-11	440-147243-1		7.0																								
TT-TP2-L1	TT-TP2-L1-20160519	2016-05-19	440-147992-1		6.8																								
TT-TP2-L1	TT-TP2-L1-20160525	2016-05-25	440-148383-1		6.7																								
TT-TP2-L1	TT-TP2-L1-20160602	2016-06-02	440-149036-1		6.1																								
TT-TP2-L1	TT-TP2-L1-20160608	2016-06-08	440-149621-1		5.2																								
TT-TP2-L1	TT-TP2-L1-20160622	2016-06-22	440-150775-1		2.8																								
TT-TP2-L1	TT-TP2-L1-20160705	2016-07-05	440-151701-1		0.50 Jq																								
TT-TP2-L1	TT-TP2-L1-20160727	2016-07-27	440-153790-1		<0.25																								
TT-TP2-L2	TT-TP2-L2-10	2015-03-26	440-105406-1																										
TT-TP2-L2	TT-TP2-L2-14	2015-03-26	440-105406-1																										
TT-TP2-L2	TT-TP2-L2-18	2015-03-26	440-105406-1																										
TT-TP2-L2	TT-TP2-L2-2	2015-03-26	440-105406-1	0.99		23		7.8		21		18000		17			4.7	550		0.024		0.64 Jq		17			1.6	<0.22	
TT-TP2-L2	TT-TP2-L2-20151210	2015-12-10	440-130588-1		1800 Je, c																								
TT-TP2-L2	TT-TP2-L2-20160103	2016-01-03	440-132876-1				2000																						
TT-TP2-L2	TT-TP2-L2-20160120	2016-01-20	440-135664-1		2800 J-c		2200																						
TT-TP2-L2	TT-TP2-L2-20160204	2016-02-04	440-137358-1		4600 J-c		4000																						
TT-TP2-L2	TT-TP2-L2-20160211	2016-02-11	440-138059-1																										
TT-TP2-L2	TT-TP2-L2-20160218	2016-02-18	440-138657-1				2300																						
TT-TP2-L2	TT-TP2-L2-20160225	2016-02-25	440-139326-1		1700																								
TT-TP2-L2	TT-TP2-L2-20160303	2016-03-03	440-139965-1		1400																								
TT-TP2-L2	TT-TP2-L2-20160310	2016-03-10	440-140826-1		1100 J-e																								
TT-TP2-L2	TT-TP2-L2-20160317	2016-03-17	440-141827-1		800																								
TT-TP2-L2	TT-TP2-L2-20160323	2016-03-23	440-142439-1		630 J-e																								
TT-TP2-L2	TT-TP2-L2-20160331	2016-03-31	440-143078-1		520																								
TT-TP2-L2	TT-TP2-L2-20160405	2016-04-05	440-143458-1		420																								
TT-TP2-L2	TT-TP2-L2-20160420	2016-04-20	440-145023-1		190		96																						
TT-TP2-L2	TT-TP2-L2-20160428	2016-04-28	440-145766-1		120																								
TT-TP2-L2	TT-TP2-L2-20160505	2016-05-05	440-146524-1		71		120																						
TT-TP2-L2	TT-TP2-L2-20160511	2016-05-11	440-147243-1		63		46																						
TT-TP2-L2	TT-TP2-L2-20160519	2016-05-19	440-147992-1		29		32																						
TT-TP2-L2	TT-TP2-L2-20160525	2016-05-25	440-148383-1		14		12																						
TT-TP2-L2	TT-TP2-L2-20160602	2016-06-02	440-149036-1		5.5																								

Report Data Summary Table
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Location	Sample	Date	SDG	Silver (mg/Kg) SW6020	Silver (ug/L) SW6020	Sodium (mg/L) SW6010B	Sodium (mg/L) SW6010B_LCH	Titanium (mg/Kg) SW6010B	Titanium (mg/L) SW6010B	Zinc (mg/Kg) SW6020	Zinc (ug/L) SW6020	pH (pH) SW9045C
TT-TP2-L1	TT-TP2-L1-20160405	2016-04-05	440-143458-1									
TT-TP2-L1	TT-TP2-L1-20160420	2016-04-20	440-145023-1									
TT-TP2-L1	TT-TP2-L1-20160428	2016-04-28	440-145766-1									
TT-TP2-L1	TT-TP2-L1-20160505	2016-05-05	440-146524-1									
TT-TP2-L1	TT-TP2-L1-20160511	2016-05-11	440-147243-1									
TT-TP2-L1	TT-TP2-L1-20160519	2016-05-19	440-147992-1									
TT-TP2-L1	TT-TP2-L1-20160525	2016-05-25	440-148383-1									
TT-TP2-L1	TT-TP2-L1-20160602	2016-06-02	440-149036-1									
TT-TP2-L1	TT-TP2-L1-20160608	2016-06-08	440-149621-1									
TT-TP2-L1	TT-TP2-L1-20160622	2016-06-22	440-150775-1									
TT-TP2-L1	TT-TP2-L1-20160705	2016-07-05	440-151701-1									
TT-TP2-L1	TT-TP2-L1-20160727	2016-07-27	440-153790-1									
TT-TP2-L2	TT-TP2-L2-10	2015-03-26	440-105406-1									
TT-TP2-L2	TT-TP2-L2-14	2015-03-26	440-105406-1									
TT-TP2-L2	TT-TP2-L2-18	2015-03-26	440-105406-1									
TT-TP2-L2	TT-TP2-L2-2	2015-03-26	440-105406-1	<0.11			94	860		42		7.78
TT-TP2-L2	TT-TP2-L2-20151210	2015-12-10	440-130588-1									
TT-TP2-L2	TT-TP2-L2-20160103	2016-01-03	440-132876-1									
TT-TP2-L2	TT-TP2-L2-20160120	2016-01-20	440-135664-1									
TT-TP2-L2	TT-TP2-L2-20160204	2016-02-04	440-137358-1									
TT-TP2-L2	TT-TP2-L2-20160211	2016-02-11	440-138059-1									
TT-TP2-L2	TT-TP2-L2-20160218	2016-02-18	440-138657-1									
TT-TP2-L2	TT-TP2-L2-20160225	2016-02-25	440-139326-1									
TT-TP2-L2	TT-TP2-L2-20160303	2016-03-03	440-139965-1									
TT-TP2-L2	TT-TP2-L2-20160310	2016-03-10	440-140826-1									
TT-TP2-L2	TT-TP2-L2-20160317	2016-03-17	440-141827-1									
TT-TP2-L2	TT-TP2-L2-20160323	2016-03-23	440-142439-1									
TT-TP2-L2	TT-TP2-L2-20160331	2016-03-31	440-143078-1									
TT-TP2-L2	TT-TP2-L2-20160405	2016-04-05	440-143458-1									
TT-TP2-L2	TT-TP2-L2-20160420	2016-04-20	440-145023-1									
TT-TP2-L2	TT-TP2-L2-20160428	2016-04-28	440-145766-1									
TT-TP2-L2	TT-TP2-L2-20160505	2016-05-05	440-146524-1									
TT-TP2-L2	TT-TP2-L2-20160511	2016-05-11	440-147243-1									
TT-TP2-L2	TT-TP2-L2-20160519	2016-05-19	440-147992-1									
TT-TP2-L2	TT-TP2-L2-20160525	2016-05-25	440-148383-1									
TT-TP2-L2	TT-TP2-L2-20160602	2016-06-02	440-149036-1									

Report Data Summary Table
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Location	Sample	Date	SDG	Carbonate (as CO3) (mg/L) SM2320B	Chloride (as Cl) (mg/L) E300.0	Chlorate (ug/L) E300.1B	Perchlorate (mg/Kg) E314.0	Perchlorate (ug/L) E314.0	Bicarbonate ion as HCO3 (mg/L) SM2320B	Hydroxide as OH (mg/L) SM2320B	Alkalinity, Total (as CaCO3) (mg/L) SM2320B	Carbon, Total Organic (mg/Kg) SW9060	Carbon, Total Organic (mg/L) SM5310B	Total Dissolved Solids (Residue, Filterable) (mg/L) SM2540C	Nitrogen, Nitrate (as N) (mg/L) E300.0	Sulfate (as So4) (mg/L) E300.0	Antimony (mg/Kg) SW6020	Antimony (ug/L) SW6020	Arsenic (mg/Kg) SW6020	Arsenic (ug/L) SW6020	Barium (mg/Kg) SW6020	Barium (ug/L) SW6020	Beryllium (mg/Kg) SW6020	Beryllium (ug/L) SW6020	Boron (mg/Kg) SW6010B	Boron (mg/L) SW6010B	Cadmium (mg/Kg) SW6020	Cadmium (ug/L) SW6020	Calcium (mg/L) SW6010B	Calcium (mg/L) SW6010B_LCH
TT-TP2-L2	TT-TP2-L2-20160608	2016-06-08	440-149621-1					250000																							
TT-TP2-L2	TT-TP2-L2-20160622	2016-06-22	440-150775-1					210000						2400																	
TT-TP2-L2	TT-TP2-L2-20160705	2016-07-05	440-151701-1					180000																							
TT-TP2-L2	TT-TP2-L2-20160727	2016-07-27	440-153790-1					170000						2100																	
TT-TP2-L2	TT-TP2-L2-22	2015-03-26	440-105406-1				91							190																	
TT-TP2-L2	TT-TP2-L2-26	2015-03-26	440-105406-1		**17**	49000	74				41	<2500		420	1.0	28	<0.56		5.4		240		0.38		5.9		<0.28			5.1
TT-TP2-L2	TT-TP2-L2-6	2015-03-26	440-105406-1				29							130																	
TT-TP2-L2A	TT-TP2-L2A-10	2016-08-13	440-155631-1				94							300																	
TT-TP2-L2A	TT-TP2-L2A-14	2016-08-13	440-155631-1				37							590																	
TT-TP2-L2A	TT-TP2-L2A-18	2016-08-13	440-155631-1				1.8							350																	
TT-TP2-L2A	TT-TP2-L2A-2	2016-08-13	440-155631-1		**2.0**	35	23 J-m				26	970		56	2.1	4.6	<0.27		3.1		180		0.41		5.6		<0.25			9.7
TT-TP2-L2A	TT-TP2-L2A-22	2016-08-13	440-155631-1				22							160																	
TT-TP2-L2A	TT-TP2-L2A-26	2016-08-13	440-155631-1		**15**	34000	62				27	440		270	1.9	38	<0.27		4.4		160		0.29 Jsp		5.6		<0.25			26
TT-TP2-L2A	TT-TP2-L2A-6	2016-08-13	440-155631-1				170							180																	
TT-TP2-M1	TT-TP2-M1	2016-02-24	440-139185-1					2400000					1.5	9300																	
TT-TP2-M1	TT-TP2-M1-20151210	2015-12-10	440-130588-1	**<2.4**	**1400**	3700000		480000	140	<1.4	120		1.2	9100	12	1400		<2.5		97		28		<1.3		4.0		<1.3	440 J-c	
TT-TP2-M1	TT-TP2-M1-2016	2016-04-04	440-143273-1	**<2.4**	**790**	900000		1900000	210	<1.4	180		1.9	7200	93	960		<0.50		23		8.8		<0.25		1.9		<0.25	280	
TT-TP2-M1	TT-TP2-M1-20160103	2016-01-03	440-132876-1					510000					1.2	9900																	
TT-TP2-M1	TT-TP2-M1-20160120	2016-01-20	440-135664-1					3100000					1.6	11000																	
TT-TP2-M1	TT-TP2-M1-20160203	2016-02-03	440-137164-1					2300000					1.6	9500																	
TT-TP2-M1	TT-TP2-M1-20160210	2016-02-10	440-137910-1	**<2.4**	**1200**	2300000		2100000	200	<1.4	160		1.8	9000		1200		<2.5		110		41		<1.3		2.9		<1.3	380	
TT-TP2-M1	TT-TP2-M1-20160217	2016-02-17	440-138539-1					2300000					1.4	9200																	
TT-TP2-M1	TT-TP2-M1-20160302	2016-03-02	440-139843-1					1800000					1.7	8100																	
TT-TP2-M1	TT-TP2-M1-20160309	2016-03-09	440-140696-1	**<2.4**	**880**	1400000		2200000	210	<1.4	170		1.9	8500	54	1000		<5.0		110		43		<2.5		15		<2.5	1900	
TT-TP2-M1	TT-TP2-M1-20160309	2016-03-09	440-140826-1					2000000																							
TT-TP2-M1	TT-TP2-M1-20160316	2016-03-16	440-141586-1					2100000					1.5	7400																	
TT-TP2-M1	TT-TP2-M1-20160323	2016-03-23	440-142439-1					1700000					1.4	7200																	
TT-TP2-M1	TT-TP2-M1-20160330	2016-03-30	440-142922-1					1700000					1.8	7000																	
TT-TP2-M1	TT-TP2-M1-20160427	2016-04-27	440-145639-1					3000000					2.0	7900																	
TT-TP2-M1	TT-TP2-M1-20160504	2016-05-04	440-146375-1	**<2.4**	**1000**	560000		2900000	210	<1.4	170		2.1	8300	68	1500		<0.50		100		42		<0.25		1.9		<0.25	350	
TT-TP2-M1	TT-TP2-M1-20160511	2016-05-11	440-147243-1					3300000					1.9	9100																	
TT-TP2-M1	TT-TP2-M1-20160519	2016-05-19	440-147992-1					3200000					1.8	9500																	
TT-TP2-M1	TT-TP2-M1-20160526	2016-05-26	440-148500-1					3700000					2.1	10000																	
TT-TP2-M1	TT-TP2-M1-20160601	2016-06-01	440-148926-1	**<2.4**	**1100**	350000		3600000	200	<1.4	170		2.0	9300	80	960		<0.50		99		39		<0.25		1.6		<0.25	320	
TT-TP2-M1	TT-TP2-M1-20160608	2016-06-08	440-149621-1					3100000					1.9	7900																	
TT-TP2-M1	TT-TP2-M1-20160622	2016-06-22	440-150775-1					2700000					1.8	7700																	

Report Data Summary Table
Soil Flushing Treatability Study
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Location	Sample	Date	SDG	Chromium, Hexavalent (mg/Kg) SW7199	Chromium, Hexavalent (ug/L) SW7199	Chromium, Total (mg/Kg) SW6020	Chromium, Total (ug/L) SW6020	Cobalt (mg/Kg) SW6020	Cobalt (ug/L) SW6020	Copper (mg/Kg) SW6020	Copper (ug/L) SW6020	Iron (mg/Kg) SW6010B	Iron (mg/L) SW6010B	Lead (mg/Kg) SW6020	Lead (ug/L) SW6020	Magnesium (mg/L) SW6010B	Magnesium (mg/L) SW6010B_LCH	Manganese (mg/Kg) SW6010B	Manganese (mg/L) SW6010B	Mercury (mg/Kg) SW7471A	Mercury (mg/L) SW7470A	Molybdenum (mg/Kg) SW6020	Molybdenum (ug/L) SW6020	Nickel (mg/Kg) SW6020	Nickel (ug/L) SW6020	Potassium (mg/L) SW6010B	Potassium (mg/L) SW6010B_LCH	Selenium (mg/Kg) SW6020	Selenium (ug/L) SW6020
TT-TP2-L2	TT-TP2-L2-20160608	2016-06-08	440-149621-1		3.8																								
TT-TP2-L2	TT-TP2-L2-20160622	2016-06-22	440-150775-1		1.5 Jq																								
TT-TP2-L2	TT-TP2-L2-20160705	2016-07-05	440-151701-1																										
TT-TP2-L2	TT-TP2-L2-20160727	2016-07-27	440-153790-1		0.58 Jsp																								
TT-TP2-L2	TT-TP2-L2-22	2015-03-26	440-105406-1																										
TT-TP2-L2	TT-TP2-L2-26	2015-03-26	440-105406-1	2.1		11		3.4		9.5		9400		6.6			1.3	160		<0.013		<0.56		9.8			0.79	<0.22	
TT-TP2-L2	TT-TP2-L2-6	2015-03-26	440-105406-1																										
TT-TP2-L2A	TT-TP2-L2A-10	2016-08-13	440-155631-1																										
TT-TP2-L2A	TT-TP2-L2A-14	2016-08-13	440-155631-1																										
TT-TP2-L2A	TT-TP2-L2A-18	2016-08-13	440-155631-1																										
TT-TP2-L2A	TT-TP2-L2A-2	2016-08-13	440-155631-1	0.48		21		6.2		14		17000		12			2.3 Jsp	320		0.016 Jsp		0.52 Jsp		13			<3.7	<0.20	
TT-TP2-L2A	TT-TP2-L2A-22	2016-08-13	440-155631-1																										
TT-TP2-L2A	TT-TP2-L2A-26	2016-08-13	440-155631-1	0.63		11		3.1		7.7		10000		5.3			8.3	140		<0.015		<0.50		7.9			<3.7	<0.20	
TT-TP2-L2A	TT-TP2-L2A-6	2016-08-13	440-155631-1																										
TT-TP2-M1	TT-TP2-M1	2016-02-24	440-139185-1		9600		8400																						
TT-TP2-M1	TT-TP2-M1-20151210	2015-12-10	440-130588-1		16000 J-e		14000 J-c		<2.5		<2.5		<0.050		<2.5	230 J-c			<0.050		<0.00010		32		<2.5	25 J-c			4.7 Jq
TT-TP2-M1	TT-TP2-M1-2016	2016-04-04	440-143273-1		3200		770		<0.50		0.64 Jq		<0.010		<0.50	140			<0.010		<0.00010		5.1		1.2 Jq	23			<0.50
TT-TP2-M1	TT-TP2-M1-20160103	2016-01-03	440-132876-1				14000																						
TT-TP2-M1	TT-TP2-M1-20160120	2016-01-20	440-135664-1		11000 J-c		9700																						
TT-TP2-M1	TT-TP2-M1-20160203	2016-02-03	440-137164-1		9200 J-c		9600																						
TT-TP2-M1	TT-TP2-M1-20160210	2016-02-10	440-137910-1				9100		<2.5		5.4 Jq		<0.10		<2.5	200			<0.10		0.00044		29		5.9 Jq	25			4.3 Jq
TT-TP2-M1	TT-TP2-M1-20160217	2016-02-17	440-138539-1				9200																						
TT-TP2-M1	TT-TP2-M1-20160302	2016-03-02	440-139843-1		7800		6600																						
TT-TP2-M1	TT-TP2-M1-20160309	2016-03-09	440-140696-1		6100		6200		<5.0		6.4 Jq		<0.25		<5.0	1000			<0.25		<0.00010		27		<5.0	130			<5.0
TT-TP2-M1	TT-TP2-M1-20160309	2016-03-09	440-140826-1																										
TT-TP2-M1	TT-TP2-M1-20160316	2016-03-16	440-141586-1		5900		4900																						
TT-TP2-M1	TT-TP2-M1-20160323	2016-03-23	440-142439-1		3600		4600																						
TT-TP2-M1	TT-TP2-M1-20160330	2016-03-30	440-142922-1		4400		4400																						
TT-TP2-M1	TT-TP2-M1-20160427	2016-04-27	440-145639-1		2600		2700																						
TT-TP2-M1	TT-TP2-M1-20160504	2016-05-04	440-146375-1		2400		2300		0.52 Jq		4.0		<0.050		<0.50	170			<0.050		<0.00010		22		0.55 Jq	25			2.4
TT-TP2-M1	TT-TP2-M1-20160511	2016-05-11	440-147243-1		2200		1800																						
TT-TP2-M1	TT-TP2-M1-20160519	2016-05-19	440-147992-1		1900		1600																						
TT-TP2-M1	TT-TP2-M1-20160526	2016-05-26	440-148500-1		1800		2000																						
TT-TP2-M1	TT-TP2-M1-20160601	2016-06-01	440-148926-1		1500		1300		0.65 Jq		1.0 Jq		<0.010		<0.50	160			<0.010		<0.00010		19		2.2	25			2.2
TT-TP2-M1	TT-TP2-M1-20160608	2016-06-08	440-149621-1		1300		1500																						
TT-TP2-M1	TT-TP2-M1-20160622	2016-06-22	440-150775-1		1100		1100																						

Report Data Summary Table
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Location	Sample	Date	SDG	Silver (mg/Kg) SW6020	Silver (ug/L) SW6020	Sodium (mg/L) SW6010B	Sodium (mg/L) SW6010B_LCH	Titanium (mg/Kg) SW6010B	Titanium (mg/L) SW6010B	Zinc (mg/Kg) SW6020	Zinc (ug/L) SW6020	pH (pH) SW9045C
TT-TP2-L2	TT-TP2-L2-20160608	2016-06-08	440-149621-1									
TT-TP2-L2	TT-TP2-L2-20160622	2016-06-22	440-150775-1									
TT-TP2-L2	TT-TP2-L2-20160705	2016-07-05	440-151701-1									
TT-TP2-L2	TT-TP2-L2-20160727	2016-07-27	440-153790-1									
TT-TP2-L2	TT-TP2-L2-22	2015-03-26	440-105406-1									
TT-TP2-L2	TT-TP2-L2-26	2015-03-26	440-105406-1	<0.11			80	580		20		8.67
TT-TP2-L2	TT-TP2-L2-6	2015-03-26	440-105406-1									
TT-TP2-L2A	TT-TP2-L2A-10	2016-08-13	440-155631-1									
TT-TP2-L2A	TT-TP2-L2A-14	2016-08-13	440-155631-1									
TT-TP2-L2A	TT-TP2-L2A-18	2016-08-13	440-155631-1									
TT-TP2-L2A	TT-TP2-L2A-2	2016-08-13	440-155631-1	<0.10			16	850		31		8.7
TT-TP2-L2A	TT-TP2-L2A-22	2016-08-13	440-155631-1									
TT-TP2-L2A	TT-TP2-L2A-26	2016-08-13	440-155631-1	<0.10			83	590		19		8.5
TT-TP2-L2A	TT-TP2-L2A-6	2016-08-13	440-155631-1									
TT-TP2-M1	TT-TP2-M1	2016-02-24	440-139185-1									
TT-TP2-M1	TT-TP2-M1-20151210	2015-12-10	440-130588-1		<2.5	1600 J-c			<0.013		<13	
TT-TP2-M1	TT-TP2-M1-2016	2016-04-04	440-143273-1		<0.50	1300			<0.0025		<2.5	
TT-TP2-M1	TT-TP2-M1-20160103	2016-01-03	440-132876-1									
TT-TP2-M1	TT-TP2-M1-20160120	2016-01-20	440-135664-1									
TT-TP2-M1	TT-TP2-M1-20160203	2016-02-03	440-137164-1									
TT-TP2-M1	TT-TP2-M1-20160210	2016-02-10	440-137910-1		<2.5	1500			<0.025		16 Jq	
TT-TP2-M1	TT-TP2-M1-20160217	2016-02-17	440-138539-1									
TT-TP2-M1	TT-TP2-M1-20160302	2016-03-02	440-139843-1									
TT-TP2-M1	TT-TP2-M1-20160309	2016-03-09	440-140696-1		<5.0	7500			<0.063		<25	
TT-TP2-M1	TT-TP2-M1-20160309	2016-03-09	440-140826-1									
TT-TP2-M1	TT-TP2-M1-20160316	2016-03-16	440-141586-1									
TT-TP2-M1	TT-TP2-M1-20160323	2016-03-23	440-142439-1									
TT-TP2-M1	TT-TP2-M1-20160330	2016-03-30	440-142922-1									
TT-TP2-M1	TT-TP2-M1-20160427	2016-04-27	440-145639-1									
TT-TP2-M1	TT-TP2-M1-20160504	2016-05-04	440-146375-1		<0.50	1300			<0.013		<2.5	
TT-TP2-M1	TT-TP2-M1-20160511	2016-05-11	440-147243-1									
TT-TP2-M1	TT-TP2-M1-20160519	2016-05-19	440-147992-1									
TT-TP2-M1	TT-TP2-M1-20160526	2016-05-26	440-148500-1									
TT-TP2-M1	TT-TP2-M1-20160601	2016-06-01	440-148926-1		<0.50	1500			<0.0025		<2.5	
TT-TP2-M1	TT-TP2-M1-20160608	2016-06-08	440-149621-1									
TT-TP2-M1	TT-TP2-M1-20160622	2016-06-22	440-150775-1									

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Location	Sample	Date	SDG	Carbonate (as CO3) (mg/L) SM2320B	Chloride (as Cl) (mg/L) E300.0	Chlorate (ug/L) E300.1B	Perchlorate (mg/Kg) E314.0	Perchlorate (ug/L) E314.0	Bicarbonate ion as HCO3 (mg/L) SM2320B	Hydroxide as OH (mg/L) SM2320B	Alkalinity, Total (as CaCO3) (mg/L) SM2320B	Carbon, Total Organic (mg/Kg) SW9060	Carbon, Total Organic (mg/L) SM5310B	Total Dissolved Solids (Residue, Filterable) (mg/L) SM2540C	Nitrogen, Nitrate (as N) (mg/L) E300.0	Sulfate (as So4) (mg/L) E300.0	Antimony (mg/Kg) SW6020	Antimony (ug/L) SW6020	Arsenic (mg/Kg) SW6020	Arsenic (ug/L) SW6020	Barium (mg/Kg) SW6020	Barium (ug/L) SW6020	Beryllium (mg/Kg) SW6020	Beryllium (ug/L) SW6020	Boron (mg/Kg) SW6010B	Boron (mg/L) SW6010B	Cadmium (mg/Kg) SW6020	Cadmium (ug/L) SW6020	Calcium (mg/L) SW6010B	Calcium (mg/L) SW6010B_LCH
TT-TP2-M1	TT-TP2-M1-20160705	2016-07-05	440-151701-1					3300000					4.8	8500																	
TT-TP1-M1	TT-TP2-M1-20160727	2016-07-27	440-153790-1	<2.4	780	770000		1400000	190	<1.4	150		3.9	6200	32	1100		<0.50		140		35		<0.25		1.2		<0.25	180	
TT-TP2-M2	TT-TP2-M2	2016-02-24	440-139185-1					1600000					1.5	9900																	
TT-TP2-M2	TT-TP2-M2-20151210	2015-12-10	440-130588-1	<2.4	1400	3700000		510000	150	<1.4	120		1.2	9300	15	1500		<2.5		98		28		<1.3		3.6		<1.3	400 J-c	
TT-TP2-M2	TT-TP2-M2-2016	2016-04-04	440-143273-1	<2.4	910	1700000		2100000	220	<1.4	180		2.6	8300	68 J-e	1200		<0.50		24		13		<0.25		2.8		<0.25	290	
TT-TP2-M2	TT-TP2-M2-20160103	2016-01-03	440-132876-1					440000 Jc					1.3	9900																
TT-TP2-M2	TT-TP2-M2-20160120	2016-01-20	440-135664-1					1800000 J+c					1.3	11000																
TT-TP2-M2	TT-TP2-M2-20160203	2016-02-03	440-137164-1					1500000					1.5	9700																
TT-TP2-M2	TT-TP2-M2-20160210	2016-02-10	440-137910-1	<2.4	1200	2700000		1700000	210	<1.4	170		1.7	9200		1400		<2.5		110		33		<1.3		3.4		<1.3	370	
TT-TP2-M2	TT-TP2-M2-20160217	2016-02-17	440-138539-1					1700000					1.5	9400																
TT-TP2-M2	TT-TP2-M2-20160302	2016-03-02	440-139843-1					1500000					1.6	9500																
TT-TP2-M2	TT-TP2-M2-20160309	2016-03-09	440-140696-1	<2.4	1100	2400000		1600000	210	<1.4	170		2.0	9200	54 J-c	1200		<2.5		120		33		<1.3		18		<1.3	1900	
TT-TP2-M2	TT-TP2-M2-20160309	2016-03-09	440-140826-1					1900000																						
TT-TP2-M2	TT-TP2-M2-20160316	2016-03-16	440-141586-1					1700000					1.3	8400																
TT-TP2-M2	TT-TP2-M2-20160323	2016-03-23	440-142439-1					1600000					1.3	8700																
TT-TP2-M2	TT-TP2-M2-20160330	2016-03-30	440-142922-1					1700000					1.5	9000																
TT-TP2-M2	TT-TP2-M2-20160427	2016-04-27	440-145639-1					2300000					1.8	8600																
TT-TP2-M2	TT-TP2-M2-20160505	2016-05-05	440-146524-1	<2.4	950	1000000		2200000	220	<1.4	180		1.8	8400	71	1100		<0.50		110		30		<0.25		2.3		<0.25	310	
TT-TP2-M2	TT-TP2-M2-20160511	2016-05-11	440-147243-1					2500000					1.7	8400																
TT-TP2-M2	TT-TP2-M2-20160519	2016-05-19	440-147992-1					2400000					1.7	8300																
TT-TP2-M2	TT-TP2-M2-20160526	2016-05-26	440-148500-1					2800000					2.0	8600																
TT-TP2-M2	TT-TP2-M2-20160601	2016-06-01	440-148926-1	<2.4	1000	710000		2900000	210	<1.4	170		1.9	8700	71	1000		<0.50		100		32		<0.25		2.1		<0.25	320	
TT-TP2-M2	TT-TP2-M2-20160608	2016-06-08	440-149621-1					2400000					1.8	8600																
TT-TP2-M2	TT-TP2-M2-20160622	2016-06-22	440-150775-1					2500000					1.6	7900																
TT-TP2-M2	TT-TP2-M2-20160705	2016-07-05	440-151701-1					2600000					1.8	7700																
TT-TP2-M2	TT-TP2-M2-20160728	2016-07-28	440-153948-1	<2.4	760	540000		2000000	210	<1.4	170		1.6	7000	50	1000		<5.0		130		28		<2.5		1.3		<2.5	230	
TT-TP3-B1	TT-TP3-B1-10	2015-03-19	440-104925-1		4.6	87	160				51	<2500		270	55	4.2	<0.56		5.3		220		0.49		9.7		<0.28			11
TT-TP3-B1	TT-TP3-B1-14	2015-03-19	440-104925-1				70							210																
TT-TP3-B1	TT-TP3-B1-18	2015-03-19	440-104925-1		5.0	4900	150				150	<2500		310	76	33	<0.56		15		190		0.35		13		<0.28			18
TT-TP3-B1	TT-TP3-B1-2	2015-03-19	440-104925-1				29							170																
TT-TP3-B1	TT-TP3-B1-22	2015-03-19	440-104925-1				200							240																
TT-TP3-B1	TT-TP3-B1-26	2015-03-19	440-104925-1				130							430																
TT-TP3-B1	TT-TP3-B1-6	2015-03-19	440-104925-1				430							230																
TT-TP3-B1A	TT-TP3-B1A-10	2016-08-14	440-155631-1		1.2	<10	0.16				27	8300		190	2.8	5.6	<0.27		4.4		170		0.47		5.6		<0.25			5.3
TT-TP3-B1A	TT-TP3-B1A-14	2016-08-14	440-155631-1				0.017 Jsp							150																
TT-TP3-B1A	TT-TP3-B1A-18	2016-08-14	440-155631-1		1.3	26	0.073				29	1600		220	0.28 Jsp	28	<0.27		18		130		0.36		16		<0.25			8.9

Report Data Summary Table
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Location	Sample	Date	SDG	Chromium, Hexavalent (mg/Kg) SW7199	Chromium, Hexavalent (ug/L) SW7199	Chromium, Total (mg/Kg) SW6020	Chromium, Total (ug/L) SW6020	Cobalt (mg/Kg) SW6020	Cobalt (ug/L) SW6020	Copper (mg/Kg) SW6020	Copper (ug/L) SW6020	Iron (mg/Kg) SW6010B	Iron (mg/L) SW6010B	Lead (mg/Kg) SW6020	Lead (ug/L) SW6020	Magnesium (mg/L) SW6010B	Magnesium (mg/L) SW6010B_LCH	Manganese (mg/Kg) SW6010B	Manganese (mg/L) SW6010B	Mercury (mg/Kg) SW7471A	Mercury (mg/L) SW7470A	Molybdenum (mg/Kg) SW6020	Molybdenum (ug/L) SW6020	Nickel (mg/Kg) SW6020	Nickel (ug/L) SW6020	Potassium (mg/L) SW6010B	Potassium (mg/L) SW6010B_LCH	Selenium (mg/Kg) SW6020	Selenium (ug/L) SW6020
TT-TP2-M1	TT-TP2-M1-20160705	2016-07-05	440-151701-1		1300		1100																						
TT-TP1-M1	TT-TP2-M1-20160727	2016-07-27	440-153790-1		3000		2500		<0.50		<0.50		<0.010		<0.50	83			<0.010		<0.00010		26		0.55 Jsp	22			2.1
TT-TP2-M2	TT-TP2-M2	2016-02-24	440-139185-1		11000		11000																						
TT-TP2-M2	TT-TP2-M2-20151210	2015-12-10	440-130588-1		15000 J-e		14000 J-c		<2.5		<2.5		<0.050		<2.5	200 J-c			<0.050		<0.00010		34		<2.5	23 J-c			4.7 Jq
TT-TP2-M2	TT-TP2-M2-2016	2016-04-04	440-143273-1		6700		1400		<0.50		2.7		<0.010		<0.50	180			<0.010		<0.00010		7.1		1.5 Jq	24			0.70 Jq
TT-TP2-M2	TT-TP2-M2-20160103	2016-01-03	440-132876-1				15000 J-c																						
TT-TP2-M2	TT-TP2-M2-20160120	2016-01-20	440-135664-1		14000 J-c		13000 Jc																						
TT-TP2-M2	TT-TP2-M2-20160203	2016-02-03	440-137164-1		11000 J-c		11000																						
TT-TP2-M2	TT-TP2-M2-20160210	2016-02-10	440-137910-1				9700		<2.5		<4.1 Ua		<0.10		<2.5	200			<0.10		<0.00010		36		5.3 Jq	27			4.7 Jq
TT-TP2-M2	TT-TP2-M2-20160217	2016-02-17	440-138539-1				11000																						
TT-TP2-M2	TT-TP2-M2-20160302	2016-03-02	440-139843-1		10000		9700																						
TT-TP2-M2	TT-TP2-M2-20160309	2016-03-09	440-140696-1		9400		9500		<2.5		3.4 Jq		<0.25		<2.5	1000			<0.25		<0.00010		37		3.8 Jq	130			4.3 Jq
TT-TP2-M2	TT-TP2-M2-20160309	2016-03-09	440-140826-1																										
TT-TP2-M2	TT-TP2-M2-20160316	2016-03-16	440-141586-1		10000		8600																						
TT-TP2-M2	TT-TP2-M2-20160323	2016-03-23	440-142439-1		7200		7800																						
TT-TP2-M2	TT-TP2-M2-20160330	2016-03-30	440-142922-1		8400		8500																						
TT-TP2-M2	TT-TP2-M2-20160427	2016-04-27	440-145639-1		5000		4900																						
TT-TP2-M2	TT-TP2-M2-20160505	2016-05-05	440-146524-1		4500 J-e		4400		<0.50		1.0 Jq		<0.010		<0.50	160			<0.010		0.0017		30		0.54 Jq	22			2.6
TT-TP2-M2	TT-TP2-M2-20160511	2016-05-11	440-147243-1		4200		3600																						
TT-TP2-M2	TT-TP2-M2-20160519	2016-05-19	440-147992-1		3700		2900																						
TT-TP2-M2	TT-TP2-M2-20160526	2016-05-26	440-148500-1		3500		3300																						
TT-TP2-M2	TT-TP2-M2-20160601	2016-06-01	440-148926-1		3200		2700		0.58 Jq		1.2 Jq		<0.010		<0.50	170			<0.010		<0.00010		25		2.2	24			2.3
TT-TP2-M2	TT-TP2-M2-20160608	2016-06-08	440-149621-1		2800		2700 J-c																						
TT-TP2-M2	TT-TP2-M2-20160622	2016-06-22	440-150775-1		2500		2400																						
TT-TP2-M2	TT-TP2-M2-20160705	2016-07-05	440-151701-1		2100		1900																						
TT-TP2-M2	TT-TP2-M2-20160728	2016-07-28	440-153948-1		2300		2300		<5.0		<5.0		<0.010		<5.0	100			<0.010		<0.00010		28		<5.0	20			<5.0
TT-TP3-B1	TT-TP3-B1-10	2015-03-19	440-104925-1	<0.44		12		6.2		16		16000		6.4			1.3	240		0.020 Jq		0.57 Jq		15			0.38 Jq	<0.22	
TT-TP3-B1	TT-TP3-B1-14	2015-03-19	440-104925-1																										
TT-TP3-B1	TT-TP3-B1-18	2015-03-19	440-104925-1	<0.45		10		3.4		9.1		11000		5.1			3.4	160		0.017 Jq		0.56 Jq		8.6			0.59	<0.22	
TT-TP3-B1	TT-TP3-B1-2	2015-03-19	440-104925-1																										
TT-TP3-B1	TT-TP3-B1-22	2015-03-19	440-104925-1																										
TT-TP3-B1	TT-TP3-B1-26	2015-03-19	440-104925-1																										
TT-TP3-B1	TT-TP3-B1-6	2015-03-19	440-104925-1																										
TT-TP3-B1A	TT-TP3-B1A-10	2016-08-14	440-155631-1	<0.17		13		5.5		13		17000		6.1			2.9 Jsp	230		0.015 Jsp		<0.49		12			<3.7	<0.20	
TT-TP3-B1A	TT-TP3-B1A-14	2016-08-14	440-155631-1																										
TT-TP3-B1A	TT-TP3-B1A-18	2016-08-14	440-155631-1	<0.18		16		4.2		9.4		12000		5.1			3.7 Jsp	190		0.014 Jsp		<0.50		9.2			<3.7	<0.20	

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Location	Sample	Date	SDG	Silver (mg/Kg) SW6020	Silver (ug/L) SW6020	Sodium (mg/L) SW6010B	Sodium (mg/L) SW6010B_LCH	Titanium (mg/Kg) SW6010B	Titanium (mg/L) SW6010B	Zinc (mg/Kg) SW6020	Zinc (ug/L) SW6020	pH (pH) SW9045C
TT-TP2-M1	TT-TP2-M1-20160705	2016-07-05	440-151701-1									
TT-TP1-M1	TT-TP2-M1-20160727	2016-07-27	440-153790-1		<0.50	1100			<0.0025		<2.5	
TT-TP2-M2	TT-TP2-M2	2016-02-24	440-139185-1									
TT-TP2-M2	TT-TP2-M2-20151210	2015-12-10	440-130588-1		<2.5	1500 J-c			<0.013		<13	
TT-TP2-M2	TT-TP2-M2-2016	2016-04-04	440-143273-1		<0.50	1500			<0.0025		<2.5	
TT-TP2-M2	TT-TP2-M2-20160103	2016-01-03	440-132876-1									
TT-TP2-M2	TT-TP2-M2-20160120	2016-01-20	440-135664-1									
TT-TP2-M2	TT-TP2-M2-20160203	2016-02-03	440-137164-1									
TT-TP2-M2	TT-TP2-M2-20160210	2016-02-10	440-137910-1		<2.5	1600			<0.025		<13	
TT-TP2-M2	TT-TP2-M2-20160217	2016-02-17	440-138539-1									
TT-TP2-M2	TT-TP2-M2-20160302	2016-03-02	440-139843-1									
TT-TP2-M2	TT-TP2-M2-20160309	2016-03-09	440-140696-1		<2.5	8100			<0.063		<13	
TT-TP2-M2	TT-TP2-M2-20160309	2016-03-09	440-140826-1									
TT-TP2-M2	TT-TP2-M2-20160316	2016-03-16	440-141586-1									
TT-TP2-M2	TT-TP2-M2-20160323	2016-03-23	440-142439-1									
TT-TP2-M2	TT-TP2-M2-20160330	2016-03-30	440-142922-1									
TT-TP2-M2	TT-TP2-M2-20160427	2016-04-27	440-145639-1									
TT-TP2-M2	TT-TP2-M2-20160505	2016-05-05	440-146524-1		<0.50	1300			<0.0025		<2.5	
TT-TP2-M2	TT-TP2-M2-20160511	2016-05-11	440-147243-1									
TT-TP2-M2	TT-TP2-M2-20160519	2016-05-19	440-147992-1									
TT-TP2-M2	TT-TP2-M2-20160526	2016-05-26	440-148500-1									
TT-TP2-M2	TT-TP2-M2-20160601	2016-06-01	440-148926-1		<0.50	1400			<0.0025		<2.5	
TT-TP2-M2	TT-TP2-M2-20160608	2016-06-08	440-149621-1									
TT-TP2-M2	TT-TP2-M2-20160622	2016-06-22	440-150775-1									
TT-TP2-M2	TT-TP2-M2-20160705	2016-07-05	440-151701-1									
TT-TP2-M2	TT-TP2-M2-20160728	2016-07-28	440-153948-1		<5.0	1100			<0.0025		<25	
TT-TP3-B1	TT-TP3-B1-10	2015-03-19	440-104925-1	<0.11			27	640		32		8.13
TT-TP3-B1	TT-TP3-B1-14	2015-03-19	440-104925-1									
TT-TP3-B1	TT-TP3-B1-18	2015-03-19	440-104925-1	<0.11			29	560		23		7.81
TT-TP3-B1	TT-TP3-B1-2	2015-03-19	440-104925-1									
TT-TP3-B1	TT-TP3-B1-22	2015-03-19	440-104925-1									
TT-TP3-B1	TT-TP3-B1-26	2015-03-19	440-104925-1									
TT-TP3-B1	TT-TP3-B1-6	2015-03-19	440-104925-1									
TT-TP3-B1A	TT-TP3-B1A-10	2016-08-14	440-155631-1	<0.099			160	750		30		9.1
TT-TP3-B1A	TT-TP3-B1A-14	2016-08-14	440-155631-1									
TT-TP3-B1A	TT-TP3-B1A-18	2016-08-14	440-155631-1	<0.10			120	640		23		8.9

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Location	Sample	Date	SDG	Carbonate (as CO3) (mg/L) SM2320B	Chloride (as Cl) (mg/L) E300.0	Chlorate (ug/L) E300.1B	Perchlorate (mg/Kg) E314.0	Perchlorate (ug/L) E314.0	Bicarbonate ion as HCO3 (mg/L) SM2320B	Hydroxide as OH (mg/L) SM2320B	Alkalinity, Total (as CaCO3) (mg/L) SM2320B	Carbon, Total Organic (mg/Kg) SW9060	Carbon, Total Organic (mg/L) SM5310B	Total Dissolved Solids (Residue, Filterable) (mg/L) SM2540C	Nitrogen, Nitrate (as N) (mg/L) E300.0	Sulfate (as So4) (mg/L) E300.0	Antimony (mg/Kg) SW6020	Antimony (ug/L) SW6020	Arsenic (mg/Kg) SW6020	Arsenic (ug/L) SW6020	Barium (mg/Kg) SW6020	Barium (ug/L) SW6020	Beryllium (mg/Kg) SW6020	Beryllium (ug/L) SW6020	Boron (mg/Kg) SW6010B	Boron (mg/L) SW6010B	Cadmium (mg/Kg) SW6020	Cadmium (ug/L) SW6020	Calcium (mg/L) SW6010B	Calcium (mg/L) SW6010B_LCH
TT-TP3-B1A	TT-TP3-B1A-2	2016-08-14	440-155631-1				15							98																	
TT-TP3-B1A	TT-TP3-B1A-22	2016-08-14	440-155631-1				140							260																	
TT-TP3-B1A	TT-TP3-B1A-28	2016-08-14	440-155631-1				110							300																	
TT-TP3-B1A	TT-TP3-B1A-6	2016-08-14	440-155631-1				1.5							93																	
TT-TP3-B2	TT-TP3-B2-10	2015-03-19	440-104925-1				2.3							170																	
TT-TP3-B2	TT-TP3-B2-14	2015-03-19	440-104925-1		**0.55**	<10	3.7				38	<2500		320	80	3.6	<0.54		6.8		100		0.44		9.6		<0.27			19
TT-TP3-B2	TT-TP3-B2-18	2015-03-19	440-104925-1				9.4							210																	
TT-TP3-B2	TT-TP3-B2-2	2015-03-19	440-104925-1				6.9							280																	
TT-TP3-B2	TT-TP3-B2-22	2015-03-19	440-104925-1				4.6							240																	
TT-TP3-B2	TT-TP3-B2-26	2015-03-19	440-104925-1				3100							550																	
TT-TP3-B2	TT-TP3-B2-6	2015-03-19	440-104925-1				1.2					<2500		240			<0.53		5.5		180		0.52		10		<0.27			
TT-TP3-B2A	TT-TP3-B2A-10	2016-08-14	440-155631-1				0.018 Jsp							140																	
TT-TP3-B2A	TT-TP3-B2A-14	2016-08-14	440-155631-1		**1.1**	<10	0.058				28	3000		250	0.32 Jsp	4.2	<0.27		5.6		130		0.35		6.4		<0.25			6.3
TT-TP3-B2A	TT-TP3-B2A-18	2016-08-14	440-155631-1				0.66							220																	
TT-TP3-B2A	TT-TP3-B2A-2	2016-08-14	440-155631-1				0.15							110																	
TT-TP3-B2A	TT-TP3-B2A-22	2016-08-14	440-155631-1				3.6 Jm, Id							190																	
TT-TP3-B2A	TT-TP3-B2A-6	2016-08-14	440-155631-1		**1.4**	<10	0.19				29	3900		67	7.1	6.7	<0.26		3.2		140		0.42		5.6		<0.25			10
TT-TP3-B3	TT-TP3-B3-10	2015-03-19	440-104925-1		**0.41 Jq**	<10	1.2				83	<2500		240	17	1.6	<0.54		5.8		130		0.52		9.9		<0.27			5.5
TT-TP3-B3	TT-TP3-B3-14	2015-03-19	440-104925-1				0.75							190																	
TT-TP3-B3	TT-TP3-B3-18	2015-03-19	440-104925-1				7.0							410																	
TT-TP3-B3	TT-TP3-B3-2	2015-03-19	440-104925-1				1.8							77																	
TT-TP3-B3	TT-TP3-B3-22	2015-03-19	440-104925-1				40							390																	
TT-TP3-B3	TT-TP3-B3-26	2015-03-19	440-104925-1		**34**	130000	330				13	<2500		510	2.3	41	<0.77		21		100		1.0		37		<0.38			2.4
TT-TP3-B3	TT-TP3-B3-6	2015-03-19	440-104925-1				1.4 J-c							340																	
TT-TP3-B3A	TT-TP3-B3A-10	2016-08-13	440-155631-1		**1.1**	27	0.31				22	3800		170	23	4.4	<0.27		3.9		140		0.46		4.4 Jsp		<0.25			5.8
TT-TP3-B3A	TT-TP3-B3A-14	2016-08-13	440-155631-1				0.096							290																	
TT-TP3-B3A	TT-TP3-B3A-18	2016-08-13	440-155631-1				0.075							130																	
TT-TP3-B3A	TT-TP3-B3A-2	2016-08-13	440-155631-1				0.18							91																	
TT-TP3-B3A	TT-TP3-B3A-22	2016-08-13	440-155631-1				4.3							210																	
TT-TP3-B3A	TT-TP3-B3A-26	2016-08-13	440-155631-1		**27**	53000	230 Jm				<4.0	5800		280	2.4	37	<0.27		11		59		0.54		22		<0.25			8.4
TT-TP3-B3A	TT-TP3-B3A-6	2016-08-13	440-155631-1				0.11							56																	
TT-TP3-B4	TT-TP3-B4-10	2015-03-19	440-104925-1				0.68							300																	
TT-TP3-B4	TT-TP3-B4-14	2015-03-19	440-104925-1				0.49							160																	
TT-TP3-B4	TT-TP3-B4-18	2015-03-19	440-104925-1		**0.82**	15 Jq	2.8				660	<2500		280	16	70	<0.60		33		120		0.58		29		<0.30			15
TT-TP3-B4	TT-TP3-B4-2	2015-03-19	440-104925-1		**0.80**	15 Jq	2.1				17	<2500		110	26	2.9	<0.55		3.4		240		0.59		10		<0.27			11
TT-TP3-B4	TT-TP3-B4-22	2015-03-19	440-104925-1				110							320																	

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Location	Sample	Date	SDG	Chromium, Hexavalent (mg/Kg) SW7199	Chromium, Hexavalent (ug/L) SW7199	Chromium, Total (mg/Kg) SW6020	Chromium, Total (ug/L) SW6020	Cobalt (mg/Kg) SW6020	Cobalt (ug/L) SW6020	Copper (mg/Kg) SW6020	Copper (ug/L) SW6020	Iron (mg/Kg) SW6010B	Iron (mg/L) SW6010B	Lead (mg/Kg) SW6020	Lead (ug/L) SW6020	Magnesium (mg/L) SW6010B	Magnesium (mg/L) SW6010B_LCH	Manganese (mg/Kg) SW6010B	Manganese (mg/L) SW6010B	Mercury (mg/Kg) SW7471A	Mercury (mg/L) SW7470A	Molybdenum (mg/Kg) SW6020	Molybdenum (ug/L) SW6020	Nickel (mg/Kg) SW6020	Nickel (ug/L) SW6020	Potassium (mg/L) SW6010B	Potassium (mg/L) SW6010B_LCH	Selenium (mg/Kg) SW6020	Selenium (ug/L) SW6020
TT-TP3-B1A	TT-TP3-B1A-2	2016-08-14	440-155631-1																										
TT-TP3-B1A	TT-TP3-B1A-22	2016-08-14	440-155631-1																										
TT-TP3-B1A	TT-TP3-B1A-28	2016-08-14	440-155631-1																										
TT-TP3-B1A	TT-TP3-B1A-6	2016-08-14	440-155631-1																										
TT-TP3-B2	TT-TP3-B2-10	2015-03-19	440-104925-1																										
TT-TP3-B2	TT-TP3-B2-14	2015-03-19	440-104925-1	<0.43		13		4.3		12		13000		6.1			2.4	210		0.013 Jq		<0.54		13			<0.37	<0.22	
TT-TP3-B2	TT-TP3-B2-18	2015-03-19	440-104925-1																										
TT-TP3-B2	TT-TP3-B2-2	2015-03-19	440-104925-1																										
TT-TP3-B2	TT-TP3-B2-22	2015-03-19	440-104925-1																										
TT-TP3-B2	TT-TP3-B2-26	2015-03-19	440-104925-1																										
TT-TP3-B2	TT-TP3-B2-6	2015-03-19	440-104925-1	<0.43		14		6.9		16		17000		7.2				260		0.025		0.58 Jq		16				<0.21	
TT-TP3-B2A	TT-TP3-B2A-10	2016-08-14	440-155631-1																										
TT-TP3-B2A	TT-TP3-B2A-14	2016-08-14	440-155631-1	<0.17		12		3.7		9.2		12000		6.3			2.5 Jsp	180		<0.013		0.54 Jsp		9.3			<3.7	<0.20	
TT-TP3-B2A	TT-TP3-B2A-18	2016-08-14	440-155631-1																										
TT-TP3-B2A	TT-TP3-B2A-2	2016-08-14	440-155631-1																										
TT-TP3-B2A	TT-TP3-B2A-22	2016-08-14	440-155631-1																										
TT-TP3-B2A	TT-TP3-B2A-6	2016-08-14	440-155631-1	<0.17		14		5.7		11		16000		5.3			2.6 Jsp	250		<0.014		<0.49		12			<3.7	<0.20	
TT-TP3-B3	TT-TP3-B3-10	2015-03-19	440-104925-1	<0.43		13		7.0		16		17000		6.5			0.93	320		0.018 Jq		0.57 Jq		15			<0.37	<0.22	
TT-TP3-B3	TT-TP3-B3-14	2015-03-19	440-104925-1																										
TT-TP3-B3	TT-TP3-B3-18	2015-03-19	440-104925-1																										
TT-TP3-B3	TT-TP3-B3-2	2015-03-19	440-104925-1																										
TT-TP3-B3	TT-TP3-B3-22	2015-03-19	440-104925-1																										
TT-TP3-B3	TT-TP3-B3-26	2015-03-19	440-104925-1	8.3		31		7.1		18		21000		11			1.1	400		0.020 Jq		1.3 Jq		18			1.6	<0.31	
TT-TP3-B3	TT-TP3-B3-6	2015-03-19	440-104925-1																										
TT-TP3-B3A	TT-TP3-B3A-10	2016-08-13	440-155631-1	<0.18		13		8.0		15		19000		6.4			3.1 Jsp	470		<0.014		<0.50		14			<3.7	<0.20	
TT-TP3-B3A	TT-TP3-B3A-14	2016-08-13	440-155631-1																										
TT-TP3-B3A	TT-TP3-B3A-18	2016-08-13	440-155631-1																										
TT-TP3-B3A	TT-TP3-B3A-2	2016-08-13	440-155631-1																										
TT-TP3-B3A	TT-TP3-B3A-22	2016-08-13	440-155631-1																										
TT-TP3-B3A	TT-TP3-B3A-26	2016-08-13	440-155631-1	3.8		18		4.2		9.7		13000		7.1			3.6 Jsp	280		<0.021		0.61 Jsp		10			<3.7	<0.20	
TT-TP3-B3A	TT-TP3-B3A-6	2016-08-13	440-155631-1																										
TT-TP3-B4	TT-TP3-B4-10	2015-03-19	440-104925-1																										
TT-TP3-B4	TT-TP3-B4-14	2015-03-19	440-104925-1																										
TT-TP3-B4	TT-TP3-B4-18	2015-03-19	440-104925-1	<0.47		19		5.2		13		15000		7.1			2.3	400		0.021 Jq		0.86 Jq		14			0.45 Jq	<0.24	
TT-TP3-B4	TT-TP3-B4-2	2015-03-19	440-104925-1	<0.44		15		8.0		18		19000		7.9			1.6	410		0.022		0.56 Jq		18			<0.37	<0.22	
TT-TP3-B4	TT-TP3-B4-22	2015-03-19	440-104925-1																										

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Location	Sample	Date	SDG	Silver (mg/Kg) SW6020	Silver (ug/L) SW6020	Sodium (mg/L) SW6010B	Sodium (mg/L) SW6010B_LCH	Titanium (mg/Kg) SW6010B	Titanium (mg/L) SW6010B	Zinc (mg/Kg) SW6020	Zinc (ug/L) SW6020	pH (pH) SW9045C
TT-TP3-B1A	TT-TP3-B1A-2	2016-08-14	440-155631-1									
TT-TP3-B1A	TT-TP3-B1A-22	2016-08-14	440-155631-1									
TT-TP3-B1A	TT-TP3-B1A-28	2016-08-14	440-155631-1									
TT-TP3-B1A	TT-TP3-B1A-6	2016-08-14	440-155631-1									
TT-TP3-B2	TT-TP3-B2-10	2015-03-19	440-104925-1									
TT-TP3-B2	TT-TP3-B2-14	2015-03-19	440-104925-1	0.23 Jq			13	630		26		7.98
TT-TP3-B2	TT-TP3-B2-18	2015-03-19	440-104925-1									
TT-TP3-B2	TT-TP3-B2-2	2015-03-19	440-104925-1									
TT-TP3-B2	TT-TP3-B2-22	2015-03-19	440-104925-1									
TT-TP3-B2	TT-TP3-B2-26	2015-03-19	440-104925-1									
TT-TP3-B2	TT-TP3-B2-6	2015-03-19	440-104925-1	<0.11				690		36		8.50
TT-TP3-B2A	TT-TP3-B2A-10	2016-08-14	440-155631-1									
TT-TP3-B2A	TT-TP3-B2A-14	2016-08-14	440-155631-1	0.27 Jsp			110	690		22		9.0
TT-TP3-B2A	TT-TP3-B2A-18	2016-08-14	440-155631-1									
TT-TP3-B2A	TT-TP3-B2A-2	2016-08-14	440-155631-1									
TT-TP3-B2A	TT-TP3-B2A-22	2016-08-14	440-155631-1									
TT-TP3-B2A	TT-TP3-B2A-6	2016-08-14	440-155631-1	<0.098			87	900		25		8.8
TT-TP3-B3	TT-TP3-B3-10	2015-03-19	440-104925-1	0.27 Jq			20	650		33		8.22
TT-TP3-B3	TT-TP3-B3-14	2015-03-19	440-104925-1									
TT-TP3-B3	TT-TP3-B3-18	2015-03-19	440-104925-1									
TT-TP3-B3	TT-TP3-B3-2	2015-03-19	440-104925-1									
TT-TP3-B3	TT-TP3-B3-22	2015-03-19	440-104925-1									
TT-TP3-B3	TT-TP3-B3-26	2015-03-19	440-104925-1	<0.15			77	840		58		7.96
TT-TP3-B3	TT-TP3-B3-6	2015-03-19	440-104925-1									
TT-TP3-B3A	TT-TP3-B3A-10	2016-08-13	440-155631-1	<0.10			110	940		31		8.9
TT-TP3-B3A	TT-TP3-B3A-14	2016-08-13	440-155631-1									
TT-TP3-B3A	TT-TP3-B3A-18	2016-08-13	440-155631-1									
TT-TP3-B3A	TT-TP3-B3A-2	2016-08-13	440-155631-1									
TT-TP3-B3A	TT-TP3-B3A-22	2016-08-13	440-155631-1									
TT-TP3-B3A	TT-TP3-B3A-26	2016-08-13	440-155631-1	<0.099			120	620		31		7.3
TT-TP3-B3A	TT-TP3-B3A-6	2016-08-13	440-155631-1									
TT-TP3-B4	TT-TP3-B4-10	2015-03-19	440-104925-1									
TT-TP3-B4	TT-TP3-B4-14	2015-03-19	440-104925-1									
TT-TP3-B4	TT-TP3-B4-18	2015-03-19	440-104925-1	<0.12			49	640		37		8.36
TT-TP3-B4	TT-TP3-B4-2	2015-03-19	440-104925-1	<0.11			2.4	710		40		8.06
TT-TP3-B4	TT-TP3-B4-22	2015-03-19	440-104925-1									

Report Data Summary Table
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Location	Sample	Date	SDG	Carbonate (as CO3) (mg/L) SM2320B	Chloride (as Cl) (mg/L) E300.0	Chlorate (ug/L) E300.1B	Perchlorate (mg/Kg) E314.0	Perchlorate (ug/L) E314.0	Bicarbonate ion as HCO3 (mg/L) SM2320B	Hydroxide as OH (mg/L) SM2320B	Alkalinity, Total (as CaCO3) (mg/L) SM2320B	Carbon, Total Organic (mg/Kg) SW9060	Carbon, Total Organic (mg/L) SM5310B	Total Dissolved Solids (Residue, Filterable) (mg/L) SM2540C	Nitrogen, Nitrate (as N) (mg/L) E300.0	Sulfate (as So4) (mg/L) E300.0	Antimony (mg/Kg) SW6020	Antimony (ug/L) SW6020	Arsenic (mg/Kg) SW6020	Arsenic (ug/L) SW6020	Barium (mg/Kg) SW6020	Barium (ug/L) SW6020	Beryllium (mg/Kg) SW6020	Beryllium (ug/L) SW6020	Boron (mg/Kg) SW6010B	Boron (mg/L) SW6010B	Cadmium (mg/Kg) SW6020	Cadmium (ug/L) SW6020	Calcium (mg/L) SW6010B	Calcium (mg/L) SW6010B_LCH
TT-TP3-B4	TT-TP3-B4-26	2015-03-19	440-104925-1				300							410																	
TT-TP3-B4	TT-TP3-B4-6	2015-03-19	440-104925-1				0.98							190																	
TT-TP3-B4A	TT-TP3-B4A-10	2016-08-14	440-155631-1				24							100																	
TT-TP3-B4A	TT-TP3-B4A-14	2016-08-14	440-155631-1				0.12							110																	
TT-TP3-B4A	TT-TP3-B4A-18	2016-08-14	440-155631-1		**1.8**	<10	0.028 Jsp				34	9600		380	<0.25	11	<0.27		21		120		0.38		20		<0.25			6.5
TT-TP3-B4A	TT-TP3-B4A-2	2016-08-14	440-155631-1		**1.2**	160	6.6				32	7100		65	1.0	7.2	<0.27		3.1		200		0.52		5.9		<0.25			8.0
TT-TP3-B4A	TT-TP3-B4A-22	2016-08-14	440-155631-1				7.3							140																	
TT-TP3-B4A	TT-TP3-B4A-6	2016-08-14	440-155631-1				2.5							79																	
TT-TP3-L1	TT-TP3-L1-20151210	2015-12-10	440-130588-1	**<2.4**	**220 Jq**			4000	350	<1.4	290		3.4	4800	500	760		4.7 Jq		20		78		<1.3				<1.3		
TT-TP3-L1	TT-TP3-L1-20160204	2016-02-04	440-137358-1					5600						17000																	
TT-TP3-L1	TT-TP3-L1-20160211	2016-02-11	440-138059-1					1600																							
TT-TP3-L1	TT-TP3-L1-20160218	2016-02-18	440-138657-1					860																							
TT-TP3-L1	TT-TP3-L1-20160225	2016-02-25	440-139326-1					590						1600																	
TT-TP3-L1	TT-TP3-L1-20160303	2016-03-03	440-139965-1					420						1400																	
TT-TP3-L1	TT-TP3-L1-20160310	2016-03-10	440-140826-1					320						1300																	
TT-TP3-L1	TT-TP3-L1-20160317	2016-03-17	440-141827-1					360																							
TT-TP3-L1	TT-TP3-L1-20160323	2016-03-23	440-142439-1					320						1300																	
TT-TP3-L1	TT-TP3-L1-20160331	2016-03-31	440-143078-1					340000						2900																	
TT-TP3-L1	TT-TP3-L1-20160405	2016-04-05	440-143458-1					210																							
TT-TP3-L1	TT-TP3-L1-20160420	2016-04-20	440-145023-1					120																							
TT-TP3-L1	TT-TP3-L1-20160428	2016-04-28	440-145766-1					90																							
TT-TP3-L1	TT-TP3-L1-20160505	2016-05-05	440-146524-1					28						910																	
TT-TP3-L1	TT-TP3-L1-20160511	2016-05-11	440-147243-1					44																							
TT-TP3-L1	TT-TP3-L1-20160519	2016-05-19	440-147992-1					58						930																	
TT-TP3-L1	TT-TP3-L1-20160525	2016-05-25	440-148383-1					72						960																	
TT-TP3-L1	TT-TP3-L1-20160602	2016-06-02	440-149036-1					29																							
TT-TP3-L1	TT-TP3-L1-20160608	2016-06-08	440-149621-1					14																							
TT-TP3-L1	TT-TP3-L1-20160622	2016-06-22	440-150775-1					22						840																	
TT-TP3-L1	TT-TP3-L1-20160705	2016-07-05	440-151701-1					19						900																	
TT-TP3-L1	TT-TP3-L1-20160727	2016-07-27	440-153790-1					20						940																	
TT-TP3-L2	TT-TP3-L2-10	2015-03-26	440-105406-1				1.1							500																	
TT-TP3-L2	TT-TP3-L2-14	2015-03-26	440-105406-1		**0.70**	26	2.7				270	<2500		500	12	17	<0.61		34		140		0.64		23		<0.30			7.3
TT-TP3-L2	TT-TP3-L2-18	2015-03-26	440-105406-1				0.81							300																	
TT-TP3-L2	TT-TP3-L2-2	2015-03-26	440-105406-1				0.78							88																	
TT-TP3-L2	TT-TP3-L2-20151210	2015-12-10	440-130588-1	**1/4/1900**	**180**			62000	410	<1.4	340			5400	200	2800															
TT-TP3-L2	TT-TP3-L2-20160204	2016-02-04	440-137358-1					42000						4200																	

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Location	Sample	Date	SDG	Chromium, Hexavalent (mg/Kg) SW7199	Chromium, Hexavalent (ug/L) SW7199	Chromium, Total (mg/Kg) SW6020	Chromium, Total (ug/L) SW6020	Cobalt (mg/Kg) SW6020	Cobalt (ug/L) SW6020	Copper (mg/Kg) SW6020	Copper (ug/L) SW6020	Iron (mg/Kg) SW6010B	Iron (mg/L) SW6010B	Lead (mg/Kg) SW6020	Lead (ug/L) SW6020	Magnesium (mg/L) SW6010B	Magnesium (mg/L) SW6010B_LCH	Manganese (mg/Kg) SW6010B	Manganese (mg/L) SW6010B	Mercury (mg/Kg) SW7471A	Mercury (mg/L) SW7470A	Molybdenum (mg/Kg) SW6020	Molybdenum (ug/L) SW6020	Nickel (mg/Kg) SW6020	Nickel (ug/L) SW6020	Potassium (mg/L) SW6010B	Potassium (mg/L) SW6010B_LCH	Selenium (mg/Kg) SW6020	Selenium (ug/L) SW6020
TT-TP3-B4	TT-TP3-B4-26	2015-03-19	440-104925-1																										
TT-TP3-B4	TT-TP3-B4-6	2015-03-19	440-104925-1																										
TT-TP3-B4A	TT-TP3-B4A-10	2016-08-14	440-155631-1																										
TT-TP3-B4A	TT-TP3-B4A-14	2016-08-14	440-155631-1																										
TT-TP3-B4A	TT-TP3-B4A-18	2016-08-14	440-155631-1	<0.19		15		3.4		7.9		10000		4.7			2.5 Jsp	140		<0.015		<0.50		8.4			<3.7	<0.20	
TT-TP3-B4A	TT-TP3-B4A-2	2016-08-14	440-155631-1	<0.18		16		6.5		13		19000		7.5			2.1 Jsp	290		<0.014		<0.50		13			<3.7	<0.20	
TT-TP3-B4A	TT-TP3-B4A-22	2016-08-14	440-155631-1																										
TT-TP3-B4A	TT-TP3-B4A-6	2016-08-14	440-155631-1																										
TT-TP3-L1	TT-TP3-L1-20151210	2015-12-10	440-130588-1		<0.25 UJe		3.2 Jq		<2.5		5.5 Jq				<2.5						<0.00010		130		5.4 Jq				<2.5
TT-TP3-L1	TT-TP3-L1-20160204	2016-02-04	440-137358-1		<0.25 UJc																								
TT-TP3-L1	TT-TP3-L1-20160211	2016-02-11	440-138059-1																										
TT-TP3-L1	TT-TP3-L1-20160218	2016-02-18	440-138657-1																										
TT-TP3-L1	TT-TP3-L1-20160225	2016-02-25	440-139326-1		1.7 Jq																								
TT-TP3-L1	TT-TP3-L1-20160303	2016-03-03	440-139965-1		1.4 Jq																								
TT-TP3-L1	TT-TP3-L1-20160310	2016-03-10	440-140826-1		1.4 Jq																								
TT-TP3-L1	TT-TP3-L1-20160317	2016-03-17	440-141827-1																										
TT-TP3-L1	TT-TP3-L1-20160323	2016-03-23	440-142439-1		1.3 Jq																								
TT-TP3-L1	TT-TP3-L1-20160331	2016-03-31	440-143078-1		18																								
TT-TP3-L1	TT-TP3-L1-20160405	2016-04-05	440-143458-1																										
TT-TP3-L1	TT-TP3-L1-20160420	2016-04-20	440-145023-1																										
TT-TP3-L1	TT-TP3-L1-20160428	2016-04-28	440-145766-1																										
TT-TP3-L1	TT-TP3-L1-20160505	2016-05-05	440-146524-1		1.2 Jq																								
TT-TP3-L1	TT-TP3-L1-20160511	2016-05-11	440-147243-1																										
TT-TP3-L1	TT-TP3-L1-20160519	2016-05-19	440-147992-1		1.9 Jq																								
TT-TP3-L1	TT-TP3-L1-20160525	2016-05-25	440-148383-1		1.9 Jq																								
TT-TP3-L1	TT-TP3-L1-20160602	2016-06-02	440-149036-1		1.4 Jq																								
TT-TP3-L1	TT-TP3-L1-20160608	2016-06-08	440-149621-1		1.2 Jq																								
TT-TP3-L1	TT-TP3-L1-20160622	2016-06-22	440-150775-1		1.7 Jq																								
TT-TP3-L1	TT-TP3-L1-20160705	2016-07-05	440-151701-1		4.1																								
TT-TP3-L1	TT-TP3-L1-20160727	2016-07-27	440-153790-1		4.6																								
TT-TP3-L2	TT-TP3-L2-10	2015-03-26	440-105406-1																										
TT-TP3-L2	TT-TP3-L2-14	2015-03-26	440-105406-1	<0.49		17		5.6		12		13000		6.8			0.73	270		0.019 Jq		0.71 Jq		13			<0.37	<0.24	
TT-TP3-L2	TT-TP3-L2-18	2015-03-26	440-105406-1																										
TT-TP3-L2	TT-TP3-L2-2	2015-03-26	440-105406-1																										
TT-TP3-L2	TT-TP3-L2-20151210	2015-12-10	440-130588-1		<0.25 UJe																								
TT-TP3-L2	TT-TP3-L2-20160204	2016-02-04	440-137358-1		2.0 J-c																								

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Location	Sample	Date	SDG	Silver (mg/Kg) SW6020	Silver (ug/L) SW6020	Sodium (mg/L) SW6010B	Sodium (mg/L) SW6010B_LCH	Titanium (mg/Kg) SW6010B	Titanium (mg/L) SW6010B	Zinc (mg/Kg) SW6020	Zinc (ug/L) SW6020	pH (pH) SW9045C
TT-TP3-B4	TT-TP3-B4-26	2015-03-19	440-104925-1									
TT-TP3-B4	TT-TP3-B4-6	2015-03-19	440-104925-1									
TT-TP3-B4A	TT-TP3-B4A-10	2016-08-14	440-155631-1									
TT-TP3-B4A	TT-TP3-B4A-14	2016-08-14	440-155631-1									
TT-TP3-B4A	TT-TP3-B4A-18	2016-08-14	440-155631-1	<0.10			99	520		22		9.0
TT-TP3-B4A	TT-TP3-B4A-2	2016-08-14	440-155631-1	<0.10			80	890		31		9.0
TT-TP3-B4A	TT-TP3-B4A-22	2016-08-14	440-155631-1									
TT-TP3-B4A	TT-TP3-B4A-6	2016-08-14	440-155631-1									
TT-TP3-L1	TT-TP3-L1-20151210	2015-12-10	440-130588-1		<2.5						<13	
TT-TP3-L1	TT-TP3-L1-20160204	2016-02-04	440-137358-1									
TT-TP3-L1	TT-TP3-L1-20160211	2016-02-11	440-138059-1									
TT-TP3-L1	TT-TP3-L1-20160218	2016-02-18	440-138657-1									
TT-TP3-L1	TT-TP3-L1-20160225	2016-02-25	440-139326-1									
TT-TP3-L1	TT-TP3-L1-20160303	2016-03-03	440-139965-1									
TT-TP3-L1	TT-TP3-L1-20160310	2016-03-10	440-140826-1									
TT-TP3-L1	TT-TP3-L1-20160317	2016-03-17	440-141827-1									
TT-TP3-L1	TT-TP3-L1-20160323	2016-03-23	440-142439-1									
TT-TP3-L1	TT-TP3-L1-20160331	2016-03-31	440-143078-1									
TT-TP3-L1	TT-TP3-L1-20160405	2016-04-05	440-143458-1									
TT-TP3-L1	TT-TP3-L1-20160420	2016-04-20	440-145023-1									
TT-TP3-L1	TT-TP3-L1-20160428	2016-04-28	440-145766-1									
TT-TP3-L1	TT-TP3-L1-20160505	2016-05-05	440-146524-1									
TT-TP3-L1	TT-TP3-L1-20160511	2016-05-11	440-147243-1									
TT-TP3-L1	TT-TP3-L1-20160519	2016-05-19	440-147992-1									
TT-TP3-L1	TT-TP3-L1-20160525	2016-05-25	440-148383-1									
TT-TP3-L1	TT-TP3-L1-20160602	2016-06-02	440-149036-1									
TT-TP3-L1	TT-TP3-L1-20160608	2016-06-08	440-149621-1									
TT-TP3-L1	TT-TP3-L1-20160622	2016-06-22	440-150775-1									
TT-TP3-L1	TT-TP3-L1-20160705	2016-07-05	440-151701-1									
TT-TP3-L1	TT-TP3-L1-20160727	2016-07-27	440-153790-1									
TT-TP3-L2	TT-TP3-L2-10	2015-03-26	440-105406-1									
TT-TP3-L2	TT-TP3-L2-14	2015-03-26	440-105406-1	<0.12			32	620		34		8.59
TT-TP3-L2	TT-TP3-L2-18	2015-03-26	440-105406-1									
TT-TP3-L2	TT-TP3-L2-2	2015-03-26	440-105406-1									
TT-TP3-L2	TT-TP3-L2-20151210	2015-12-10	440-130588-1									
TT-TP3-L2	TT-TP3-L2-20160204	2016-02-04	440-137358-1									

Report Data Summary Table
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Location	Sample	Date	SDG	Carbonate (as CO3) (mg/L) SM2320B	Chloride (as Cl) (mg/L) E300.0	Chlorate (ug/L) E300.1B	Perchlorate (mg/Kg) E314.0	Perchlorate (ug/L) E314.0	Bicarbonate ion as HCO3 (mg/L) SM2320B	Hydroxide as OH (mg/L) SM2320B	Alkalinity, Total (as CaCO3) (mg/L) SM2320B	Carbon, Total Organic (mg/Kg) SW9060	Carbon, Total Organic (mg/L) SM5310B	Total Dissolved Solids (Residue, Filterable) (mg/L) SM2540C	Nitrogen, Nitrate (as N) (mg/L) E300.0	Sulfate (as So4) (mg/L) E300.0	Antimony (mg/Kg) SW6020	Antimony (ug/L) SW6020	Arsenic (mg/Kg) SW6020	Arsenic (ug/L) SW6020	Barium (mg/Kg) SW6020	Barium (ug/L) SW6020	Beryllium (mg/Kg) SW6020	Beryllium (ug/L) SW6020	Boron (mg/Kg) SW6010B	Boron (mg/L) SW6010B	Cadmium (mg/Kg) SW6020	Cadmium (ug/L) SW6020	Calcium (mg/L) SW6010B	Calcium (mg/L) SW6010B_LCH
TT-TP3-L2	TT-TP3-L2-20160211	2016-02-11	440-138059-1					32000																						
TT-TP3-L2	TT-TP3-L2-20160218	2016-02-18	440-138657-1					24000																						
TT-TP3-L2	TT-TP3-L2-20160225	2016-02-25	440-139326-1					14000						4800																
TT-TP3-L2	TT-TP3-L2-20160303	2016-03-03	440-139965-1					12000						3400																
TT-TP3-L2	TT-TP3-L2-20160310	2016-03-10	440-140826-1					7200						3300																
TT-TP3-L2	TT-TP3-L2-20160317	2016-03-17	440-141827-1					5400						2900																
TT-TP3-L2	TT-TP3-L2-20160323	2016-03-23	440-142439-1					4400						3000																
TT-TP3-L2	TT-TP3-L2-20160331	2016-03-31	440-143078-1					3000						2600																
TT-TP3-L2	TT-TP3-L2-20160405	2016-04-05	440-143458-1					2200						2500																
TT-TP3-L2	TT-TP3-L2-20160420	2016-04-20	440-145023-1					1100																						
TT-TP3-L2	TT-TP3-L2-20160428	2016-04-28	440-145766-1					770						1900																
TT-TP3-L2	TT-TP3-L2-20160505	2016-05-05	440-146524-1					540						1800																
TT-TP3-L2	TT-TP3-L2-20160511	2016-05-11	440-147243-1					450					2.0	1700																
TT-TP3-L2	TT-TP3-L2-20160519	2016-05-19	440-147992-1					380						1700																
TT-TP3-L2	TT-TP3-L2-20160525	2016-05-25	440-148383-1					490						1600																
TT-TP3-L2	TT-TP3-L2-20160602	2016-06-02	440-149036-1					260																						
TT-TP3-L2	TT-TP3-L2-20160608	2016-06-08	440-149621-1					300																						
TT-TP3-L2	TT-TP3-L2-20160622	2016-06-22	440-150775-1					1300						1300																
TT-TP3-L2	TT-TP3-L2-20160705	2016-07-05	440-151701-1					500						1300																
TT-TP3-L2	TT-TP3-L2-20160727	2016-07-27	440-153790-1					300						1100																
TT-TP3-L2	TT-TP3-L2-22	2015-03-26	440-105406-1				31							260																
TT-TP3-L2	TT-TP3-L2-26	2015-03-26	440-105406-1				320							650																
TT-TP3-L2	TT-TP3-L2-6	2015-03-26	440-105406-1		**0.41 Jq**	<10	0.83				61	<2500		200	40 Jf	2.9	<0.55 UJc		5.5		220 J+c		0.62		6.7		<0.27			2.7
TT-TP3-L2A	TT-TP3-L2A-10	2016-08-14	440-155631-1				26							100																
TT-TP3-L2A	TT-TP3-L2A-14	2016-08-14	440-155631-1		**7.4**	11000	2.5				50	510		210	8.6	15	<0.27		5.9		130		0.39		7.8		<0.25			6.9
TT-TP3-L2A	TT-TP3-L2A-18	2016-08-14	440-155631-1				0.045 Jsp							230																
TT-TP3-L2A	TT-TP3-L2A-2	2016-08-14	440-155631-1				36							99																
TT-TP3-L2A	TT-TP3-L2A-22	2016-08-14	440-155631-1				59							380																
TT-TP3-L2A	TT-TP3-L2A-26	2016-08-14	440-155631-1				190							330																
TT-TP3-L2A	TT-TP3-L2A-6	2016-08-14	440-155631-1		**12**	8800	88				27	5100		170	14	17	<0.27		5.4		160		0.43		7.9		<0.25			6.8
TT-TP3-M1	TT-TP3-M1--20160427	2016-04-27	440-145639-1					280					2.1	820																
TT-TP3-M1	TT-TP3-M1-20151210	2015-12-10	440-130588-1	**<2.4**	**1400**	4200000		610000	160	<1.4	130		1.3	11000	16	1500		<2.5		100		30		<1.3		3.4		<1.3	400 J-c	
TT-TP3-M1	TT-TP3-M1-20160203	2016-02-03	440-137164-1					730000					2.2	11000																
TT-TP3-M1	TT-TP3-M1-20160211	2016-02-11	440-138059-1	**<2.4**		210000		350000	290	<1.4	240		3.6	5900				<2.5		180		56		<1.3		2.8		<1.3	470	
TT-TP3-M1	TT-TP3-M1-20160218	2016-02-18	440-138657-1					4900					3.0	1300																
TT-TP3-M1	TT-TP3-M1-20160225	2016-02-25	440-139326-1					1400					2.2	1100																

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Location	Sample	Date	SDG	Chromium, Hexavalent (mg/Kg) SW7199	Chromium, Hexavalent (ug/L) SW7199	Chromium, Total (mg/Kg) SW6020	Chromium, Total (ug/L) SW6020	Cobalt (mg/Kg) SW6020	Cobalt (ug/L) SW6020	Copper (mg/Kg) SW6020	Copper (ug/L) SW6020	Iron (mg/Kg) SW6010B	Iron (mg/L) SW6010B	Lead (mg/Kg) SW6020	Lead (ug/L) SW6020	Magnesium (mg/L) SW6010B	Magnesium (mg/L) SW6010B_LCH	Manganese (mg/Kg) SW6010B	Manganese (mg/L) SW6010B	Mercury (mg/Kg) SW7471A	Mercury (mg/L) SW7470A	Molybdenum (mg/Kg) SW6020	Molybdenum (ug/L) SW6020	Nickel (mg/Kg) SW6020	Nickel (ug/L) SW6020	Potassium (mg/L) SW6010B	Potassium (mg/L) SW6010B_LCH	Selenium (mg/Kg) SW6020	Selenium (ug/L) SW6020
TT-TP3-L2	TT-TP3-L2-20160211	2016-02-11	440-138059-1																										
TT-TP3-L2	TT-TP3-L2-20160218	2016-02-18	440-138657-1																										
TT-TP3-L2	TT-TP3-L2-20160225	2016-02-25	440-139326-1		5.3		16 Jq																						
TT-TP3-L2	TT-TP3-L2-20160303	2016-03-03	440-139965-1		2.7 J-e																								
TT-TP3-L2	TT-TP3-L2-20160310	2016-03-10	440-140826-1		3.2		3.5 Jq																						
TT-TP3-L2	TT-TP3-L2-20160317	2016-03-17	440-141827-1		2.4																								
TT-TP3-L2	TT-TP3-L2-20160323	2016-03-23	440-142439-1		1.3 Jq																								
TT-TP3-L2	TT-TP3-L2-20160331	2016-03-31	440-143078-1		1.4 Jq																								
TT-TP3-L2	TT-TP3-L2-20160405	2016-04-05	440-143458-1		1.1 Jq																								
TT-TP3-L2	TT-TP3-L2-20160420	2016-04-20	440-145023-1		0.78 Jq		1.9 Jq																						
TT-TP3-L2	TT-TP3-L2-20160428	2016-04-28	440-145766-1		0.83 Jq																								
TT-TP3-L2	TT-TP3-L2-20160505	2016-05-05	440-146524-1		0.65 Jq		2.1																						
TT-TP3-L2	TT-TP3-L2-20160511	2016-05-11	440-147243-1		0.56 Jq		0.81 Jq																						
TT-TP3-L2	TT-TP3-L2-20160519	2016-05-19	440-147992-1		0.37 Jq																								
TT-TP3-L2	TT-TP3-L2-20160525	2016-05-25	440-148383-1		<0.25																								
TT-TP3-L2	TT-TP3-L2-20160602	2016-06-02	440-149036-1		0.37 Jq																								
TT-TP3-L2	TT-TP3-L2-20160608	2016-06-08	440-149621-1		0.28 Jq		40																						
TT-TP3-L2	TT-TP3-L2-20160622	2016-06-22	440-150775-1		11																								
TT-TP3-L2	TT-TP3-L2-20160705	2016-07-05	440-151701-1		0.46 Jq																								
TT-TP3-L2	TT-TP3-L2-20160727	2016-07-27	440-153790-1		<0.25																								
TT-TP3-L2	TT-TP3-L2-22	2015-03-26	440-105406-1																										
TT-TP3-L2	TT-TP3-L2-26	2015-03-26	440-105406-1																										
TT-TP3-L2	TT-TP3-L2-6	2015-03-26	440-105406-1	<0.44		14		7.0		16		17000 Jc		7.7			0.36 Jq	300 J+c		<0.013		0.70 Jq		16			0.42 Jq	<0.22	
TT-TP3-L2A	TT-TP3-L2A-10	2016-08-14	440-155631-1																										
TT-TP3-L2A	TT-TP3-L2A-14	2016-08-14	440-155631-1	<0.18		16		4.6		10		14000		6.2			4.4	180		<0.014		0.83 Jsp		12			<3.7	0.20 Jsp	
TT-TP3-L2A	TT-TP3-L2A-18	2016-08-14	440-155631-1																										
TT-TP3-L2A	TT-TP3-L2A-2	2016-08-14	440-155631-1																										
TT-TP3-L2A	TT-TP3-L2A-22	2016-08-14	440-155631-1																										
TT-TP3-L2A	TT-TP3-L2A-26	2016-08-14	440-155631-1																										
TT-TP3-L2A	TT-TP3-L2A-6	2016-08-14	440-155631-1	<0.17		20		5.0		40		15000		6.4			3.3 Jsp	240		<0.014		0.58 Jsp		11			<3.7	<0.20	
TT-TP3-M1	TT-TP3-M1--20160427	2016-04-27	440-145639-1		3.5		6.4																						
TT-TP3-M1	TT-TP3-M1-20151210	2015-12-10	440-130588-1		19000 J-e		17000 J-c		<2.5		<2.5		<0.050		<2.5	200 J-c			<0.050		<0.00010		40		<2.5	25 J-c			3.8 Jq
TT-TP3-M1	TT-TP3-M1-20160203	2016-02-03	440-137164-1		9500 J-c		10000																						
TT-TP3-M1	TT-TP3-M1-20160211	2016-02-11	440-138059-1				1000		3.9 Jq		<3.6 Ua		<0.010		<2.5	170			<0.010		<0.00010		34		8.8 Jq	16			3.1 Jq
TT-TP3-M1	TT-TP3-M1-20160218	2016-02-18	440-138657-1				34																						
TT-TP3-M1	TT-TP3-M1-20160225	2016-02-25	440-139326-1		14		22																						

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Location	Sample	Date	SDG	Silver (mg/Kg) SW6020	Silver (ug/L) SW6020	Sodium (mg/L) SW6010B	Sodium (mg/L) SW6010B_LCH	Titanium (mg/Kg) SW6010B	Titanium (mg/L) SW6010B	Zinc (mg/Kg) SW6020	Zinc (ug/L) SW6020	pH (pH) SW9045C
TT-TP3-L2	TT-TP3-L2-20160211	2016-02-11	440-138059-1									
TT-TP3-L2	TT-TP3-L2-20160218	2016-02-18	440-138657-1									
TT-TP3-L2	TT-TP3-L2-20160225	2016-02-25	440-139326-1									
TT-TP3-L2	TT-TP3-L2-20160303	2016-03-03	440-139965-1									
TT-TP3-L2	TT-TP3-L2-20160310	2016-03-10	440-140826-1									
TT-TP3-L2	TT-TP3-L2-20160317	2016-03-17	440-141827-1									
TT-TP3-L2	TT-TP3-L2-20160323	2016-03-23	440-142439-1									
TT-TP3-L2	TT-TP3-L2-20160331	2016-03-31	440-143078-1									
TT-TP3-L2	TT-TP3-L2-20160405	2016-04-05	440-143458-1									
TT-TP3-L2	TT-TP3-L2-20160420	2016-04-20	440-145023-1									
TT-TP3-L2	TT-TP3-L2-20160428	2016-04-28	440-145766-1									
TT-TP3-L2	TT-TP3-L2-20160505	2016-05-05	440-146524-1									
TT-TP3-L2	TT-TP3-L2-20160511	2016-05-11	440-147243-1									
TT-TP3-L2	TT-TP3-L2-20160519	2016-05-19	440-147992-1									
TT-TP3-L2	TT-TP3-L2-20160525	2016-05-25	440-148383-1									
TT-TP3-L2	TT-TP3-L2-20160602	2016-06-02	440-149036-1									
TT-TP3-L2	TT-TP3-L2-20160608	2016-06-08	440-149621-1									
TT-TP3-L2	TT-TP3-L2-20160622	2016-06-22	440-150775-1									
TT-TP3-L2	TT-TP3-L2-20160705	2016-07-05	440-151701-1									
TT-TP3-L2	TT-TP3-L2-20160727	2016-07-27	440-153790-1									
TT-TP3-L2	TT-TP3-L2-22	2015-03-26	440-105406-1									
TT-TP3-L2	TT-TP3-L2-26	2015-03-26	440-105406-1									
TT-TP3-L2	TT-TP3-L2-6	2015-03-26	440-105406-1	<0.11			81	820 J+c		35		9.34
TT-TP3-L2A	TT-TP3-L2A-10	2016-08-14	440-155631-1									
TT-TP3-L2A	TT-TP3-L2A-14	2016-08-14	440-155631-1	<0.10			240	760		24		8.6
TT-TP3-L2A	TT-TP3-L2A-18	2016-08-14	440-155631-1									
TT-TP3-L2A	TT-TP3-L2A-2	2016-08-14	440-155631-1									
TT-TP3-L2A	TT-TP3-L2A-22	2016-08-14	440-155631-1									
TT-TP3-L2A	TT-TP3-L2A-26	2016-08-14	440-155631-1									
TT-TP3-L2A	TT-TP3-L2A-6	2016-08-14	440-155631-1	<0.099			92	880		190		8.5
TT-TP3-M1	TT-TP3-M1--20160427	2016-04-27	440-145639-1									
TT-TP3-M1	TT-TP3-M1-20151210	2015-12-10	440-130588-1		<2.5	1800 J-c			<0.013		<13	
TT-TP3-M1	TT-TP3-M1-20160203	2016-02-03	440-137164-1									
TT-TP3-M1	TT-TP3-M1-20160211	2016-02-11	440-138059-1		<2.5	900			<0.0025		<13	
TT-TP3-M1	TT-TP3-M1-20160218	2016-02-18	440-138657-1									
TT-TP3-M1	TT-TP3-M1-20160225	2016-02-25	440-139326-1									

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Location	Sample	Date	SDG	Carbonate (as CO3) (mg/L) SM2320B	Chloride (as Cl) (mg/L) E300.0	Chlorate (ug/L) E300.1B	Perchlorate (mg/Kg) E314.0	Perchlorate (ug/L) E314.0	Bicarbonate ion as HCO3 (mg/L) SM2320B	Hydroxide as OH (mg/L) SM2320B	Alkalinity, Total (as CaCO3) (mg/L) SM2320B	Carbon, Total Organic (mg/Kg) SW9060	Carbon, Total Organic (mg/L) SM5310B	Total Dissolved Solids (Residue, Filterable) (mg/L) SM2540C	Nitrogen, Nitrate (as N) (mg/L) E300.0	Sulfate (as So4) (mg/L) E300.0	Antimony (mg/Kg) SW6020	Antimony (ug/L) SW6020	Arsenic (mg/Kg) SW6020	Arsenic (ug/L) SW6020	Barium (mg/Kg) SW6020	Barium (ug/L) SW6020	Beryllium (mg/Kg) SW6020	Beryllium (ug/L) SW6020	Boron (mg/Kg) SW6010B	Boron (mg/L) SW6010B	Cadmium (mg/Kg) SW6020	Cadmium (ug/L) SW6020	Calcium (mg/L) SW6010B	Calcium (mg/L) SW6010B_LCH
TT-TP3-M1	TT-TP3-M1-20160303	2016-03-03	440-139965-1					690					2.3	1000																	
TT-TP3-M1	TT-TP3-M1-20160310	2016-03-10	440-140826-1	<2.4	**84**	390		430	210	<1.4	170		2.1	940	3.2	330		<1.0		110		21		<0.50		0.32		<0.50	34	
TT-TP3-M1	TT-TP3-M1-20160316	2016-03-16	440-141586-1					370					1.5	860																	
TT-TP3-M1	TT-TP3-M1-20160323	2016-03-23	440-142439-1					420					4.1	850																	
TT-TP3-M1	TT-TP3-M1-20160331	2016-03-31	440-143078-1					400					2.0	860																	
TT-TP3-M1	TT-TP3-M1-20160405	2016-04-05	440-143458-1	<2.4	**81**	230		400	170	<1.4	140		1.9	850	2.3	260		<0.50		91		25		<0.25		0.22		<0.25	36	
TT-TP3-M1	TT-TP3-M1-20160420	2016-04-20	440-145020-1					820					1.9																		
TT-TP3-M1	TT-TP3-M1-20160505	2016-05-05	440-146524-1	<2.4	**90**	88		230	170	<1.4	140		1.8	850	3.0	270		<0.50		67		27		<0.25		0.29 Jq		<0.25	37	
TT-TP3-M1	TT-TP3-M1-20160511	2016-05-11	440-147243-1					210					1.9	790																	
TT-TP3-M1	TT-TP3-M1-20160519	2016-05-19	440-147992-1					860					<0.65	900																	
TT-TP3-M1	TT-TP3-M1-20160526	2016-05-26	440-148500-1					1600					1.9	880																	
TT-TP3-M1	TT-TP3-M1-20160601	2016-06-01	440-148926-1	<2.4	**85**	66		430	170	<1.4	140		2.0	810	2.0	240		<0.50		53		29		<0.25		0.23		<0.25	43	
TT-TP3-M1	TT-TP3-M1-20160608	2016-06-08	440-149621-1					180					1.9	770																	
TT-TP3-M1	TT-TP3-M1-20160622	2016-06-22	440-150775-1					140					1.5	780																	
TT-TP3-M1	TT-TP3-M1-20160705	2016-07-05	440-151701-1					1800					1.7	930																	
TT-TP3-M1	TT-TP3-M1-20160728	2016-07-28	440-153948-1	<2.4	**440**	1100000		200000	120	<1.4	100		1.6	3800	12	760		<2.5		44		78		<1.3		0.62		<1.3	310	
TT-TP3-M2	TT-TP3-M2-20151210	2015-12-10	440-130588-1	<2.4	**1500**	4200000		550000	150	<1.4	120		1.2	10000	15	1500		<2.5		95		30		<1.3		3.7		<1.3	410 J-c	
TT-TP3-M2	TT-TP3-M2-20160204	2016-02-04	440-137358-1					590000					1.4	11000																	
TT-TP3-M2	TT-TP3-M2-20160210	2016-02-10	440-137910-1	<2.4	**890**	2700000		430000	200	<1.4	170		1.8	8700		1500		<2.5		110		29		<1.3		3.4		<1.3	300	
TT-TP3-M2	TT-TP3-M2-20160218	2016-02-18	440-138657-1					170000					2.0	4700																	
TT-TP3-M2	TT-TP3-M2-20160225	2016-02-25	440-139326-1					71000					2.0	2800																	
TT-TP3-M2	TT-TP3-M2-20160303	2016-03-03	440-139965-1					38000					2.1	2000																	
TT-TP3-M2	TT-TP3-M2-20160310	2016-03-10	440-140826-1	<2.4	**130**	150000		20000	200	<1.4	160		2.5	1700	5.7	620		<2.5		200		22		<1.3		0.69		<1.3	32	
TT-TP3-M2	TT-TP3-M2-20160316	2016-03-16	440-141586-1					16000					1.7	1500																	
TT-TP3-M2	TT-TP3-M2-20160323	2016-03-23	440-142439-1					9900					1.5	1400																	
TT-TP3-M2	TT-TP3-M2-20160331	2016-03-31	440-143078-1					8700					1.9	1300																	
TT-TP3-M2	TT-TP3-M2-20160405	2016-04-05	440-143458-1	<2.4	**99**	55000		8700	170	<1.4	140		1.9	1300	2.7	540		<0.50		120		22		<0.25		0.40		<0.25	34	
TT-TP3-M2	TT-TP3-M2-20160420	2016-04-20	440-145020-1					11000					1.8																		
TT-TP3-M2	TT-TP3-M2-20160427	2016-04-27	440-145639-1					9200					1.8	1300																	
TT-TP3-M2	TT-TP3-M2-20160505	2016-05-05	440-146524-1	<2.4	**110**	44000		6400	170	<1.4	140		1.8	1300	3.0	550		<0.50		80		20		<0.25		0.39 Jq		<0.25	36	
TT-TP3-M2	TT-TP3-M2-20160511	2016-05-11	440-147243-1					5700					1.9	1200																	
TT-TP3-M2	TT-TP3-M2-20160519	2016-05-19	440-147992-1					9600					1.7	1200																	
TT-TP3-M2	TT-TP3-M2-20160526	2016-05-26	440-148500-1					7900					1.8	1200																	
TT-TP3-M2	TT-TP3-M2-20160602	2016-06-02	440-149036-1	<2.4	**110**	40000		5800	170	<1.4	140		1.7	1100	2.7	440		<0.50		70		20		<0.25		0.31		<0.25	46	
TT-TP3-M2	TT-TP3-M2-20160608	2016-06-08	440-149621-1					5200					1.7	1000																	
TT-TP3-M2	TT-TP3-M2-20160622	2016-06-22	440-150775-1					4000					1.4	950																	

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Location	Sample	Date	SDG	Chromium, Hexavalent (mg/Kg) SW7199	Chromium, Hexavalent (ug/L) SW7199	Chromium, Total (mg/Kg) SW6020	Chromium, Total (ug/L) SW6020	Cobalt (mg/Kg) SW6020	Cobalt (ug/L) SW6020	Copper (mg/Kg) SW6020	Copper (ug/L) SW6020	Iron (mg/Kg) SW6010B	Iron (mg/L) SW6010B	Lead (mg/Kg) SW6020	Lead (ug/L) SW6020	Magnesium (mg/L) SW6010B	Magnesium (mg/L) SW6010B_LCH	Manganese (mg/Kg) SW6010B	Manganese (mg/L) SW6010B	Mercury (mg/Kg) SW7471A	Mercury (mg/L) SW7470A	Molybdenum (mg/Kg) SW6020	Molybdenum (ug/L) SW6020	Nickel (mg/Kg) SW6020	Nickel (ug/L) SW6020	Potassium (mg/L) SW6010B	Potassium (mg/L) SW6010B_LCH	Selenium (mg/Kg) SW6020	Selenium (ug/L) SW6020
TT-TP3-M1	TT-TP3-M1-20160303	2016-03-03	440-139965-1		6.1		16																						
TT-TP3-M1	TT-TP3-M1-20160310	2016-03-10	440-140826-1		6.7 J-e		4.7		<1.0		<1.0		<0.010		<1.0	13			<0.010		<0.00010		7.8		<1.0	2.9			1.7 Jq
TT-TP3-M1	TT-TP3-M1-20160316	2016-03-16	440-141586-1		3.4		5.5 Jq																						
TT-TP3-M1	TT-TP3-M1-20160323	2016-03-23	440-142439-1		2.7		4.0																						
TT-TP3-M1	TT-TP3-M1-20160331	2016-03-31	440-143078-1		3.3		7.9																						
TT-TP3-M1	TT-TP3-M1-20160405	2016-04-05	440-143458-1		3.3		7.0		<0.50		1.8 Jq		<0.010		<0.50	12			<0.010		<0.00010		6.5		0.87 Jq	2.8			1.3 Jq
TT-TP3-M1	TT-TP3-M1-20160420	2016-04-20	440-145020-1		3.0		150																						
TT-TP3-M1	TT-TP3-M1-20160505	2016-05-05	440-146524-1		3.2		8.8		<0.50		<0.50		0.010 Jq		<0.50	16			<0.010		<0.00010		6.4		<0.50	2.8 Jq			1.4 Jq
TT-TP3-M1	TT-TP3-M1-20160511	2016-05-11	440-147243-1		2.3		25																						
TT-TP3-M1	TT-TP3-M1-20160519	2016-05-19	440-147992-1		25		18																						
TT-TP3-M1	TT-TP3-M1-20160526	2016-05-26	440-148500-1		11		9.5																						
TT-TP3-M1	TT-TP3-M1-20160601	2016-06-01	440-148926-1		3.7		8.4		<0.50		<0.50		<0.010		<0.50	19			<0.010		<0.00010		6.0		0.93 Jq	3.5			1.3 Jq
TT-TP3-M1	TT-TP3-M1-20160608	2016-06-08	440-149621-1		3.2		41																						
TT-TP3-M1	TT-TP3-M1-20160622	2016-06-22	440-150775-1		2.5		3.8																						
TT-TP3-M1	TT-TP3-M1-20160705	2016-07-05	440-151701-1		53		54																						
TT-TP3-M1	TT-TP3-M1-20160728	2016-07-28	440-153948-1		3900		3800		<2.5		<2.5		<0.010		<2.5	99			<0.010		<0.00010		10		<2.5	14			<2.5
TT-TP3-M2	TT-TP3-M2-20151210	2015-12-10	440-130588-1		18000 J-e		17000 J-c		<2.5		<2.5		<0.050		<2.5	210 J-c			<0.050		<0.00010		38		<2.5	25 J-c			4.4 Jq
TT-TP3-M2	TT-TP3-M2-20160204	2016-02-04	440-137358-1		17000 J-c		15000																						
TT-TP3-M2	TT-TP3-M2-20160210	2016-02-10	440-137910-1				11000		<2.5		<4.6 Ua		<0.10		<2.5	150			<0.10		0.00038		44		5.5 Jq	23			3.9 Jq
TT-TP3-M2	TT-TP3-M2-20160218	2016-02-18	440-138657-1				4700																						
TT-TP3-M2	TT-TP3-M2-20160225	2016-02-25	440-139326-1		2100		2100																						
TT-TP3-M2	TT-TP3-M2-20160303	2016-03-03	440-139965-1		1100 J-e		1000																						
TT-TP3-M2	TT-TP3-M2-20160310	2016-03-10	440-140826-1		710 J-e		760		<2.5		<2.5		<0.010		<2.5	16			<0.010		0.00011 Jq		28		<2.5	6.3			<2.5
TT-TP3-M2	TT-TP3-M2-20160316	2016-03-16	440-141586-1		510		510																						
TT-TP3-M2	TT-TP3-M2-20160323	2016-03-23	440-142439-1		350		340																						
TT-TP3-M2	TT-TP3-M2-20160331	2016-03-31	440-143078-1		290		290																						
TT-TP3-M2	TT-TP3-M2-20160405	2016-04-05	440-143458-1		140		230		<0.50		2.2		<0.010		<0.50	15			<0.010		<0.00010		15		0.87 Jq	5.7			1.5 Jq
TT-TP3-M2	TT-TP3-M2-20160420	2016-04-20	440-145020-1		330		290																						
TT-TP3-M2	TT-TP3-M2-20160427	2016-04-27	440-145639-1		250		320																						
TT-TP3-M2	TT-TP3-M2-20160505	2016-05-05	440-146524-1		210 J-e		230		<0.50		<0.50		0.13 Jq		<0.50	20			<0.010		<0.00010		12		<0.50	5.8			1.1 Jq
TT-TP3-M2	TT-TP3-M2-20160511	2016-05-11	440-147243-1		200		170																						
TT-TP3-M2	TT-TP3-M2-20160519	2016-05-19	440-147992-1		310		290																						
TT-TP3-M2	TT-TP3-M2-20160526	2016-05-26	440-148500-1		210		210																						
TT-TP3-M2	TT-TP3-M2-20160602	2016-06-02	440-149036-1		190		200		<0.50		<0.50		<0.010		<0.50	23			<0.010		<0.00010		13		<0.50	5.8			1.6 Jq
TT-TP3-M2	TT-TP3-M2-20160608	2016-06-08	440-149621-1		160		160																						
TT-TP3-M2	TT-TP3-M2-20160622	2016-06-22	440-150775-1		130		130																						

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Location	Sample	Date	SDG	Silver (mg/Kg) SW6020	Silver (ug/L) SW6020	Sodium (mg/L) SW6010B	Sodium (mg/L) SW6010B_LCH	Titanium (mg/Kg) SW6010B	Titanium (mg/L) SW6010B	Zinc (mg/Kg) SW6020	Zinc (ug/L) SW6020	pH (pH) SW9045C
TT-TP3-M1	TT-TP3-M1-20160303	2016-03-03	440-139965-1									
TT-TP3-M1	TT-TP3-M1-20160310	2016-03-10	440-140826-1		<1.0	230			<0.0025		<5.0	
TT-TP3-M1	TT-TP3-M1-20160316	2016-03-16	440-141586-1									
TT-TP3-M1	TT-TP3-M1-20160323	2016-03-23	440-142439-1									
TT-TP3-M1	TT-TP3-M1-20160331	2016-03-31	440-143078-1									
TT-TP3-M1	TT-TP3-M1-20160405	2016-04-05	440-143458-1		<0.50	190			<0.0025		<2.5	
TT-TP3-M1	TT-TP3-M1-20160420	2016-04-20	440-145020-1									
TT-TP3-M1	TT-TP3-M1-20160505	2016-05-05	440-146524-1		<0.50	170			<0.0025		<2.5	
TT-TP3-M1	TT-TP3-M1-20160511	2016-05-11	440-147243-1									
TT-TP3-M1	TT-TP3-M1-20160519	2016-05-19	440-147992-1									
TT-TP3-M1	TT-TP3-M1-20160526	2016-05-26	440-148500-1									
TT-TP3-M1	TT-TP3-M1-20160601	2016-06-01	440-148926-1		<0.50	160			<0.0025		<2.5	
TT-TP3-M1	TT-TP3-M1-20160608	2016-06-08	440-149621-1									
TT-TP3-M1	TT-TP3-M1-20160622	2016-06-22	440-150775-1									
TT-TP3-M1	TT-TP3-M1-20160705	2016-07-05	440-151701-1									
TT-TP3-M1	TT-TP3-M1-20160728	2016-07-28	440-153948-1		<2.5	330			<0.0025		<13	
TT-TP3-M2	TT-TP3-M2-20151210	2015-12-10	440-130588-1		<2.5	1700 J-c			<0.013		<13	
TT-TP3-M2	TT-TP3-M2-20160204	2016-02-04	440-137358-1									
TT-TP3-M2	TT-TP3-M2-20160210	2016-02-10	440-137910-1		<2.5	1600			<0.025		15 Jq	
TT-TP3-M2	TT-TP3-M2-20160218	2016-02-18	440-138657-1									
TT-TP3-M2	TT-TP3-M2-20160225	2016-02-25	440-139326-1									
TT-TP3-M2	TT-TP3-M2-20160303	2016-03-03	440-139965-1									
TT-TP3-M2	TT-TP3-M2-20160310	2016-03-10	440-140826-1		<2.5	440			<0.0025		<13	
TT-TP3-M2	TT-TP3-M2-20160316	2016-03-16	440-141586-1									
TT-TP3-M2	TT-TP3-M2-20160323	2016-03-23	440-142439-1									
TT-TP3-M2	TT-TP3-M2-20160331	2016-03-31	440-143078-1									
TT-TP3-M2	TT-TP3-M2-20160405	2016-04-05	440-143458-1		<0.50	370			<0.0025		<2.5	
TT-TP3-M2	TT-TP3-M2-20160420	2016-04-20	440-145020-1									
TT-TP3-M2	TT-TP3-M2-20160427	2016-04-27	440-145639-1									
TT-TP3-M2	TT-TP3-M2-20160505	2016-05-05	440-146524-1		<0.50	280			<0.0025		<2.5	
TT-TP3-M2	TT-TP3-M2-20160511	2016-05-11	440-147243-1									
TT-TP3-M2	TT-TP3-M2-20160519	2016-05-19	440-147992-1									
TT-TP3-M2	TT-TP3-M2-20160526	2016-05-26	440-148500-1									
TT-TP3-M2	TT-TP3-M2-20160602	2016-06-02	440-149036-1		<0.50	250			<0.0025		5.9 Jq	
TT-TP3-M2	TT-TP3-M2-20160608	2016-06-08	440-149621-1									
TT-TP3-M2	TT-TP3-M2-20160622	2016-06-22	440-150775-1									

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Location	Sample	Date	SDG	Carbonate (as CO3) (mg/L) SM2320B	Chloride (as Cl) (mg/L) E300.0	Chlorate (ug/L) E300.1B	Perchlorate (mg/Kg) E314.0	Perchlorate (ug/L) E314.0	Bicarbonate ion as HCO3 (mg/L) SM2320B	Hydroxide as OH (mg/L) SM2320B	Alkalinity, Total (as CaCO3) (mg/L) SM2320B	Carbon, Total Organic (mg/Kg) SW9060	Carbon, Total Organic (mg/L) SM5310B	Total Dissolved Solids (Residue, Filterable) (mg/L) SM2540C	Nitrogen, Nitrate (as N) (mg/L) E300.0	Sulfate (as So4) (mg/L) E300.0	Antimony (mg/Kg) SW6020	Antimony (ug/L) SW6020	Arsenic (mg/Kg) SW6020	Arsenic (ug/L) SW6020	Barium (mg/Kg) SW6020	Barium (ug/L) SW6020	Beryllium (mg/Kg) SW6020	Beryllium (ug/L) SW6020	Boron (mg/Kg) SW6010B	Boron (mg/L) SW6010B	Cadmium (mg/Kg) SW6020	Cadmium (ug/L) SW6020	Calcium (mg/L) SW6010B	Calcium (mg/L) SW6010B_LCH
TT-TP3-M2	TT-TP3-M2-20160705	2016-07-05	440-151701-1					23000					1.6	1300																	
TT-TP3-M2	TT-TP3-M2-20160728	2016-07-28	440-153948-1	<2.4	560	1500000		230000	130	<1.4	110		1.5	4700	7.5	860		<5.0		52		60		<2.5		1.0		<2.5	260	
TT-TP4-B1	TT-TP4-B1-10	2015-03-19	440-105015-1				1.0							150																
TT-TP4-B1	TT-TP4-B1-14	2015-03-19	440-105015-1		0.38 Jq	<10	2.0				35	<2500		330	64	11	<0.52		6.9		170		0.43		6.2		<0.26			6.3
TT-TP4-B1	TT-TP4-B1-18	2015-03-19	440-105015-1				1.6							190																
TT-TP4-B1	TT-TP4-B1-2	2015-03-19	440-105015-1				0.82							56																
TT-TP4-B1	TT-TP4-B1-22	2015-03-19	440-105015-1				150							240																
TT-TP4-B1	TT-TP4-B1-26	2015-03-19	440-105015-1				220							420																
TT-TP4-B1	TT-TP4-B1-6	2015-03-19	440-105015-1		0.62	<10	0.97				57	<2500		110	22 J+c	2.1	<0.54 UJc		4.0		160 J+c		0.52		5.3 Jq		<0.27			2.6
TT-TP4-B1A	TT-TP4-B1A-10	2016-08-16	440-155720-1				2.1							340																
TT-TP4-B1A	TT-TP4-B1A-14	2016-08-16	440-155720-1		4.3	3500	3.3				57	8100		410	7.8	14	<0.27		3.7		170		0.44		7.2		<0.25			8.1
TT-TP4-B1A	TT-TP4-B1A-18	2016-08-16	440-155720-1				5.3							610																
TT-TP4-B1A	TT-TP4-B1A-2	2016-08-16	440-155720-1				3.2							87																
TT-TP4-B1A	TT-TP4-B1A-24	2016-08-16	440-155720-1				21							1600																
TT-TP4-B1A	TT-TP4-B1A-26	2016-08-16	440-155720-1				110							1000																
TT-TP4-B1A	TT-TP4-B1A-6	2016-08-16	440-155720-1		0.64	180	0.89				24	6900		100	27	5.0	<0.27		2.5		170		0.45		8.5		<0.25			6.1
TT-TP4-B2	TT-TP4-B2-10	2015-03-20	440-105015-1		1.3	65	31				92	<2500		400	63	9.2	<0.52		5.1		220		0.47		6.4		<0.26			11
TT-TP4-B2	TT-TP4-B2-14	2015-03-20	440-105015-1				6.9							190																
TT-TP4-B2	TT-TP4-B2-18	2015-03-20	440-105015-1				15							220																
TT-TP4-B2	TT-TP4-B2-2	2015-03-20	440-105015-1				2.9							190																
TT-TP4-B2	TT-TP4-B2-22	2015-03-20	440-105015-1		3.9	50000	34				31	10000		320	14	11	<0.55		11		72		0.31 Jq		8.8		<0.27			3.4
TT-TP4-B2	TT-TP4-B2-26	2015-03-20	440-105015-1				310							340																
TT-TP4-B2	TT-TP4-B2-6	2015-03-20	440-105015-1				3.0							150																
TT-TP4-B2A	TT-TP4-B2A-10	2016-08-16	440-155767-1		0.38 Jsp	<10	0.22				34	440		220	0.47 Jsp	1.3	<0.53 UJm		3.3		94 J+m		0.79		6.9		<0.50			5.6
TT-TP4-B2A	TT-TP4-B2A-14	2016-08-16	440-155767-1				0.067							280																
TT-TP4-B2A	TT-TP4-B2A-18	2016-08-16	440-155767-1				0.061							150																
TT-TP4-B2A	TT-TP4-B2A-2	2016-08-16	440-155767-1				2.1							170																
TT-TP4-B2A	TT-TP4-B2A-22	2016-08-16	440-155767-1		1.5	1100	3.8				9.3	840		770	2.2	280	<0.27		8.2		130		0.44		7.9		<0.25			180
TT-TP4-B2A	TT-TP4-B2A-26	2016-08-16	440-155767-1				73							490																
TT-TP4-B2A	TT-TP4-B2A-6	2016-08-16	440-155767-1				0.077 J-m							240																
TT-TP4-B3	TT-TP4-B3-10	2015-03-20	440-105015-1				2.6							140																
TT-TP4-B3	TT-TP4-B3-14	2015-03-20	440-105015-1				1.6							160																
TT-TP4-B3	TT-TP4-B3-18	2015-03-20	440-105015-1				1.6							1500																
TT-TP4-B3	TT-TP4-B3-2	2015-03-20	440-105015-1		0.40 Jq	18 Jq	0.24				79	<2500		200	0.44 Jq	1.4	<0.55		3.1		220		0.61		7.9		<0.28			2.7
TT-TP4-B3	TT-TP4-B3-22	2015-03-20	440-105015-1		6.1	120 Jf	170 Jf				34 Jf	18000		500	76	19	<0.66		25		30		0.39 Jq		17		<0.33			5.7
TT-TP4-B3	TT-TP4-B3-26	2015-03-20	440-105015-1				300							400																

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Location	Sample	Date	SDG	Chromium, Hexavalent (mg/Kg) SW7199	Chromium, Hexavalent (ug/L) SW7199	Chromium, Total (mg/Kg) SW6020	Chromium, Total (ug/L) SW6020	Cobalt (mg/Kg) SW6020	Cobalt (ug/L) SW6020	Copper (mg/Kg) SW6020	Copper (ug/L) SW6020	Iron (mg/Kg) SW6010B	Iron (mg/L) SW6010B	Lead (mg/Kg) SW6020	Lead (ug/L) SW6020	Magnesium (mg/L) SW6010B	Magnesium (mg/L) SW6010B_LCH	Manganese (mg/Kg) SW6010B	Manganese (mg/L) SW6010B	Mercury (mg/Kg) SW7471A	Mercury (mg/L) SW7470A	Molybdenum (mg/Kg) SW6020	Molybdenum (ug/L) SW6020	Nickel (mg/Kg) SW6020	Nickel (ug/L) SW6020	Potassium (mg/L) SW6010B	Potassium (mg/L) SW6010B_LCH	Selenium (mg/Kg) SW6020	Selenium (ug/L) SW6020
TT-TP3-M2	TT-TP3-M2-20160705	2016-07-05	440-151701-1		630		600																						
TT-TP3-M2	TT-TP3-M2-20160728	2016-07-28	440-153948-1		6100		5700		<5.0		<5.0		<0.010		<5.0	120			<0.010		<0.00010		16 Jsp		<5.0	16			<5.0
TT-TP4-B1	TT-TP4-B1-10	2015-03-19	440-105015-1																										
TT-TP4-B1	TT-TP4-B1-14	2015-03-19	440-105015-1	<0.43		13		4.0		10		11000		6.3			0.91	160		<0.013		0.98 Jq		11			<0.37	<0.21	
TT-TP4-B1	TT-TP4-B1-18	2015-03-19	440-105015-1																										
TT-TP4-B1	TT-TP4-B1-2	2015-03-19	440-105015-1																										
TT-TP4-B1	TT-TP4-B1-22	2015-03-19	440-105015-1																										
TT-TP4-B1	TT-TP4-B1-26	2015-03-19	440-105015-1																										
TT-TP4-B1	TT-TP4-B1-6	2015-03-19	440-105015-1	<0.44		15		7.9		15		15000 J+c		7.2			0.37 Jq	270 J+c		0.019 Jq		0.70 Jq		19			<0.37	<0.22	
TT-TP4-B1A	TT-TP4-B1A-10	2016-08-16	440-155720-1																										
TT-TP4-B1A	TT-TP4-B1A-14	2016-08-16	440-155720-1	<0.17		16		6.0		13		17000		6.3			8.9	250		<0.013		0.66 Jsp		13			3.9 Jsp	<0.20	
TT-TP4-B1A	TT-TP4-B1A-18	2016-08-16	440-155720-1																										
TT-TP4-B1A	TT-TP4-B1A-2	2016-08-16	440-155720-1																										
TT-TP4-B1A	TT-TP4-B1A-24	2016-08-16	440-155720-1																										
TT-TP4-B1A	TT-TP4-B1A-26	2016-08-16	440-155720-1																										
TT-TP4-B1A	TT-TP4-B1A-6	2016-08-16	440-155720-1	<0.18		14		6.2		12		17000		6.3			1.4 Jsp	250		<0.015		0.52 Jsp		13			<3.7	<0.20	
TT-TP4-B2	TT-TP4-B2-10	2015-03-20	440-105015-1	<0.42		13		7.0		15		16000		6.6			0.77	270		0.020 Jq		<0.52		16			0.64	<0.21	
TT-TP4-B2	TT-TP4-B2-14	2015-03-20	440-105015-1																										
TT-TP4-B2	TT-TP4-B2-18	2015-03-20	440-105015-1																										
TT-TP4-B2	TT-TP4-B2-2	2015-03-20	440-105015-1																										
TT-TP4-B2	TT-TP4-B2-22	2015-03-20	440-105015-1	<0.44		18		3.8		9.2		10000		4.8			0.80	160		0.017 Jq		<0.55		13			0.64	<0.22	
TT-TP4-B2	TT-TP4-B2-26	2015-03-20	440-105015-1																										
TT-TP4-B2	TT-TP4-B2-6	2015-03-20	440-105015-1																										
TT-TP4-B2A	TT-TP4-B2A-10	2016-08-16	440-155767-1	<0.17		13 J-m		5.9 J-m		15 J-m		17000 Jm		6.3			5.4	220 J+m		<0.013		<0.99		15 J-m			<3.7	0.74 J-m, sp	
TT-TP4-B2A	TT-TP4-B2A-14	2016-08-16	440-155767-1																										
TT-TP4-B2A	TT-TP4-B2A-18	2016-08-16	440-155767-1																										
TT-TP4-B2A	TT-TP4-B2A-2	2016-08-16	440-155767-1																										
TT-TP4-B2A	TT-TP4-B2A-22	2016-08-16	440-155767-1	<0.18		12		3.6		9.0		9900		4.9			6.3	150		<0.015		0.72 Jsp		8.8			<3.7	0.58 Jsp	
TT-TP4-B2A	TT-TP4-B2A-26	2016-08-16	440-155767-1																										
TT-TP4-B2A	TT-TP4-B2A-6	2016-08-16	440-155767-1																										
TT-TP4-B3	TT-TP4-B3-10	2015-03-20	440-105015-1																										
TT-TP4-B3	TT-TP4-B3-14	2015-03-20	440-105015-1																										
TT-TP4-B3	TT-TP4-B3-18	2015-03-20	440-105015-1																										
TT-TP4-B3	TT-TP4-B3-2	2015-03-20	440-105015-1	<0.44		16		8.6		16		19000		8.7			0.33 Jq	430		0.032		<0.55		16			0.43 Jq	<0.22	
TT-TP4-B3	TT-TP4-B3-22	2015-03-20	440-105015-1	<0.53		37 Jf		2.5		6.5		6900		4.1			1.9	130		<0.016		<0.66		9.1			1.2	<0.26	
TT-TP4-B3	TT-TP4-B3-26	2015-03-20	440-105015-1																										

Report Data Summary Table
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Location	Sample	Date	SDG	Silver (mg/Kg) SW6020	Silver (ug/L) SW6020	Sodium (mg/L) SW6010B	Sodium (mg/L) SW6010B_LCH	Titanium (mg/Kg) SW6010B	Titanium (mg/L) SW6010B	Zinc (mg/Kg) SW6020	Zinc (ug/L) SW6020	pH (pH) SW9045C
TT-TP3-M2	TT-TP3-M2-20160705	2016-07-05	440-151701-1									
TT-TP3-M2	TT-TP3-M2-20160728	2016-07-28	440-153948-1		<5.0	610			<0.0025		<25	
TT-TP4-B1	TT-TP4-B1-10	2015-03-19	440-105015-1									
TT-TP4-B1	TT-TP4-B1-14	2015-03-19	440-105015-1	0.12 Jq			26	560		25		8.50
TT-TP4-B1	TT-TP4-B1-18	2015-03-19	440-105015-1									
TT-TP4-B1	TT-TP4-B1-2	2015-03-19	440-105015-1									
TT-TP4-B1	TT-TP4-B1-22	2015-03-19	440-105015-1									
TT-TP4-B1	TT-TP4-B1-26	2015-03-19	440-105015-1									
TT-TP4-B1	TT-TP4-B1-6	2015-03-19	440-105015-1	<0.11			18	600 J+c		37		9.09
TT-TP4-B1A	TT-TP4-B1A-10	2016-08-16	440-155720-1									
TT-TP4-B1A	TT-TP4-B1A-14	2016-08-16	440-155720-1	<0.099			180	870		36		9.1
TT-TP4-B1A	TT-TP4-B1A-18	2016-08-16	440-155720-1									
TT-TP4-B1A	TT-TP4-B1A-2	2016-08-16	440-155720-1									
TT-TP4-B1A	TT-TP4-B1A-24	2016-08-16	440-155720-1									
TT-TP4-B1A	TT-TP4-B1A-26	2016-08-16	440-155720-1									
TT-TP4-B1A	TT-TP4-B1A-6	2016-08-16	440-155720-1	<0.099			87	900		32		8.6
TT-TP4-B2	TT-TP4-B2-10	2015-03-20	440-105015-1	<0.10			91	780		32		9.03
TT-TP4-B2	TT-TP4-B2-14	2015-03-20	440-105015-1									
TT-TP4-B2	TT-TP4-B2-18	2015-03-20	440-105015-1									
TT-TP4-B2	TT-TP4-B2-2	2015-03-20	440-105015-1									
TT-TP4-B2	TT-TP4-B2-22	2015-03-20	440-105015-1	<0.11			26	510		20		8.94
TT-TP4-B2	TT-TP4-B2-26	2015-03-20	440-105015-1									
TT-TP4-B2	TT-TP4-B2-6	2015-03-20	440-105015-1									
TT-TP4-B2A	TT-TP4-B2A-10	2016-08-16	440-155767-1	<0.20			100	770 J+m		30		9.2
TT-TP4-B2A	TT-TP4-B2A-14	2016-08-16	440-155767-1									
TT-TP4-B2A	TT-TP4-B2A-18	2016-08-16	440-155767-1									
TT-TP4-B2A	TT-TP4-B2A-2	2016-08-16	440-155767-1									
TT-TP4-B2A	TT-TP4-B2A-22	2016-08-16	440-155767-1	<0.10			39	520		22		8.5
TT-TP4-B2A	TT-TP4-B2A-26	2016-08-16	440-155767-1									
TT-TP4-B2A	TT-TP4-B2A-6	2016-08-16	440-155767-1									
TT-TP4-B3	TT-TP4-B3-10	2015-03-20	440-105015-1									
TT-TP4-B3	TT-TP4-B3-14	2015-03-20	440-105015-1									
TT-TP4-B3	TT-TP4-B3-18	2015-03-20	440-105015-1									
TT-TP4-B3	TT-TP4-B3-2	2015-03-20	440-105015-1	<0.11			57	900		37		9.64
TT-TP4-B3	TT-TP4-B3-22	2015-03-20	440-105015-1	<0.13			110 Jf	350		20		8.86
TT-TP4-B3	TT-TP4-B3-26	2015-03-20	440-105015-1									

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Location	Sample	Date	SDG	Carbonate (as CO3) (mg/L) SM2320B	Chloride (as Cl) (mg/L) E300.0	Chlorate (ug/L) E300.1B	Perchlorate (mg/Kg) E314.0	Perchlorate (ug/L) E314.0	Bicarbonate ion as HCO3 (mg/L) SM2320B	Hydroxide as OH (mg/L) SM2320B	Alkalinity, Total (as CaCO3) (mg/L) SM2320B	Carbon, Total Organic (mg/Kg) SW9060	Carbon, Total Organic (mg/L) SM5310B	Total Dissolved Solids (Residue, Filterable) (mg/L) SM2540C	Nitrogen, Nitrate (as N) (mg/L) E300.0	Sulfate (as So4) (mg/L) E300.0	Antimony (mg/Kg) SW6020	Antimony (ug/L) SW6020	Arsenic (mg/Kg) SW6020	Arsenic (ug/L) SW6020	Barium (mg/Kg) SW6020	Barium (ug/L) SW6020	Beryllium (mg/Kg) SW6020	Beryllium (ug/L) SW6020	Boron (mg/Kg) SW6010B	Boron (mg/L) SW6010B	Cadmium (mg/Kg) SW6020	Cadmium (ug/L) SW6020	Calcium (mg/L) SW6010B	Calcium (mg/L) SW6010B_LCH
TT-TP4-B3	TT-TP4-B3-6	2015-03-20	440-105015-1				1.3							89																	
TT-TP4-B3A	TT-TP4-B3A-10	2016-08-15	440-155631-1				6.1							110																	
TT-TP4-B3A	TT-TP4-B3A-14	2016-08-15	440-155631-1				0.83							170																	
TT-TP4-B3A	TT-TP4-B3A-18	2016-08-15	440-155631-1				0.032 Jsp							160																	
TT-TP4-B3A	TT-TP4-B3A-2	2016-08-15	440-155631-1		**15**	16000	9.9				27	11000		160	4.1	22	<0.27		4.7		160		0.46		8.2		<0.25			12
TT-TP4-B3A	TT-TP4-B3A-22	2016-08-15	440-155631-1		**16**	46000	120				25	7600		730	19	30	<0.26		17		28		0.42		25		<0.25			6.3
TT-TP4-B3A	TT-TP4-B3A-26	2016-08-13	440-155631-1				76							430																
TT-TP4-B3A	TT-TP4-B3A-6	2016-08-15	440-155631-1				18							89																
TT-TP4-B4	TT-TP4-B4-10	2015-03-20	440-105015-1		**0.44 Jq**	15 Jq	3.8				140	<2500		400	21	1.0	<0.53		5.5		170		0.52		5.2 Jq		<0.27			1.1
TT-TP4-B4	TT-TP4-B4-14	2015-03-20	440-105015-1				2.1							360																
TT-TP4-B4	TT-TP4-B4-18	2015-03-20	440-105015-1				2.8							890																
TT-TP4-B4	TT-TP4-B4-2	2015-03-20	440-105015-1				1.9							99																
TT-TP4-B4	TT-TP4-B4-22	2015-03-20	440-105015-1				78 J+c							240																
TT-TP4-B4	TT-TP4-B4-26	2015-03-20	440-105015-1		**7.4**	6400	24				15	<2500		1500	3.4	1000	<0.56		10		150		0.37		8.6		<0.28			310
TT-TP4-B4	TT-TP4-B4-6	2015-03-20	440-105015-1				3.2							96																
TT-TP4-B4A	TT-TP4-B4A-10	2016-08-16	440-155720-1		**8.2**	8900	6.4				52	9200		200	17	15	<0.27		6.4		190		0.49		11		<0.25			14
TT-TP4-B4A	TT-TP4-B4A-14	2016-08-16	440-155720-1				3.6							380																
TT-TP4-B4A	TT-TP4-B4A-18	2016-08-16	440-155720-1				0.054							270																
TT-TP4-B4A	TT-TP4-B4A-2	2016-08-16	440-155720-1				150							270																
TT-TP4-B4A	TT-TP4-B4A-22	2016-08-16	440-155720-1				25							730																
TT-TP4-B4A	TT-TP4-B4A-26	2016-08-16	440-155720-1		**7.8**	18000	43				17	6200		490	17	37	<0.27		11		57		0.57		20		<0.25			2.9
TT-TP4-B4A	TT-TP4-B4A-6	2016-08-16	440-155720-1				47							160																
TT-TP4-L1	TT-TP4-L1-20151210	2015-12-10	440-130588-1	**<2.4**	**110**			10000 J-c	250	<1.4	210		4.4	13000	1700	990														
TT-TP4-L1	TT-TP4-L1-20160204	2016-02-04	440-137358-1					8700						13000																
TT-TP4-L1	TT-TP4-L1-20160211	2016-02-11	440-138059-1					8400																						
TT-TP4-L1	TT-TP4-L1-20160218	2016-02-18	440-138657-1					7300						17000																
TT-TP4-L1	TT-TP4-L1-20160225	2016-02-25	440-139326-1					12000						30000																
TT-TP4-L1	TT-TP4-L1-20160303	2016-03-03	440-139965-1					15000						32000																
TT-TP4-L1	TT-TP4-L1-20160310	2016-03-10	440-140826-1					8100						22000																
TT-TP4-L1	TT-TP4-L1-20160317	2016-03-17	440-141827-1					6600						13000																
TT-TP4-L1	TT-TP4-L1-20160323	2016-03-23	440-142439-1					5000																						
TT-TP4-L1	TT-TP4-L1-20160331	2016-03-31	440-143078-1					4000						8900																
TT-TP4-L1	TT-TP4-L1-20160405	2016-04-05	440-143458-1					3800						8400																
TT-TP4-L1	TT-TP4-L1-20160420	2016-04-20	440-145023-1					3500																						
TT-TP4-L1	TT-TP4-L1-20160428	2016-04-28	440-145766-1					980						1500																
TT-TP4-L1	TT-TP4-L1-20160505	2016-05-05	440-146524-1					430						1500																

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Location	Sample	Date	SDG	Chromium, Hexavalent (mg/Kg) SW7199	Chromium, Hexavalent (ug/L) SW7199	Chromium, Total (mg/Kg) SW6020	Chromium, Total (ug/L) SW6020	Cobalt (mg/Kg) SW6020	Cobalt (ug/L) SW6020	Copper (mg/Kg) SW6020	Copper (ug/L) SW6020	Iron (mg/Kg) SW6010B	Iron (mg/L) SW6010B	Lead (mg/Kg) SW6020	Lead (ug/L) SW6020	Magnesium (mg/L) SW6010B	Magnesium (mg/L) SW6010B_LCH	Manganese (mg/Kg) SW6010B	Manganese (mg/L) SW6010B	Mercury (mg/Kg) SW7471A	Mercury (mg/L) SW7470A	Molybdenum (mg/Kg) SW6020	Molybdenum (ug/L) SW6020	Nickel (mg/Kg) SW6020	Nickel (ug/L) SW6020	Potassium (mg/L) SW6010B	Potassium (mg/L) SW6010B_LCH	Selenium (mg/Kg) SW6020	Selenium (ug/L) SW6020
TT-TP4-B3	TT-TP4-B3-6	2015-03-20	440-105015-1																										
TT-TP4-B3A	TT-TP4-B3A-10	2016-08-15	440-155631-1																										
TT-TP4-B3A	TT-TP4-B3A-14	2016-08-15	440-155631-1																										
TT-TP4-B3A	TT-TP4-B3A-18	2016-08-15	440-155631-1																										
TT-TP4-B3A	TT-TP4-B3A-2	2016-08-15	440-155631-1	<0.19		17		5.9		14		18000		6.6			5.9	290		<0.016		0.69 Jsp		12			<3.7	<0.20	
TT-TP4-B3A	TT-TP4-B3A-22	2016-08-15	440-155631-1	2.4		24		2.5		6.0		8200 J-m		4.0			3.4 Jsp	130 J-m		<0.020		<0.49		6.3			<3.7	<0.20	
TT-TP4-B3A	TT-TP4-B3A-26	2016-08-13	440-155631-1																										
TT-TP4-B3A	TT-TP4-B3A-6	2016-08-15	440-155631-1																										
TT-TP4-B4	TT-TP4-B4-10	2015-03-20	440-105015-1	<0.43		14		7.4		16		17000		7.1			0.16 Jq	400		0.016 Jq		<0.53		16			<0.37	<0.21	
TT-TP4-B4	TT-TP4-B4-14	2015-03-20	440-105015-1																										
TT-TP4-B4	TT-TP4-B4-18	2015-03-20	440-105015-1																										
TT-TP4-B4	TT-TP4-B4-2	2015-03-20	440-105015-1																										
TT-TP4-B4	TT-TP4-B4-22	2015-03-20	440-105015-1																										
TT-TP4-B4	TT-TP4-B4-26	2015-03-20	440-105015-1	<0.45		16		4.9		11		11000		5.3			4.0	230		<0.014		0.83 Jq		16			0.55	<0.22	
TT-TP4-B4	TT-TP4-B4-6	2015-03-20	440-105015-1																										
TT-TP4-B4A	TT-TP4-B4A-10	2016-08-16	440-155720-1	<0.17		20		6.1		13		17000		6.9			4.1	290		<0.014		0.77 Jsp		13			<3.7	0.21 Jsp	
TT-TP4-B4A	TT-TP4-B4A-14	2016-08-16	440-155720-1																										
TT-TP4-B4A	TT-TP4-B4A-18	2016-08-16	440-155720-1																										
TT-TP4-B4A	TT-TP4-B4A-2	2016-08-16	440-155720-1																										
TT-TP4-B4A	TT-TP4-B4A-22	2016-08-16	440-155720-1																										
TT-TP4-B4A	TT-TP4-B4A-26	2016-08-16	440-155720-1	1.1		14		4.0		9.0		12000		7.3			3.8 Jsp	240		<0.019		0.75 Jsp		9.6			<3.7	<0.20	
TT-TP4-B4A	TT-TP4-B4A-6	2016-08-16	440-155720-1																										
TT-TP4-L1	TT-TP4-L1-20151210	2015-12-10	440-130588-1		<0.25 UJe																								
TT-TP4-L1	TT-TP4-L1-20160204	2016-02-04	440-137358-1		<0.25 UJc																								
TT-TP4-L1	TT-TP4-L1-20160211	2016-02-11	440-138059-1																										
TT-TP4-L1	TT-TP4-L1-20160218	2016-02-18	440-138657-1				4.8 Jq																						
TT-TP4-L1	TT-TP4-L1-20160225	2016-02-25	440-139326-1		<0.25																								
TT-TP4-L1	TT-TP4-L1-20160303	2016-03-03	440-139965-1		<0.25																								
TT-TP4-L1	TT-TP4-L1-20160310	2016-03-10	440-140826-1		<0.25																								
TT-TP4-L1	TT-TP4-L1-20160317	2016-03-17	440-141827-1		<0.25																								
TT-TP4-L1	TT-TP4-L1-20160323	2016-03-23	440-142439-1																										
TT-TP4-L1	TT-TP4-L1-20160331	2016-03-31	440-143078-1		<0.25																								
TT-TP4-L1	TT-TP4-L1-20160405	2016-04-05	440-143458-1		8.9																								
TT-TP4-L1	TT-TP4-L1-20160420	2016-04-20	440-145023-1		<0.25																								
TT-TP4-L1	TT-TP4-L1-20160428	2016-04-28	440-145766-1		<0.25																								
TT-TP4-L1	TT-TP4-L1-20160505	2016-05-05	440-146524-1		<0.25		<0.50																						

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Location	Sample	Date	SDG	Silver (mg/Kg) SW6020	Silver (ug/L) SW6020	Sodium (mg/L) SW6010B	Sodium (mg/L) SW6010B_LCH	Titanium (mg/Kg) SW6010B	Titanium (mg/L) SW6010B	Zinc (mg/Kg) SW6020	Zinc (ug/L) SW6020	pH (pH) SW9045C
TT-TP4-B3	TT-TP4-B3-6	2015-03-20	440-105015-1									
TT-TP4-B3A	TT-TP4-B3A-10	2016-08-15	440-155631-1									
TT-TP4-B3A	TT-TP4-B3A-14	2016-08-15	440-155631-1									
TT-TP4-B3A	TT-TP4-B3A-18	2016-08-15	440-155631-1									
TT-TP4-B3A	TT-TP4-B3A-2	2016-08-15	440-155631-1	<0.10			120	940		31		8.4
TT-TP4-B3A	TT-TP4-B3A-22	2016-08-15	440-155631-1	<0.098			220	400 J+m		19		8.8
TT-TP4-B3A	TT-TP4-B3A-26	2016-08-13	440-155631-1									
TT-TP4-B3A	TT-TP4-B3A-6	2016-08-15	440-155631-1									
TT-TP4-B4	TT-TP4-B4-10	2015-03-20	440-105015-1	<0.11			40	750		35		9.75
TT-TP4-B4	TT-TP4-B4-14	2015-03-20	440-105015-1									
TT-TP4-B4	TT-TP4-B4-18	2015-03-20	440-105015-1									
TT-TP4-B4	TT-TP4-B4-2	2015-03-20	440-105015-1									
TT-TP4-B4	TT-TP4-B4-22	2015-03-20	440-105015-1									
TT-TP4-B4	TT-TP4-B4-26	2015-03-20	440-105015-1	<0.11			35	530		22		8.01
TT-TP4-B4	TT-TP4-B4-6	2015-03-20	440-105015-1									
TT-TP4-B4A	TT-TP4-B4A-10	2016-08-16	440-155720-1	0.11 Jsp			60	880		45		8.6
TT-TP4-B4A	TT-TP4-B4A-14	2016-08-16	440-155720-1									
TT-TP4-B4A	TT-TP4-B4A-18	2016-08-16	440-155720-1									
TT-TP4-B4A	TT-TP4-B4A-2	2016-08-16	440-155720-1									
TT-TP4-B4A	TT-TP4-B4A-22	2016-08-16	440-155720-1									
TT-TP4-B4A	TT-TP4-B4A-26	2016-08-16	440-155720-1	<0.099			160	570		31		8.3
TT-TP4-B4A	TT-TP4-B4A-6	2016-08-16	440-155720-1									
TT-TP4-L1	TT-TP4-L1-20151210	2015-12-10	440-130588-1									
TT-TP4-L1	TT-TP4-L1-20160204	2016-02-04	440-137358-1									
TT-TP4-L1	TT-TP4-L1-20160211	2016-02-11	440-138059-1									
TT-TP4-L1	TT-TP4-L1-20160218	2016-02-18	440-138657-1									
TT-TP4-L1	TT-TP4-L1-20160225	2016-02-25	440-139326-1									
TT-TP4-L1	TT-TP4-L1-20160303	2016-03-03	440-139965-1									
TT-TP4-L1	TT-TP4-L1-20160310	2016-03-10	440-140826-1									
TT-TP4-L1	TT-TP4-L1-20160317	2016-03-17	440-141827-1									
TT-TP4-L1	TT-TP4-L1-20160323	2016-03-23	440-142439-1									
TT-TP4-L1	TT-TP4-L1-20160331	2016-03-31	440-143078-1									
TT-TP4-L1	TT-TP4-L1-20160405	2016-04-05	440-143458-1									
TT-TP4-L1	TT-TP4-L1-20160420	2016-04-20	440-145023-1									
TT-TP4-L1	TT-TP4-L1-20160428	2016-04-28	440-145766-1									
TT-TP4-L1	TT-TP4-L1-20160505	2016-05-05	440-146524-1									

Report Data Summary Table
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Location	Sample	Date	SDG	Carbonate (as CO3) (mg/L) SM2320B	Chloride (as Cl) (mg/L) E300.0	Chlorate (ug/L) E300.1B	Perchlorate (mg/Kg) E314.0	Perchlorate (ug/L) E314.0	Bicarbonate ion as HCO3 (mg/L) SM2320B	Hydroxide as OH (mg/L) SM2320B	Alkalinity, Total (as CaCO3) (mg/L) SM2320B	Carbon, Total Organic (mg/Kg) SW9060	Carbon, Total Organic (mg/L) SM5310B	Total Dissolved Solids (Residue, Filterable) (mg/L) SM2540C	Nitrogen, Nitrate (as N) (mg/L) E300.0	Sulfate (as So4) (mg/L) E300.0	Antimony (mg/Kg) SW6020	Antimony (ug/L) SW6020	Arsenic (mg/Kg) SW6020	Arsenic (ug/L) SW6020	Barium (mg/Kg) SW6020	Barium (ug/L) SW6020	Beryllium (mg/Kg) SW6020	Beryllium (ug/L) SW6020	Boron (mg/Kg) SW6010B	Boron (mg/L) SW6010B	Cadmium (mg/Kg) SW6020	Cadmium (ug/L) SW6020	Calcium (mg/L) SW6010B	Calcium (mg/L) SW6010B_LCH
TT-TP4-L1	TT-TP4-L1-20160511	2016-05-11	440-147243-1					620						1500																	
TT-TP4-L1	TT-TP4-L1-20160519	2016-05-19	440-147992-1					420						1400																	
TT-TP4-L1	TT-TP4-L1-20160525	2016-05-25	440-148383-1					250						1200																	
TT-TP4-L1	TT-TP4-L1-20160602	2016-06-02	440-149036-1					180																							
TT-TP4-L1	TT-TP4-L1-20160608	2016-06-08	440-149621-1					130																							
TT-TP4-L1	TT-TP4-L1-20160622	2016-06-22	440-150775-1					250						1000																	
TT-TP4-L1	TT-TP4-L1-20160705	2016-07-05	440-151701-1					220						1200																	
TT-TP4-L1	TT-TP4-L1-20160727	2016-07-27	440-153790-1					310						1400																	
TT-TP4-L2	TT-TP4-L2-10	2015-03-25	440-105330-1		**0.39 Jq**	<10	2.0				40	<2500		200	69	2.1	<0.55		4.8		200		0.52		6.4		<0.27			7.2
TT-TP4-L2	TT-TP4-L2-14	2015-03-25	440-105330-1				1.2							240																	
TT-TP4-L2	TT-TP4-L2-18	2015-03-25	440-105330-1				1.5							350																	
TT-TP4-L2	TT-TP4-L2-2	2015-03-25	440-105330-1				4.2							100																	
TT-TP4-L2	TT-TP4-L2-20151210	2015-12-10	440-130588-1	**<2.4**	**150**			120000	480	<1.4	390		4.1	6500	500	1200															
TT-TP4-L2	TT-TP4-L2-20160204	2016-02-04	440-137358-1					120000						6600																	
TT-TP4-L2	TT-TP4-L2-20160211	2016-02-11	440-138059-1					110000																							
TT-TP4-L2	TT-TP4-L2-20160218	2016-02-18	440-138657-1					110000						6100																	
TT-TP4-L2	TT-TP4-L2-20160225	2016-02-25	440-139326-1					72000						5600																	
TT-TP4-L2	TT-TP4-L2-20160303	2016-03-03	440-139965-1					66000						5600																	
TT-TP4-L2	TT-TP4-L2-20160310	2016-03-10	440-140826-1					49000						6000																	
TT-TP4-L2	TT-TP4-L2-20160317	2016-03-17	440-141827-1					58000						6100																	
TT-TP4-L2	TT-TP4-L2-20160323	2016-03-23	440-142439-1					51000						5900																	
TT-TP4-L2	TT-TP4-L2-20160331	2016-03-31	440-143458-1					40000																							
TT-TP4-L2	TT-TP4-L2-20160405	2016-04-05	440-143458-1					37000						5800																	
TT-TP4-L2	TT-TP4-L2-20160420	2016-04-20	440-145023-1					27000																							
TT-TP4-L2	TT-TP4-L2-20160428	2016-04-28	440-145766-1					24000						4400																	
TT-TP4-L2	TT-TP4-L2-20160505	2016-05-05	440-146524-1											4200																	
TT-TP4-L2	TT-TP4-L2-20160511	2016-05-11	440-147243-1					15000						3900																	
TT-TP4-L2	TT-TP4-L2-20160519	2016-05-19	440-147992-1					10000						3300																	
TT-TP4-L2	TT-TP4-L2-20160525	2016-05-25	440-148383-1					8900						2900																	
TT-TP4-L2	TT-TP4-L2-20160602	2016-06-02	440-149036-1					6900																							
TT-TP4-L2	TT-TP4-L2-20160608	2016-06-08	440-149621-1					6700																							
TT-TP4-L2	TT-TP4-L2-20160622	2016-06-22	440-150775-1					5100						2200																	
TT-TP4-L2	TT-TP4-L2-20160705	2016-07-05	440-151701-1					4100						2000																	
TT-TP4-L2	TT-TP4-L2-20160727	2016-07-27	440-153790-1					3300						2000																	
TT-TP4-L2	TT-TP4-L2-22	2015-03-25	440-105330-1		**7.0 Jf**	23000 Jf, c	83 Jf, c				87	<2500		240	3.0 Jf	11	<0.56		13 Jf		46 J+c		0.32 Jq		8.8 Jf		<0.28			6.3 Jf
TT-TP4-L2	TT-TP4-L2-26	2015-03-25	440-105330-1				380							670																	

Report Data Summary Table
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Location	Sample	Date	SDG	Chromium, Hexavalent (mg/Kg) SW7199	Chromium, Hexavalent (ug/L) SW7199	Chromium, Total (mg/Kg) SW6020	Chromium, Total (ug/L) SW6020	Cobalt (mg/Kg) SW6020	Cobalt (ug/L) SW6020	Copper (mg/Kg) SW6020	Copper (ug/L) SW6020	Iron (mg/Kg) SW6010B	Iron (mg/L) SW6010B	Lead (mg/Kg) SW6020	Lead (ug/L) SW6020	Magnesium (mg/L) SW6010B	Magnesium (mg/L) SW6010B_LCH	Manganese (mg/Kg) SW6010B	Manganese (mg/L) SW6010B	Mercury (mg/Kg) SW7471A	Mercury (mg/L) SW7470A	Molybdenum (mg/Kg) SW6020	Molybdenum (ug/L) SW6020	Nickel (mg/Kg) SW6020	Nickel (ug/L) SW6020	Potassium (mg/L) SW6010B	Potassium (mg/L) SW6010B_LCH	Selenium (mg/Kg) SW6020	Selenium (ug/L) SW6020
TT-TP4-L1	TT-TP4-L1-20160511	2016-05-11	440-147243-1		<0.25																								
TT-TP4-L1	TT-TP4-L1-20160519	2016-05-19	440-147992-1		<0.25		<0.50																						
TT-TP4-L1	TT-TP4-L1-20160525	2016-05-25	440-148383-1		<0.25		<0.50																						
TT-TP4-L1	TT-TP4-L1-20160602	2016-06-02	440-149036-1		0.26 Jq																								
TT-TP4-L1	TT-TP4-L1-20160608	2016-06-08	440-149621-1		<0.25																								
TT-TP4-L1	TT-TP4-L1-20160622	2016-06-22	440-150775-1		<0.25																								
TT-TP4-L1	TT-TP4-L1-20160705	2016-07-05	440-151701-1		<0.25																								
TT-TP4-L1	TT-TP4-L1-20160727	2016-07-27	440-153790-1		<0.25																								
TT-TP4-L2	TT-TP4-L2-10	2015-03-25	440-105330-1	<0.44		13		6.8		15		18000		7.0			0.65	310		0.027		<0.55		15			0.48 Jq	<0.22	
TT-TP4-L2	TT-TP4-L2-14	2015-03-25	440-105330-1																										
TT-TP4-L2	TT-TP4-L2-18	2015-03-25	440-105330-1																										
TT-TP4-L2	TT-TP4-L2-2	2015-03-25	440-105330-1																										
TT-TP4-L2	TT-TP4-L2-20151210	2015-12-10	440-130588-1		3.3 J-e																								
TT-TP4-L2	TT-TP4-L2-20160204	2016-02-04	440-137358-1		1.1 J-c, q																								
TT-TP4-L2	TT-TP4-L2-20160211	2016-02-11	440-138059-1																										
TT-TP4-L2	TT-TP4-L2-20160218	2016-02-18	440-138657-1				3.7 Jq																						
TT-TP4-L2	TT-TP4-L2-20160225	2016-02-25	440-139326-1		15																								
TT-TP4-L2	TT-TP4-L2-20160303	2016-03-03	440-139965-1		20																								
TT-TP4-L2	TT-TP4-L2-20160310	2016-03-10	440-140826-1		12																								
TT-TP4-L2	TT-TP4-L2-20160317	2016-03-17	440-141827-1		7.7																								
TT-TP4-L2	TT-TP4-L2-20160323	2016-03-23	440-142439-1		<0.25																								
TT-TP4-L2	TT-TP4-L2-20160331	2016-03-31	440-143458-1																										
TT-TP4-L2	TT-TP4-L2-20160405	2016-04-05	440-143458-1		8.0																								
TT-TP4-L2	TT-TP4-L2-20160420	2016-04-20	440-145023-1		<0.25																								
TT-TP4-L2	TT-TP4-L2-20160428	2016-04-28	440-145766-1		<0.25																								
TT-TP4-L2	TT-TP4-L2-20160505	2016-05-05	440-146524-1		0.83 Jq		0.83 Jq																						
TT-TP4-L2	TT-TP4-L2-20160511	2016-05-11	440-147243-1		<0.25																								
TT-TP4-L2	TT-TP4-L2-20160519	2016-05-19	440-147992-1		1.8 Jq		<0.50																						
TT-TP4-L2	TT-TP4-L2-20160525	2016-05-25	440-148383-1		0.27 Jq		0.71 Jq																						
TT-TP4-L2	TT-TP4-L2-20160602	2016-06-02	440-149036-1																										
TT-TP4-L2	TT-TP4-L2-20160608	2016-06-08	440-149621-1		<0.25																								
TT-TP4-L2	TT-TP4-L2-20160622	2016-06-22	440-150775-1		<0.25																								
TT-TP4-L2	TT-TP4-L2-20160705	2016-07-05	440-151701-1		<0.25																								
TT-TP4-L2	TT-TP4-L2-20160727	2016-07-27	440-153790-1		<0.25																								
TT-TP4-L2	TT-TP4-L2-22	2015-03-25	440-105330-1	1.0 Jf		15 Jf		3.4		7.9		8500 J+c		4.3			0.75	140 J+c		0.013 Jq		<0.56		9.8			0.49 Jq	<0.23	
TT-TP4-L2	TT-TP4-L2-26	2015-03-25	440-105330-1																										

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Location	Sample	Date	SDG	Silver (mg/Kg) SW6020	Silver (ug/L) SW6020	Sodium (mg/L) SW6010B	Sodium (mg/L) SW6010B_LCH	Titanium (mg/Kg) SW6010B	Titanium (mg/L) SW6010B	Zinc (mg/Kg) SW6020	Zinc (ug/L) SW6020	pH (pH) SW9045C
TT-TP4-L1	TT-TP4-L1-20160511	2016-05-11	440-147243-1									
TT-TP4-L1	TT-TP4-L1-20160519	2016-05-19	440-147992-1									
TT-TP4-L1	TT-TP4-L1-20160525	2016-05-25	440-148383-1									
TT-TP4-L1	TT-TP4-L1-20160602	2016-06-02	440-149036-1									
TT-TP4-L1	TT-TP4-L1-20160608	2016-06-08	440-149621-1									
TT-TP4-L1	TT-TP4-L1-20160622	2016-06-22	440-150775-1									
TT-TP4-L1	TT-TP4-L1-20160705	2016-07-05	440-151701-1									
TT-TP4-L1	TT-TP4-L1-20160727	2016-07-27	440-153790-1									
TT-TP4-L2	TT-TP4-L2-10	2015-03-25	440-105330-1	0.12 Jq			83	750		35		8.53
TT-TP4-L2	TT-TP4-L2-14	2015-03-25	440-105330-1									
TT-TP4-L2	TT-TP4-L2-18	2015-03-25	440-105330-1									
TT-TP4-L2	TT-TP4-L2-2	2015-03-25	440-105330-1									
TT-TP4-L2	TT-TP4-L2-20151210	2015-12-10	440-130588-1									
TT-TP4-L2	TT-TP4-L2-20160204	2016-02-04	440-137358-1									
TT-TP4-L2	TT-TP4-L2-20160211	2016-02-11	440-138059-1									
TT-TP4-L2	TT-TP4-L2-20160218	2016-02-18	440-138657-1									
TT-TP4-L2	TT-TP4-L2-20160225	2016-02-25	440-139326-1									
TT-TP4-L2	TT-TP4-L2-20160303	2016-03-03	440-139965-1									
TT-TP4-L2	TT-TP4-L2-20160310	2016-03-10	440-140826-1									
TT-TP4-L2	TT-TP4-L2-20160317	2016-03-17	440-141827-1									
TT-TP4-L2	TT-TP4-L2-20160323	2016-03-23	440-142439-1									
TT-TP4-L2	TT-TP4-L2-20160331	2016-03-31	440-143458-1									
TT-TP4-L2	TT-TP4-L2-20160405	2016-04-05	440-143458-1									
TT-TP4-L2	TT-TP4-L2-20160420	2016-04-20	440-145023-1									
TT-TP4-L2	TT-TP4-L2-20160428	2016-04-28	440-145766-1									
TT-TP4-L2	TT-TP4-L2-20160505	2016-05-05	440-146524-1									
TT-TP4-L2	TT-TP4-L2-20160511	2016-05-11	440-147243-1									
TT-TP4-L2	TT-TP4-L2-20160519	2016-05-19	440-147992-1									
TT-TP4-L2	TT-TP4-L2-20160525	2016-05-25	440-148383-1									
TT-TP4-L2	TT-TP4-L2-20160602	2016-06-02	440-149036-1									
TT-TP4-L2	TT-TP4-L2-20160608	2016-06-08	440-149621-1									
TT-TP4-L2	TT-TP4-L2-20160622	2016-06-22	440-150775-1									
TT-TP4-L2	TT-TP4-L2-20160705	2016-07-05	440-151701-1									
TT-TP4-L2	TT-TP4-L2-20160727	2016-07-27	440-153790-1									
TT-TP4-L2	TT-TP4-L2-22	2015-03-25	440-105330-1	<0.11			60 J-c	430 J+c		18		8.86
TT-TP4-L2	TT-TP4-L2-26	2015-03-25	440-105330-1									

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Location	Sample	Date	SDG	Carbonate (as CO3) (mg/L) SM2320B	Chloride (as Cl) (mg/L) E300.0	Chlorate (ug/L) E300.1B	Perchlorate (mg/Kg) E314.0	Perchlorate (ug/L) E314.0	Bicarbonate ion as HCO3 (mg/L) SM2320B	Hydroxide as OH (mg/L) SM2320B	Alkalinity, Total (as CaCO3) (mg/L) SM2320B	Carbon, Total Organic (mg/Kg) SW9060	Carbon, Total Organic (mg/L) SM5310B	Total Dissolved Solids (Residue, Filterable) (mg/L) SM2540C	Nitrogen, Nitrate (as N) (mg/L) E300.0	Sulfate (as So4) (mg/L) E300.0	Antimony (mg/Kg) SW6020	Antimony (ug/L) SW6020	Arsenic (mg/Kg) SW6020	Arsenic (ug/L) SW6020	Barium (mg/Kg) SW6020	Barium (ug/L) SW6020	Beryllium (mg/Kg) SW6020	Beryllium (ug/L) SW6020	Boron (mg/Kg) SW6010B	Boron (mg/L) SW6010B	Cadmium (mg/Kg) SW6020	Cadmium (ug/L) SW6020	Calcium (mg/L) SW6010B	Calcium (mg/L) SW6010B_LCH
TT-TP4-L2	TT-TP4-L2-6	2015-03-25	440-105330-1				2.3							170																	
TT-TP4-L2A	TT-TP4-L2A-10	2016-08-16	440-155720-1		**1.3**	650	7.7				56	6700		180	5.1	5.8	<0.27		3.1		160		0.40		8.4		<0.25			7.9
TT-TP4-L2A	TT-TP4-L2A-14	2016-08-16	440-155720-1				0.41							390																	
TT-TP4-L2A	TT-TP4-L2A-18	2016-08-16	440-155720-1				0.58							190																	
TT-TP4-L2A	TT-TP4-L2A-2	2016-08-16	440-155720-1				0.78							65																	
TT-TP4-L2A	TT-TP4-L2A-22	2016-08-16	440-155720-1		**5.3**	14000 J-m	25 J+m				23	32000		130	10	14	<0.27 UJm		10		130 J+m		0.30 J-m		10		<0.25			8.1
TT-TP4-L2A	TT-TP4-L2A-26	2016-08-16	440-155720-1				170 J-m							1400																	
TT-TP4-L2A	TT-TP4-L2A-6	2016-08-16	440-155720-1				0.56							350																	
TT-TP4-M1	TT-TP4-M1-20151210	2015-12-10	440-130588-1	**<2.4**	**1500**	4500000		750000	180	<1.4	150		1.5	11000	18	1600		<2.5		100		31		<1.3		3.3		<1.3	400 J-c	
TT-TP4-M1	TT-TP4-M1-20160204	2016-02-04	440-137358-1					970000					1.6	11000																
TT-TP4-M1	TT-TP4-M1-20160211	2016-02-11	440-138059-1	**<2.4**		4700000		1100000	200	<1.4	160		1.6	12000				<2.5		110		36		<1.3		3.4		<1.3	400	
TT-TP4-M1	TT-TP4-M1-20160218	2016-02-18	440-138657-1					910000					1.7	11000																
TT-TP4-M1	TT-TP4-M1-20160225	2016-02-25	440-139326-1					690000					1.7	11000																
TT-TP4-M1	TT-TP4-M1-20160303	2016-03-03	440-139965-1					1000000					1.9	10000																
TT-TP4-M1	TT-TP4-M1-20160310	2016-03-10	440-140826-1	**<2.4**	**1500**	1700000		3400000	230	<1.4	190		2.6	13000	260	1100		<2.5		150		65		<1.3		15		<1.3	3800	
TT-TP4-M1	TT-TP4-M1-20160317	2016-03-17	440-141827-1					800000					2.5	8300																
TT-TP4-M1	TT-TP4-M1-20160324	2016-03-24	440-142556-1					550000					2.0	8200																
TT-TP4-M1	TT-TP4-M1-20160331	2016-03-31	440-143078-1					440000					2.2	6500																
TT-TP4-M1	TT-TP4-M1-20160405	2016-04-05	440-143458-1	**<2.4**	**750**	1300000		520000	250	<1.4	210		2.3	7500	57	1200		<2.5		170		22		<1.3		2.6		<1.3	200	
TT-TP4-M1	TT-TP4-M1-20160420	2016-04-20	440-145020-1					290000					2.1																	
TT-TP4-M1	TT-TP4-M1-20160427	2016-04-27	440-145639-1					370000					2.2	5900																
TT-TP4-M1	TT-TP4-M1-20160505	2016-05-05	440-146524-1	**<2.4**	**430**	1100000		220000	250	<1.4	200		2.0	4900	58	860		<0.50		180		24		<0.25		1.9		<0.25	130	
TT-TP4-M1	TT-TP4-M1-20160511	2016-05-11	440-147243-1					340000					1.9	5500																
TT-TP4-M1	TT-TP4-M1-20160519	2016-05-19	440-147992-1					76000					1.9	3100																
TT-TP4-M1	TT-TP4-M1-20160526	2016-05-26	440-148500-1					170000					2.0	4100																
TT-TP4-M1	TT-TP4-M1-20160602	2016-06-02	440-149036-1	**<2.4**	**360**	690000		2000000	230	<1.4	190		2.9	4300	91	760		<0.50		170		27		<0.25		1.7		<0.25	120	
TT-TP4-M1	TT-TP4-M1-20160609	2016-06-09	440-149732-1					230000					1.9	4200																
TT-TP4-M1	TT-TP4-M1-20160622	2016-06-22	440-150775-1					66000					1.6	2700																
TT-TP4-M1	TT-TP4-M1-20160706	2016-07-06	440-151885-1					62000					1.8	2400																
TT-TP4-M1	TT-TP4-M1-20160728	2016-07-28	440-153948-1	**<2.4**	**480**	1100000		200000	210	<1.4	170		1.7	5100	120	1100		<2.5		160		44		<1.3		1.8		<1.3	210	
TT-TP4-M2	TT-TP4-M2-20151210	2015-12-10	440-130588-1	**<2.4**	**1500**	4300000		890000	230	<1.4	190		1.7	11000	33	1500		<2.5		110		34		<1.3		3.3		<1.3	400 J-c	
TT-TP4-M2	TT-TP4-M2-20160204	2016-02-04	440-137358-1					870000					1.6	11000																
TT-TP4-M2	TT-TP4-M2-20160211	2016-02-11	440-138059-1	**<2.4**		4400000		940000	230	<1.4	190		1.5	11000				<2.5		110		53		<1.3		3.5		<1.3	400	
TT-TP4-M2	TT-TP4-M2-20160218	2016-02-18	440-138657-1					920000					2.2	11000																
TT-TP4-M2	TT-TP4-M2-20160225	2016-02-25	440-139326-1					860000					1.6	11000																
TT-TP4-M2	TT-TP4-M2-20160303	2016-03-03	440-139965-1					770000					1.9	11000																

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Location	Sample	Date	SDG	Chromium, Hexavalent (mg/Kg) SW7199	Chromium, Hexavalent (ug/L) SW7199	Chromium, Total (mg/Kg) SW6020	Chromium, Total (ug/L) SW6020	Cobalt (mg/Kg) SW6020	Cobalt (ug/L) SW6020	Copper (mg/Kg) SW6020	Copper (ug/L) SW6020	Iron (mg/Kg) SW6010B	Iron (mg/L) SW6010B	Lead (mg/Kg) SW6020	Lead (ug/L) SW6020	Magnesium (mg/L) SW6010B	Magnesium (mg/L) SW6010B_LCH	Manganese (mg/Kg) SW6010B	Manganese (mg/L) SW6010B	Mercury (mg/Kg) SW7471A	Mercury (mg/L) SW7470A	Molybdenum (mg/Kg) SW6020	Molybdenum (ug/L) SW6020	Nickel (mg/Kg) SW6020	Nickel (ug/L) SW6020	Potassium (mg/L) SW6010B	Potassium (mg/L) SW6010B_LCH	Selenium (mg/Kg) SW6020	Selenium (ug/L) SW6020
TT-TP4-L2	TT-TP4-L2-6	2015-03-25	440-105330-1																										
TT-TP4-L2A	TT-TP4-L2A-10	2016-08-16	440-155720-1	<0.19		15		5.9		12		16000		6.4			6.0	260		<0.015		<0.50		12			<3.7	<0.20	
TT-TP4-L2A	TT-TP4-L2A-14	2016-08-16	440-155720-1																										
TT-TP4-L2A	TT-TP4-L2A-18	2016-08-16	440-155720-1																										
TT-TP4-L2A	TT-TP4-L2A-2	2016-08-16	440-155720-1																										
TT-TP4-L2A	TT-TP4-L2A-22	2016-08-16	440-155720-1	<0.19		15 J-m		3.6		8.3 J-m		9100 J-m		4.5			1.3 Jsp	150		<0.015		0.55 Jsp		9.4 J-m			<3.7	<0.20	
TT-TP4-L2A	TT-TP4-L2A-26	2016-08-16	440-155720-1																										
TT-TP4-L2A	TT-TP4-L2A-6	2016-08-16	440-155720-1																										
TT-TP4-M1	TT-TP4-M1-20151210	2015-12-10	440-130588-1		19000 Je, c		18000 J-c		<2.5		<2.5		<0.050		<2.5	190 J-c			<0.050		<0.00010		40		<2.5	24 J-c			5.5 Jq
TT-TP4-M1	TT-TP4-M1-20160204	2016-02-04	440-137358-1		19000 J-c		16000																						
TT-TP4-M1	TT-TP4-M1-20160211	2016-02-11	440-138059-1				18000		<2.5		5.9 Jq		<0.10		<2.5	190			<0.10		<0.00010		43		5.0 Jq	30			5.3 Jq
TT-TP4-M1	TT-TP4-M1-20160218	2016-02-18	440-138657-1				18000																						
TT-TP4-M1	TT-TP4-M1-20160225	2016-02-25	440-139326-1		13000		15000																						
TT-TP4-M1	TT-TP4-M1-20160303	2016-03-03	440-139965-1		11000		11000																						
TT-TP4-M1	TT-TP4-M1-20160310	2016-03-10	440-140826-1		7400		7500		<2.5		5.3 Jq		<0.25		<2.5	1400			<0.25		0.00016 Jq		50		7.9 Jq	140			3.2 Jq
TT-TP4-M1	TT-TP4-M1-20160317	2016-03-17	440-141827-1		11000		9900																						
TT-TP4-M1	TT-TP4-M1-20160324	2016-03-24	440-142556-1		11000		10000																						
TT-TP4-M1	TT-TP4-M1-20160331	2016-03-31	440-143078-1		7900		7500																						
TT-TP4-M1	TT-TP4-M1-20160405	2016-04-05	440-143458-1		9800		6300		<2.5		73		<0.020		<2.5	95			<0.020		<0.00010		40		4.2 Jq	18			2.8 Jq
TT-TP4-M1	TT-TP4-M1-20160420	2016-04-20	440-145020-1		6600		6300																						
TT-TP4-M1	TT-TP4-M1-20160427	2016-04-27	440-145639-1		7100		6500																						
TT-TP4-M1	TT-TP4-M1-20160505	2016-05-05	440-146524-1		4900		4700		<0.50		<0.50		<0.010		<0.50	60			<0.010		0.00010 Jq		43		<0.50	13			2.5
TT-TP4-M1	TT-TP4-M1-20160511	2016-05-11	440-147243-1		5700		6800																						
TT-TP4-M1	TT-TP4-M1-20160519	2016-05-19	440-147992-1		2200		1900																						
TT-TP4-M1	TT-TP4-M1-20160526	2016-05-26	440-148500-1		3200		2700																						
TT-TP4-M1	TT-TP4-M1-20160602	2016-06-02	440-149036-1		3500		3500		<0.50		<0.50		<0.010		<0.50	53			<0.010		<0.00010		40		0.55 Jq	12			2.1
TT-TP4-M1	TT-TP4-M1-20160609	2016-06-09	440-149732-1		3500		3800																						
TT-TP4-M1	TT-TP4-M1-20160622	2016-06-22	440-150775-1		1000		980																						
TT-TP4-M1	TT-TP4-M1-20160706	2016-07-06	440-151885-1		1100		990																						
TT-TP4-M1	TT-TP4-M1-20160728	2016-07-28	440-153948-1		4700		4400		<2.5		<2.5		<0.010		<2.5	67			<0.010		<0.00010		39		<2.5	13			<2.5
TT-TP4-M2	TT-TP4-M2-20151210	2015-12-10	440-130588-1		18000 J-e		18000 J-c		<2.5		<2.5		<0.050		<2.5	180 J-c			<0.050		<0.00010		40		4.2 Jq	24 J-c			4.5 Jq
TT-TP4-M2	TT-TP4-M2-20160204	2016-02-04	440-137358-1		18000 J-c		16000																						
TT-TP4-M2	TT-TP4-M2-20160211	2016-02-11	440-138059-1				17000		<2.5		<3.9 Ua		<0.10		<2.5	190			<0.10		<0.00010		43		6.2 Jq	32			5.0 Jq
TT-TP4-M2	TT-TP4-M2-20160218	2016-02-18	440-138657-1				13000																						
TT-TP4-M2	TT-TP4-M2-20160225	2016-02-25	440-139326-1		18000		17000																						
TT-TP4-M2	TT-TP4-M2-20160303	2016-03-03	440-139965-1		15000		15000																						

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Location	Sample	Date	SDG	Silver (mg/Kg) SW6020	Silver (ug/L) SW6020	Sodium (mg/L) SW6010B	Sodium (mg/L) SW6010B_LCH	Titanium (mg/Kg) SW6010B	Titanium (mg/L) SW6010B	Zinc (mg/Kg) SW6020	Zinc (ug/L) SW6020	pH (pH) SW9045C
TT-TP4-L2	TT-TP4-L2-6	2015-03-25	440-105330-1									
TT-TP4-L2A	TT-TP4-L2A-10	2016-08-16	440-155720-1	<0.10			150	920		32		9.2
TT-TP4-L2A	TT-TP4-L2A-14	2016-08-16	440-155720-1									
TT-TP4-L2A	TT-TP4-L2A-18	2016-08-16	440-155720-1									
TT-TP4-L2A	TT-TP4-L2A-2	2016-08-16	440-155720-1									
TT-TP4-L2A	TT-TP4-L2A-22	2016-08-16	440-155720-1	<0.099			93 J+m	540 J+m		22 J-m		9.0
TT-TP4-L2A	TT-TP4-L2A-26	2016-08-16	440-155720-1									
TT-TP4-L2A	TT-TP4-L2A-6	2016-08-16	440-155720-1									
TT-TP4-M1	TT-TP4-M1-20151210	2015-12-10	440-130588-1		<2.5	1800 J-c			<0.013		<13	
TT-TP4-M1	TT-TP4-M1-20160204	2016-02-04	440-137358-1									
TT-TP4-M1	TT-TP4-M1-20160211	2016-02-11	440-138059-1		<2.5	2100			<0.025		<13	
TT-TP4-M1	TT-TP4-M1-20160218	2016-02-18	440-138657-1									
TT-TP4-M1	TT-TP4-M1-20160225	2016-02-25	440-139326-1									
TT-TP4-M1	TT-TP4-M1-20160303	2016-03-03	440-139965-1									
TT-TP4-M1	TT-TP4-M1-20160310	2016-03-10	440-140826-1		<2.5	9900			<0.063		<13	
TT-TP4-M1	TT-TP4-M1-20160317	2016-03-17	440-141827-1									
TT-TP4-M1	TT-TP4-M1-20160324	2016-03-24	440-142556-1									
TT-TP4-M1	TT-TP4-M1-20160331	2016-03-31	440-143078-1									
TT-TP4-M1	TT-TP4-M1-20160405	2016-04-05	440-143458-1		<2.5	1200			<0.0050		41 Jq	
TT-TP4-M1	TT-TP4-M1-20160420	2016-04-20	440-145020-1									
TT-TP4-M1	TT-TP4-M1-20160427	2016-04-27	440-145639-1									
TT-TP4-M1	TT-TP4-M1-20160505	2016-05-05	440-146524-1		<0.50	910			<0.0025		<2.5	
TT-TP4-M1	TT-TP4-M1-20160511	2016-05-11	440-147243-1									
TT-TP4-M1	TT-TP4-M1-20160519	2016-05-19	440-147992-1									
TT-TP4-M1	TT-TP4-M1-20160526	2016-05-26	440-148500-1									
TT-TP4-M1	TT-TP4-M1-20160602	2016-06-02	440-149036-1		<0.50	840			<0.0025		3.2 Jq	
TT-TP4-M1	TT-TP4-M1-20160609	2016-06-09	440-149732-1									
TT-TP4-M1	TT-TP4-M1-20160622	2016-06-22	440-150775-1									
TT-TP4-M1	TT-TP4-M1-20160706	2016-07-06	440-151885-1									
TT-TP4-M1	TT-TP4-M1-20160728	2016-07-28	440-153948-1		<2.5	910			<0.0025		<13	
TT-TP4-M2	TT-TP4-M2-20151210	2015-12-10	440-130588-1		<2.5	1900 J-c			<0.013		<13	
TT-TP4-M2	TT-TP4-M2-20160204	2016-02-04	440-137358-1									
TT-TP4-M2	TT-TP4-M2-20160211	2016-02-11	440-138059-1		<2.5	2200			<0.025		<13	
TT-TP4-M2	TT-TP4-M2-20160218	2016-02-18	440-138657-1									
TT-TP4-M2	TT-TP4-M2-20160225	2016-02-25	440-139326-1									
TT-TP4-M2	TT-TP4-M2-20160303	2016-03-03	440-139965-1									

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Location	Sample	Date	SDG	Carbonate (as CO3) (mg/L) SM2320B	Chloride (as Cl) (mg/L) E300.0	Chlorate (ug/L) E300.1B	Perchlorate (mg/Kg) E314.0	Perchlorate (ug/L) E314.0	Bicarbonate ion as HCO3 (mg/L) SM2320B	Hydroxide as OH (mg/L) SM2320B	Alkalinity, Total (as CaCO3) (mg/L) SM2320B	Carbon, Total Organic (mg/Kg) SW9060	Carbon, Total Organic (mg/L) SM5310B	Total Dissolved Solids (Residue, Filterable) (mg/L) SM2540C	Nitrogen, Nitrate (as N) (mg/L) E300.0	Sulfate (as So4) (mg/L) E300.0	Antimony (mg/Kg) SW6020	Antimony (ug/L) SW6020	Arsenic (mg/Kg) SW6020	Arsenic (ug/L) SW6020	Barium (mg/Kg) SW6020	Barium (ug/L) SW6020	Beryllium (mg/Kg) SW6020	Beryllium (ug/L) SW6020	Boron (mg/Kg) SW6010B	Boron (mg/L) SW6010B	Cadmium (mg/Kg) SW6020	Cadmium (ug/L) SW6020	Calcium (mg/L) SW6010B	Calcium (mg/L) SW6010B_LCH
TT-TP4-M2	TT-TP4-M2-20160310	2016-03-10	440-140826-1	<2.4	1000	3000000		540000	230	<1.4	190		2.0	9600	110	1500		<2.5		130		30		<1.3		19		<1.3	1700	
TT-TP4-M2	TT-TP4-M2-20160317	2016-03-17	440-141827-1					530000					2.1	7800																
TT-TP4-M2	TT-TP4-M2-20160324	2016-03-24	440-142556-1					370000					1.9	6800																
TT-TP4-M2	TT-TP4-M2-20160331	2016-03-31	440-143078-1					370000					2.3	5800																
TT-TP4-M2	TT-TP4-M2-20160405	2016-04-05	440-143458-1	<2.4	480	1200000		300000	260	<1.4	210		2.5	5200	52	1100		<2.5		170		24		<1.3		2.6		<1.3	150	
TT-TP4-M2	TT-TP4-M2-20160420	2016-04-20	440-145020-1					230000					2.1																	
TT-TP4-M2	TT-TP4-M2-20160427	2016-04-27	440-145639-1					190000					2.2	3800																
TT-TP4-M2	TT-TP4-M2-20160505	2016-05-05	440-146524-1	<2.4	280	600000		140000	260	<1.4	220		3.0	3400	62	940		<0.50		210		21		<0.25		1.7		<0.25	79	
TT-TP4-M2	TT-TP4-M2-20160511	2016-05-11	440-147243-1					120000					2.3	3100																
TT-TP4-M2	TT-TP4-M2-20160519	2016-05-19	440-147992-1					110000					2.1	3200																
TT-TP4-M2	TT-TP4-M2-20160526	2016-05-26	440-148500-1					85000					2.2	2700																
TT-TP4-M2	TT-TP4-M2-20160602	2016-06-02	440-149036-1	<2.4	210	340000		79000	250	<1.4	210		2.0	2400	26	820		<0.50		230		18		<0.25		1.3		<0.25	47	
TT-TP4-M2	TT-TP4-M2-20160608	2016-06-08	440-149621-1					70000					2.0	2300																
TT-TP4-M2	TT-TP4-M2-20160622	2016-06-22	440-150775-1					51000					1.6	2100																
TT-TP4-M2	TT-TP4-M2-20160705	2016-07-05	440-151701-1					63000					1.8	2200																
TT-TP4-M2	TT-TP4-M2-20160728	2016-07-28	440-153948-1	<2.4	290	450000		93000	220	<1.4	180		1.8	3500	100	840		<2.5		140		41		<1.3		1.1		<1.3	80	
TT-TP4-M3	TT-TP4-M3-20151209	2015-12-09	440-130543-1	<2.4	1500	4400000		760000	160	<1.4	130		1.6	10000	16	1400		<2.5		110		34		<1.3		3.2		<1.3	420	
TT-TP4-M3	TT-TP4-M3-20160204	2016-02-04	440-137358-1					800000 J-c					1.5	11000																
TT-TP4-M3	TT-TP4-M3-20160211	2016-02-11	440-138059-1	<2.4		4500000 J-c		820000 J-c	170	<1.4	140		1.5	11000				<2.5		110		34		<1.3		3.4		<1.3	390 J+c	
TT-TP4-M3	TT-TP4-M3-20160218	2016-02-18	440-138657-1					780000 Jc					1.5	11000																
TT-TP4-M3	TT-TP4-M3-20160225	2016-02-25	440-139326-1					620000					1.5	12000																
TT-TP4-M3	TT-TP4-M3-20160303	2016-03-03	440-139965-1					680000					1.9	11000																
TT-TP4-M3	TT-TP4-M3-20160310	2016-03-10	440-140826-1	<2.4	1200	4700000 J-c		620000 J-c	180	<1.4	150		2.0	11000	36 J-e, c	1600		<5.0		110		33		<2.5		18 J+c		<2.5	2100 Jc	
TT-TP4-M3	TT-TP4-M3-20160317	2016-03-17	440-141827-1					780000 J-c					1.4	11000																
TT-TP4-M3	TT-TP4-M3-20160324	2016-03-24	440-142556-1					580000 J-c					1.5	11000																
TT-TP4-M3	TT-TP4-M3-20160331	2016-03-31	440-143078-1					600000 Jc					1.5	11000																
TT-TP4-M3	TT-TP4-M3-20160405	2016-04-05	440-143458-1	<2.4	1000 J-c	3600000 J+c		570000 J-c	200	<1.4	160		1.6 Jf	11000	160 Jc	1400 J-c		<2.5		100		33		<1.3		3.9		<1.3	420 J+c	
TT-TP4-M3	TT-TP4-M3-20160420	2016-04-20	440-145020-1					410000 J+c					1.8																	
TT-TP4-M3	TT-TP4-M3-20160427	2016-04-27	440-145639-1					370000 Jc					1.9	8600																
TT-TP4-M3	TT-TP4-M3-20160505	2016-05-05	440-146524-1	<2.4	670 J-c	1700000 Jc, f		310000 J-c	300	<1.4	240		2.0	7700	210 J-c	1500 J-c		<2.5		130 J+c		27		<1.3		3.3 J-c		<1.3	240 J-c	
TT-TP4-M3	TT-TP4-M3-20160511	2016-05-11	440-147243-1					270000 J-c					2.3 J+c	7100																
TT-TP4-M3	TT-TP4-M3-20160519	2016-05-19	440-147992-1					270000 J-c					2.0	6300																
TT-TP4-M3	TT-TP4-M3-20160526	2016-05-26	440-148500-1					240000 J+c					2.2	6200																
TT-TP4-M3	TT-TP4-M3-20160602	2016-06-02	440-149036-1	<2.4	410 J-c	1000000 J+c		200000 J+c	310	<1.4	250		2.2	5800	150 Jc	1300 J-c		<0.50		170		23		<0.50		2.6		<0.25	150 J-c	
TT-TP4-M3	TT-TP4-M3-20160609	2016-06-09	440-149732-1					190000					2.0	5000																
TT-TP4-M3	TT-TP4-M3-20160622	2016-06-22	440-150775-1					170000					1.6	5300																

Report Data Summary Table
Soil Flushing Treatability Study
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Location	Sample	Date	SDG	Chromium, Hexavalent (mg/Kg) SW7199	Chromium, Hexavalent (ug/L) SW7199	Chromium, Total (mg/Kg) SW6020	Chromium, Total (ug/L) SW6020	Cobalt (mg/Kg) SW6020	Cobalt (ug/L) SW6020	Copper (mg/Kg) SW6020	Copper (ug/L) SW6020	Iron (mg/Kg) SW6010B	Iron (mg/L) SW6010B	Lead (mg/Kg) SW6020	Lead (ug/L) SW6020	Magnesium (mg/L) SW6010B	Magnesium (mg/L) SW6010B_LCH	Manganese (mg/Kg) SW6010B	Manganese (mg/L) SW6010B	Mercury (mg/Kg) SW7471A	Mercury (mg/L) SW7470A	Molybdenum (mg/Kg) SW6020	Molybdenum (ug/L) SW6020	Nickel (mg/Kg) SW6020	Nickel (ug/L) SW6020	Potassium (mg/L) SW6010B	Potassium (mg/L) SW6010B_LCH	Selenium (mg/Kg) SW6020	Selenium (ug/L) SW6020
TT-TP4-M2	TT-TP4-M2-20160310	2016-03-10	440-140826-1		13000		12000		<2.5		3.1 Jq		<0.25		<2.5	790			<0.25		<0.00010		53		3.1 Jq	130			4.1 Jq
TT-TP4-M2	TT-TP4-M2-20160317	2016-03-17	440-141827-1		10000		10000																						
TT-TP4-M2	TT-TP4-M2-20160324	2016-03-24	440-142556-1		7800		7900																						
TT-TP4-M2	TT-TP4-M2-20160331	2016-03-31	440-143078-1		6300		5800																						
TT-TP4-M2	TT-TP4-M2-20160405	2016-04-05	440-143458-1		8400		5100		<2.5		5.5 Jq		0.010 Jq		<2.5	65			<0.010		<0.00010		64		4.2 Jq	16			<2.5
TT-TP4-M2	TT-TP4-M2-20160420	2016-04-20	440-145020-1		4300 J-e		3600																						
TT-TP4-M2	TT-TP4-M2-20160427	2016-04-27	440-145639-1		3600		3500																						
TT-TP4-M2	TT-TP4-M2-20160505	2016-05-05	440-146524-1		2900		2800		<0.50		0.60 Jq		<0.010		<0.50	35			<0.010		<0.00010		57		<0.50	11			2.6
TT-TP4-M2	TT-TP4-M2-20160511	2016-05-11	440-147243-1		3000		2300																						
TT-TP4-M2	TT-TP4-M2-20160519	2016-05-19	440-147992-1		2800		2300																						
TT-TP4-M2	TT-TP4-M2-20160526	2016-05-26	440-148500-1		1800		1600																						
TT-TP4-M2	TT-TP4-M2-20160602	2016-06-02	440-149036-1		1700		1700		<0.50		<0.50		<0.010		<0.50	22			<0.010		<0.00010		50		0.56 Jq	8.1			2.0
TT-TP4-M2	TT-TP4-M2-20160608	2016-06-08	440-149621-1		1500		1500																						
TT-TP4-M2	TT-TP4-M2-20160622	2016-06-22	440-150775-1		1100		1000																						
TT-TP4-M2	TT-TP4-M2-20160705	2016-07-05	440-151701-1		950		900																						
TT-TP4-M2	TT-TP4-M2-20160728	2016-07-28	440-153948-1		2100		2100		<2.5		<2.5		<0.010		<2.5	36			<0.010		<0.00010		27		<2.5	11			<2.5
TT-TP4-M3	TT-TP4-M3-20151209	2015-12-09	440-130543-1		18000 J-e		19000		<2.5		<2.5		<0.050		<2.5	190			<0.050		<0.00010		42		<2.5	25			4.1 Jq
TT-TP4-M3	TT-TP4-M3-20160204	2016-02-04	440-137358-1		19000 J-c		17000 J+c																						
TT-TP4-M3	TT-TP4-M3-20160211	2016-02-11	440-138059-1				18000 J+c		<2.5		9.9 Jq		<0.10		<2.5	200 J+c			<0.10		<0.00010		44		4.9 Jq	28			5.4 Jq
TT-TP4-M3	TT-TP4-M3-20160218	2016-02-18	440-138657-1				13000 Jc																						
TT-TP4-M3	TT-TP4-M3-20160225	2016-02-25	440-139326-1		20000		18000 J-c																						
TT-TP4-M3	TT-TP4-M3-20160303	2016-03-03	440-139965-1		19000 J-c		18000 J+c																						
TT-TP4-M3	TT-TP4-M3-20160310	2016-03-10	440-140826-1		18000 J+c		17000 J-c		<5.0		<5.0		<0.25		<5.0	1000 J+c			<0.25		0.00013 Jq		44		<5.0	140 J+c			5.4 Jq
TT-TP4-M3	TT-TP4-M3-20160317	2016-03-17	440-141827-1		20000 J-c		17000 J-c																						
TT-TP4-M3	TT-TP4-M3-20160324	2016-03-24	440-142556-1		17000 J-c		17000 J-c																						
TT-TP4-M3	TT-TP4-M3-20160331	2016-03-31	440-143078-1		16000 J-c		16000 J-c																						
TT-TP4-M3	TT-TP4-M3-20160405	2016-04-05	440-143458-1		15000 J-c		14000 Jc		<2.5		6.3 Jq		0.060		<2.5	180 J+c			<0.010		<0.00010		43		6.6 Jq	32			<2.5
TT-TP4-M3	TT-TP4-M3-20160420	2016-04-20	440-145020-1		13000 J-c		11000 J-c																						
TT-TP4-M3	TT-TP4-M3-20160427	2016-04-27	440-145639-1		11000 J-c		10000 J-c																						
TT-TP4-M3	TT-TP4-M3-20160505	2016-05-05	440-146524-1		7400		8200 J+c		<2.5		<2.5		0.023 Jq		<2.5	120 J-c			<0.020		<0.00010		47		<2.5	22 J-c			7.4 Jq
TT-TP4-M3	TT-TP4-M3-20160511	2016-05-11	440-147243-1		6400		6800 J-c																						
TT-TP4-M3	TT-TP4-M3-20160519	2016-05-19	440-147992-1		6300 J-c		5900 J-c																						
TT-TP4-M3	TT-TP4-M3-20160526	2016-05-26	440-148500-1		6000 J-c		6600 J-c																						
TT-TP4-M3	TT-TP4-M3-20160602	2016-06-02	440-149036-1		5100 J-c		5000 Jc		<0.50		0.53 Jq		0.017 Jq		<0.50	72 J-c			<0.010		<0.00010		44		0.61 Jq	17			2.5
TT-TP4-M3	TT-TP4-M3-20160609	2016-06-09	440-149732-1		4700 J-c		4900 Jc																						
TT-TP4-M3	TT-TP4-M3-20160622	2016-06-22	440-150775-1		3900 J-c		4000 J-c																						

Report Data Summary Table
Soil Flushing Treatability Study
Comprehensive

Location	Sample	Date	SDG	Silver (mg/Kg) SW6020	Silver (ug/L) SW6020	Sodium (mg/L) SW6010B	Sodium (mg/L) SW6010B_LCH	Titanium (mg/Kg) SW6010B	Titanium (mg/L) SW6010B	Zinc (mg/Kg) SW6020	Zinc (ug/L) SW6020	pH (pH) SW9045C
TT-TP4-M2	TT-TP4-M2-20160310	2016-03-10	440-140826-1		<2.5	9700			<0.063		<13	
TT-TP4-M2	TT-TP4-M2-20160317	2016-03-17	440-141827-1									
TT-TP4-M2	TT-TP4-M2-20160324	2016-03-24	440-142556-1									
TT-TP4-M2	TT-TP4-M2-20160331	2016-03-31	440-143078-1									
TT-TP4-M2	TT-TP4-M2-20160405	2016-04-05	440-143458-1		<2.5	1200			<0.0025		33 Jq	
TT-TP4-M2	TT-TP4-M2-20160420	2016-04-20	440-145020-1									
TT-TP4-M2	TT-TP4-M2-20160427	2016-04-27	440-145639-1									
TT-TP4-M2	TT-TP4-M2-20160505	2016-05-05	440-146524-1		<0.50	750			<0.0025		<2.5	
TT-TP4-M2	TT-TP4-M2-20160511	2016-05-11	440-147243-1									
TT-TP4-M2	TT-TP4-M2-20160519	2016-05-19	440-147992-1									
TT-TP4-M2	TT-TP4-M2-20160526	2016-05-26	440-148500-1									
TT-TP4-M2	TT-TP4-M2-20160602	2016-06-02	440-149036-1		<0.50	610			<0.0025		<2.5	
TT-TP4-M2	TT-TP4-M2-20160608	2016-06-08	440-149621-1									
TT-TP4-M2	TT-TP4-M2-20160622	2016-06-22	440-150775-1									
TT-TP4-M2	TT-TP4-M2-20160705	2016-07-05	440-151701-1									
TT-TP4-M2	TT-TP4-M2-20160728	2016-07-28	440-153948-1		<2.5	730			<0.0025		<13	
TT-TP4-M3	TT-TP4-M3-20151209	2015-12-09	440-130543-1		<2.5	1800			<0.013		<13	
TT-TP4-M3	TT-TP4-M3-20160204	2016-02-04	440-137358-1									
TT-TP4-M3	TT-TP4-M3-20160211	2016-02-11	440-138059-1		<2.5	2000 J+c			<0.025		<13	
TT-TP4-M3	TT-TP4-M3-20160218	2016-02-18	440-138657-1									
TT-TP4-M3	TT-TP4-M3-20160225	2016-02-25	440-139326-1									
TT-TP4-M3	TT-TP4-M3-20160303	2016-03-03	440-139965-1									
TT-TP4-M3	TT-TP4-M3-20160310	2016-03-10	440-140826-1		<5.0	10000 J+c			<0.063		<250 UJc	
TT-TP4-M3	TT-TP4-M3-20160317	2016-03-17	440-141827-1									
TT-TP4-M3	TT-TP4-M3-20160324	2016-03-24	440-142556-1									
TT-TP4-M3	TT-TP4-M3-20160331	2016-03-31	440-143078-1									
TT-TP4-M3	TT-TP4-M3-20160405	2016-04-05	440-143458-1		<2.5	1900 J+c			<0.0025		<13	
TT-TP4-M3	TT-TP4-M3-20160420	2016-04-20	440-145020-1									
TT-TP4-M3	TT-TP4-M3-20160427	2016-04-27	440-145639-1									
TT-TP4-M3	TT-TP4-M3-20160505	2016-05-05	440-146524-1		<2.5	1500 J-c			<0.0050		<13	
TT-TP4-M3	TT-TP4-M3-20160511	2016-05-11	440-147243-1									
TT-TP4-M3	TT-TP4-M3-20160519	2016-05-19	440-147992-1									
TT-TP4-M3	TT-TP4-M3-20160526	2016-05-26	440-148500-1									
TT-TP4-M3	TT-TP4-M3-20160602	2016-06-02	440-149036-1		<0.50	1100 J-c			<0.0025		<2.5	
TT-TP4-M3	TT-TP4-M3-20160609	2016-06-09	440-149732-1									
TT-TP4-M3	TT-TP4-M3-20160622	2016-06-22	440-150775-1									

Report Data Summary Table
Soil Flushing Treatability Study
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Location	Sample	Date	SDG	Carbonate (as CO3) (mg/L) SM2320B	Chloride (as Cl) (mg/L) E300.0	Chlorate (ug/L) E300.1B	Perchlorate (mg/Kg) E314.0	Perchlorate (ug/L) E314.0	Bicarbonate ion as HCO3 (mg/L) SM2320B	Hydroxide as OH (mg/L) SM2320B	Alkalinity, Total (as CaCO3) (mg/L) SM2320B	Carbon, Total Organic (mg/Kg) SW9060	Carbon, Total Organic (mg/L) SM5310B	Total Dissolved Solids (Residue, Filterable) (mg/L) SM2540C	Nitrogen, Nitrate (as N) (mg/L) E300.0	Sulfate (as So4) (mg/L) E300.0	Antimony (mg/Kg) SW6020	Antimony (ug/L) SW6020	Arsenic (mg/Kg) SW6020	Arsenic (ug/L) SW6020	Barium (mg/Kg) SW6020	Barium (ug/L) SW6020	Beryllium (mg/Kg) SW6020	Beryllium (ug/L) SW6020	Boron (mg/Kg) SW6010B	Boron (mg/L) SW6010B	Cadmium (mg/Kg) SW6020	Cadmium (ug/L) SW6020	Calcium (mg/L) SW6010B	Calcium (mg/L) SW6010B_LCH
TT-TP4-M3	TT-TP4-M3-20160706	2016-07-06	440-151885-1					250000 J-c					1.9	6400																	
TT-TP4-M3	TT-TP4-M3-20160728	2016-07-28	440-153948-1	<2.4	**830 J+m**	2300000		370000	230	<1.4	190		1.6	8400	180 J-m	1300 J+m		<5.0		130		42		<2.5		3.0		<2.5	260 J-m	

Report Data Summary Table
Soil Flushing Treatability Study
Comprehensive

Location	Sample	Date	SDG	Chromium, Hexavalent (mg/Kg) SW7199	Chromium, Hexavalent (ug/L) SW7199	Chromium, Total (mg/Kg) SW6020	Chromium, Total (ug/L) SW6020	Cobalt (mg/Kg) SW6020	Cobalt (ug/L) SW6020	Copper (mg/Kg) SW6020	Copper (ug/L) SW6020	Iron (mg/Kg) SW6010B	Iron (mg/L) SW6010B	Lead (mg/Kg) SW6020	Lead (ug/L) SW6020	Magnesium (mg/L) SW6010B	Magnesium (mg/L) SW6010B_LCH	Manganese (mg/Kg) SW6010B	Manganese (mg/L) SW6010B	Mercury (mg/Kg) SW7471A	Mercury (mg/L) SW7470A	Molybdenum (mg/Kg) SW6020	Molybdenum (ug/L) SW6020	Nickel (mg/Kg) SW6020	Nickel (ug/L) SW6020	Potassium (mg/L) SW6010B	Potassium (mg/L) SW6010B_LCH	Selenium (mg/Kg) SW6020	Selenium (ug/L) SW6020
TT-TP4-M3	TT-TP4-M3-20160706	2016-07-06	440-151885-1		5600		5300 J+c																						
TT-TP4-M3	TT-TP4-M3-20160728	2016-07-28	440-153948-1		10000 J-m		10000 J-m		<5.0		<5.0		<0.10		<5.0	130 J-m			<0.10		<0.00010		48		<5.0	21			<5.0

Report Data Summary Table
Soil Flushing Treatability Study
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Location	Sample	Date	SDG	Silver (mg/Kg) SW6020	Silver (ug/L) SW6020	Sodium (mg/L) SW6010B	Sodium (mg/L) SW6010B_LCH	Titanium (mg/Kg) SW6010B	Titanium (mg/L) SW6010B	Zinc (mg/Kg) SW6020	Zinc (ug/L) SW6020	pH (pH) SW9045C
TT-TP4-M3	TT-TP4-M3-20160706	2016-07-06	440-151885-1									
TT-TP4-M3	TT-TP4-M3-20160728	2016-07-28	440-153948-1		<5.0	1600 J-m			<0.025		<25	

Appendix E
Data Validation Summary Report

Data Validation Summary Report
(DVSR ID: TetraTech-M05-2017rev1)
Soil Flushing Treatability Study
Nevada Environmental Response Trust Site
Henderson, Nevada

PREPARED FOR

Nevada Environmental Response Trust
35 E. Wacker Drive, Suite 1550
Chicago, IL 60601

PRESENTED BY

Tetra Tech, Inc.
150 South Fourth Street, Unit A
Henderson, NV 89015

June 15, 2017

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LIST OF ACRONYMS/ABBREVIATIONS

Acronyms/Abbreviations	Definition
ADR	Automated Data Review
CCB	continuing calibration blank
COD	chemical oxygen demand
DQO	data quality objectives
DUP	duplicate
DVSR	data validation summary report
EB	equipment blank
FD	field duplicate
ICB	initial calibration blank
LCS/LCSD	laboratory control sample / laboratory control sample duplicate
MDL	method detection limit
mg/L	milligram per liter
MS/MSD	matrix spike / matrix spike duplicate
%D	percent difference
%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
QC	quality control
RL	reporting limit
RPD	relative percent difference
SDG	sample delivery group
SQL	sample quantitation limit
Tetra Tech	Tetra Tech, Inc.
TDS	total dissolved solids
TOC	total organic carbon
USEPA	United States Environmental Protection Agency
µg/L	micrograms per liter

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 Soil Flushing Treatability Study, located in Clark County, Nevada. Tetra Tech performed the treatability study, which included the collection and analyses of environmental soil and water samples for the project. Tetra Tech collected additional quality control (QC) samples used to aid in assessing data quality.

The Automated Data Review Software (ADR) was used to perform qualifier assignments to the data results for the treatability study data set. The ADR software was purchased from the commercial vendor Laboratory Data Consultants and has been vetted by various government and commercial organizations. The ADR software was configured to meet the NERT protocols and validation practices. In order to verify the quality of the ADR qualifier assignments a parallel manual validation was performed on several data packages. The results of the comparison showed that the ADR software was performing in a manner consistent with the manual validation and the NERT validation protocols.

The ADR software allows qualifier assignments to be attached to data based on how the software is programed. The software is programed to perform qualifier assignments in a manner that is protective to the environment and will assign qualifiers based on preset limits. The programing also follows the National Functional Guidelines (NFGs) and the specific Nevada Division of Environmental Protection (NDEP) validation guidance documents. The ADR software output data tables (located in Appendix E.1) contain the raw data from the electronic validation which is then reviewed to determine the final qualifier assignments. The review process uses professional judgement and NFG guidance to determine the final qualifiers. The final qualifiers are added to the database and are presented in the DVSR tables. Therefore, there will be some qualifiers in the ADR raw data that are excluded from the final data tables. After professional review, their inclusion was not warranted.

Test America, Inc. and subcontracted laboratories provided laboratory analytical services. The analyses were performed by the methods shown in Table 1 (located at the end of this report).

The lab assigned job numbers or sample delivery groups (SDGs) to all samples. The samples are associated with quality assurance and quality control (QA/QC) samples designed to document the data quality of the samples in each sampling round or within an SDG. Appendix E.1 contains all of the ADR output files describing all of the qualified data.

The laboratory analytical data were verified and validated in accordance with procedures described in the Nevada Division of Environmental Protection (NDEP) *Data Verification and Validation Requirements - Supplement April, 2009* established for the BMI Plant Sites and Common Areas Projects, Henderson, Nevada and correspondence by NDEP personnel. Samples were validated to stage 2A. The analytical data were evaluated for QA/QC based on the following documents: *Quality Assurance Project Plan (QAPP),* Revision 1, July 18 2014; NDEP *Revised Guidance on Qualifying Data due to Blank Contamination for the BMI Complex and Common Areas*, January 5 2012; *National Functional Guidelines for Inorganic Superfund Data Review, August 2014*; *National Functional Guidelines for Superfund Organic Methods Data Review, August 2014;* and the *EPA SW 846 Third Edition, Test Methods for Evaluating Solid Waste,* update I, July 1992; update IIA, August 1993; update II, September 1994; update IIB, January 1995; update III, December 1996; update IV, February 2007. The Data Validation Stage 2A Checklist Summary reports are compiled in Appendix E.2. The data packages for this project are provided in Appendix E.3. Additionally, the DVSR Access Database deliverable that is aligned with the NDEP guidelines and requirements found in the June 5, 2013 NEPA guidance “Guidance on Unified Chemical Electronic Data Deliverable Format” is provided as Appendix E.4.

This report summarizes the QA/QC evaluation of the data according to precision, accuracy, representativeness, completeness, comparability, 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.

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 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 duplicates (FDs), and matrix spike/matrix spike duplicates (MS/MSDs). Laboratory QA/QC samples include method blanks, laboratory control samples/laboratory control sample duplicates (LCS/LCSDs), 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 initial calibrations and RPD from the concentrations of the spiked compounds for each sample in the MS/MSD pair. In the absence of an MS/MSD pair, a laboratory duplicate or LCS/LCSD pair can be analyzed as an alternative means of assessing precision. An additional measure of sampling precision was obtained by collecting and analyzing field duplicate samples, which were compared using the RPD result as the evaluation criteria.

MS and MSD samples are field samples 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 particular environmental matrix. The LCS sample is spiked with the same target analytes as the MS/MSD using and 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 analyzed also. 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. 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 LCS/LCSD indicates imprecision. Imprecision is the variance in the consistency with which the laboratory arrives at a particular reported result. The actual analyte concentration may be higher or lower than the reported result.

Possible causes of poor precision include sample matrix interference, improper sample collection or handling, inconsistent sample preparation, instrument column fouling, and poor instrument stability. In duplicate pairs, results maybe 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 a given 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 LCSD. 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 of MS and LCS analyses.

Percent recovery (%R) is calculated using the following equation:

$$\%R = (A-B)/C \times 100$$

Where:
A = measured concentration in the spiked sample
B = measured concentration of the spike compound in the unspiked sample
C = concentration of the spike

The percent recovery of each analyte spiked in MS/MSD samples and LCS/LCSD was evaluated with the acceptance criteria specified by the QAPP 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/or analyzed are method blanks, calibration blanks, and EBs.

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 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 and measure efficiency of the decontamination procedure. EBs were collected and analyzed for contaminants of concern.

Contaminants found in both the environmental sample and the blank sample are assumed to be laboratory artifacts if both values are less than the PQL or if a sample result and blank contaminant value were greater than the PQL and less than 10 times the blank contaminant value. The blanks and associated samples were evaluated according to the NDEP *BMI Plant Sites and Common Areas Projects, Henderson, Nevada, Revised Guidance on Qualifying Data due to Blank Contamination for the BMI Complex and Common Areas*, January 5 2012.

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 but less than two times the method holding time were qualified as estimated.

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 reporting analytical results with appropriate units. Comparability is also dependent upon other PARCCS criteria, because only when precision, accuracy, and representativeness are known can data sets 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 QAPP, with the number determined above.

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 limits (MDLs) represent 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. It 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. It is often the lowest acceptable calibration point for the analyte. The laboratory data reports show RL in place of the PQL. The laboratory reported detected analytes down to the adjusted MDL for this project. All results reported between the MDL and RL were qualified “J” by the laboratory. Sample results are compared to method and field 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 according to the QAPP (May 2014), Functional Guidelines (USEPA 2014), and EPA analytical methods. Table 2 (located at the end of this report) shows the method, parameters, and number of samples validated.

Samples not meeting the acceptance criteria were denoted with a validation qualifier that indicates a deficiency with the data. Table 3 (located at the end of this report) contains a list of validation qualifiers and their definitions used in data validation.

When more than one validation qualifier was applicable to a data point, the final validation qualifier applied was based on a hierarchy.

The hierarchy of validation qualifiers is listed below:

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+, J-) qualifiers with opposite signs will result in an unbiased qualifier (J).
UJ = U plus J	The UJ qualifier is used when a non-detected (U) flag is added to an unbiased flag (J).

3.1 PRECISION

3.1.1 Instrument Calibration

The objective of initial calibration is to ensure that an instrument is capable of producing acceptable qualitative and quantitative data by determining the ratio of instrument response to analyte concentration. %RSD is used to evaluate initial calibration results and provide a means of evaluating precision within an analytical system. Based on laboratory case narratives, all %RSDs were acceptable. Instrument calibration is not reviewed in Stage 2A validation.

3.1.2 MS/MSD and Lab Duplicate Samples

MS/MSD and lab duplicate RPDs outside of acceptance criteria as stated in the QAPP are shown in Table 4 (located at the end of this report).

3.1.3 LCS/LCSD Samples

All LCS/LCSD RPDs met acceptance criteria as stated in the QAPP.

3.1.4 FD Samples

For results > 5X the PQL, the field duplicate samples were evaluated for acceptable precision with RPDs. For results < 5X the PQL, samples were evaluated by the difference between the two measurements. Table 5 includes results where RPDs exceeded 30% for water samples or 50% for soil samples (including leached or soluble results) or the difference between the values was greater than the absolute value of the PQL.

3.2 ACCURACY

3.2.1 Instrument Calibration

The instrument calibration errors as denoted in the data package case narrative were reviewed and any calibration errors were reviewed to determine if qualifications were needed. The few calibration errors noted in the case narratives did not lead to sample qualifications for this Stage 2A validation effort.

3.2.2 MS/MSD Samples

Many MS/MSD %Rs were outside of acceptance criteria shown in the QAPP. MS/MSD %R exceedances can be found in Table 6 (located at the end of this report). Analytes that were present in the parent sample in concentrations greater than 4 times the amount spiked were not qualified and are not presented in Table 6.

There are generally two modes of MS/MSD validation practice used to qualify data results. The first mode is to qualify only the parent sample of the MS/MSD or secondly qualify the batch of associated samples. To decide which mode of validation to use, professional judgement is used and is based on the nature of the samples associations and the heterogeneity of the soil matrix. For this Stage 2A MS/MSD validation only the parent samples were qualified. A list of parent samples qualified is presented in Table 6. One analyte was rejected because of low recoveries in the MS/MSD. The zinc result in TT-TP4-M3-20160310 was rejected because recovery was <30% and the analyte was not detected in the parent sample.

3.2.3 LCS/LCSD Samples

All LCS/LCSD %Rs met acceptance criteria as stated in the QAPP.

3.2.4 Interference Check Samples

The interference check samples were found to be compliant to the method and the QAPP.

3.2.5 Surrogates

Surrogates were analyzed in applicable methods. All surrogate %Rs met the acceptance criteria as stated in the QAPP.

3.2.6 Analyte Quantitation and Target Identification

The analyte quantitation and target Identification are considered correct from the Stage 2A data validation effort.

3.3 REPRESENTATIVENESS

3.3.1 Sample Preservation and Holding Times

Holding times and sample preservation were evaluated to verify compliance with the analytical method and NFGs. Samples listed in Table 7 (located at the end of this report) exceeded the allowed analytical holding times and were qualified. All samples met the preservation criteria.

Fifty-nine hexavalent chromium results and 2 nitrate results were qualified because of holding time infractions. Analytes detected above the PQL were qualified “J-“, estimated biased low. Non-detected results were qualified “UJ” as they were analyzed within 2X of the holding times. One result was detected below the PQL and was qualified “J“. Based on hierarchy of validation qualification, the “J” qualifier applied to detected results below the PQL supersedes the negative bias of the holding time infraction.

3.3.2 Blanks

Method blanks, ICBs, CCBs, and EBs were analyzed to evaluate representativeness. Only method blanks and EBs were evaluated in Stage 2A validation. 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, no qualification was applied.

Qualified results were all detected below the PQL. 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.

3.3.2.1 Method Blanks

Method blanks were reviewed and the outliers resulting in qualification are denoted in Table 8 (located at the end of this report).

3.3.2.2 EBs

EBs were reviewed. Although several analytes were detected in the EBs, no results were qualified. .

3.4 COMPARABILITY

The laboratory used standard analytical methods for all of the analyses. In all cases, the adjusted MDLs attained were at or below the PQLs. Target compounds detected below the PQLs were flagged “J” by the laboratory and should be considered estimated. The comparability of the data is acceptable.

3.5 COMPLETENESS

The completeness level attained for the field samples was 100 percent. The percentage was calculated as the total number of accepted sample results divided by the total number of sample results multiplied by 100. One result was rejected.

3.6 SENSITIVITY

The calibrations were evaluated for instrument sensitivity and were determined to be technically acceptable. Due to high levels of analyte concentrations, many analytical runs were analyzed at dilutions. MDLs and PQLs were elevated.

4.0 CONCLUSIONS AND RECOMMENDATIONS

The analytical data quality assessment for the soil and water laboratory analytical results generated during the Soil Flushing Treatability Study at the NERT site in Henderson, Nevada established that the overall project requirements and completeness levels were met. A summary of the analytical work and validation stages can be found in Table 9, which is a cross-reference table listing each sample, analysis, SDG, collection date, laboratory sample number, matrix, and stage of validation. Most sample results were acceptable. The zinc result in TT-TP4-M3-20160310 was rejected for matrix effects. All other sample results were found to be useable. Sample results that were qualified as estimated are useable for their intended purpose.

5.0 REFERENCES

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Tables

Table 1 Analytical Methods

Method	Parameters
EPA 218.6	Chromium, Hexavalent
EPA 300.0	Anions (Chloride, Nitrate, and/or Sulfate)
EPA 300.1B	Chlorate
EPA 314.0	Perchlorate
SM2320B	Alkalinity, Bicarbonate, Carbonate, and Hydroxide
SM2540C	Total Dissolved Solids
SM5310B	Total Organic Carbon
SW-6010B	Metals (Boron, Calcium, Iron, Magnesium, Manganese, Potassium, Sodium, Titanium)
SW-6010B_LCH	Metals (Calcium, Magnesium, Potassium, Sodium) (soluble)
SW-6020	Metals (Antimony, Arsenic, Barium, Beryllium, Cadmium, Chromium, Cobalt, Copper, Lead, Molybdenum, Nickel, Selenium, Silver, Zinc)
SW-7199	Chromium, Hexavalent
SW-7470A	Mercury
SW-7471A	Mercury
SW-9045C	pH
SW-9060	TOC

Table 2 Samples Validated

Matrix	Method	Parameters	Samples Validated
Groundwater	EPA 218.6	Chromium, hexavalent	35
	EPA 300.0	Anions (Chloride, Nitrate, and/or Sulfate)	84
	EPA 300.1B	Chlorate	76
	EPA 314.0	Perchlorate	428
	SM2320B	Alkalinity, Bicarbonate, Carbonate, and Hydroxide	84
	SM2540C	Total Dissolved Solids	381
	SM5310B	Total Organic Carbon	257
	SW-6010B	Metals	76
	SW-6020	Metals	283
	SW-7199	Chromium, hexavalent	374
	SW-7470A	Mercury	77
Soil	EPA 300.0	Anions (Chloride, Nitrate, and/or Sulfate) (soluble)	87
	EPA 300.1B	Chlorate (soluble)	87
	EPA 314.0	Perchlorate	304
	SM2320B	Alkalinity (soluble)	87
	SM2540C	Total Dissolved Solids (soluble)	304
	SW-6010B	Metals	88
	SW-6010B_LCH	Metals (soluble)	87
	SW-6020	Metals	88
	SW-7199	Chromium, hexavalent	88
	SW-7471A	Mercury	88
	SW-9045C	pH	88
	SW-9060	Total Organic Carbon	88
Equipment Blanks	EPA 314.0	Perchlorate	8
	SW-6010B	Metals	8
	SW-6020	Metals	8
	SW-7199	Chromium, hexavalent	8
	SW-7470A	Mercury	8
	SW-9060	Total Organic Carbon	8

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.
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 MS/MSD and Duplicate RPD Exceedances

SDG	Method	Sample	Analyte	RPD (%)	Allowed RPD (%)
440-143458-1	SM5310B	TT-TP4-M3-20160405 MS/MSD	Total Organic Carbon	25	20
440-146524-1	EPA 300.1B	TT-TP4-M3-20160505 MS/MSD	Chlorate	65	25
440-155570-1	EPA 300.0	TT-TP2-B3A-14 MS/MSD	Sulfate	21	20
440-155570-1	SW-6010B	TT-TP2-B3A-14 MS/MSD	Calcium	23	20
440-155631-1	EPA 314.0	TT-TP3-B2A-22 MS/MSD	Perchlorate	23	20
440-155767-1	EPA 314.0	TT-TP4-B2A-6DUP	Perchlorate	72	20

Table 5 FD Exceedances

SDG	Method	Analyte	Units	Parent Sample ID	Parent Result	FD Result	RPD (%)	Difference *
440-104832-1	EPA 314.0	Perchlorate	mg/Kg	TT-TP1-B4-6	0.77	1.4	58	---
440-104832-1	EPA 314.0	Perchlorate	mg/Kg	TT-TP2-B1-22	520	7900	175	---
440-104832-1	SM2540C	Total Dissolved Solids	mg/L	TT-TP2-B1-22	600	1100	59	---
440-104925-1	EPA 300.0	Sulfate	mg/L	TT-TP2-B3-14	500	960	63	---
440-104925-1	EPA 300.1B	Chlorate	ug/L	TT-TP2-B3-14	47000	26000	58	---
440-104925-1	EPA 314.0	Perchlorate	mg/Kg	TT-TP3-B1-6	430	210	69	---
440-104925-1	EPA 314.0	Perchlorate	mg/Kg	TT-TP3-B4-14	0.49	0.9	59	---
440-104925-1	SM2320B	Alkalinity	mg/L	TT-TP2-B3-14	14	5.9	81	---
440-104925-1	SW-6010B	Boron	mg/Kg	TT-TP2-B3-14	26	10	89	---
440-104925-1	SW-6010B_LCH	Potassium	mg/L	TT-TP2-B3-14	0.83	1.5	58	---
440-104925-1	SW-6010B_LCH	Sodium	mg/L	TT-TP2-B3-14	60	140	80	---
440-104925-1	SW-6020	Arsenic	mg/Kg	TT-TP2-B3-14	25	14	56	---
440-104925-1	SW-6020	Barium	mg/Kg	TT-TP2-B3-14	68	120	55	---
440-105015-1	EPA 300.1B	Chlorate	ug/L	TT-TP4-B3-22	120	790	147	---
440-105015-1	EPA 314.0	Perchlorate	mg/Kg	TT-TP4-B3-22	170	68	86	---
440-105015-1	SM2320B	Alkalinity	mg/L	TT-TP4-B3-22	34	100	99	---
440-105015-1	SW-6010B_LCH	Sodium	mg/L	TT-TP4-B3-22	110	63	54	---
440-105015-1	SW-6020	Chromium	mg/Kg	TT-TP4-B3-22	37	66	56	---
440-105330-1	EPA 300.0	Chloride	mg/L	TT-TP4-L2-22	7	0.63	167	---

Table 5 FD Exceedances

SDG	Method	Analyte	Units	Parent Sample ID	Parent Result	FD Result	RPD (%)	Difference *
440-105330-1	EPA 300.0	Nitrate	mg/L	TT-TP4-L2-22	3	31	165	---
440-105330-1	EPA 300.1B	Chlorate	ug/L	TT-TP4-L2-22	23000	53	199	---
440-105330-1	EPA 314.0	Perchlorate	mg/Kg	TT-TP4-L2-22	83	2.5	188	---
440-105330-1	SW-6010B	Boron	mg/Kg	TT-TP4-L2-22	8.8	19	73	---
440-105330-1	SW-6010B_LCH	Calcium	mg/L	TT-TP4-L2-22	6.3	1	145	---
440-105330-1	SW-6020	Arsenic	mg/Kg	TT-TP4-L2-22	13	25	63	---
440-105330-1	SW-6020	Chromium	mg/Kg	TT-TP4-L2-22	15	26	54	---
440-105406-1	EPA 300.0	Nitrate	mg/L	TT-TP3-L2-6	40	75	61	---
440-105406-1	EPA 314.0	Perchlorate	mg/Kg	TT-TP1-L2-14	1.3	3.1	82	---
440-138059-1	SM2320B	Alkalinity	mg/L	TT-TP4-M2-20160211	190	1200	145	---
440-138059-1	SW-6020	Barium	ug/L	TT-TP4-M2-20160211	53	35	41	---
440-143458-1	SW-6010B	Iron	mg/L	TT-TP4-M3-20160405	0.06	0.01 U	---	0.05
440-155501-1	SM2540C	Total Dissolved Solids	mg/L	TT-TP1-B4A-6	72	140	64	---
440-155570-1	EPA 300.0	Sulfate	mg/L	TT-TP2-B3A-14	830	310	91	---
440-155570-1	EPA 314.0	Perchlorate	mg/Kg	TT-TP2-B3A-14	4.1	12	98	---
440-155570-1	SW-6010B_LCH	Calcium	mg/L	TT-TP2-B3A-14	430	81	137	---
440-155575-1	EPA 314.0	Perchlorate	mg/Kg	TT-TP1-B2A-14	0.22	0.16	---	0.06
440-155575-1	EPA 314.0	Perchlorate	mg/Kg	TT-TP1-L2A-14	0.9	0.22	121	---
440-155575-1	SM2540C	Total Dissolved Solids	mg/L	TT-TP1-L2A-14	330	96	110	---

Table 5 FD Exceedances

SDG	Method	Analyte	Units	Parent Sample ID	Parent Result	FD Result	RPD (%)	Difference *
440-155631-1	EPA 300.0	Chloride	mg/L	TT-TP3-L2A-6	12	1.1	166	---
440-155631-1	EPA 300.0	Nitrate	mg/L	TT-TP3-L2A-6	14	3.3	124	---
440-155631-1	EPA 300.0	Sulfate	mg/L	TT-TP3-L2A-6	17	4.3	119	---
440-155631-1	EPA 314.0	Perchlorate	mg/Kg	TT-TP2-B1A-22	22	210	162	---
440-155631-1	EPA 314.0	Perchlorate	mg/Kg	TT-TP3-B1A-6	1.5	9.4	145	---
440-155631-1	EPA 314.0	Perchlorate	mg/Kg	TT-TP3-B2A-22	3.6	0.18	181	---
440-155631-1	EPA 314.0	Perchlorate	mg/Kg	TT-TP3-B4A-14	0.12	4.4	189	---
440-155631-1	EPA 314.0	Perchlorate	mg/Kg	TT-TP3-L2A-6	88	1.9	192	---
440-155631-1	SM2540C	Total Dissolved Solids	mg/L	TT-TP2-B1A-22	1700	560	101	---
440-155631-1	SM2540C	Total Dissolved Solids	mg/L	TT-TP3-L2A-6	170	88	64	---
440-155631-1	SW-6020	Copper	mg/Kg	TT-TP3-L2A-6	40	16	86	---
440-155631-1	SW-6020	Copper	mg/Kg	TT-TP4-B3A-22	6	150	185	---
440-155631-1	SW-6020	Lead	mg/Kg	TT-TP4-B3A-22	4	11	93	---
440-155631-1	SW-6020	Zinc	mg/Kg	TT-TP3-L2A-6	190	32	142	---
440-155631-1	SW-6020	Zinc	mg/Kg	TT-TP4-B3A-22	19	130	149	---
440-155631-1	SW-7199	Chromium, Hexavalent	mg/Kg	TT-TP4-B3A-22	2.4	3.4	---	1
440-155720-1	EPA 314.0	Perchlorate	mg/Kg	TT-TP4-L2A-26	170	62	93	---
440-155720-1	SM2540C	Total Dissolved Solids	mg/L	TT-TP4-L2A-26	1400	730	63	---
440-155767-1	EPA 300.0	Chloride	mg/L	TT-TP4-B2A-22	1.5	5	108	---

Table 5 FD Exceedances

SDG	Method	Analyte	Units	Parent Sample ID	Parent Result	FD Result	RPD (%)	Difference *
440-155767-1	EPA 300.0	Nitrate	mg/L	TT-TP4-B2A-22	2.2	7.4	108	---
440-155767-1	EPA 300.0	Sulfate	mg/L	TT-TP4-B2A-22	280	45	145	---
440-155767-1	EPA 300.1B	Chlorate	ug/L	TT-TP4-B2A-22	1100	14000	171	---
440-155767-1	EPA 314.0	Perchlorate	mg/Kg	TT-TP4-B2A-22	3.8	18	130	---
440-155767-1	EPA 314.0	Perchlorate	mg/Kg	TT-TP4-B2A-6	0.077	9	197	---
440-155767-1	SM2320B	Alkalinity	mg/L	TT-TP4-B2A-22	9.3	22	81	---
440-155767-1	SM2540C	Total Dissolved Solids	mg/L	TT-TP4-B2A-22	770	210	114	---
440-155767-1	SM2540C	Total Dissolved Solids	mg/L	TT-TP4-B2A-6	240	460	63	---
440-155767-1	SW-6010B	Boron	mg/Kg	TT-TP4-B2A-22	7.9	4.4	57	---
440-155767-1	SW-6010B_LCH	Calcium	mg/L	TT-TP4-B2A-22	180	26	150	---
440-155767-1	SW-6010B_LCH	Sodium	mg/L	TT-TP4-B2A-22	39	150	117	---
440-155767-1	SW-9060	Total Organic Carbon	mg/Kg	TT-TP4-B2A-22	840	9100	166	---

* Used if results are <5x the PQL. Qualified if the difference is > PQL of parent or FD.

Table 6 MS/MSD Recovery Exceedances

SDG	Lab Sample ID	Spiked Sample	Sample Date	Method	Filtered	Analyte	MS Recovery (%)	MSD Recovery (%)	Acceptance Range (%)
440-104698-1	440-104698-3	TT-TP1-B1-10	2015-03-17	SW-6010B	Unfiltered	Manganese	101	68	75-125
440-104698-1	440-104698-3	TT-TP1-B1-10	2015-03-17	SW-6020	Unfiltered	Barium	154	154	75-125
440-104698-1	440-104698-3	TT-TP1-B1-10	2015-03-17	SW-6020	Unfiltered	Copper	81	75	75-125
440-104832-1	440-104832-17	TT-TP1-B4-6	2015-03-18	EPA 314.0	N/A	Perchlorate	125	171	80-120
440-104832-1	440-104832-2	TT-TP1-B2-6	2015-03-17	SW-6010B	Unfiltered	Boron	57	61	75-125
440-104832-1	440-104832-2	TT-TP1-B2-6	2015-03-17	SW-6020	Unfiltered	Antimony	34	37	75-125
440-104832-1	440-104832-2	TT-TP1-B2-6	2015-03-17	SW-6020	Unfiltered	Arsenic	22	28	75-125
440-104832-1	440-104832-2	TT-TP1-B2-6	2015-03-17	SW-6020	Unfiltered	Copper	73	80	75-125
440-104832-1	440-104832-2	TT-TP1-B2-6	2015-03-17	SW-6020	Unfiltered	Nickel	70	77	75-125
440-104832-1	440-104832-2	TT-TP1-B2-6	2015-03-17	SW-6020	Unfiltered	Zinc	-40	-32	75-125
440-104925-1	440-104925-4	TT-TP2-B3-14	2015-03-18	EPA 314.0	N/A	Perchlorate	-35	-33	80-120
440-104925-1	440-104925-35	TT-TP3-B3-6	2015-03-19	EPA 314.0	N/A	Perchlorate	-6	1	80-120
440-104925-1	440-104925-4	TT-TP2-B3-14	2015-03-18	SW-6020	Unfiltered	Antimony	78	78	75-125
440-104925-1	440-104925-4	TT-TP2-B3-14	2015-03-18	SW-6020	Unfiltered	Barium	209	154	75-125
440-105015-1	440-105015-2	TT-TP4-B1-6	2015-03-19	SW-6020	Unfiltered	Antimony	65	68	75-125
440-105015-1	440-105015-2	TT-TP4-B1-6	2015-03-19	SW-6020	Unfiltered	Barium	188	183	75-125
440-105330-1	440-105330-6	TT-TP4-L2-22	2015-03-25	SW-6010B	Unfiltered	Manganese	154	110	75-125
440-105330-1	440-105330-6	TT-TP4-L2-22	2015-03-25	SW-6020	Unfiltered	Barium	165	126	75-125
440-105406-1	440-105406-2	TT-TP3-L2-6	2015-03-26	SW-6020	Unfiltered	Antimony	60	55	75-125

Table 6 MS/MSD Recovery Exceedances

SDG	Lab Sample ID	Spiked Sample	Sample Date	Method	Filtered	Analyte	MS Recovery (%)	MSD Recovery (%)	Acceptance Range (%)
440-130588-1	440-130588-15	TT-TP2-L1-20151210	2015-12-10	EPA 300.0	N/A	Chloride	66	58	80-120
440-130588-1	440-130588-15	TT-TP2-L1-20151210	2015-12-10	EPA 300.0	N/A	Nitrate	76	76	80-120
440-130588-1	440-130588-9	TT-TP1-M3-20151210	2015-12-10	SW-6010B	Unfiltered	Potassium	57	65	75-125
440-140826-1	440-140826-5	TT-TP4-M3-20160310	2016-03-10	EPA 300.0	N/A	Nitrate	84	73	80-120
440-140826-1	440-140826-5	TT-TP4-M3-20160310	2016-03-10	SW-6020	Filtered	Zinc	0	0	75-125
440-142922-1	440-142922-1	TT-TP1-M1-20160330	2016-03-30	SW-7199	Filtered	Chromium, Hexavalent	72	71	85-115
440-143078-1	440-143078-5	TT-TP4-M3-20160331	2016-03-31	SW-6020	Filtered	Chromium, Total	-59	102	75-125
440-143078-1	440-143078-5	TT-TP4-M3-20160331	2016-03-31	SW-7199	Filtered	Chromium, Hexavalent	66	58	85-115
440-144411-1	440-144411-1	TT-TP1-M1-20160413	2016-04-13	SW-7199	Filtered	Chromium, Hexavalent	84	84	85-115
440-146524-1	440-146524-6	TT-TP4-M3-20160505	2016-05-05	SW-6010B	Filtered	Boron	80	66	75-125
440-146524-1	440-146524-6	TT-TP4-M3-20160505	2016-05-05	SW-6010B	Filtered	Potassium	75	67	75-125
440-146524-1	440-146524-6	TT-TP4-M3-20160505	2016-05-05	SW-6020	Filtered	Arsenic	132	138	75-125
440-147243-1	440-147243-7	TT-TP4-M3-20160511	2016-05-11	SM5310B	Unfiltered	Total Organic Carbon	109	121	80-120
440-148500-1	440-148500-7	TT-TP4-M3-20160526	2016-05-26	SW-7199	Filtered	Chromium, Hexavalent	80	81	85-115
440-149036-1	440-149036-5	TT-TP4-M3-20160602	2016-06-02	SW-7199	Filtered	Chromium, Hexavalent	81	85	85-115
440-150775-1	440-150775-7	TT-TP4-M3-20160622	2016-06-22	SW-7199	Filtered	Chromium, Hexavalent	84	83	85-115
440-155501-1	440-155501-11	TT-TP1-B4A-10	2016-08-11	EPA 314.0	N/A	Perchlorate	72	71	80-120
440-155570-1	440-155570-4	TT-TP2-B3A-14	2016-08-12	EPA 300.0	N/A	Nitrate	132	133	80-120
440-155570-1	440-155570-4	TT-TP2-B3A-14	2016-08-12	SW-6010B	Unfiltered	Manganese	259	253	75-125

Table 6 MS/MSD Recovery Exceedances

SDG	Lab Sample ID	Spiked Sample	Sample Date	Method	Filtered	Analyte	MS Recovery (%)	MSD Recovery (%)	Acceptance Range (%)
440-155570-1	440-155570-4	TT-TP2-B3A-14	2016-08-12	SW-6020	Unfiltered	Antimony	71	68	75-125
440-155570-1	440-155570-4	TT-TP2-B3A-14	2016-08-12	SW-6020	Unfiltered	Arsenic	77	73	75-125
440-155570-1	440-155570-4	TT-TP2-B3A-14	2016-08-12	SW-6020	Unfiltered	Barium	219	207	75-125
440-155570-1	440-155570-4	TT-TP2-B3A-14	2016-08-12	SW-6020	Unfiltered	Beryllium	72	70	75-125
440-155575-1	440-155575-19	TT-TP1-L2A-14	2016-08-12	EPA 314.0	N/A	Perchlorate	129	116	80-120
440-155631-1	440-155631-57	TT-TP4-B3A-22	2016-08-15	SW-6010B	Unfiltered	Manganese	70	82	75-125
440-155631-1	440-155631-39	TT-TP3-L2A-6-DUP	2016-08-14	SW-6020	Unfiltered	Antimony	88	78	75-125
440-155631-1	440-155631-39	TT-TP3-L2A-6-DUP	2016-08-14	SW-6020	Unfiltered	Barium	80	140	75-125
440-155631-1	440-155631-39	TT-TP3-L2A-6-DUP	2016-08-14	SW-6020	Unfiltered	Beryllium	74	74	75-125
440-155631-1	440-155631-39	TT-TP3-L2A-6-DUP	2016-08-14	SW-6020	Unfiltered	Chromium, Total	77	77	75-125
440-155631-1	440-155631-39	TT-TP3-L2A-6-DUP	2016-08-14	SW-6020	Unfiltered	Cobalt	76	76	75-125
440-155631-1	440-155631-39	TT-TP3-L2A-6-DUP	2016-08-14	SW-6020	Unfiltered	Copper	72	73	75-125
440-155631-1	440-155631-39	TT-TP3-L2A-6-DUP	2016-08-14	SW-6020	Unfiltered	Nickel	76	78	75-125
440-155631-1	440-155631-39	TT-TP3-L2A-6-DUP	2016-08-14	SW-6020	Unfiltered	Selenium	78	78	75-125
440-155720-1	440-155720-21	TT-TP4-L2A-22	2016-08-16	SW-6020	Unfiltered	Antimony	83	78	75-125
440-155720-1	440-155720-21	TT-TP4-L2A-22	2016-08-16	SW-6020	Unfiltered	Barium	199	160	75-125
440-155720-1	440-155720-21	TT-TP4-L2A-22	2016-08-16	SW-6020	Unfiltered	Beryllium	75	75	75-125
440-155720-1	440-155720-21	TT-TP4-L2A-22	2016-08-16	SW-6020	Unfiltered	Chromium, Total	78	85	75-125
440-155720-1	440-155720-21	TT-TP4-L2A-22	2016-08-16	SW-6020	Unfiltered	Copper	76	80	75-125

Table 6 MS/MSD Recovery Exceedances

SDG	Lab Sample ID	Spiked Sample	Sample Date	Method	Filtered	Analyte	MS Recovery (%)	MSD Recovery (%)	Acceptance Range (%)
440-155720-1	440-155720-21	TT-TP4-L2A-22	2016-08-16	SW-6020	Unfiltered	Nickel	80	77	75-125
440-155720-1	440-155720-21	TT-TP4-L2A-22	2016-08-16	SW-6020	Unfiltered	Zinc	73	75	75-125
440-155767-1	440-155767-2	TT-TP4-B2A-6	2016-08-16	EPA 314.0	N/A	Perchlorate	71	75	80-120
440-155767-1	440-155767-4	TT-TP4-B2A-10	2016-08-16	SW-6020	Unfiltered	Antimony	76	83	75-125
440-155767-1	440-155767-4	TT-TP4-B2A-10	2016-08-16	SW-6020	Unfiltered	Barium	136	145	75-125
440-155767-1	440-155767-4	TT-TP4-B2A-10	2016-08-16	SW-6020	Unfiltered	Chromium, Total	81	76	75-125
440-155767-1	440-155767-4	TT-TP4-B2A-10	2016-08-16	SW-6020	Unfiltered	Cobalt	76	76	75-125
440-155767-1	440-155767-4	TT-TP4-B2A-10	2016-08-16	SW-6020	Unfiltered	Copper	73	75	75-125
440-155767-1	440-155767-4	TT-TP4-B2A-10	2016-08-16	SW-6020	Unfiltered	Nickel	70	70	75-125
440-155767-1	440-155767-4	TT-TP4-B2A-10	2016-08-16	SW-6020	Unfiltered	Selenium	79	79	75-125

Table 7 Holding Time Exceedances

SDG	Sample ID	Method	Analyte	Time Limit (hours)	Time Elapsed (hours)
440-130543-1	TT-TP4-M3-20151209	SW-7199	Chromium, Hexavalent	24	60.50
440-130588-1	TT-TP1-L1-20151210	SW-7199	Chromium, Hexavalent	24	47.75
440-130588-1	TT-TP1-L2-20151210	SW-7199	Chromium, Hexavalent	24	47.75
440-130588-1	TT-TP1-M1-20151210	SW-7199	Chromium, Hexavalent	24	39.50
440-130588-1	TT-TP1-M2-20151210	SW-7199	Chromium, Hexavalent	24	39.25
440-130588-1	TT-TP1-M3-20151210	SW-7199	Chromium, Hexavalent	24	48.00
440-130588-1	TT-TP2-L1-20151210	SW-7199	Chromium, Hexavalent	24	47.25
440-130588-1	TT-TP2-L2-20151210	SW-7199	Chromium, Hexavalent	24	47.75
440-130588-1	TT-TP2-M1-20151210	SW-7199	Chromium, Hexavalent	24	40.25
440-130588-1	TT-TP2-M2-20151210	SW-7199	Chromium, Hexavalent	24	40.00
440-130588-1	TT-TP3-L1-20151210	SW-7199	Chromium, Hexavalent	24	47.25
440-130588-1	TT-TP3-L2-20151210	SW-7199	Chromium, Hexavalent	24	47.25
440-130588-1	TT-TP3-M1-20151210	SW-7199	Chromium, Hexavalent	24	41.00
440-130588-1	TT-TP3-M1-20151210-DUP	SW-7199	Chromium, Hexavalent	24	43.25
440-130588-1	TT-TP3-M2-20151210	SW-7199	Chromium, Hexavalent	24	40.25
440-130588-1	TT-TP4-L1-20151210	SW-7199	Chromium, Hexavalent	24	43.25
440-130588-1	TT-TP4-L2-20151210	SW-7199	Chromium, Hexavalent	24	43.25
440-130588-1	TT-TP4-M1-20151210	SW-7199	Chromium, Hexavalent	24	41.25
440-130588-1	TT-TP4-M2-20151210	SW-7199	Chromium, Hexavalent	24	53.50
440-135664-1	TT-TP2-M2-20160120-DUP	SW-7199	Chromium, Hexavalent	24	32.25
440-138059-1	TT-TP1-L2-20160211	EPA 218.6	Chromium, Hexavalent	24	332.00
440-138059-1	TT-TP2-L1-20160211	EPA 218.6	Chromium, Hexavalent	24	332.25
440-138059-1	TT-TP2-L2-20160211	EPA 218.6	Chromium, Hexavalent	24	332.00
440-138059-1	TT-TP3-L1-20160211	EPA 218.6	Chromium, Hexavalent	24	332.25
440-138059-1	TT-TP3-M1-20160211	EPA 218.6	Chromium, Hexavalent	24	334.25
440-138059-1	TT-TP4-L1-20160211	EPA 218.6	Chromium, Hexavalent	24	332.50
440-138059-1	TT-TP4-L2-20160211	EPA 218.6	Chromium, Hexavalent	24	332.50
440-138059-1	TT-TP4-M1-20160211	EPA 218.6	Chromium, Hexavalent	24	333.50
440-138059-1	TT-TP4-M2-20160211	EPA 218.6	Chromium, Hexavalent	24	331.50
440-138059-1	TT-TP4-M2-20160211-DUP	EPA 218.6	Chromium, Hexavalent	24	331.50
440-138059-1	TT-TP4-M3-20160211	EPA 218.6	Chromium, Hexavalent	24	330.50
440-138657-1	TT-TP1-L1-20160218	EPA 218.6	Chromium, Hexavalent	24	179.50
440-138657-1	TT-TP1-L2-20160218	EPA 218.6	Chromium, Hexavalent	24	179.25
440-138657-1	TT-TP2-L1-20160218	EPA 218.6	Chromium, Hexavalent	24	179.75
440-138657-1	TT-TP2-L2-20160218	EPA 218.6	Chromium, Hexavalent	24	179.5

Table 7 Holding Time Exceedances

SDG	Sample ID	Method	Analyte	Time Limit (hours)	Time Elapsed (hours)
440-138657-1	TT-TP3-L1-20160218	EPA 218.6	Chromium, Hexavalent	24	179.75
440-138657-1	TT-TP3-M1-20160218	EPA 218.6	Chromium, Hexavalent	24	182.5
440-138657-1	TT-TP3-M2-20160218	EPA 218.6	Chromium, Hexavalent	24	182
440-138657-1	TT-TP4-L1-20160218	EPA 218.6	Chromium, Hexavalent	24	180.25
440-138657-1	TT-TP4-L2-20160218	EPA 218.6	Chromium, Hexavalent	24	180
440-138657-1	TT-TP4-M1-20160218	EPA 218.6	Chromium, Hexavalent	24	181.5
440-138657-1	TT-TP4-M2-20160218	EPA 218.6	Chromium, Hexavalent	24	181
440-138657-1	TT-TP4-M3-20160218	EPA 218.6	Chromium, Hexavalent	24	180.5
440-138657-1	TT-TP4-M3-20160218-DUP	EPA 218.6	Chromium, Hexavalent	24	180.5
440-139965-1	TT-TP3-L1-20160303	SW-7199	Chromium, Hexavalent	24	24.15
440-139965-1	TT-TP3-L2-20160303	SW-7199	Chromium, Hexavalent	24	24.25
440-139965-1	TT-TP3-M2-20160303	SW-7199	Chromium, Hexavalent	24	25.5
440-139965-1	TT-TP4-M3-20160303-DUP	SW-7199	Chromium, Hexavalent	24	25
440-140696-1	TT-TP1-M3-20160309	SW-7199	Chromium, Hexavalent	24	25.75
440-140826-1	TT-TP2-L1-20160310	SW-7199	Chromium, Hexavalent	24	24.75
440-140826-1	TT-TP2-L2-20160310	SW-7199	Chromium, Hexavalent	24	24.75
440-140826-1	TT-TP3-M1-20160310	SW-7199	Chromium, Hexavalent	24	29.25
440-140826-1	TT-TP3-M2-20160310	SW-7199	Chromium, Hexavalent	24	29.5
440-140826-1	TT-TP4-L1-20160310	SW-7199	Chromium, Hexavalent	24	24.15
440-140826-1	TT-TP4-M3-20160310	EPA 300.0	Nitrate	48	149.75
440-142439-1	TT-TP2-L2-20160323	SW-7199	Chromium, Hexavalent	24	24.25
440-143273-1	TT-TP2-M2-2016	EPA 300.0	Nitrate	48	106.75
440-145020-1	TT-TP4-M2-20160420	SW-7199	Chromium, Hexavalent	24	25
440-146524-1	TT-TP1-L2-20160505	SW-7199	Chromium, Hexavalent	24	24.15
440-146524-1	TT-TP2-M2-20160505	SW-7199	Chromium, Hexavalent	24	29
440-146524-1	TT-TP3-M2-20160505	SW-7199	Chromium, Hexavalent	24	28.75

Table 8 Method Blank Detections

SDG	Blank SampleID	Method	Analyte	Result	Units	Qualified Samples
440-104925-1	MB 440-245079/1-A	SW-6020	Zinc	16.4	ug/L	EB-03/19/15
440-105330-1	MB 440-245361/1-A	SW-7470A	Mercury	0.000171	mg/L	EB-03/25/15
440-137910-1	MB 440-311592/1-B	SW-6020	Copper	0.999 ug/L	ug/L	TT-TP1-M2-20160210
						TT-TP1-M1-20160210
						TT-TP2-M2-20160210
						TT-TP3-M2-20160210
440-138059-1	MB 440-311592/1-B	SW-6020	Copper	0.999 ug/L	ug/L	TT-TP3-M1-20160211
						TT-TP4-M2-20160211
						TT-TP4-M2-20160211-DUP

Table 9 Sample Cross-Reference

SDG	Client Sample ID	Lab Sample ID	Matrix	Sample Date	QC Type	Validation Stage	Alkalinity and ions by SM2320	Anions by EPA 300.0	Chlorate by EPA 300.1B	Hexavalent Chromium by SW-7199	Hexavalent Chromium by EPA 218.6	Metals by SW-6010B	Metals by SW-6010B_LCH	Metals by SW-6020	Mercury by SW-7470A	Mercury by SW-7471A	Perchlorate by EPA 314.0	pH by SW9045C	TDS by SM2540C	TOC by SM5310	TOC by SW-9060
440-104698-1	TT-TP1-B1-10	440-104698-3	SO	2015-03-17	NORM	Stage 2A	X (s)	X (s)	X (s)	X		X	X (s)	X		X	X	X (s)	X (s)		X
440-104698-1	TT-TP1-B1-14	440-104698-4	SO	2015-03-17	NORM	Stage 2A											X		X (s)		
440-104698-1	TT-TP1-B1-18	440-104698-5	SO	2015-03-17	NORM	Stage 2A	X (s)	X (s)	X (s)	X		X	X (s)	X		X	X	X (s)	X (s)		X
440-104698-1	TT-TP1-B1-2	440-104698-1	SO	2015-03-17	NORM	Stage 2A											X		X (s)		
440-104698-1	TT-TP1-B1-22	440-104698-6	SO	2015-03-17	NORM	Stage 2A											X		X (s)		
440-104698-1	TT-TP1-B1-26	440-104698-7	SO	2015-03-17	NORM	Stage 2A											X		X (s)		
440-104698-1	TT-TP1-B1-6	440-104698-2	SO	2015-03-17	NORM	Stage 2A											X		X (s)		
440-104832-1	TT-TP1-B2-10	440-104832-3	SO	2015-03-17	NORM	Stage 2A											X		X (s)		
440-104832-1	TT-TP1-B2-14	440-104832-4	SO	2015-03-17	NORM	Stage 2A											X		X (s)		
440-104832-1	TT-TP1-B2-14-DUP	440-104832-5	SO	2015-03-17	FD	Stage 2A											X		X (s)		
440-104832-1	TT-TP1-B2-18	440-104832-6	SO	2015-03-17	NORM	Stage 2A											X		X (s)		
440-104832-1	TT-TP1-B2-2	440-104832-1	SO	2015-03-17	NORM	Stage 2A											X		X (s)		
440-104832-1	TT-TP1-B2-22	440-104832-7	SO	2015-03-17	NORM	Stage 2A	X (s)	X (s)	X (s)	X		X	X (s)	X		X	X	X (s)	X (s)		X
440-104832-1	TT-TP1-B2-26	440-104832-8	SO	2015-03-17	NORM	Stage 2A											X		X (s)		
440-104832-1	TT-TP1-B2-6	440-104832-2	SO	2015-03-17	NORM	Stage 2A	X (s)	X (s)	X (s)	X		X	X (s)	X		X	X	X (s)	X (s)		X
440-104832-1	TT-TP1-B3-10	440-104832-11	SO	2015-03-18	NORM	Stage 2A											X		X (s)		
440-104832-1	TT-TP1-B3-14	440-104832-12	SO	2015-03-18	NORM	Stage 2A											X		X (s)		
440-104832-1	TT-TP1-B3-18	440-104832-13	SO	2015-03-18	NORM	Stage 2A	X (s)	X (s)	X (s)	X		X	X (s)	X		X	X	X (s)	X (s)		X
440-104832-1	TT-TP1-B3-2	440-104832-9	SO	2015-03-18	NORM	Stage 2A											X		X (s)		
440-104832-1	TT-TP1-B3-22	440-104832-14	SO	2015-03-18	NORM	Stage 2A											X		X (s)		
440-104832-1	TT-TP1-B3-26	440-104832-15	SO	2015-03-18	NORM	Stage 2A											X		X (s)		
440-104832-1	TT-TP1-B3-6	440-104832-10	SO	2015-03-18	NORM	Stage 2A	X (s)	X (s)	X (s)	X		X	X (s)	X		X	X	X (s)	X (s)		X
440-104832-1	TT-TP1-B4-10	440-104832-19	SO	2015-03-18	NORM	Stage 2A											X		X (s)		
440-104832-1	TT-TP1-B4-14	440-104832-20	SO	2015-03-18	NORM	Stage 2A											X		X (s)		
440-104832-1	TT-TP1-B4-18	440-104832-21	SO	2015-03-18	NORM	Stage 2A											X		X (s)		
440-104832-1	TT-TP1-B4-2	440-104832-16	SO	2015-03-18	NORM	Stage 2A	X (s)	X (s)	X (s)	X		X	X (s)	X		X	X	X (s)	X (s)		X
440-104832-1	TT-TP1-B4-22	440-104832-22	SO	2015-03-18	NORM	Stage 2A											X		X (s)		
440-104832-1	TT-TP1-B4-26	440-104832-23	SO	2015-03-18	NORM	Stage 2A	X (s)	X (s)	X (s)	X		X	X (s)	X		X	X	X (s)	X (s)		X
440-104832-1	TT-TP1-B4-6	440-104832-17	SO	2015-03-18	NORM	Stage 2A											X		X (s)		
440-104832-1	TT-TP1-B4-6-DUP	440-104832-18	SO	2015-03-18	FD	Stage 2A											X		X (s)		
440-104832-1	TT-TP2-B1-10	440-104832-26	SO	2015-03-18	NORM	Stage 2A											X		X (s)		
440-104832-1	TT-TP2-B1-14	440-104832-27	SO	2015-03-18	NORM	Stage 2A	X (s)	X (s)	X (s)	X		X	X (s)	X		X	X	X (s)	X (s)		X

Table 9 Sample Cross-Reference

SDG	Client Sample ID	Lab Sample ID	Matrix	Sample Date	QC Type	Validation Stage	Alkalinity and ions by SM2320	Anions by EPA 300.0	Chlorate by EPA 300.1B	Hexavalent Chromium by SW-7199	Hexavalent Chromium by EPA 218.6	Metals by SW-6010B	Metals by SW-6010B_LCH	Metals by SW-6020	Mercury by SW-7470A	Mercury by SW-7471A	Perchlorate by EPA 314.0	pH by SW9045C	TDS by SM2540C	TOC by SM5310	TOC by SW-9060
440-104832-1	TT-TP2-B1-18	440-104832-28	SO	2015-03-18	NORM	Stage 2A											X		X (s)		
440-104832-1	TT-TP2-B1-2	440-104832-24	SO	2015-03-18	NORM	Stage 2A	X (s)	X (s)	X (s)	X		X	X (s)	X		X	X	X (s)	X (s)		X
440-104832-1	TT-TP2-B1-22	440-104832-29	SO	2015-03-18	NORM	Stage 2A											X		X (s)		
440-104832-1	TT-TP2-B1-22-DUP	440-104832-30	SO	2015-03-18	FD	Stage 2A											X		X (s)		
440-104832-1	TT-TP2-B1-26	440-104832-31	SO	2015-03-18	NORM	Stage 2A											X		X (s)		
440-104832-1	TT-TP2-B1-6	440-104832-25	SO	2015-03-18	NORM	Stage 2A											X		X (s)		
440-104832-1	TT-TP2-B2-10	440-104832-36	SO	2015-03-18	NORM	Stage 2A	X (s)	X (s)	X (s)	X		X	X (s)	X		X	X	X (s)	X (s)		X
440-104832-1	TT-TP2-B2-14	440-104832-37	SO	2015-03-18	NORM	Stage 2A											X		X (s)		
440-104832-1	TT-TP2-B2-18	440-104832-38	SO	2015-03-18	NORM	Stage 2A											X		X (s)		
440-104832-1	TT-TP2-B2-2	440-104832-34	SO	2015-03-18	NORM	Stage 2A											X		X (s)		
440-104832-1	TT-TP2-B2-22	440-104832-39	SO	2015-03-18	NORM	Stage 2A											X		X (s)		
440-104832-1	TT-TP2-B2-26	440-104832-40	SO	2015-03-18	NORM	Stage 2A	X (s)	X (s)	X (s)	X		X	X (s)	X		X	X	X (s)	X (s)		X
440-104832-1	TT-TP2-B2-6	440-104832-35	SO	2015-03-18	NORM	Stage 2A											X		X (s)		
440-104925-1	TT-TP2-B3-10	440-104925-3	SO	2015-03-18	NORM	Stage 2A											X		X (s)		
440-104925-1	TT-TP2-B3-14	440-104925-4	SO	2015-03-18	NORM	Stage 2A	X (s)	X (s)	X (s)	X		X	X (s)	X		X	X	X (s)	X (s)		X
440-104925-1	TT-TP2-B3-14-DUP	440-104925-5	SO	2015-03-18	FD	Stage 2A	X (s)	X (s)	X (s)	X		X	X (s)	X		X	X	X (s)	X (s)		X
440-104925-1	TT-TP2-B3-18	440-104925-6	SO	2015-03-18	NORM	Stage 2A											X		X (s)		
440-104925-1	TT-TP2-B3-2	440-104925-1	SO	2015-03-18	NORM	Stage 2A	X (s)	X (s)	X (s)	X		X	X (s)	X		X	X	X (s)	X (s)		X
440-104925-1	TT-TP2-B3-22	440-104925-7	SO	2015-03-18	NORM	Stage 2A											X		X (s)		
440-104925-1	TT-TP2-B3-26	440-104925-8	SO	2015-03-18	NORM	Stage 2A											X		X (s)		
440-104925-1	TT-TP2-B3-6	440-104925-2	SO	2015-03-18	NORM	Stage 2A											X		X (s)		
440-104925-1	TT-TP2-B4-10	440-104925-11	SO	2015-03-19	NORM	Stage 2A											X		X (s)		
440-104925-1	TT-TP2-B4-14	440-104925-12	SO	2015-03-19	NORM	Stage 2A											X		X (s)		
440-104925-1	TT-TP2-B4-18	440-104925-13	SO	2015-03-19	NORM	Stage 2A											X		X (s)		
440-104925-1	TT-TP2-B4-2	440-104925-9	SO	2015-03-19	NORM	Stage 2A											X		X (s)		
440-104925-1	TT-TP2-B4-22	440-104925-14	SO	2015-03-19	NORM	Stage 2A	X (s)	X (s)	X (s)	X		X	X (s)	X		X	X	X (s)	X (s)		X
440-104925-1	TT-TP2-B4-26	440-104925-15	SO	2015-03-19	NORM	Stage 2A											X		X (s)		
440-104925-1	TT-TP2-B4-6	440-104925-10	SO	2015-03-19	NORM	Stage 2A	X (s)	X (s)	X (s)	X		X	X (s)	X		X	X	X (s)	X (s)		X
440-104925-1	TT-TP3-B1-10	440-104925-19	SO	2015-03-19	NORM	Stage 2A	X (s)	X (s)	X (s)	X		X	X (s)	X		X	X	X (s)	X (s)		X
440-104925-1	TT-TP3-B1-14	440-104925-20	SO	2015-03-19	NORM	Stage 2A											X		X (s)		
440-104925-1	TT-TP3-B1-18	440-104925-21	SO	2015-03-19	NORM	Stage 2A	X (s)	X (s)	X (s)	X		X	X (s)	X		X	X	X (s)	X (s)		X
440-104925-1	TT-TP3-B1-2	440-104925-16	SO	2015-03-19	NORM	Stage 2A											X		X (s)		

Table 9 Sample Cross-Reference

SDG	Client Sample ID	Lab Sample ID	Matrix	Sample Date	QC Type	Validation Stage	Alkalinity and ions by SM2320	Anions by EPA 300.0	Chlorate by EPA 300.1B	Hexavalent Chromium by SW-7199	Hexavalent Chromium by EPA 218.6	Metals by SW-6010B	Metals by SW-6010B_LCH	Metals by SW-6020	Mercury by SW-7470A	Mercury by SW-7471A	Perchlorate by EPA 314.0	pH by SW9045C	TDS by SM2540C	TOC by SM5310	TOC by SW-9060
440-104925-1	TT-TP3-B1-22	440-104925-22	SO	2015-03-19	NORM	Stage 2A											X		X (s)		
440-104925-1	TT-TP3-B1-26	440-104925-23	SO	2015-03-19	NORM	Stage 2A											X		X (s)		
440-104925-1	TT-TP3-B1-6	440-104925-17	SO	2015-03-19	NORM	Stage 2A											X		X (s)		
440-104925-1	TT-TP3-B1-6-DUP	440-104925-18	SO	2015-03-19	FD	Stage 2A											X		X (s)		
440-104925-1	TT-TP3-B2-10	440-104925-26	SO	2015-03-19	NORM	Stage 2A											X		X (s)		
440-104925-1	TT-TP3-B2-14	440-104925-27	SO	2015-03-19	NORM	Stage 2A	X (s)	X (s)	X (s)	X		X	X (s)	X		X	X	X (s)	X (s)		X
440-104925-1	TT-TP3-B2-18	440-104925-28	SO	2015-03-19	NORM	Stage 2A											X		X (s)		
440-104925-1	TT-TP3-B2-2	440-104925-24	SO	2015-03-19	NORM	Stage 2A											X		X (s)		
440-104925-1	TT-TP3-B2-22	440-104925-29	SO	2015-03-19	NORM	Stage 2A											X		X (s)		
440-104925-1	TT-TP3-B2-22-DUP	440-104925-30	SO	2015-03-19	FD	Stage 2A											X		X (s)		
440-104925-1	TT-TP3-B2-26	440-104925-31	SO	2015-03-19	NORM	Stage 2A											X		X (s)		
440-104925-1	TT-TP3-B2-26-DUP	440-104925-32	SO	2015-03-19	FD	Stage 2A											X		X (s)		
440-104925-1	TT-TP3-B2-6	440-104925-25	SO	2015-03-19	NORM	Stage 2A				X		X		X		X	X	X	X (s)		X
440-104925-1	TT-TP3-B3-10	440-104925-36	SO	2015-03-19	NORM	Stage 2A	X (s)	X (s)	X (s)	X		X	X (s)	X		X	X	X (s)	X (s)		X
440-104925-1	TT-TP3-B3-14	440-104925-37	SO	2015-03-19	NORM	Stage 2A											X		X (s)		
440-104925-1	TT-TP3-B3-18	440-104925-38	SO	2015-03-19	NORM	Stage 2A											X		X (s)		
440-104925-1	TT-TP3-B3-2	440-104925-34	SO	2015-03-19	NORM	Stage 2A											X		X (s)		
440-104925-1	TT-TP3-B3-22	440-104925-39	SO	2015-03-19	NORM	Stage 2A											X		X (s)		
440-104925-1	TT-TP3-B3-26	440-104925-40	SO	2015-03-19	NORM	Stage 2A	X (s)	X (s)	X (s)	X		X	X (s)	X		X	X	X (s)	X (s)		X
440-104925-1	TT-TP3-B3-6	440-104925-35	SO	2015-03-19	NORM	Stage 2A											X		X (s)		
440-104925-1	TT-TP3-B4-10	440-104925-44	SO	2015-03-19	NORM	Stage 2A											X		X (s)		
440-104925-1	TT-TP3-B4-14	440-104925-45	SO	2015-03-19	NORM	Stage 2A											X		X (s)		
440-104925-1	TT-TP3-B4-14-DUP	440-104925-46	SO	2015-03-19	FD	Stage 2A											X		X (s)		
440-104925-1	TT-TP3-B4-18	440-104925-47	SO	2015-03-19	NORM	Stage 2A	X (s)	X (s)	X (s)	X		X	X (s)	X		X	X	X (s)	X (s)		X
440-104925-1	TT-TP3-B4-2	440-104925-42	SO	2015-03-19	NORM	Stage 2A	X (s)	X (s)	X (s)	X		X	X (s)	X		X	X	X (s)	X (s)		X
440-104925-1	TT-TP3-B4-22	440-104925-48	SO	2015-03-19	NORM	Stage 2A											X		X (s)		
440-104925-1	TT-TP3-B4-26	440-104925-49	SO	2015-03-19	NORM	Stage 2A											X		X (s)		
440-104925-1	TT-TP3-B4-6	440-104925-43	SO	2015-03-19	NORM	Stage 2A											X		X (s)		
440-105015-1	EB-03/20/15	440-105015-31	BW	2015-03-20	EB	Stage 2A				X		X		X	X		X				X
440-105015-1	TT-TP4-B1-10	440-105015-3	SO	2015-03-19	NORM	Stage 2A											X		X (s)		
440-105015-1	TT-TP4-B1-14	440-105015-4	SO	2015-03-19	NORM	Stage 2A	X (s)	X (s)	X (s)	X		X	X (s)	X		X	X	X (s)	X (s)		X
440-105015-1	TT-TP4-B1-18	440-105015-5	SO	2015-03-19	NORM	Stage 2A											X		X (s)		

Table 9 Sample Cross-Reference

SDG	Client Sample ID	Lab Sample ID	Matrix	Sample Date	QC Type	Validation Stage	Alkalinity and ions by SM2320	Anions by EPA 300.0	Chlorate by EPA 300.1B	Hexavalent Chromium by SW-7199	Hexavalent Chromium by EPA 218.6	Metals by SW-6010B	Metals by SW-6010B_LCH	Metals by SW-6020	Mercury by SW-7470A	Mercury by SW-7471A	Perchlorate by EPA 314.0	pH by SW9045C	TDS by SM2540C	TOC by SM5310	TOC by SW-9060
440-105015-1	TT-TP4-B1-2	440-105015-1	SO	2015-03-19	NORM	Stage 2A											X		X (s)		
440-105015-1	TT-TP4-B1-22	440-105015-6	SO	2015-03-19	NORM	Stage 2A											X		X (s)		
440-105015-1	TT-TP4-B1-26	440-105015-7	SO	2015-03-19	NORM	Stage 2A											X		X (s)		
440-105015-1	TT-TP4-B1-6	440-105015-2	SO	2015-03-19	NORM	Stage 2A	X (s)	X (s)	X (s)	X		X	X (s)	X		X	X	X (s)	X (s)		X
440-105015-1	TT-TP4-B2-10	440-105015-11	SO	2015-03-20	NORM	Stage 2A	X (s)	X (s)	X (s)	X		X	X (s)	X		X	X	X (s)	X (s)		X
440-105015-1	TT-TP4-B2-14	440-105015-12	SO	2015-03-20	NORM	Stage 2A											X		X (s)		
440-105015-1	TT-TP4-B2-18	440-105015-13	SO	2015-03-20	NORM	Stage 2A											X		X (s)		
440-105015-1	TT-TP4-B2-2	440-105015-8	SO	2015-03-20	NORM	Stage 2A											X		X (s)		
440-105015-1	TT-TP4-B2-22	440-105015-14	SO	2015-03-20	NORM	Stage 2A	X (s)	X (s)	X (s)	X		X	X (s)	X		X	X	X (s)	X (s)		X
440-105015-1	TT-TP4-B2-26	440-105015-15	SO	2015-03-20	NORM	Stage 2A											X		X (s)		
440-105015-1	TT-TP4-B2-6	440-105015-9	SO	2015-03-20	NORM	Stage 2A											X		X (s)		
440-105015-1	TT-TP4-B2-6-DUP	440-105015-10	SO	2015-03-20	FD	Stage 2A											X		X (s)		
440-105015-1	TT-TP4-B3-10	440-105015-18	SO	2015-03-20	NORM	Stage 2A											X		X (s)		
440-105015-1	TT-TP4-B3-14	440-105015-19	SO	2015-03-20	NORM	Stage 2A											X		X (s)		
440-105015-1	TT-TP4-B3-18	440-105015-20	SO	2015-03-20	NORM	Stage 2A											X		X (s)		
440-105015-1	TT-TP4-B3-2	440-105015-16	SO	2015-03-20	NORM	Stage 2A	X (s)	X (s)	X (s)	X		X	X (s)	X		X	X	X (s)	X (s)		X
440-105015-1	TT-TP4-B3-22	440-105015-21	SO	2015-03-20	NORM	Stage 2A	X (s)	X (s)	X (s)	X		X	X (s)	X		X	X	X (s)	X (s)		X
440-105015-1	TT-TP4-B3-22-DUP	440-105015-22	SO	2015-03-20	FD	Stage 2A	X (s)	X (s)	X (s)	X		X	X (s)	X		X	X	X (s)	X (s)		X
440-105015-1	TT-TP4-B3-26	440-105015-23	SO	2015-03-20	NORM	Stage 2A											X		X (s)		
440-105015-1	TT-TP4-B3-6	440-105015-17	SO	2015-03-20	NORM	Stage 2A											X		X (s)		
440-105015-1	TT-TP4-B4-10	440-105015-26	SO	2015-03-20	NORM	Stage 2A	X (s)	X (s)	X (s)	X		X	X (s)	X		X	X	X (s)	X (s)		X
440-105015-1	TT-TP4-B4-14	440-105015-27	SO	2015-03-20	NORM	Stage 2A											X		X (s)		
440-105015-1	TT-TP4-B4-18	440-105015-28	SO	2015-03-20	NORM	Stage 2A											X		X (s)		
440-105015-1	TT-TP4-B4-2	440-105015-24	SO	2015-03-20	NORM	Stage 2A											X		X (s)		
440-105015-1	TT-TP4-B4-22	440-105015-29	SO	2015-03-20	NORM	Stage 2A											X		X (s)		
440-105015-1	TT-TP4-B4-26	440-105015-30	SO	2015-03-20	NORM	Stage 2A	X (s)	X (s)	X (s)	X		X	X (s)	X		X	X	X (s)	X (s)		X
440-105015-1	TT-TP4-B4-6	440-105015-25	SO	2015-03-20	NORM	Stage 2A											X		X (s)		
440-105330-1	EB-03/25/15	440-105330-10	BW	2015-03-25	EB	Stage 2A				X		X		X	X		X				X
440-105330-1	TT-TP4-L2-10	440-105330-3	SO	2015-03-25	NORM	Stage 2A	X (s)	X (s)	X (s)	X		X	X (s)	X		X	X	X (s)	X (s)		X
440-105330-1	TT-TP4-L2-14	440-105330-4	SO	2015-03-25	NORM	Stage 2A											X		X (s)		
440-105330-1	TT-TP4-L2-18	440-105330-5	SO	2015-03-25	NORM	Stage 2A											X		X (s)		
440-105330-1	TT-TP4-L2-2	440-105330-1	SO	2015-03-25	NORM	Stage 2A											X		X (s)		

Table 9 Sample Cross-Reference

SDG	Client Sample ID	Lab Sample ID	Matrix	Sample Date	QC Type	Validation Stage	Alkalinity and ions by SM2320	Anions by EPA 300.0	Chlorate by EPA 300.1B	Hexavalent Chromium by SW-7199	Hexavalent Chromium by EPA 218.6	Metals by SW-6010B	Metals by SW-6010B_LCH	Metals by SW-6020	Mercury by SW-7470A	Mercury by SW-7471A	Perchlorate by EPA 314.0	pH by SW9045C	TDS by SM2540C	TOC by SM5310	TOC by SW-9060
440-105330-1	TT-TP4-L2-22	440-105330-6	SO	2015-03-25	NORM	Stage 2A	X (s)	X (s)	X (s)	X		X	X (s)	X		X	X	X (s)	X (s)		X
440-105330-1	TT-TP4-L2-22-DUP	440-105330-7	SO	2015-03-25	FD	Stage 2A	X (s)	X (s)	X (s)	X		X	X (s)	X		X	X	X (s)	X (s)		X
440-105330-1	TT-TP4-L2-26	440-105330-8	SO	2015-03-25	NORM	Stage 2A											X		X (s)		
440-105330-1	TT-TP4-L2-26-DUP	440-105330-9	SO	2015-03-25	FD	Stage 2A											X		X (s)		
440-105330-1	TT-TP4-L2-6	440-105330-2	SO	2015-03-25	NORM	Stage 2A											X		X (s)		
440-105406-1	EB-03/26/15	440-105406-24	BW	2015-03-26	EB	Stage 2A				X		X		X	X		X				X
440-105406-1	TT-TP1-L2-10	440-105406-18	SO	2015-03-26	NORM	Stage 2A											X		X (s)		
440-105406-1	TT-TP1-L2-14	440-105406-19	SO	2015-03-26	NORM	Stage 2A											X		X (s)		
440-105406-1	TT-TP1-L2-14-DUP	440-105406-20	SO	2015-03-26	FD	Stage 2A											X		X (s)		
440-105406-1	TT-TP1-L2-18	440-105406-21	SO	2015-03-26	NORM	Stage 2A	X (s)	X (s)	X (s)	X		X	X (s)	X		X	X	X (s)	X (s)		X
440-105406-1	TT-TP1-L2-2	440-105406-16	SO	2015-03-26	NORM	Stage 2A											X		X (s)		
440-105406-1	TT-TP1-L2-22	440-105406-22	SO	2015-03-26	NORM	Stage 2A											X		X (s)		
440-105406-1	TT-TP1-L2-26	440-105406-23	SO	2015-03-26	NORM	Stage 2A											X		X (s)		
440-105406-1	TT-TP1-L2-6	440-105406-17	SO	2015-03-26	NORM	Stage 2A	X (s)	X (s)	X (s)	X		X	X (s)	X		X	X	X (s)	X (s)		X
440-105406-1	TT-TP2-L2-10	440-105406-11	SO	2015-03-26	NORM	Stage 2A											X		X (s)		
440-105406-1	TT-TP2-L2-14	440-105406-12	SO	2015-03-26	NORM	Stage 2A											X		X (s)		
440-105406-1	TT-TP2-L2-18	440-105406-13	SO	2015-03-26	NORM	Stage 2A											X		X (s)		
440-105406-1	TT-TP2-L2-2	440-105406-9	SO	2015-03-26	NORM	Stage 2A	X (s)	X (s)	X (s)	X		X	X (s)	X		X	X	X (s)	X (s)		X
440-105406-1	TT-TP2-L2-22	440-105406-14	SO	2015-03-26	NORM	Stage 2A											X		X (s)		
440-105406-1	TT-TP2-L2-26	440-105406-15	SO	2015-03-26	NORM	Stage 2A	X (s)	X (s)	X (s)	X		X	X (s)	X		X	X	X (s)	X (s)		X
440-105406-1	TT-TP2-L2-6	440-105406-10	SO	2015-03-26	NORM	Stage 2A											X		X (s)		
440-105406-1	TT-TP3-L2-10	440-105406-4	SO	2015-03-26	NORM	Stage 2A											X		X (s)		
440-105406-1	TT-TP3-L2-14	440-105406-5	SO	2015-03-26	NORM	Stage 2A	X (s)	X (s)	X (s)	X		X	X (s)	X		X	X	X (s)	X (s)		X
440-105406-1	TT-TP3-L2-18	440-105406-6	SO	2015-03-26	NORM	Stage 2A											X		X (s)		
440-105406-1	TT-TP3-L2-2	440-105406-1	SO	2015-03-26	NORM	Stage 2A											X		X (s)		
440-105406-1	TT-TP3-L2-22	440-105406-7	SO	2015-03-26	NORM	Stage 2A											X		X (s)		
440-105406-1	TT-TP3-L2-26	440-105406-8	SO	2015-03-26	NORM	Stage 2A											X		X (s)		
440-105406-1	TT-TP3-L2-6	440-105406-2	SO	2015-03-26	NORM	Stage 2A	X (s)	X (s)	X (s)	X		X	X (s)	X		X	X	X (s)	X (s)		X
440-105406-1	TT-TP3-L2-6-DUP	440-105406-3	SO	2015-03-26	FD	Stage 2A	X (s)	X (s)	X (s)	X		X	X (s)	X		X	X	X (s)	X (s)		X
440-130543-1	TT-TP4-M3-20151209	440-130543-1	WG	2015-12-09	NORM	Stage 2A	X	X	X	X		X		X	X		X		X	X	
440-130588-1	TT-TP1-L1-20151210	440-130588-17	WG	2015-12-10	NORM	Stage 2A	X	X		X				X			X		X	X	
440-130588-1	TT-TP1-L2-20151210	440-130588-18	WG	2015-12-10	NORM	Stage 2A	X	X		X				X			X		X	X	

Table 9 Sample Cross-Reference

SDG	Client Sample ID	Lab Sample ID	Matrix	Sample Date	QC Type	Validation Stage	Alkalinity and ions by SM2320	Anions by EPA 300.0	Chlorate by EPA 300.1B	Hexavalent Chromium by SW-7199	Hexavalent Chromium by EPA 218.6	Metals by SW-6010B	Metals by SW-6010B_LCH	Metals by SW-6020	Mercury by SW-7470A	Mercury by SW-7471A	Perchlorate by EPA 314.0	pH by SW9045C	TDS by SM2540C	TOC by SM5310	TOC by SW-9060
440-130588-1	TT-TP1-M1-20151210	440-130588-7	WG	2015-12-10	NORM	Stage 2A	X	X	X	X		X		X	X		X		X	X	
440-130588-1	TT-TP1-M2-20151210	440-130588-8	WG	2015-12-10	NORM	Stage 2A	X	X	X	X		X		X	X		X		X	X	
440-130588-1	TT-TP1-M3-20151210	440-130588-9	WG	2015-12-10	NORM	Stage 2A	X	X	X	X		X		X	X		X		X	X	
440-130588-1	TT-TP2-L1-20151210	440-130588-15	WG	2015-12-10	NORM	Stage 2A	X	X		X							X		X	X	
440-130588-1	TT-TP2-L2-20151210	440-130588-16	WG	2015-12-10	NORM	Stage 2A	X	X		X							X		X	X	
440-130588-1	TT-TP2-M1-20151210	440-130588-5	WG	2015-12-10	NORM	Stage 2A	X	X	X	X		X		X	X		X		X	X	
440-130588-1	TT-TP2-M2-20151210	440-130588-6	WG	2015-12-10	NORM	Stage 2A	X	X	X	X		X		X	X		X		X	X	
440-130588-1	TT-TP3-L1-20151210	440-130588-13	WG	2015-12-10	NORM	Stage 2A	X	X		X				X	X		X		X	X	
440-130588-1	TT-TP3-L2-20151210	440-130588-14	WG	2015-12-10	NORM	Stage 2A	X	X		X							X		X		
440-130588-1	TT-TP3-M1-20151210	440-130588-3	WG	2015-12-10	NORM	Stage 2A	X	X	X	X		X		X	X		X		X	X	
440-130588-1	TT-TP3-M1-20151210-DUP	440-130588-10	WG	2015-12-10	FD	Stage 2A	X	X	X	X		X		X	X		X		X	X	
440-130588-1	TT-TP3-M2-20151210	440-130588-4	WG	2015-12-10	NORM	Stage 2A	X	X	X	X		X		X	X		X		X	X	
440-130588-1	TT-TP4-L1-20151210	440-130588-11	WG	2015-12-10	NORM	Stage 2A	X	X		X							X		X	X	
440-130588-1	TT-TP4-L2-20151210	440-130588-12	WG	2015-12-10	NORM	Stage 2A	X	X		X							X		X	X	
440-130588-1	TT-TP4-M1-20151210	440-130588-1	WG	2015-12-10	NORM	Stage 2A	X	X	X	X		X		X	X		X		X	X	
440-130588-1	TT-TP4-M2-20151210	440-130588-2	WG	2015-12-10	NORM	Stage 2A	X	X	X	X		X		X	X		X		X	X	
440-132876-1	TT-TP2-L1-20160103	440-132876-4	WG	2016-01-03	NORM	Stage 2A								X			X		X		
440-132876-1	TT-TP2-L2-20160103	440-132876-3	WG	2016-01-03	NORM	Stage 2A								X			X		X	X	
440-132876-1	TT-TP2-M1-20160103	440-132876-1	WG	2016-01-03	NORM	Stage 2A								X			X		X	X	
440-132876-1	TT-TP2-M2-20160103	440-132876-2	WG	2016-01-03	NORM	Stage 2A								X			X		X	X	
440-132876-1	TT-TP2-M2-20160103-DUP	440-132876-5	WG	2016-01-03	FD	Stage 2A								X			X		X	X	
440-135664-1	TT-TP1-L1-20160120	440-135664-8	WG	2016-01-20	NORM	Stage 2A				X							X		X		
440-135664-1	TT-TP1-L2-20160120	440-135664-9	WG	2016-01-20	NORM	Stage 2A				X				X			X		X		
440-135664-1	TT-TP1-M1-20160120	440-135664-4	WG	2016-01-20	NORM	Stage 2A				X				X			X		X	X	
440-135664-1	TT-TP1-M2-20160120	440-135664-5	WG	2016-01-20	NORM	Stage 2A				X				X			X		X	X	
440-135664-1	TT-TP2-L1-20160120	440-135664-6	WG	2016-01-20	NORM	Stage 2A				X							X		X		
440-135664-1	TT-TP2-L2-20160120	440-135664-7	WG	2016-01-20	NORM	Stage 2A				X				X			X		X		
440-135664-1	TT-TP2-M1-20160120	440-135664-3	WG	2016-01-20	NORM	Stage 2A				X				X			X		X	X	
440-135664-1	TT-TP2-M2-20160120	440-135664-1	WG	2016-01-20	NORM	Stage 2A				X				X			X		X	X	
440-135664-1	TT-TP2-M2-20160120-DUP	440-135664-2	WG	2016-01-20	FD	Stage 2A				X				X			X		X	X	
440-137164-1	TT-TP1-M1-20160203	440-137164-1	WG	2016-02-03	NORM	Stage 2A				X				X			X		X	X	
440-137164-1	TT-TP1-M2-20160203	440-137164-2	WG	2016-02-03	NORM	Stage 2A				X				X			X		X	X	

Table 9 Sample Cross-Reference

SDG	Client Sample ID	Lab Sample ID	Matrix	Sample Date	QC Type	Validation Stage	Alkalinity and ions by SM2320	Anions by EPA 300.0	Chlorate by EPA 300.1B	Hexavalent Chromium by SW-7199	Hexavalent Chromium by EPA 218.6	Metals by SW-6010B	Metals by SW-6010B_LCH	Metals by SW-6020	Mercury by SW-7470A	Mercury by SW-7471A	Perchlorate by EPA 314.0	pH by SW9045C	TDS by SM2540C	TOC by SM5310	TOC by SW-9060
440-137164-1	TT-TP1-M3-20160203	440-137164-3	WG	2016-02-03	NORM	Stage 2A				X				X			X		X	X	
440-137164-1	TT-TP2-M1-20160203	440-137164-5	WG	2016-02-03	NORM	Stage 2A				X				X			X		X	X	
440-137164-1	TT-TP2-M2-20160203	440-137164-4	WG	2016-02-03	NORM	Stage 2A				X				X			X		X	X	
440-137164-1	TT-TP3-M1-20160203	440-137164-6	WG	2016-02-03	NORM	Stage 2A				X				X			X		X	X	
440-137358-1	TT-TP1-L1-20160204	440-137358-12	WG	2016-02-04	NORM	Stage 2A				X							X		X		
440-137358-1	TT-TP1-L2-20160204	440-137358-13	WG	2016-02-04	NORM	Stage 2A				X				X			X		X	X	
440-137358-1	TT-TP2-L1-20160204	440-137358-10	WG	2016-02-04	NORM	Stage 2A				X							X		X		
440-137358-1	TT-TP2-L2-20160204	440-137358-11	WG	2016-02-04	NORM	Stage 2A				X				X			X		X		
440-137358-1	TT-TP3-L1-20160204	440-137358-8	WG	2016-02-04	NORM	Stage 2A				X							X		X		
440-137358-1	TT-TP3-L2-20160204	440-137358-9	WG	2016-02-04	NORM	Stage 2A				X							X		X		
440-137358-1	TT-TP3-M2-20160204	440-137358-1	WG	2016-02-04	NORM	Stage 2A				X				X			X		X	X	
440-137358-1	TT-TP4-L1-20160204	440-137358-6	WG	2016-02-04	NORM	Stage 2A				X							X		X		
440-137358-1	TT-TP4-L2-20160204	440-137358-7	WG	2016-02-04	NORM	Stage 2A				X							X		X		
440-137358-1	TT-TP4-M1-20160204	440-137358-4	WG	2016-02-04	NORM	Stage 2A				X				X			X		X	X	
440-137358-1	TT-TP4-M2-20160204	440-137358-3	WG	2016-02-04	NORM	Stage 2A				X				X			X		X	X	
440-137358-1	TT-TP4-M3-20160204	440-137358-2	WG	2016-02-04	NORM	Stage 2A				X				X			X		X	X	
440-137358-1	TT-TP4-M3-20160204-DUP	440-137358-5	WG	2016-02-04	FD	Stage 2A				X				X			X		X	X	
440-137910-1	TT-TP1-M1-20160210	440-137910-2	WG	2016-02-10	NORM	Stage 2A	X	X	X		X	X		X	X		X		X	X	
440-137910-1	TT-TP1-M2-20160210	440-137910-1	WG	2016-02-10	NORM	Stage 2A	X	X	X		X	X		X	X		X		X	X	
440-137910-1	TT-TP1-M3-20160210	440-137910-3	WG	2016-02-10	NORM	Stage 2A	X	X	X		X	X		X	X		X		X	X	
440-137910-1	TT-TP2-M1-20160210	440-137910-4	WG	2016-02-10	NORM	Stage 2A	X	X	X		X	X		X	X		X		X	X	
440-137910-1	TT-TP2-M2-20160210	440-137910-5	WG	2016-02-10	NORM	Stage 2A	X	X	X		X	X		X	X		X		X	X	
440-137910-1	TT-TP3-M2-20160210	440-137910-6	WG	2016-02-10	NORM	Stage 2A	X	X	X		X	X		X	X		X		X	X	
440-138059-1	TT-TP1-L1-20160211	440-138059-9	WG	2016-02-11	NORM	Stage 2A											X				
440-138059-1	TT-TP1-L2-20160211	440-138059-10	WG	2016-02-11	NORM	Stage 2A					X			X			X		X		
440-138059-1	TT-TP2-L1-20160211	440-138059-7	WG	2016-02-11	NORM	Stage 2A					X						X				
440-138059-1	TT-TP2-L2-20160211	440-138059-8	WG	2016-02-11	NORM	Stage 2A					X						X		X		
440-138059-1	TT-TP3-L1-20160211	440-138059-5	WG	2016-02-11	NORM	Stage 2A					X						X				
440-138059-1	TT-TP3-L2-20160211	440-138059-6	WG	2016-02-11	NORM	Stage 2A											X				
440-138059-1	TT-TP3-M1-20160211	440-138059-1	WG	2016-02-11	NORM	Stage 2A	X	X	X		X	X		X	X		X		X	X	
440-138059-1	TT-TP4-L1-20160211	440-138059-3	WG	2016-02-11	NORM	Stage 2A					X						X				
440-138059-1	TT-TP4-L2-20160211	440-138059-4	WG	2016-02-11	NORM	Stage 2A					X						X				

Table 9 Sample Cross-Reference

SDG	Client Sample ID	Lab Sample ID	Matrix	Sample Date	QC Type	Validation Stage	Alkalinity and ions by SM2320	Anions by EPA 300.0	Chlorate by EPA 300.1B	Hexavalent Chromium by SW-7199	Hexavalent Chromium by EPA 218.6	Metals by SW-6010B	Metals by SW-6010B_LCH	Metals by SW-6020	Mercury by SW-7470A	Mercury by SW-7471A	Perchlorate by EPA 314.0	pH by SW9045C	TDS by SM2540C	TOC by SM5310	TOC by SW-9060
440-138059-1	TT-TP4-M1-20160211	440-138059-2	WG	2016-02-11	NORM	Stage 2A	X	X	X		X	X		X	X		X		X	X	
440-138059-1	TT-TP4-M2-20160211	440-138059-11	WG	2016-02-11	NORM	Stage 2A	X	X	X		X	X		X	X		X		X	X	
440-138059-1	TT-TP4-M2-20160211-DUP	440-138059-12	WG	2016-02-11	FD	Stage 2A	X	X	X		X	X		X	X		X		X	X	
440-138059-1	TT-TP4-M3-20160211	440-138059-13	WG	2016-02-11	NORM	Stage 2A	X	X	X		X	X		X	X		X		X	X	
440-138539-1	TT-TP1-M1-20160217	440-138539-1	WG	2016-02-17	NORM	Stage 2A					X			X			X		X	X	
440-138539-1	TT-TP1-M2-20160217	440-138539-2	WG	2016-02-17	NORM	Stage 2A					X			X			X		X	X	
440-138539-1	TT-TP1-M3-20160217	440-138539-3	WG	2016-02-17	NORM	Stage 2A					X			X			X		X	X	
440-138539-1	TT-TP2-M1-20160217	440-138539-4	WG	2016-02-17	NORM	Stage 2A					X			X			X		X	X	
440-138539-1	TT-TP2-M2-20160217	440-138539-5	WG	2016-02-17	NORM	Stage 2A					X			X			X		X	X	
440-138657-1	TT-TP1-L1-20160218	440-138657-13	WG	2016-02-18	NORM	Stage 2A					X						X				
440-138657-1	TT-TP1-L2-20160218	440-138657-14	WG	2016-02-18	NORM	Stage 2A					X			X			X		X		
440-138657-1	TT-TP2-L1-20160218	440-138657-11	WG	2016-02-18	NORM	Stage 2A					X						X		X		
440-138657-1	TT-TP2-L2-20160218	440-138657-12	WG	2016-02-18	NORM	Stage 2A					X			X			X		X		
440-138657-1	TT-TP3-L1-20160218	440-138657-9	WG	2016-02-18	NORM	Stage 2A					X						X				
440-138657-1	TT-TP3-L2-20160218	440-138657-10	WG	2016-02-18	NORM	Stage 2A											X				
440-138657-1	TT-TP3-M1-20160218	440-138657-1	WG	2016-02-18	NORM	Stage 2A					X			X			X		X	X	
440-138657-1	TT-TP3-M2-20160218	440-138657-2	WG	2016-02-18	NORM	Stage 2A					X			X			X		X	X	
440-138657-1	TT-TP4-L1-20160218	440-138657-7	WG	2016-02-18	NORM	Stage 2A					X			X			X		X		
440-138657-1	TT-TP4-L2-20160218	440-138657-8	WG	2016-02-18	NORM	Stage 2A					X			X			X		X		
440-138657-1	TT-TP4-M1-20160218	440-138657-3	WG	2016-02-18	NORM	Stage 2A					X			X			X		X	X	
440-138657-1	TT-TP4-M2-20160218	440-138657-4	WG	2016-02-18	NORM	Stage 2A					X			X			X		X	X	
440-138657-1	TT-TP4-M3-20160218	440-138657-5	WG	2016-02-18	NORM	Stage 2A					X			X			X		X	X	
440-138657-1	TT-TP4-M3-20160218-DUP	440-138657-6	WG	2016-02-18	FD	Stage 2A					X			X			X		X	X	
440-139185-1	TT-TP1-M1	440-139185-1	WG	2016-02-24	NORM	Stage 2A				X				X			X		X	X	
440-139185-1	TT-TP1-M2	440-139185-2	WG	2016-02-24	NORM	Stage 2A				X				X			X		X	X	
440-139185-1	TT-TP1-M3	440-139185-3	WG	2016-02-24	NORM	Stage 2A				X				X			X		X	X	
440-139185-1	TT-TP2-M1	440-139185-5	WG	2016-02-24	NORM	Stage 2A				X				X			X		X	X	
440-139185-1	TT-TP2-M2	440-139185-4	WG	2016-02-24	NORM	Stage 2A				X				X			X		X	X	
440-139326-1	TT-TP1-L1-20160225	440-139326-13	WG	2016-02-25	NORM	Stage 2A				X							X		X		
440-139326-1	TT-TP1-L2-20160225	440-139326-14	WG	2016-02-25	NORM	Stage 2A				X				X			X		X		
440-139326-1	TT-TP2-L1-20160225	440-139326-11	WG	2016-02-25	NORM	Stage 2A				X							X		X		
440-139326-1	TT-TP2-L2-20160225	440-139326-12	WG	2016-02-25	NORM	Stage 2A				X							X		X		

Table 9 Sample Cross-Reference

SDG	Client Sample ID	Lab Sample ID	Matrix	Sample Date	QC Type	Validation Stage	Alkalinity and ions by SM2320	Anions by EPA 300.0	Chlorate by EPA 300.1B	Hexavalent Chromium by SW-7199	Hexavalent Chromium by EPA 218.6	Metals by SW-6010B	Metals by SW-6010B_LCH	Metals by SW-6020	Mercury by SW-7470A	Mercury by SW-7471A	Perchlorate by EPA 314.0	pH by SW9045C	TDS by SM2540C	TOC by SM5310	TOC by SW-9060
440-139326-1	TT-TP3-L1-20160225	440-139326-9	WG	2016-02-25	NORM	Stage 2A				X							X		X		
440-139326-1	TT-TP3-L2-20160225	440-139326-10	WG	2016-02-25	NORM	Stage 2A				X				X			X		X		
440-139326-1	TT-TP3-M1-20160225	440-139326-1	WG	2016-02-25	NORM	Stage 2A				X				X			X		X	X	
440-139326-1	TT-TP3-M2-20160225	440-139326-2	WG	2016-02-25	NORM	Stage 2A				X							X		X	X	
440-139326-1	TT-TP4-L1-20160225	440-139326-7	WG	2016-02-25	NORM	Stage 2A				X							X		X		
440-139326-1	TT-TP4-L2-20160225	440-139326-8	WG	2016-02-25	NORM	Stage 2A				X							X		X		
440-139326-1	TT-TP4-M1-20160225	440-139326-3	WG	2016-02-25	NORM	Stage 2A				X				X			X		X	X	
440-139326-1	TT-TP4-M2-20160225	440-139326-4	WG	2016-02-25	NORM	Stage 2A				X				X			X		X	X	
440-139326-1	TT-TP4-M3-20160225	440-139326-5	WG	2016-02-25	NORM	Stage 2A				X				X			X		X	X	
440-139326-1	TT-TP4-M3-20160225-DUP	440-139326-6	WG	2016-02-25	FD	Stage 2A				X				X			X		X	X	
440-139843-1	TT-TP1-M1-20160302	440-139843-3	WG	2016-03-02	NORM	Stage 2A				X				X			X		X	X	
440-139843-1	TT-TP1-M2-20160302	440-139843-2	WG	2016-03-02	NORM	Stage 2A				X				X			X		X	X	
440-139843-1	TT-TP1-M3-20160302	440-139843-1	WG	2016-03-02	NORM	Stage 2A				X				X			X		X	X	
440-139843-1	TT-TP2-M1-20160302	440-139843-5	WG	2016-03-02	NORM	Stage 2A				X				X			X		X	X	
440-139843-1	TT-TP2-M2-20160302	440-139843-4	WG	2016-03-02	NORM	Stage 2A				X				X			X		X	X	
440-139965-1	TT-TP1-L1-20160303	440-139965-13	WG	2016-03-03	NORM	Stage 2A				X							X		X		
440-139965-1	TT-TP1-L2-20160303	440-139965-14	WG	2016-03-03	NORM	Stage 2A				X				X			X		X		
440-139965-1	TT-TP2-L1-20160303	440-139965-11	WG	2016-03-03	NORM	Stage 2A				X							X		X		
440-139965-1	TT-TP2-L2-20160303	440-139965-12	WG	2016-03-03	NORM	Stage 2A				X							X		X		
440-139965-1	TT-TP3-L1-20160303	440-139965-9	WG	2016-03-03	NORM	Stage 2A				X							X		X		
440-139965-1	TT-TP3-L2-20160303	440-139965-10	WG	2016-03-03	NORM	Stage 2A				X							X		X		
440-139965-1	TT-TP3-M1-20160303	440-139965-1	WG	2016-03-03	NORM	Stage 2A				X				X			X		X	X	
440-139965-1	TT-TP3-M2-20160303	440-139965-2	WG	2016-03-03	NORM	Stage 2A				X				X			X		X	X	
440-139965-1	TT-TP4-L1-20160303	440-139965-7	WG	2016-03-03	NORM	Stage 2A				X							X		X		
440-139965-1	TT-TP4-L2-20160303	440-139965-8	WG	2016-03-03	NORM	Stage 2A				X							X		X		
440-139965-1	TT-TP4-M1-20160303	440-139965-3	WG	2016-03-03	NORM	Stage 2A				X				X			X		X	X	
440-139965-1	TT-TP4-M2-20160303	440-139965-4	WG	2016-03-03	NORM	Stage 2A				X				X			X		X	X	
440-139965-1	TT-TP4-M3-20160303	440-139965-5	WG	2016-03-03	NORM	Stage 2A				X				X			X		X	X	
440-139965-1	TT-TP4-M3-20160303-DUP	440-139965-6	WG	2016-03-03	FD	Stage 2A				X				X			X		X	X	
440-140696-1	TT-TP1-M1-20160309	440-140696-3	WG	2016-03-09	NORM	Stage 2A	X	X	X	X		X		X	X		X		X	X	
440-140696-1	TT-TP1-M2-20160309	440-140696-2	WG	2016-03-09	NORM	Stage 2A	X	X	X	X		X		X	X		X		X	X	
440-140696-1	TT-TP1-M3-20160309	440-140696-1	WG	2016-03-09	NORM	Stage 2A	X	X	X	X		X		X	X		X		X	X	

Table 9 Sample Cross-Reference

SDG	Client Sample ID	Lab Sample ID	Matrix	Sample Date	QC Type	Validation Stage	Alkalinity and ions by SM2320	Anions by EPA 300.0	Chlorate by EPA 300.1B	Hexavalent Chromium by SW-7199	Hexavalent Chromium by EPA 218.6	Metals by SW-6010B	Metals by SW-6010B_LCH	Metals by SW-6020	Mercury by SW-7470A	Mercury by SW-7471A	Perchlorate by EPA 314.0	pH by SW9045C	TDS by SM2540C	TOC by SM5310	TOC by SW-9060
440-140696-1	TT-TP2-M1-20160309	440-140696-5	WG	2016-03-09	NORM	Stage 2A	X	X	X	X		X		X	X		X		X	X	
440-140696-1	TT-TP2-M2-20160309	440-140696-4	WG	2016-03-09	NORM	Stage 2A	X	X	X	X		X		X	X				X	X	
440-140826-1	TT-TP1-L1-20160310	440-140826-17	WG	2016-03-10	NORM	Stage 2A				X							X		X		
440-140826-1	TT-TP1-L2-20160310	440-140826-12	WG	2016-03-10	NORM	Stage 2A				X				X			X		X		
440-140826-1	TT-TP2-L1-20160310	440-140826-18	WG	2016-03-10	NORM	Stage 2A				X							X		X		
440-140826-1	TT-TP2-L2-20160310	440-140826-19	WG	2016-03-10	NORM	Stage 2A				X							X		X		
440-140826-1	TT-TP2-M2-20160309	440-140826-9	WG	2016-03-09	NORM	Stage 2A											X				
440-140826-1	TT-TP3-L1-20160310	440-140826-14	WG	2016-03-10	NORM	Stage 2A				X							X		X		
440-140826-1	TT-TP3-L2-20160310	440-140826-13	WG	2016-03-10	NORM	Stage 2A				X				X			X		X		
440-140826-1	TT-TP3-M1-20160310	440-140826-2	WG	2016-03-10	NORM	Stage 2A	X	X	X	X		X		X	X		X		X	X	
440-140826-1	TT-TP3-M2-20160310	440-140826-1	WG	2016-03-10	NORM	Stage 2A	X	X	X	X		X		X	X		X		X	X	
440-140826-1	TT-TP4-L1-20160310	440-140826-16	WG	2016-03-10	NORM	Stage 2A				X							X		X		
440-140826-1	TT-TP4-L2-20160310	440-140826-15	WG	2016-03-10	NORM	Stage 2A				X							X		X		
440-140826-1	TT-TP4-M1-20160310	440-140826-3	WG	2016-03-10	NORM	Stage 2A	X	X	X	X		X		X	X		X		X	X	
440-140826-1	TT-TP4-M2-20160310	440-140826-4	WG	2016-03-10	NORM	Stage 2A	X	X	X	X		X		X	X		X		X	X	
440-140826-1	TT-TP4-M3-20160310	440-140826-5	WG	2016-03-10	NORM	Stage 2A	X	X	X	X		X		X	X		X		X	X	
440-140826-1	TT-TP4-M3-20160310-DUP	440-140826-11	WG	2016-03-10	FD	Stage 2A	X	X	X	X		X		X	X		X		X	X	
440-141586-1	TT-TP1-M1-20160316	440-141586-1	WG	2016-03-16	NORM	Stage 2A				X				X			X		X	X	
440-141586-1	TT-TP1-M2-20160316	440-141586-2	WG	2016-03-16	NORM	Stage 2A				X				X			X		X	X	
440-141586-1	TT-TP1-M3-20160316	440-141586-3	WG	2016-03-16	NORM	Stage 2A				X				X			X		X	X	
440-141586-1	TT-TP2-M1-20160316	440-141586-4	WG	2016-03-16	NORM	Stage 2A				X				X			X		X	X	
440-141586-1	TT-TP2-M2-20160316	440-141586-5	WG	2016-03-16	NORM	Stage 2A				X				X			X		X	X	
440-141586-1	TT-TP3-M1-20160316	440-141586-6	WG	2016-03-16	NORM	Stage 2A				X				X			X		X	X	
440-141586-1	TT-TP3-M2-20160316	440-141586-7	WG	2016-03-16	NORM	Stage 2A				X				X			X		X	X	
440-141827-1	TT-TP1-L1-20160317	440-141827-11	WG	2016-03-17	NORM	Stage 2A				X							X		X		
440-141827-1	TT-TP1-L2-20160317	440-141827-12	WG	2016-03-17	NORM	Stage 2A				X							X		X		
440-141827-1	TT-TP2-L1-20160317	440-141827-9	WG	2016-03-17	NORM	Stage 2A				X							X		X		
440-141827-1	TT-TP2-L2-20160317	440-141827-10	WG	2016-03-17	NORM	Stage 2A				X							X		X		
440-141827-1	TT-TP3-L1-20160317	440-141827-7	WG	2016-03-17	NORM	Stage 2A											X				
440-141827-1	TT-TP3-L2-20160317	440-141827-8	WG	2016-03-17	NORM	Stage 2A				X							X		X		
440-141827-1	TT-TP4-L1-20160317	440-141827-5	WG	2016-03-17	NORM	Stage 2A				X							X		X		
440-141827-1	TT-TP4-L2-20160317	440-141827-6	WG	2016-03-17	NORM	Stage 2A				X							X		X		

Table 9 Sample Cross-Reference

SDG	Client Sample ID	Lab Sample ID	Matrix	Sample Date	QC Type	Validation Stage	Alkalinity and ions by SM2320	Anions by EPA 300.0	Chlorate by EPA 300.1B	Hexavalent Chromium by SW-7199	Hexavalent Chromium by EPA 218.6	Metals by SW-6010B	Metals by SW-6010B_LCH	Metals by SW-6020	Mercury by SW-7470A	Mercury by SW-7471A	Perchlorate by EPA 314.0	pH by SW9045C	TDS by SM2540C	TOC by SM5310	TOC by SW-9060
440-141827-1	TT-TP4-M1-20160317	440-141827-1	WG	2016-03-17	NORM	Stage 2A				X				X			X		X	X	
440-141827-1	TT-TP4-M2-20160317	440-141827-2	WG	2016-03-17	NORM	Stage 2A				X				X			X		X	X	
440-141827-1	TT-TP4-M3-20160317	440-141827-3	WG	2016-03-17	NORM	Stage 2A				X				X			X		X	X	
440-141827-1	TT-TP4-M3-20160317-DUP	440-141827-4	WG	2016-03-17	FD	Stage 2A				X				X			X		X	X	
440-142439-1	TT-TP1-L1-20160323	440-142439-14	WG	2016-03-23	NORM	Stage 2A				X							X		X		
440-142439-1	TT-TP1-L2-20160323	440-142439-15	WG	2016-03-23	NORM	Stage 2A				X							X		X		
440-142439-1	TT-TP1-M1-20160323	440-142439-1	WG	2016-03-23	NORM	Stage 2A				X				X			X		X	X	
440-142439-1	TT-TP1-M2-20160323	440-142439-2	WG	2016-03-23	NORM	Stage 2A				X				X			X		X	X	
440-142439-1	TT-TP1-M3-20160323	440-142439-3	WG	2016-03-23	NORM	Stage 2A				X							X		X	X	
440-142439-1	TT-TP2-L1-20160323	440-142439-12	WG	2016-03-23	NORM	Stage 2A				X							X		X		
440-142439-1	TT-TP2-L2-20160323	440-142439-13	WG	2016-03-23	NORM	Stage 2A				X							X		X		
440-142439-1	TT-TP2-M1-20160323	440-142439-4	WG	2016-03-23	NORM	Stage 2A				X				X			X		X	X	
440-142439-1	TT-TP2-M2-20160323	440-142439-5	WG	2016-03-23	NORM	Stage 2A				X				X			X		X	X	
440-142439-1	TT-TP3-L1-20160323	440-142439-10	WG	2016-03-23	NORM	Stage 2A				X							X		X		
440-142439-1	TT-TP3-L2-20160323	440-142439-11	WG	2016-03-23	NORM	Stage 2A				X							X		X		
440-142439-1	TT-TP3-M1-20160323	440-142439-6	WG	2016-03-23	NORM	Stage 2A				X				X			X		X	X	
440-142439-1	TT-TP3-M2-20160323	440-142439-7	WG	2016-03-23	NORM	Stage 2A				X				X			X		X	X	
440-142439-1	TT-TP4-L1-20160323	440-142439-8	WG	2016-03-23	NORM	Stage 2A											X				
440-142439-1	TT-TP4-L2-20160323	440-142439-9	WG	2016-03-23	NORM	Stage 2A				X							X		X		
440-142556-1	TT-TP4-M1-20160324	440-142556-1	WG	2016-03-24	NORM	Stage 2A				X				X			X		X	X	
440-142556-1	TT-TP4-M2-20160324	440-142556-2	WG	2016-03-24	NORM	Stage 2A				X				X			X		X	X	
440-142556-1	TT-TP4-M3-20160324	440-142556-3	WG	2016-03-24	NORM	Stage 2A				X				X			X		X	X	
440-142556-1	TT-TP4-M3-20160324-DUP	440-142556-4	WG	2016-03-24	FD	Stage 2A				X				X			X		X	X	
440-142922-1	TT-TP1-M1-20160330	440-142922-1	WG	2016-03-30	NORM	Stage 2A				X				X			X		X	X	
440-142922-1	TT-TP1-M2-20160330	440-142922-2	WG	2016-03-30	NORM	Stage 2A				X				X			X		X	X	
440-142922-1	TT-TP1-M3-20160330	440-142922-3	WG	2016-03-30	NORM	Stage 2A				X				X			X		X	X	
440-142922-1	TT-TP2-M1-20160330	440-142922-4	WG	2016-03-30	NORM	Stage 2A				X				X			X		X	X	
440-142922-1	TT-TP2-M2-20160330	440-142922-5	WG	2016-03-30	NORM	Stage 2A				X				X			X		X	X	
440-143078-1	TT-TP1-L1-20160331	440-143078-13	WG	2016-03-31	NORM	Stage 2A				X							X		X		
440-143078-1	TT-TP1-L2-20160331	440-143078-14	WG	2016-03-31	NORM	Stage 2A				X							X		X		
440-143078-1	TT-TP2-L1-20160331	440-143078-11	WG	2016-03-31	NORM	Stage 2A				X							X		X		
440-143078-1	TT-TP2-L2-20160331	440-143078-12	WG	2016-03-31	NORM	Stage 2A				X							X		X		

Table 9 Sample Cross-Reference

SDG	Client Sample ID	Lab Sample ID	Matrix	Sample Date	QC Type	Validation Stage	Alkalinity and ions by SM2320	Anions by EPA 300.0	Chlorate by EPA 300.1B	Hexavalent Chromium by SW-7199	Hexavalent Chromium by EPA 218.6	Metals by SW-6010B	Metals by SW-6010B_LCH	Metals by SW-6020	Mercury by SW-7470A	Mercury by SW-7471A	Perchlorate by EPA 314.0	pH by SW9045C	TDS by SM2540C	TOC by SM5310	TOC by SW-9060
440-143078-1	TT-TP3-L1-20160331	440-143078-9	WG	2016-03-31	NORM	Stage 2A											X				
440-143078-1	TT-TP3-L2-20160331	440-143078-10	WG	2016-03-31	NORM	Stage 2A				X							X		X		
440-143078-1	TT-TP3-M1-20160331	440-143078-1	WG	2016-03-31	NORM	Stage 2A				X				X			X		X	X	
440-143078-1	TT-TP3-M2-20160331	440-143078-2	WG	2016-03-31	NORM	Stage 2A				X				X			X		X	X	
440-143078-1	TT-TP4-L1-20160331	440-143078-7	WG	2016-03-31	NORM	Stage 2A				X							X		X		
440-143078-1	TT-TP4-M1-20160331	440-143078-3	WG	2016-03-31	NORM	Stage 2A				X				X			X		X	X	
440-143078-1	TT-TP4-M2-20160331	440-143078-4	WG	2016-03-31	NORM	Stage 2A				X				X			X		X	X	
440-143078-1	TT-TP4-M3-20160331	440-143078-5	WG	2016-03-31	NORM	Stage 2A				X				X			X		X	X	
440-143078-1	TT-TP4-M3-20160331-DUP	440-143078-6	WG	2016-03-31	FD	Stage 2A				X							X		X	X	
440-143273-1	TT-TP1-M1-2016	440-143273-1	WG	2016-04-04	NORM	Stage 2A	X	X	X	X		X		X	X		X		X	X	
440-143273-1	TT-TP1-M2-2016	440-143273-2	WG	2016-04-04	NORM	Stage 2A	X	X	X	X		X		X	X		X		X	X	
440-143273-1	TT-TP1-M3-2016	440-143273-3	WG	2016-04-04	NORM	Stage 2A	X	X	X	X		X		X	X		X		X	X	
440-143273-1	TT-TP2-M1-2016	440-143273-4	WG	2016-04-04	NORM	Stage 2A	X	X	X	X		X		X	X		X		X	X	
440-143273-1	TT-TP2-M2-2016	440-143273-5	WG	2016-04-04	NORM	Stage 2A	X	X	X	X		X		X	X		X		X	X	
440-143458-1	TT-TP1-L1-20160405	440-143458-8	WG	2016-04-05	NORM	Stage 2A				X							X		X		
440-143458-1	TT-TP1-L2-20160405	440-143458-9	WG	2016-04-05	NORM	Stage 2A				X							X		X		
440-143458-1	TT-TP2-L1-20160405	440-143458-10	WG	2016-04-05	NORM	Stage 2A				X							X		X		
440-143458-1	TT-TP2-L2-20160405	440-143458-11	WG	2016-04-05	NORM	Stage 2A				X							X		X		
440-143458-1	TT-TP3-L1-20160405	440-143458-12	WG	2016-04-05	NORM	Stage 2A											X				
440-143458-1	TT-TP3-L2-20160405	440-143458-13	WG	2016-04-05	NORM	Stage 2A				X							X		X		
440-143458-1	TT-TP3-M1-20160405	440-143458-1	WG	2016-04-05	NORM	Stage 2A	X	X	X	X		X		X	X		X		X	X	
440-143458-1	TT-TP3-M2-20160405	440-143458-2	WG	2016-04-05	NORM	Stage 2A	X	X	X	X		X		X	X		X		X	X	
440-143458-1	TT-TP4-L1-20160405	440-143458-14	WG	2016-04-05	NORM	Stage 2A				X							X		X		
440-143458-1	TT-TP4-L2-20160331	440-143458-6	WG	2016-03-31	NORM	Stage 2A											X				
440-143458-1	TT-TP4-L2-20160405	440-143458-15	WG	2016-04-05	NORM	Stage 2A				X							X		X		
440-143458-1	TT-TP4-M1-20160405	440-143458-3	WG	2016-04-05	NORM	Stage 2A	X	X	X	X		X		X	X		X		X	X	
440-143458-1	TT-TP4-M2-20160405	440-143458-4	WG	2016-04-05	NORM	Stage 2A	X	X	X	X		X		X	X		X		X	X	
440-143458-1	TT-TP4-M3-20160405	440-143458-5	WG	2016-04-05	NORM	Stage 2A	X	X	X	X		X		X	X		X		X	X	
440-143458-1	TT-TP4-M3-20160405-DUP	440-143458-7	WG	2016-04-05	FD	Stage 2A	X	X	X	X		X		X	X		X		X	X	
440-144411-1	TT-TP1-M1-20160413	440-144411-1	WG	2016-04-13	NORM	Stage 2A				X				X			X		X	X	
440-144411-1	TT-TP1-M2-20160413	440-144411-2	WG	2016-04-13	NORM	Stage 2A				X				X			X		X	X	
440-144411-1	TT-TP1-M3-20160413	440-144411-3	WG	2016-04-13	NORM	Stage 2A				X				X			X		X	X	

Table 9 Sample Cross-Reference

SDG	Client Sample ID	Lab Sample ID	Matrix	Sample Date	QC Type	Validation Stage	Alkalinity and ions by SM2320	Anions by EPA 300.0	Chlorate by EPA 300.1B	Hexavalent Chromium by SW-7199	Hexavalent Chromium by EPA 218.6	Metals by SW-6010B	Metals by SW-6010B_LCH	Metals by SW-6020	Mercury by SW-7470A	Mercury by SW-7471A	Perchlorate by EPA 314.0	pH by SW9045C	TDS by SM2540C	TOC by SM5310	TOC by SW-9060
440-145020-1	TT-TP3-M1-20160420	440-145020-1	WG	2016-04-20	NORM	Stage 2A				X				X			X			X	
440-145020-1	TT-TP3-M2-20160420	440-145020-2	WG	2016-04-20	NORM	Stage 2A				X				X			X			X	
440-145020-1	TT-TP4-M1-20160420	440-145020-3	WG	2016-04-20	NORM	Stage 2A				X				X			X			X	
440-145020-1	TT-TP4-M2-20160420	440-145020-4	WG	2016-04-20	NORM	Stage 2A				X				X			X			X	
440-145020-1	TT-TP4-M3-20160420	440-145020-5	WG	2016-04-20	NORM	Stage 2A				X				X			X			X	
440-145020-1	TT-TP4-M3-20160420-DUP	440-145020-6	WG	2016-04-20	FD	Stage 2A				X				X			X			X	
440-145023-1	TT-TP1-L1-20160420	440-145023-1	WG	2016-04-20	NORM	Stage 2A				X							X				
440-145023-1	TT-TP1-L2-20160420	440-145023-2	WG	2016-04-20	NORM	Stage 2A				X				X			X				
440-145023-1	TT-TP2-L1-20160420	440-145023-3	WG	2016-04-20	NORM	Stage 2A				X							X				
440-145023-1	TT-TP2-L2-20160420	440-145023-4	WG	2016-04-20	NORM	Stage 2A				X				X			X				
440-145023-1	TT-TP3-L1-20160420	440-145023-5	WG	2016-04-20	NORM	Stage 2A											X				
440-145023-1	TT-TP3-L2-20160420	440-145023-6	WG	2016-04-20	NORM	Stage 2A				X				X			X				
440-145023-1	TT-TP4-L1-20160420	440-145023-7	WG	2016-04-20	NORM	Stage 2A				X							X				
440-145023-1	TT-TP4-L2-20160420	440-145023-8	WG	2016-04-20	NORM	Stage 2A				X							X				
440-145639-1	TT-TP1-M1-20160427	440-145639-1	WG	2016-04-27	NORM	Stage 2A				X				X			X		X	X	
440-145639-1	TT-TP1-M2-20160427	440-145639-2	WG	2016-04-27	NORM	Stage 2A				X				X			X		X	X	
440-145639-1	TT-TP1-M3-20160427	440-145639-3	WG	2016-04-27	NORM	Stage 2A				X				X			X		X	X	
440-145639-1	TT-TP2-M1-20160427	440-145639-4	WG	2016-04-27	NORM	Stage 2A				X				X			X		X	X	
440-145639-1	TT-TP2-M2-20160427	440-145639-5	WG	2016-04-27	NORM	Stage 2A				X				X			X		X	X	
440-145639-1	TT-TP3-M1--20160427	440-145639-6	WG	2016-04-27	NORM	Stage 2A				X				X			X		X	X	
440-145639-1	TT-TP3-M2-20160427	440-145639-7	WG	2016-04-27	NORM	Stage 2A				X				X			X		X	X	
440-145639-1	TT-TP4-M1-20160427	440-145639-8	WG	2016-04-27	NORM	Stage 2A				X				X			X		X	X	
440-145639-1	TT-TP4-M2-20160427	440-145639-9	WG	2016-04-27	NORM	Stage 2A				X				X			X		X	X	
440-145639-1	TT-TP4-M3-20160427	440-145639-10	WG	2016-04-27	NORM	Stage 2A				X				X			X		X	X	
440-145639-1	TT-TP4-M3-20160427-DUP	440-145639-11	WG	2016-04-27	FD	Stage 2A				X				X			X		X	X	
440-145766-1	TT-TP1-L1-20160428	440-145766-1	WG	2016-04-28	NORM	Stage 2A				X							X		X		
440-145766-1	TT-TP1-L2-20160428	440-145766-2	WG	2016-04-28	NORM	Stage 2A				X							X		X		
440-145766-1	TT-TP2-L1-20160428	440-145766-3	WG	2016-04-28	NORM	Stage 2A				X							X		X		
440-145766-1	TT-TP2-L2-20160428	440-145766-4	WG	2016-04-28	NORM	Stage 2A				X							X		X		
440-145766-1	TT-TP3-L1-20160428	440-145766-5	WG	2016-04-28	NORM	Stage 2A											X				
440-145766-1	TT-TP3-L2-20160428	440-145766-6	WG	2016-04-28	NORM	Stage 2A				X							X		X		
440-145766-1	TT-TP4-L1-20160428	440-145766-7	WG	2016-04-28	NORM	Stage 2A				X							X		X		

Table 9 Sample Cross-Reference

SDG	Client Sample ID	Lab Sample ID	Matrix	Sample Date	QC Type	Validation Stage	Alkalinity and ions by SM2320	Anions by EPA 300.0	Chlorate by EPA 300.1B	Hexavalent Chromium by SW-7199	Hexavalent Chromium by EPA 218.6	Metals by SW-6010B	Metals by SW-6010B_LCH	Metals by SW-6020	Mercury by SW-7470A	Mercury by SW-7471A	Perchlorate by EPA 314.0	pH by SW9045C	TDS by SM2540C	TOC by SM5310	TOC by SW-9060
440-145766-1	TT-TP4-L2-20160428	440-145766-8	WG	2016-04-28	NORM	Stage 2A				X							X		X		
440-146375-1	TT-TP1-M1-20160504	440-146375-1	WG	2016-05-04	NORM	Stage 2A	X	X	X	X		X		X	X		X		X	X	
440-146375-1	TT-TP1-M2-20160504	440-146375-2	WG	2016-05-04	NORM	Stage 2A	X	X	X	X		X		X	X		X		X	X	
440-146375-1	TT-TP1-M3-20160504	440-146375-3	WG	2016-05-04	NORM	Stage 2A	X	X	X	X		X		X	X		X		X	X	
440-146375-1	TT-TP2-M1-20160504	440-146375-4	WG	2016-05-04	NORM	Stage 2A	X	X	X	X		X		X	X		X		X	X	
440-146524-1	TT-TP1-L1-20160505	440-146524-13	WG	2016-05-05	NORM	Stage 2A				X							X		X		
440-146524-1	TT-TP1-L2-20160505	440-146524-14	WG	2016-05-05	NORM	Stage 2A				X							X		X		
440-146524-1	TT-TP2-L1-20160505	440-146524-8	WG	2016-05-05	NORM	Stage 2A				X							X		X		
440-146524-1	TT-TP2-L2-20160505	440-146524-7	WG	2016-05-05	NORM	Stage 2A				X				X			X		X		
440-146524-1	TT-TP2-M2-20160505	440-146524-1	WG	2016-05-05	NORM	Stage 2A	X	X	X	X		X		X	X		X		X	X	
440-146524-1	TT-TP3-L1-20160505	440-146524-10	WG	2016-05-05	NORM	Stage 2A				X							X		X		
440-146524-1	TT-TP3-L2-20160505	440-146524-9	WG	2016-05-05	NORM	Stage 2A				X				X			X		X		
440-146524-1	TT-TP3-M1-20160505	440-146524-3	WG	2016-05-05	NORM	Stage 2A	X	X	X	X		X		X	X		X		X	X	
440-146524-1	TT-TP3-M2-20160505	440-146524-2	WG	2016-05-05	NORM	Stage 2A	X	X	X	X		X		X	X		X		X	X	
440-146524-1	TT-TP4-L1-20160505	440-146524-12	WG	2016-05-05	NORM	Stage 2A				X				X			X		X		
440-146524-1	TT-TP4-L2-20160505	440-146524-11	WG	2016-05-05	NORM	Stage 2A				X				X					X		
440-146524-1	TT-TP4-M1-20160505	440-146524-4	WG	2016-05-05	NORM	Stage 2A	X	X	X	X		X		X	X		X		X	X	
440-146524-1	TT-TP4-M2-20160505	440-146524-5	WG	2016-05-05	NORM	Stage 2A	X	X	X	X		X		X	X		X		X	X	
440-146524-1	TT-TP4-M3-20160505	440-146524-6	WG	2016-05-05	NORM	Stage 2A	X	X	X	X		X		X	X		X		X	X	
440-147006-1	TT-TP1-M1-20160510	440-147006-1	WG	2016-05-10	NORM	Stage 2A				X				X			X		X	X	
440-147006-1	TT-TP1-M2-20160510	440-147006-2	WG	2016-05-10	NORM	Stage 2A				X				X			X		X	X	
440-147006-1	TT-TP1-M3-20160510	440-147006-3	WG	2016-05-10	NORM	Stage 2A				X				X			X		X	X	
440-147243-1	TT-TP1-L1-20160511	440-147243-8	WG	2016-05-11	NORM	Stage 2A				X							X		X		
440-147243-1	TT-TP1-L2-20160511	440-147243-9	WG	2016-05-11	NORM	Stage 2A											X				
440-147243-1	TT-TP2-L1-20160511	440-147243-10	WG	2016-05-11	NORM	Stage 2A				X							X		X		
440-147243-1	TT-TP2-L2-20160511	440-147243-11	WG	2016-05-11	NORM	Stage 2A				X				X			X		X		
440-147243-1	TT-TP2-M1-20160511	440-147243-1	WG	2016-05-11	NORM	Stage 2A				X				X			X		X	X	
440-147243-1	TT-TP2-M2-20160511	440-147243-2	WG	2016-05-11	NORM	Stage 2A				X				X			X		X	X	
440-147243-1	TT-TP3-L1-20160511	440-147243-12	WG	2016-05-11	NORM	Stage 2A											X				
440-147243-1	TT-TP3-L2-20160511	440-147243-13	WG	2016-05-11	NORM	Stage 2A				X				X			X		X	X	
440-147243-1	TT-TP3-M1-20160511	440-147243-3	WG	2016-05-11	NORM	Stage 2A				X				X			X		X	X	
440-147243-1	TT-TP3-M2-20160511	440-147243-4	WG	2016-05-11	NORM	Stage 2A				X				X			X		X	X	

Table 9 Sample Cross-Reference

SDG	Client Sample ID	Lab Sample ID	Matrix	Sample Date	QC Type	Validation Stage	Alkalinity and ions by SM2320	Anions by EPA 300.0	Chlorate by EPA 300.1B	Hexavalent Chromium by SW-7199	Hexavalent Chromium by EPA 218.6	Metals by SW-6010B	Metals by SW-6010B_LCH	Metals by SW-6020	Mercury by SW-7470A	Mercury by SW-7471A	Perchlorate by EPA 314.0	pH by SW9045C	TDS by SM2540C	TOC by SM5310	TOC by SW-9060
440-147243-1	TT-TP4-L1-20160511	440-147243-14	WG	2016-05-11	NORM	Stage 2A				X							X		X		
440-147243-1	TT-TP4-L2-20160511	440-147243-15	WG	2016-05-11	NORM	Stage 2A				X							X		X		
440-147243-1	TT-TP4-M1-20160511	440-147243-5	WG	2016-05-11	NORM	Stage 2A				X				X			X		X	X	
440-147243-1	TT-TP4-M2-20160511	440-147243-6	WG	2016-05-11	NORM	Stage 2A				X				X			X		X	X	
440-147243-1	TT-TP4-M3-20160511	440-147243-7	WG	2016-05-11	NORM	Stage 2A				X				X			X		X	X	
440-147243-1	TT-TP4-M3-20160511-DUP	440-147243-16	WG	2016-05-11	FD	Stage 2A				X				X			X		X	X	
440-147992-1	TT-TP1-L1-20160519	440-147992-12	WG	2016-05-19	NORM	Stage 2A				X							X		X		
440-147992-1	TT-TP1-L2-20160519	440-147992-13	WG	2016-05-19	NORM	Stage 2A				X				X			X		X		
440-147992-1	TT-TP1-M1-20160519	440-147992-1	WG	2016-05-19	NORM	Stage 2A				X				X			X		X	X	
440-147992-1	TT-TP1-M2-20160519	440-147992-2	WG	2016-05-19	NORM	Stage 2A				X				X			X		X	X	
440-147992-1	TT-TP1-M3-20160519	440-147992-3	WG	2016-05-19	NORM	Stage 2A				X				X			X		X	X	
440-147992-1	TT-TP2-L1-20160519	440-147992-14	WG	2016-05-19	NORM	Stage 2A				X							X		X		
440-147992-1	TT-TP2-L2-20160519	440-147992-15	WG	2016-05-19	NORM	Stage 2A				X				X			X		X		
440-147992-1	TT-TP2-M1-20160519	440-147992-4	WG	2016-05-19	NORM	Stage 2A				X				X			X		X	X	
440-147992-1	TT-TP2-M2-20160519	440-147992-5	WG	2016-05-19	NORM	Stage 2A				X				X			X		X	X	
440-147992-1	TT-TP3-L1-20160519	440-147992-16	WG	2016-05-19	NORM	Stage 2A				X							X		X		
440-147992-1	TT-TP3-L2-20160519	440-147992-17	WG	2016-05-19	NORM	Stage 2A				X							X		X		
440-147992-1	TT-TP3-M1-20160519	440-147992-6	WG	2016-05-19	NORM	Stage 2A				X							X		X	X	
440-147992-1	TT-TP3-M2-20160519	440-147992-7	WG	2016-05-19	NORM	Stage 2A				X							X		X	X	
440-147992-1	TT-TP4-L1-20160519	440-147992-18	WG	2016-05-19	NORM	Stage 2A				X							X		X		
440-147992-1	TT-TP4-L2-20160519	440-147992-19	WG	2016-05-19	NORM	Stage 2A				X							X		X		
440-147992-1	TT-TP4-M1-20160519	440-147992-8	WG	2016-05-19	NORM	Stage 2A				X				X			X		X	X	
440-147992-1	TT-TP4-M2-20160519	440-147992-9	WG	2016-05-19	NORM	Stage 2A				X				X			X		X	X	
440-147992-1	TT-TP4-M3-20160519	440-147992-10	WG	2016-05-19	NORM	Stage 2A				X				X			X		X	X	
440-147992-1	TT-TP4-M3-20160519-DUP	440-147992-11	WG	2016-05-19	FD	Stage 2A				X				X			X		X	X	
440-148308-1	TT-TP1-M1-20160524	440-148308-1	WG	2016-05-24	NORM	Stage 2A				X				X			X		X	X	
440-148308-1	TT-TP1-M2-20160524	440-148308-2	WG	2016-05-24	NORM	Stage 2A				X				X			X		X	X	
440-148308-1	TT-TP1-M3-20160524	440-148308-3	WG	2016-05-24	NORM	Stage 2A				X				X			X		X	X	
440-148383-1	TT-TP1-L1-20160525	440-148383-1	WG	2016-05-25	NORM	Stage 2A				X							X		X		
440-148383-1	TT-TP1-L2-20160525	440-148383-2	WG	2016-05-25	NORM	Stage 2A				X				X			X		X		
440-148383-1	TT-TP2-L1-20160525	440-148383-3	WG	2016-05-25	NORM	Stage 2A				X							X		X		
440-148383-1	TT-TP2-L2-20160525	440-148383-4	WG	2016-05-25	NORM	Stage 2A				X				X			X		X		

Table 9 Sample Cross-Reference

SDG	Client Sample ID	Lab Sample ID	Matrix	Sample Date	QC Type	Validation Stage	Alkalinity and ions by SM2320	Anions by EPA 300.0	Chlorate by EPA 300.1B	Hexavalent Chromium by SW-7199	Hexavalent Chromium by EPA 218.6	Metals by SW-6010B	Metals by SW-6010B_LCH	Metals by SW-6020	Mercury by SW-7470A	Mercury by SW-7471A	Perchlorate by EPA 314.0	pH by SW9045C	TDS by SM2540C	TOC by SM5310	TOC by SW-9060
440-148383-1	TT-TP3-L1-20160525	440-148383-5	WG	2016-05-25	NORM	Stage 2A				X							X		X		
440-148383-1	TT-TP3-L2-20160525	440-148383-6	WG	2016-05-25	NORM	Stage 2A				X							X		X		
440-148383-1	TT-TP4-L1-20160525	440-148383-7	WG	2016-05-25	NORM	Stage 2A				X				X			X		X		
440-148383-1	TT-TP4-L2-20160525	440-148383-8	WG	2016-05-25	NORM	Stage 2A				X				X			X		X		
440-148500-1	TT-TP2-M1-20160526	440-148500-1	WG	2016-05-26	NORM	Stage 2A				X				X			X		X	X	
440-148500-1	TT-TP2-M2-20160526	440-148500-2	WG	2016-05-26	NORM	Stage 2A				X				X			X		X	X	
440-148500-1	TT-TP3-M1-20160526	440-148500-3	WG	2016-05-26	NORM	Stage 2A				X				X			X		X	X	
440-148500-1	TT-TP3-M2-20160526	440-148500-4	WG	2016-05-26	NORM	Stage 2A				X				X			X		X	X	
440-148500-1	TT-TP4-M1-20160526	440-148500-5	WG	2016-05-26	NORM	Stage 2A				X				X			X		X	X	
440-148500-1	TT-TP4-M2-20160526	440-148500-6	WG	2016-05-26	NORM	Stage 2A				X				X			X		X	X	
440-148500-1	TT-TP4-M3-20160526	440-148500-7	WG	2016-05-26	NORM	Stage 2A				X				X			X		X	X	
440-148500-1	TT-TP4-M3-20160526-DUP	440-148500-8	WG	2016-05-26	FD	Stage 2A				X				X			X		X	X	
440-148926-1	TT-TP1-M1-20160601	440-148926-2	WG	2016-06-01	NORM	Stage 2A	X	X	X	X		X		X	X		X		X	X	
440-148926-1	TT-TP1-M2-20160601	440-148926-3	WG	2016-06-01	NORM	Stage 2A	X	X	X	X		X		X	X		X		X	X	
440-148926-1	TT-TP1-M3-20160601	440-148926-1	WG	2016-06-01	NORM	Stage 2A	X	X	X	X		X		X	X		X		X	X	
440-148926-1	TT-TP2-M1-20160601	440-148926-5	WG	2016-06-01	NORM	Stage 2A	X	X	X	X		X		X	X		X		X	X	
440-148926-1	TT-TP2-M2-20160601	440-148926-4	WG	2016-06-01	NORM	Stage 2A	X	X	X	X		X		X	X		X		X	X	
440-148926-1	TT-TP3-M1-20160601	440-148926-6	WG	2016-06-01	NORM	Stage 2A	X	X	X	X		X		X	X		X		X	X	
440-149036-1	TT-TP1-L1-20160602	440-149036-6	WG	2016-06-02	NORM	Stage 2A				X							X				
440-149036-1	TT-TP1-L2-20160602	440-149036-7	WG	2016-06-02	NORM	Stage 2A				X							X				
440-149036-1	TT-TP2-L1-20160602	440-149036-8	WG	2016-06-02	NORM	Stage 2A				X							X				
440-149036-1	TT-TP2-L2-20160602	440-149036-9	WG	2016-06-02	NORM	Stage 2A				X							X				
440-149036-1	TT-TP3-L1-20160602	440-149036-10	WG	2016-06-02	NORM	Stage 2A				X							X				
440-149036-1	TT-TP3-L2-20160602	440-149036-11	WG	2016-06-02	NORM	Stage 2A				X							X				
440-149036-1	TT-TP3-M2-20160602	440-149036-1	WG	2016-06-02	NORM	Stage 2A	X	X	X	X		X		X	X		X		X	X	
440-149036-1	TT-TP4-L1-20160602	440-149036-12	WG	2016-06-02	NORM	Stage 2A				X							X				
440-149036-1	TT-TP4-L2-20160602	440-149036-13	WG	2016-06-02	NORM	Stage 2A											X				
440-149036-1	TT-TP4-M1-20160602	440-149036-4	WG	2016-06-02	NORM	Stage 2A	X	X	X	X		X		X	X		X		X	X	
440-149036-1	TT-TP4-M2-20160602	440-149036-2	WG	2016-06-02	NORM	Stage 2A	X	X	X	X		X		X	X		X		X	X	
440-149036-1	TT-TP4-M2-20160602-DUP	440-149036-3	WG	2016-06-02	FD	Stage 2A	X	X	X	X		X		X	X		X		X	X	
440-149036-1	TT-TP4-M3-20160602	440-149036-5	WG	2016-06-02	NORM	Stage 2A	X	X	X	X		X		X	X		X		X	X	
440-149621-1	TT-TP1-L1-20160608	440-149621-15	WG	2016-06-08	NORM	Stage 2A				X							X				

Table 9 Sample Cross-Reference

SDG	Client Sample ID	Lab Sample ID	Matrix	Sample Date	QC Type	Validation Stage	Alkalinity and ions by SM2320	Anions by EPA 300.0	Chlorate by EPA 300.1B	Hexavalent Chromium by SW-7199	Hexavalent Chromium by EPA 218.6	Metals by SW-6010B	Metals by SW-6010B_LCH	Metals by SW-6020	Mercury by SW-7470A	Mercury by SW-7471A	Perchlorate by EPA 314.0	pH by SW9045C	TDS by SM2540C	TOC by SM5310	TOC by SW-9060
440-149621-1	TT-TP1-L2-20160608	440-149621-16	WG	2016-06-08	NORM	Stage 2A											X				
440-149621-1	TT-TP1-M1-20160608	440-149621-1	WG	2016-06-08	NORM	Stage 2A				X				X			X		X	X	
440-149621-1	TT-TP1-M2-20160608	440-149621-2	WG	2016-06-08	NORM	Stage 2A				X				X			X		X	X	
440-149621-1	TT-TP1-M3-20160608	440-149621-3	WG	2016-06-08	NORM	Stage 2A				X				X			X		X	X	
440-149621-1	TT-TP2-L1-20160608	440-149621-13	WG	2016-06-08	NORM	Stage 2A				X							X				
440-149621-1	TT-TP2-L2-20160608	440-149621-14	WG	2016-06-08	NORM	Stage 2A				X							X				
440-149621-1	TT-TP2-M1-20160608	440-149621-4	WG	2016-06-08	NORM	Stage 2A				X				X			X		X	X	
440-149621-1	TT-TP2-M2-20160608	440-149621-5	WG	2016-06-08	NORM	Stage 2A				X				X			X		X	X	
440-149621-1	TT-TP3-L1-20160608	440-149621-11	WG	2016-06-08	NORM	Stage 2A				X							X				
440-149621-1	TT-TP3-L2-20160608	440-149621-12	WG	2016-06-08	NORM	Stage 2A				X				X			X				
440-149621-1	TT-TP3-M1-20160608	440-149621-6	WG	2016-06-08	NORM	Stage 2A				X				X			X		X	X	
440-149621-1	TT-TP3-M2-20160608	440-149621-7	WG	2016-06-08	NORM	Stage 2A				X				X			X		X	X	
440-149621-1	TT-TP4-L1-20160608	440-149621-9	WG	2016-06-08	NORM	Stage 2A				X							X				
440-149621-1	TT-TP4-L2-20160608	440-149621-10	WG	2016-06-08	NORM	Stage 2A				X							X				
440-149621-1	TT-TP4-M2-20160608	440-149621-8	WG	2016-06-08	NORM	Stage 2A				X				X			X		X	X	
440-149732-1	TT-TP4-M1-20160609	440-149732-1	WG	2016-06-09	NORM	Stage 2A				X				X			X		X	X	
440-149732-1	TT-TP4-M3-20160609	440-149732-2	WG	2016-06-09	NORM	Stage 2A				X				X			X		X	X	
440-149732-1	TT-TP4-M3-20160609-DUP	440-149732-3	WG	2016-06-09	FD	Stage 2A				X				X			X		X	X	
440-150680-1	TT-TP1-M1-20160621	440-150680-1	WG	2016-06-21	NORM	Stage 2A				X				X			X		X	X	
440-150680-1	TT-TP1-M2-20160621	440-150680-2	WG	2016-06-21	NORM	Stage 2A				X				X			X		X	X	
440-150680-1	TT-TP1-M3-20160621	440-150680-3	WG	2016-06-21	NORM	Stage 2A				X				X			X		X	X	
440-150775-1	TT-TP1-L1-20160622	440-150775-9	WG	2016-06-22	NORM	Stage 2A				X							X		X		
440-150775-1	TT-TP1-L2-20160622	440-150775-10	WG	2016-06-22	NORM	Stage 2A				X				X			X		X		
440-150775-1	TT-TP2-L1-20160622	440-150775-11	WG	2016-06-22	NORM	Stage 2A				X							X		X		
440-150775-1	TT-TP2-L2-20160622	440-150775-12	WG	2016-06-22	NORM	Stage 2A				X							X		X		
440-150775-1	TT-TP2-M1-20160622	440-150775-1	WG	2016-06-22	NORM	Stage 2A				X				X			X		X	X	
440-150775-1	TT-TP2-M2-20160622	440-150775-2	WG	2016-06-22	NORM	Stage 2A				X				X			X		X	X	
440-150775-1	TT-TP3-L1-20160622	440-150775-13	WG	2016-06-22	NORM	Stage 2A				X							X		X		
440-150775-1	TT-TP3-L2-20160622	440-150775-14	WG	2016-06-22	NORM	Stage 2A				X							X		X		
440-150775-1	TT-TP3-M1-20160622	440-150775-3	WG	2016-06-22	NORM	Stage 2A				X				X			X		X	X	
440-150775-1	TT-TP3-M2-20160622	440-150775-4	WG	2016-06-22	NORM	Stage 2A				X				X			X		X	X	
440-150775-1	TT-TP4-L1-20160622	440-150775-15	WG	2016-06-22	NORM	Stage 2A				X							X		X		

Table 9 Sample Cross-Reference

SDG	Client Sample ID	Lab Sample ID	Matrix	Sample Date	QC Type	Validation Stage	Alkalinity and ions by SM2320	Anions by EPA 300.0	Chlorate by EPA 300.1B	Hexavalent Chromium by SW-7199	Hexavalent Chromium by EPA 218.6	Metals by SW-6010B	Metals by SW-6010B_LCH	Metals by SW-6020	Mercury by SW-7470A	Mercury by SW-7471A	Perchlorate by EPA 314.0	pH by SW9045C	TDS by SM2540C	TOC by SM5310	TOC by SW-9060
440-150775-1	TT-TP4-L2-20160622	440-150775-16	WG	2016-06-22	NORM	Stage 2A				X							X		X		
440-150775-1	TT-TP4-M1-20160622	440-150775-5	WG	2016-06-22	NORM	Stage 2A				X				X			X		X	X	
440-150775-1	TT-TP4-M2-20160622	440-150775-6	WG	2016-06-22	NORM	Stage 2A				X				X			X		X	X	
440-150775-1	TT-TP4-M3-20160622	440-150775-7	WG	2016-06-22	NORM	Stage 2A				X				X			X		X	X	
440-150775-1	TT-TP4-M3-20160622-DUP	440-150775-8	WG	2016-06-22	FD	Stage 2A				X				X			X		X	X	
440-151701-1	TT-TP1-L1-20160705	440-151701-9	WG	2016-07-05	NORM	Stage 2A				X							X		X		
440-151701-1	TT-TP1-L2-20160705	440-151701-10	WG	2016-07-05	NORM	Stage 2A				X							X		X		
440-151701-1	TT-TP1-M1-20160705	440-151701-1	WG	2016-07-05	NORM	Stage 2A				X				X			X		X	X	
440-151701-1	TT-TP1-M2-20160705	440-151701-2	WG	2016-07-05	NORM	Stage 2A				X				X			X		X	X	
440-151701-1	TT-TP1-M3-20160705	440-151701-3	WG	2016-07-05	NORM	Stage 2A				X				X			X		X	X	
440-151701-1	TT-TP2-L1-20160705	440-151701-11	WG	2016-07-05	NORM	Stage 2A				X							X		X		
440-151701-1	TT-TP2-L2-20160705	440-151701-12	WG	2016-07-05	NORM	Stage 2A											X				
440-151701-1	TT-TP2-M1-20160705	440-151701-4	WG	2016-07-05	NORM	Stage 2A				X				X			X		X	X	
440-151701-1	TT-TP2-M2-20160705	440-151701-5	WG	2016-07-05	NORM	Stage 2A				X				X			X		X	X	
440-151701-1	TT-TP3-L1-20160705	440-151701-13	WG	2016-07-05	NORM	Stage 2A				X							X		X		
440-151701-1	TT-TP3-L2-20160705	440-151701-14	WG	2016-07-05	NORM	Stage 2A				X							X		X		
440-151701-1	TT-TP3-M1-20160705	440-151701-6	WG	2016-07-05	NORM	Stage 2A				X				X			X		X	X	
440-151701-1	TT-TP3-M2-20160705	440-151701-7	WG	2016-07-05	NORM	Stage 2A				X				X			X		X	X	
440-151701-1	TT-TP4-L1-20160705	440-151701-15	WG	2016-07-05	NORM	Stage 2A				X							X		X		
440-151701-1	TT-TP4-L2-20160705	440-151701-16	WG	2016-07-05	NORM	Stage 2A				X							X		X		
440-151701-1	TT-TP4-M2-20160705	440-151701-8	WG	2016-07-05	NORM	Stage 2A				X				X			X		X	X	
440-151885-1	TT-TP4-M1-20160706	440-151885-1	WG	2016-07-06	NORM	Stage 2A				X				X			X		X	X	
440-151885-1	TT-TP4-M3-20160706	440-151885-2	WG	2016-07-06	NORM	Stage 2A				X				X			X		X	X	
440-151885-1	TT-TP4-M3-20160706-DUP	440-151885-3	WG	2016-07-06	FD	Stage 2A				X				X			X		X	X	
440-153790-1	TT-TP1-L1-20160727	440-153790-5	WG	2016-07-27	NORM	Stage 2A				X							X		X		
440-153790-1	TT-TP1-L2-20160727	440-153790-6	WG	2016-07-27	NORM	Stage 2A				X							X		X		
440-153790-1	TT-TP1-M1-20160727	440-153790-2	WG	2016-07-27	NORM	Stage 2A	X	X	X	X		X		X	X		X		X	X	
440-153790-1	TT-TP1-M2-20160727	440-153790-1	WG	2016-07-27	NORM	Stage 2A	X	X	X	X		X		X	X		X		X	X	
440-153790-1	TT-TP1-M3-20160727	440-153790-3	WG	2016-07-27	NORM	Stage 2A	X	X	X	X		X		X	X		X		X	X	
440-153790-1	TT-TP2-L1-20160727	440-153790-7	WG	2016-07-27	NORM	Stage 2A				X							X		X		
440-153790-1	TT-TP2-L2-20160727	440-153790-8	WG	2016-07-27	NORM	Stage 2A				X							X		X		
440-153790-1	TT-TP2-M1-20160727	440-153790-4	WG	2016-07-27	NORM	Stage 2A	X	X	X	X		X		X	X		X		X	X	

Table 9 Sample Cross-Reference

SDG	Client Sample ID	Lab Sample ID	Matrix	Sample Date	QC Type	Validation Stage	Alkalinity and ions by SM2320	Anions by EPA 300.0	Chlorate by EPA 300.1B	Hexavalent Chromium by SW-7199	Hexavalent Chromium by EPA 218.6	Metals by SW-6010B	Metals by SW-6010B_LCH	Metals by SW-6020	Mercury by SW-7470A	Mercury by SW-7471A	Perchlorate by EPA 314.0	pH by SW9045C	TDS by SM2540C	TOC by SM5310	TOC by SW-9060
440-153790-1	TT-TP3-L1-20160727	440-153790-9	WG	2016-07-27	NORM	Stage 2A				X							X		X		
440-153790-1	TT-TP3-L2-20160727	440-153790-10	WG	2016-07-27	NORM	Stage 2A				X							X		X		
440-153790-1	TT-TP4-L1-20160727	440-153790-11	WG	2016-07-27	NORM	Stage 2A				X							X		X		
440-153790-1	TT-TP4-L2-20160727	440-153790-12	WG	2016-07-27	NORM	Stage 2A				X							X		X		
440-153948-1	TT-TP2-M2-20160728	440-153948-1	WG	2016-07-28	NORM	Stage 2A	X	X	X	X		X		X	X		X		X	X	
440-153948-1	TT-TP3-M1-20160728	440-153948-3	WG	2016-07-28	NORM	Stage 2A	X	X	X	X		X		X	X		X		X	X	
440-153948-1	TT-TP3-M2-20160728	440-153948-2	WG	2016-07-28	NORM	Stage 2A	X	X	X	X		X		X	X		X		X	X	
440-153948-1	TT-TP4-M1-20160728	440-153948-4	WG	2016-07-28	NORM	Stage 2A	X	X	X	X		X		X	X		X		X	X	
440-153948-1	TT-TP4-M2-20160728	440-153948-5	WG	2016-07-28	NORM	Stage 2A	X	X	X	X		X		X	X		X		X	X	
440-153948-1	TT-TP4-M3-20160728	440-153948-6	WG	2016-07-28	NORM	Stage 2A	X	X	X	X		X		X	X		X		X	X	
440-153948-1	TT-TP4-M3-20160728-DUP	440-153948-7	WG	2016-07-28	FD	Stage 2A	X	X	X	X		X		X	X		X		X	X	
440-155501-1	TT-TP1-B1A-10	440-155501-3	SO	2016-08-11	NORM	Stage 2A	X (s)	X (s)	X (s)	X		X	X (s)	X		X	X	X (s)	X (s)		X
440-155501-1	TT-TP1-B1A-14	440-155501-4	SO	2016-08-11	NORM	Stage 2A											X		X (s)		
440-155501-1	TT-TP1-B1A-18	440-155501-5	SO	2016-08-11	NORM	Stage 2A	X (s)	X (s)	X (s)	X		X	X (s)	X		X	X	X (s)	X (s)		X
440-155501-1	TT-TP1-B1A-2	440-155501-1	SO	2016-08-11	NORM	Stage 2A											X		X (s)		
440-155501-1	TT-TP1-B1A-22	440-155501-6	SO	2016-08-11	NORM	Stage 2A											X		X (s)		
440-155501-1	TT-TP1-B1A-26	440-155501-7	SO	2016-08-11	NORM	Stage 2A											X		X (s)		
440-155501-1	TT-TP1-B1A-6	440-155501-2	SO	2016-08-11	NORM	Stage 2A											X		X (s)		
440-155501-1	TT-TP1-B3A-10	440-155501-18	SO	2016-08-11	NORM	Stage 2A											X		X (s)		
440-155501-1	TT-TP1-B3A-14	440-155501-19	SO	2016-08-11	NORM	Stage 2A											X		X (s)		
440-155501-1	TT-TP1-B3A-18	440-155501-20	SO	2016-08-11	NORM	Stage 2A	X (s)	X (s)	X (s)	X		X	X (s)	X		X	X	X (s)	X (s)		X
440-155501-1	TT-TP1-B3A-2	440-155501-16	SO	2016-08-11	NORM	Stage 2A											X		X (s)		
440-155501-1	TT-TP1-B3A-26	440-155501-21	SO	2016-08-11	NORM	Stage 2A											X		X (s)		
440-155501-1	TT-TP1-B3A-6	440-155501-17	SO	2016-08-11	NORM	Stage 2A	X (s)	X (s)	X (s)	X		X	X (s)	X		X	X	X (s)	X (s)		X
440-155501-1	TT-TP1-B4A-10	440-155501-11	SO	2016-08-11	NORM	Stage 2A											X		X (s)		
440-155501-1	TT-TP1-B4A-14	440-155501-12	SO	2016-08-11	NORM	Stage 2A											X		X (s)		
440-155501-1	TT-TP1-B4A-18	440-155501-13	SO	2016-08-11	NORM	Stage 2A											X		X (s)		
440-155501-1	TT-TP1-B4A-2	440-155501-8	SO	2016-08-11	NORM	Stage 2A	X (s)	X (s)	X (s)	X		X	X (s)	X		X	X	X (s)	X (s)		X
440-155501-1	TT-TP1-B4A-22	440-155501-14	SO	2016-08-11	NORM	Stage 2A											X		X (s)		
440-155501-1	TT-TP1-B4A-26	440-155501-15	SO	2016-08-11	NORM	Stage 2A	X (s)	X (s)	X (s)	X		X	X (s)	X		X	X	X (s)	X (s)		X
440-155501-1	TT-TP1-B4A-6	440-155501-9	SO	2016-08-11	NORM	Stage 2A											X		X (s)		
440-155501-1	TT-TP1-B4A-6-DUP	440-155501-10	SO	2016-08-11	FD	Stage 2A											X		X (s)		

Table 9 Sample Cross-Reference

SDG	Client Sample ID	Lab Sample ID	Matrix	Sample Date	QC Type	Validation Stage	Alkalinity and ions by SM2320	Anions by EPA 300.0	Chlorate by EPA 300.1B	Hexavalent Chromium by SW-7199	Hexavalent Chromium by EPA 218.6	Metals by SW-6010B	Metals by SW-6010B_LCH	Metals by SW-6020	Mercury by SW-7470A	Mercury by SW-7471A	Perchlorate by EPA 314.0	pH by SW9045C	TDS by SM2540C	TOC by SM5310	TOC by SW-9060
440-155570-1	TT-TP2-B3A-10	440-155570-3	SO	2016-08-12	NORM	Stage 2A											X		X (s)		
440-155570-1	TT-TP2-B3A-14	440-155570-4	SO	2016-08-12	NORM	Stage 2A	X (s)	X (s)	X (s)	X		X	X (s)	X		X	X	X (s)	X (s)		X
440-155570-1	TT-TP2-B3A-14-DUP	440-155570-5	SO	2016-08-12	FD	Stage 2A	X (s)	X (s)	X (s)	X		X	X (s)	X		X	X	X (s)	X (s)		X
440-155570-1	TT-TP2-B3A-18	440-155570-6	SO	2016-08-12	NORM	Stage 2A											X		X (s)		
440-155570-1	TT-TP2-B3A-2	440-155570-1	SO	2016-08-12	NORM	Stage 2A	X (s)	X (s)	X (s)	X		X	X (s)	X		X	X	X (s)	X (s)		X
440-155570-1	TT-TP2-B3A-22	440-155570-7	SO	2016-08-12	NORM	Stage 2A											X		X (s)		
440-155570-1	TT-TP2-B3A-26	440-155570-8	SO	2016-08-12	NORM	Stage 2A											X		X (s)		
440-155570-1	TT-TP2-B3A-6	440-155570-2	SO	2016-08-12	NORM	Stage 2A											X		X (s)		
440-155575-1	TT-TP1-B2A-10	440-155575-10	SO	2016-08-12	NORM	Stage 2A											X		X (s)		
440-155575-1	TT-TP1-B2A-14	440-155575-11	SO	2016-08-12	NORM	Stage 2A											X		X (s)		
440-155575-1	TT-TP1-B2A-14-DUP	440-155575-12	SO	2016-08-12	FD	Stage 2A											X		X (s)		
440-155575-1	TT-TP1-B2A-18	440-155575-13	SO	2016-08-12	NORM	Stage 2A											X		X (s)		
440-155575-1	TT-TP1-B2A-2	440-155575-8	SO	2016-08-12	NORM	Stage 2A											X		X (s)		
440-155575-1	TT-TP1-B2A-22	440-155575-14	SO	2016-08-12	NORM	Stage 2A	X (s)	X (s)	X (s)	X		X	X (s)	X		X	X	X (s)	X (s)		X
440-155575-1	TT-TP1-B2A-6	440-155575-9	SO	2016-08-12	NORM	Stage 2A	X (s)	X (s)	X (s)	X		X	X (s)	X		X	X	X (s)	X (s)		X
440-155575-1	TT-TP1-L2A-10	440-155575-18	SO	2016-08-12	NORM	Stage 2A											X		X (s)		
440-155575-1	TT-TP1-L2A-14	440-155575-19	SO	2016-08-12	NORM	Stage 2A											X		X (s)		
440-155575-1	TT-TP1-L2A-14-DUP	440-155575-20	SO	2016-08-12	FD	Stage 2A											X		X (s)		
440-155575-1	TT-TP1-L2A-18	440-155575-21	SO	2016-08-12	NORM	Stage 2A	X (s)	X (s)	X (s)	X		X	X (s)	X		X	X	X (s)	X (s)		X
440-155575-1	TT-TP1-L2A-2	440-155575-16	SO	2016-08-12	NORM	Stage 2A											X		X (s)		
440-155575-1	TT-TP1-L2A-22	440-155575-22	SO	2016-08-12	NORM	Stage 2A											X		X (s)		
440-155575-1	TT-TP1-L2A-26	440-155575-23	SO	2016-08-12	NORM	Stage 2A											X		X (s)		
440-155575-1	TT-TP1-L2A-6	440-155575-17	SO	2016-08-12	NORM	Stage 2A	X (s)	X (s)	X (s)	X		X	X (s)	X		X	X	X (s)	X (s)		X
440-155575-1	TT-TP2-B4A-10	440-155575-3	SO	2016-08-12	NORM	Stage 2A											X		X (s)		
440-155575-1	TT-TP2-B4A-14	440-155575-4	SO	2016-08-12	NORM	Stage 2A											X		X (s)		
440-155575-1	TT-TP2-B4A-18	440-155575-5	SO	2016-08-12	NORM	Stage 2A											X		X (s)		
440-155575-1	TT-TP2-B4A-2	440-155575-1	SO	2016-08-12	NORM	Stage 2A											X		X (s)		
440-155575-1	TT-TP2-B4A-22	440-155575-6	SO	2016-08-12	NORM	Stage 2A	X (s)	X (s)	X (s)	X		X	X (s)	X		X	X	X (s)	X (s)		X
440-155575-1	TT-TP2-B4A-26	440-155575-7	SO	2016-08-12	NORM	Stage 2A											X		X (s)		
440-155575-1	TT-TP2-B4A-6	440-155575-2	SO	2016-08-12	NORM	Stage 2A	X (s)	X (s)	X (s)	X		X	X (s)	X		X	X	X (s)	X (s)		X
440-155631-1	TT-TP2-B1A-10	440-155631-62	SO	2016-08-13	NORM	Stage 2A											X		X (s)		
440-155631-1	TT-TP2-B1A-14	440-155631-63	SO	2016-08-13	NORM	Stage 2A	X (s)	X (s)	X (s)	X		X	X (s)	X		X	X	X (s)	X (s)		X

Table 9 Sample Cross-Reference

SDG	Client Sample ID	Lab Sample ID	Matrix	Sample Date	QC Type	Validation Stage	Alkalinity and ions by SM2320	Anions by EPA 300.0	Chlorate by EPA 300.1B	Hexavalent Chromium by SW-7199	Hexavalent Chromium by EPA 218.6	Metals by SW-6010B	Metals by SW-6010B_LCH	Metals by SW-6020	Mercury by SW-7470A	Mercury by SW-7471A	Perchlorate by EPA 314.0	pH by SW9045C	TDS by SM2540C	TOC by SM5310	TOC by SW-9060
440-155631-1	TT-TP2-B1A-18	440-155631-64	SO	2016-08-13	NORM	Stage 2A											X		X (s)		
440-155631-1	TT-TP2-B1A-2	440-155631-60	SO	2016-08-13	NORM	Stage 2A	X (s)	X (s)	X (s)	X		X	X (s)	X		X	X	X (s)	X (s)		X
440-155631-1	TT-TP2-B1A-22	440-155631-65	SO	2016-08-13	NORM	Stage 2A											X		X (s)		
440-155631-1	TT-TP2-B1A-22-DUP	440-155631-66	SO	2016-08-13	FD	Stage 2A											X		X (s)		
440-155631-1	TT-TP2-B1A-26	440-155631-67	SO	2016-08-13	NORM	Stage 2A											X		X (s)		
440-155631-1	TT-TP2-B1A-6	440-155631-61	SO	2016-08-13	NORM	Stage 2A											X		X (s)		
440-155631-1	TT-TP2-B2A-10	440-155631-10	SO	2016-08-13	NORM	Stage 2A	X (s)	X (s)	X (s)	X		X	X (s)	X		X	X	X (s)	X (s)		X
440-155631-1	TT-TP2-B2A-14	440-155631-11	SO	2016-08-13	NORM	Stage 2A											X		X (s)		
440-155631-1	TT-TP2-B2A-18	440-155631-12	SO	2016-08-13	NORM	Stage 2A											X		X (s)		
440-155631-1	TT-TP2-B2A-2	440-155631-8	SO	2016-08-13	NORM	Stage 2A											X		X (s)		
440-155631-1	TT-TP2-B2A-22	440-155631-13	SO	2016-08-13	NORM	Stage 2A											X		X (s)		
440-155631-1	TT-TP2-B2A-26	440-155631-14	SO	2016-08-13	NORM	Stage 2A	X (s)	X (s)	X (s)	X		X	X (s)	X		X	X	X (s)	X (s)		X
440-155631-1	TT-TP2-B2A-6	440-155631-9	SO	2016-08-13	NORM	Stage 2A											X		X (s)		
440-155631-1	TT-TP2-L2A-10	440-155631-3	SO	2016-08-13	NORM	Stage 2A											X		X (s)		
440-155631-1	TT-TP2-L2A-14	440-155631-4	SO	2016-08-13	NORM	Stage 2A											X		X (s)		
440-155631-1	TT-TP2-L2A-18	440-155631-5	SO	2016-08-13	NORM	Stage 2A											X		X (s)		
440-155631-1	TT-TP2-L2A-2	440-155631-1	SO	2016-08-13	NORM	Stage 2A	X (s)	X (s)	X (s)	X		X	X (s)	X		X	X	X (s)	X (s)		X
440-155631-1	TT-TP2-L2A-22	440-155631-6	SO	2016-08-13	NORM	Stage 2A											X		X (s)		
440-155631-1	TT-TP2-L2A-26	440-155631-7	SO	2016-08-13	NORM	Stage 2A	X (s)	X (s)	X (s)	X		X	X (s)	X		X	X	X (s)	X (s)		X
440-155631-1	TT-TP2-L2A-6	440-155631-2	SO	2016-08-13	NORM	Stage 2A											X		X (s)		
440-155631-1	TT-TP3-B1A-10	440-155631-32	SO	2016-08-14	NORM	Stage 2A	X (s)	X (s)	X (s)	X		X	X (s)	X		X	X	X (s)	X (s)		X
440-155631-1	TT-TP3-B1A-14	440-155631-33	SO	2016-08-14	NORM	Stage 2A											X		X (s)		
440-155631-1	TT-TP3-B1A-18	440-155631-34	SO	2016-08-14	NORM	Stage 2A	X (s)	X (s)	X (s)	X		X	X (s)	X		X	X	X (s)	X (s)		X
440-155631-1	TT-TP3-B1A-2	440-155631-29	SO	2016-08-14	NORM	Stage 2A											X		X (s)		
440-155631-1	TT-TP3-B1A-22	440-155631-35	SO	2016-08-14	NORM	Stage 2A											X		X (s)		
440-155631-1	TT-TP3-B1A-28	440-155631-36	SO	2016-08-14	NORM	Stage 2A											X		X (s)		
440-155631-1	TT-TP3-B1A-6	440-155631-30	SO	2016-08-14	NORM	Stage 2A											X		X (s)		
440-155631-1	TT-TP3-B1A-6-DUP	440-155631-31	SO	2016-08-14	FD	Stage 2A											X		X (s)		
440-155631-1	TT-TP3-B2A-10	440-155631-47	SO	2016-08-14	NORM	Stage 2A											X		X (s)		
440-155631-1	TT-TP3-B2A-14	440-155631-48	SO	2016-08-14	NORM	Stage 2A	X (s)	X (s)	X (s)	X		X	X (s)	X		X	X	X (s)	X (s)		X
440-155631-1	TT-TP3-B2A-18	440-155631-49	SO	2016-08-14	NORM	Stage 2A											X		X (s)		
440-155631-1	TT-TP3-B2A-2	440-155631-45	SO	2016-08-14	NORM	Stage 2A											X		X (s)		

Table 9 Sample Cross-Reference

SDG	Client Sample ID	Lab Sample ID	Matrix	Sample Date	QC Type	Validation Stage	Alkalinity and ions by SM2320	Anions by EPA 300.0	Chlorate by EPA 300.1B	Hexavalent Chromium by SW-7199	Hexavalent Chromium by EPA 218.6	Metals by SW-6010B	Metals by SW-6010B_LCH	Metals by SW-6020	Mercury by SW-7470A	Mercury by SW-7471A	Perchlorate by EPA 314.0	pH by SW9045C	TDS by SM2540C	TOC by SM5310	TOC by SW-9060
440-155631-1	TT-TP3-B2A-22	440-155631-50	SO	2016-08-14	NORM	Stage 2A											X		X (s)		
440-155631-1	TT-TP3-B2A-22-DUP	440-155631-51	SO	2016-08-14	FD	Stage 2A											X		X (s)		
440-155631-1	TT-TP3-B2A-6	440-155631-46	SO	2016-08-14	NORM	Stage 2A	X (s)	X (s)	X (s)	X		X	X (s)	X		X	X	X (s)	X (s)		X
440-155631-1	TT-TP3-B3A-10	440-155631-17	SO	2016-08-13	NORM	Stage 2A	X (s)	X (s)	X (s)	X		X	X (s)	X		X	X	X (s)	X (s)		X
440-155631-1	TT-TP3-B3A-14	440-155631-18	SO	2016-08-13	NORM	Stage 2A											X		X (s)		
440-155631-1	TT-TP3-B3A-18	440-155631-19	SO	2016-08-13	NORM	Stage 2A											X		X (s)		
440-155631-1	TT-TP3-B3A-2	440-155631-15	SO	2016-08-13	NORM	Stage 2A											X		X (s)		
440-155631-1	TT-TP3-B3A-22	440-155631-20	SO	2016-08-13	NORM	Stage 2A											X		X (s)		
440-155631-1	TT-TP3-B3A-26	440-155631-21	SO	2016-08-13	NORM	Stage 2A	X (s)	X (s)	X (s)	X		X	X (s)	X		X	X	X (s)	X (s)		X
440-155631-1	TT-TP3-B3A-6	440-155631-16	SO	2016-08-13	NORM	Stage 2A											X		X (s)		
440-155631-1	TT-TP3-B4A-10	440-155631-24	SO	2016-08-14	NORM	Stage 2A											X		X (s)		
440-155631-1	TT-TP3-B4A-14	440-155631-25	SO	2016-08-14	NORM	Stage 2A											X		X (s)		
440-155631-1	TT-TP3-B4A-14-DUP	440-155631-26	SO	2016-08-14	FD	Stage 2A											X		X (s)		
440-155631-1	TT-TP3-B4A-18	440-155631-27	SO	2016-08-14	NORM	Stage 2A	X (s)	X (s)	X (s)	X		X	X (s)	X		X	X	X (s)	X (s)		X
440-155631-1	TT-TP3-B4A-2	440-155631-22	SO	2016-08-14	NORM	Stage 2A	X (s)	X (s)	X (s)	X		X	X (s)	X		X	X	X (s)	X (s)		X
440-155631-1	TT-TP3-B4A-22	440-155631-28	SO	2016-08-14	NORM	Stage 2A											X		X (s)		
440-155631-1	TT-TP3-B4A-6	440-155631-23	SO	2016-08-14	NORM	Stage 2A											X		X (s)		
440-155631-1	TT-TP3-L2A-10	440-155631-40	SO	2016-08-14	NORM	Stage 2A											X		X (s)		
440-155631-1	TT-TP3-L2A-14	440-155631-41	SO	2016-08-14	NORM	Stage 2A	X (s)	X (s)	X (s)	X		X	X (s)	X		X	X	X (s)	X (s)		X
440-155631-1	TT-TP3-L2A-18	440-155631-42	SO	2016-08-14	NORM	Stage 2A											X		X (s)		
440-155631-1	TT-TP3-L2A-2	440-155631-37	SO	2016-08-14	NORM	Stage 2A											X		X (s)		
440-155631-1	TT-TP3-L2A-22	440-155631-43	SO	2016-08-14	NORM	Stage 2A											X		X (s)		
440-155631-1	TT-TP3-L2A-26	440-155631-44	SO	2016-08-14	NORM	Stage 2A											X		X (s)		
440-155631-1	TT-TP3-L2A-6	440-155631-38	SO	2016-08-14	NORM	Stage 2A	X (s)	X (s)	X (s)	X		X	X (s)	X		X	X	X (s)	X (s)		X
440-155631-1	TT-TP3-L2A-6-DUP	440-155631-39	SO	2016-08-14	FD	Stage 2A	X (s)	X (s)	X (s)	X		X	X (s)	X		X	X	X (s)	X (s)		X
440-155631-1	TT-TP4-B3A-10	440-155631-54	SO	2016-08-15	NORM	Stage 2A											X		X (s)		
440-155631-1	TT-TP4-B3A-14	440-155631-55	SO	2016-08-15	NORM	Stage 2A											X		X (s)		
440-155631-1	TT-TP4-B3A-18	440-155631-56	SO	2016-08-15	NORM	Stage 2A											X		X (s)		
440-155631-1	TT-TP4-B3A-2	440-155631-52	SO	2016-08-15	NORM	Stage 2A	X (s)	X (s)	X (s)	X		X	X (s)	X		X	X	X (s)	X (s)		X
440-155631-1	TT-TP4-B3A-22	440-155631-57	SO	2016-08-15	NORM	Stage 2A	X (s)	X (s)	X (s)	X		X	X (s)	X		X	X	X (s)	X (s)		X
440-155631-1	TT-TP4-B3A-22-DUP	440-155631-58	SO	2016-08-15	FD	Stage 2A	X (s)	X (s)	X (s)	X		X	X (s)	X		X	X	X (s)	X (s)		X
440-155631-1	TT-TP4-B3A-26	440-155631-59	SO	2016-08-13	NORM	Stage 2A											X		X (s)		

Table 9 Sample Cross-Reference

SDG	Client Sample ID	Lab Sample ID	Matrix	Sample Date	QC Type	Validation Stage	Alkalinity and ions by SM2320	Anions by EPA 300.0	Chlorate by EPA 300.1B	Hexavalent Chromium by SW-7199	Hexavalent Chromium by EPA 218.6	Metals by SW-6010B	Metals by SW-6010B_LCH	Metals by SW-6020	Mercury by SW-7470A	Mercury by SW-7471A	Perchlorate by EPA 314.0	pH by SW9045C	TDS by SM2540C	TOC by SM5310	TOC by SW-9060
440-155631-1	TT-TP4-B3A-6	440-155631-53	SO	2016-08-15	NORM	Stage 2A											X		X (s)		
440-155720-1	TT-TP4-B1A-10	440-155720-10	SO	2016-08-16	NORM	Stage 2A											X		X (s)		
440-155720-1	TT-TP4-B1A-14	440-155720-11	SO	2016-08-16	NORM	Stage 2A	X (s)	X (s)	X (s)	X		X	X (s)	X		X	X	X (s)	X (s)		X
440-155720-1	TT-TP4-B1A-18	440-155720-12	SO	2016-08-16	NORM	Stage 2A											X		X (s)		
440-155720-1	TT-TP4-B1A-2	440-155720-8	SO	2016-08-16	NORM	Stage 2A											X		X (s)		
440-155720-1	TT-TP4-B1A-24	440-155720-15	SO	2016-08-16	NORM	Stage 2A											X		X (s)		
440-155720-1	TT-TP4-B1A-26	440-155720-13	SO	2016-08-16	NORM	Stage 2A											X		X (s)		
440-155720-1	TT-TP4-B1A-26-DUP	440-155720-14	SO	2016-08-16	FD	Stage 2A											X		X (s)		
440-155720-1	TT-TP4-B1A-6	440-155720-9	SO	2016-08-16	NORM	Stage 2A	X (s)	X (s)	X (s)	X		X	X (s)	X		X	X	X (s)	X (s)		X
440-155720-1	TT-TP4-B4A-10	440-155720-3	SO	2016-08-16	NORM	Stage 2A	X (s)	X (s)	X (s)	X		X	X (s)	X		X	X	X (s)	X (s)		X
440-155720-1	TT-TP4-B4A-14	440-155720-4	SO	2016-08-16	NORM	Stage 2A											X		X (s)		
440-155720-1	TT-TP4-B4A-18	440-155720-5	SO	2016-08-16	NORM	Stage 2A											X		X (s)		
440-155720-1	TT-TP4-B4A-2	440-155720-1	SO	2016-08-16	NORM	Stage 2A											X		X (s)		
440-155720-1	TT-TP4-B4A-22	440-155720-6	SO	2016-08-16	NORM	Stage 2A											X		X (s)		
440-155720-1	TT-TP4-B4A-26	440-155720-7	SO	2016-08-16	NORM	Stage 2A	X (s)	X (s)	X (s)	X		X	X (s)	X		X	X	X (s)	X (s)		X
440-155720-1	TT-TP4-B4A-6	440-155720-2	SO	2016-08-16	NORM	Stage 2A											X		X (s)		
440-155720-1	TT-TP4-L2A-10	440-155720-18	SO	2016-08-16	NORM	Stage 2A	X (s)	X (s)	X (s)	X		X	X (s)	X		X	X	X (s)	X (s)		X
440-155720-1	TT-TP4-L2A-14	440-155720-19	SO	2016-08-16	NORM	Stage 2A											X		X (s)		
440-155720-1	TT-TP4-L2A-18	440-155720-20	SO	2016-08-16	NORM	Stage 2A											X		X (s)		
440-155720-1	TT-TP4-L2A-2	440-155720-16	SO	2016-08-16	NORM	Stage 2A											X		X (s)		
440-155720-1	TT-TP4-L2A-22	440-155720-21	SO	2016-08-16	NORM	Stage 2A	X (s)	X (s)	X (s)	X		X	X (s)	X		X	X	X (s)	X (s)		X
440-155720-1	TT-TP4-L2A-26	440-155720-22	SO	2016-08-16	NORM	Stage 2A											X		X (s)		
440-155720-1	TT-TP4-L2A-26-DUP	440-155720-23	SO	2016-08-16	FD	Stage 2A											X		X (s)		
440-155720-1	TT-TP4-L2A-6	440-155720-17	SO	2016-08-16	NORM	Stage 2A											X		X (s)		
440-155767-1	TT-TP4-B2A-10	440-155767-4	SO	2016-08-16	NORM	Stage 2A	X (s)	X (s)	X (s)	X		X	X (s)	X		X	X	X (s)	X (s)		X
440-155767-1	TT-TP4-B2A-14	440-155767-5	SO	2016-08-16	NORM	Stage 2A											X		X (s)		
440-155767-1	TT-TP4-B2A-18	440-155767-6	SO	2016-08-16	NORM	Stage 2A											X		X (s)		
440-155767-1	TT-TP4-B2A-2	440-155767-1	SO	2016-08-16	NORM	Stage 2A											X		X (s)		
440-155767-1	TT-TP4-B2A-22	440-155767-7	SO	2016-08-16	NORM	Stage 2A	X (s)	X (s)	X (s)	X		X	X (s)	X		X	X	X (s)	X (s)		X
440-155767-1	TT-TP4-B2A-22-DUP	440-155767-9	SO	2016-08-16	FD	Stage 2A	X (s)	X (s)	X (s)	X		X	X (s)	X		X	X	X (s)	X (s)		X
440-155767-1	TT-TP4-B2A-26	440-155767-8	SO	2016-08-16	NORM	Stage 2A											X		X (s)		
440-155767-1	TT-TP4-B2A-6	440-155767-2	SO	2016-08-16	NORM	Stage 2A											X		X (s)		

Table 9 Sample Cross-Reference

SDG	Client Sample ID	Lab Sample ID	Matrix	Sample Date	QC Type	Validation Stage	Alkalinity and ions by SM2320	Anions by EPA 300.0	Chlorate by EPA 300.1B	Hexavalent Chromium by SW-7199	Hexavalent Chromium by EPA 218.6	Metals by SW-6010B	Metals by SW-6010B_LCH	Metals by SW-6020	Mercury by SW-7470A	Mercury by SW-7471A	Perchlorate by EPA 314.0	pH by SW9045C	TDS by SM2540C	TOC by SM5310	TOC by SW-9060
440-155767-1	TT-TP4-B2A-6-DUP	440-155767-3	SO	2016-08-16	FD	Stage 2A											X		X (s)		
440-104698-1	EB-03/17/15	440-104698-8	BW	2015-03-17	EB	Stage 2A				X		X		X	X		X				X
440-104832-1	EB-03/18/15	440-104832-32	BW	2015-03-18	EB	Stage 2A				X		X		X	X		X				X
440-104832-1	EB-03/18/15-2	440-104832-33	BW	2015-03-18	EB	Stage 2A				X		X		X	X		X				X
440-104925-1	EB-03/19/15	440-104925-33	BW	2015-03-19	EB	Stage 2A				X		X		X	X		X				X
440-104925-1	EB-03/19/15-2	440-104925-41	BW	2015-03-19	EB	Stage 2A				X		X		X	X		X				X

(s) - soluble

Appendix E.1
Automated Data Review
Data Tables

Data Review Summary

Lab Reporting Batch ID: 440-104698-1 **Laboratory: TA IRV**

EDD Filename: Prep440-104698-1 **eQAPP Name: TetraTechInc_NERT_11302016**

Validation Area	*Note*
Technical Holding Times	A
Temperature	A
Initial Calibration	N
Continuing Calibration/Initial Calibration Verification	N
Method Blanks	SR
Surrogate/Tracer Spikes	A
Matrix Spike/Matrix Spike Duplicates	SR
Laboratory Duplicates	A
Laboratory Replicates	N
Laboratory Control Samples	A
Compound Quantitation	SR
Field Duplicates	N
Field Triplicates	N
Field Blanks	A

A = Acceptable, N = Not provided/applicable, SR = See report

The contents of this report reflect findings made by ADR during Automated Data Review, manual applied qualifiers are not considered. Please refer to the Overall Qualifier Summary report for manual qualifiers.

Matrix Spike/Matrix Spike Duplicate Outlier Report

Lab Reporting Batch ID: 440-104698-1 **Laboratory: TA IRV**

EDD Filename: Prep440-104698-1 **eQAPP Name: TetraTechInc_NERT_11302016**

Method: 314.0
Matrix: AQ

QC Sample ID (Associated Samples)	Compound	MS %R	MSD %R	%R Limits	RPD (Limits)	Affected Compounds	Flag
EB-03/17/15MS EB-03/17/15MSD (EB-03/17/15)	PERCHLORATE	121	123	80.00-120.00	-	PERCHLORATE	J+(all detects)

Method: 6010B
Matrix: SO

QC Sample ID (Associated Samples)	Compound	MS %R	MSD %R	%R Limits	RPD (Limits)	Affected Compounds	Flag
Tt-TP1-B1-10MS (TOT) Tt-TP1-B1-10MSD (TOT) (Tt-TP1-B1-10)	IRON	-787	-3020	75.00-125.00	-	IRON	J- (all detects) R (all non-detects)
Tt-TP1-B1-10MSD (TOT) (Tt-TP1-B1-10)	MANGANESE	-	68	75.00-125.00	-	MANGANESE	J-(all detects) UJ(all non-detects)
Tt-TP1-B1-10MS (TOT) Tt-TP1-B1-10MSD (TOT) (Tt-TP1-B1-10)	TITANIUM	364	216	75.00-125.00	-	TITANIUM	J+(all detects)

Method: 6020
Matrix: SO

QC Sample ID (Associated Samples)	Compound	MS %R	MSD %R	%R Limits	RPD (Limits)	Affected Compounds	Flag
Tt-TP1-B1-10MSD (TOT) (Tt-TP1-B1-10)	COPPER	-	75	80.00-120.00	-	COPPER	J-(all detects) UJ(all non-detects)
Tt-TP1-B1-10MS (TOT) Tt-TP1-B1-10MSD (TOT) (Tt-TP1-B1-10)	BARIUM	154	154	80.00-120.00	-	BARIUM	J+(all detects)

Method Blank Outlier Report

Lab Reporting Batch ID: 440-104698-1 **Laboratory: TA IRV**

EDD Filename: Prep440-104698-1 **eQAPP Name: TetraTechInc_NERT_11302016**

Method: **6010B**
Matrix: **AQ**

Method Blank Sample ID	Analysis Date	Analyte	Result	Associated Samples
MB 440-244433/1-A	3/25/2015 10:05:00 AM	IRON MAGNESIUM	0.0136 mg/L 0.0101 mg/L	EB-03/17/15

Method: **6010B_Leach**
Matrix: **AQ**

Method Blank Sample ID	Analysis Date	Analyte	Result	Associated Samples
MB 440-245772/1-B	3/30/2015 12:18:00 PM	CALCIUM MAGNESIUM	0.0860 mg/L 0.0146 mg/L	Tt-TP1-B1-10 Tt-TP1-B1-18

Method: **6020**
Matrix: **AQ**

Method Blank Sample ID	Analysis Date	Analyte	Result	Associated Samples
MB 440-244681/1-A	3/27/2015 2:44:00 PM	ZINC	3.19 ug/L	EB-03/17/15

Data Qualifier Summary

Lab Reporting Batch ID: 440-104698-1 **Laboratory: TA IRV**

EDD Filename: Prep440-104698-1 **eQAPP Name: TetraTechInc_NERT_11302016**

Method Category: GENCHEM

Method: 300.1B_Leach **Matrix: AQ**

Sample ID: Tt-TP1-B1-18 **Collected:** 3/17/2015 11:25:00 AM **Analysis Type:** RES **Dilution:** 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
Chlorate	17	J	10	MDL	20	MRL	ug/L	J	sp

Method Category: METALS

Method: 6010B **Matrix: AQ**

Sample ID: EB-03/17/15 **Collected:** 3/17/2015 12:33:00 PM **Analysis Type:** RES/TOT **Dilution:** 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
TITANIUM	0.0026	J	0.0025	MDL	0.0050	MRL	mg/L	J	sp

Method Category: METALS

Method: 6010B **Matrix: SO**

Sample ID: Tt-TP1-B1-10 **Collected:** 3/17/2015 11:08:00 AM **Analysis Type:** RES/TOT **Dilution:** 5

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
IRON	12000		5.4	MDL	11	MRL	mg/Kg	J-	m
MANGANESE	190	F1	1.1	MDL	2.2	MRL	mg/Kg	J-	m
TITANIUM	600		1.1	MDL	2.2	MRL	mg/Kg	J+	m

Method Category: METALS

Method: 6020 **Matrix: AQ**

Sample ID: EB-03/17/15 **Collected:** 3/17/2015 12:33:00 PM **Analysis Type:** RES/TOT **Dilution:** 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
MOLYBDENUM	0.94	J	0.50	MDL	2.0	MRL	ug/L	J	sp

* denotes a non-reportable result

Project Name and Number: 114-520225-2015-MO5 - NERT Soil Flushing

Data Qualifier Summary

Lab Reporting Batch ID: 440-104698-1 **Laboratory: TA IRV**

EDD Filename: Prep440-104698-1 **eQAPP Name: TetraTechInc_NERT_11302016**

Method Category: METALS

Method: 6020 **Matrix: SO**

Sample ID: Tt-TP1-B1-10 **Collected:** 3/17/2015 11:08:00 AM **Analysis Type:** RE2/TOT **Dilution:** 20

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
COPPER	27	F1	0.54	MDL	1.1	MRL	mg/Kg	J-	m

Sample ID: Tt-TP1-B1-10 **Collected:** 3/17/2015 11:08:00 AM **Analysis Type:** RES/TOT **Dilution:** 20

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
BARIUM	110	F1	0.27	MDL	0.54	MRL	mg/Kg	J+	m
MOLYBDENUM	0.85	J	0.54	MDL	1.1	MRL	mg/Kg	J	sp

Sample ID: Tt-TP1-B1-18 **Collected:** 3/17/2015 11:25:00 AM **Analysis Type:** RE2/TOT **Dilution:** 20

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
BERYLLIUM	0.27	J	0.16	MDL	0.32	MRL	mg/Kg	J	sp

Sample ID: Tt-TP1-B1-18 **Collected:** 3/17/2015 11:25:00 AM **Analysis Type:** RES/TOT **Dilution:** 20

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
MOLYBDENUM	0.92	J	0.53	MDL	1.1	MRL	mg/Kg	J	sp

Method Category: METALS

Method: 7471A **Matrix: SO**

Sample ID: Tt-TP1-B1-10 **Collected:** 3/17/2015 11:08:00 AM **Analysis Type:** RES/TOT **Dilution:** 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
MERCURY	0.014	J	0.013	MDL	0.022	MRL	mg/Kg	J	sp

* denotes a non-reportable result

Project Name and Number: 114-520225-2015-MO5 - NERT Soil Flushing

Data Qualifier Summary

Lab Reporting Batch ID: 440-104698-1

Laboratory: TA IRV

EDD Filename: Prep440-104698-1

eQAPP Name: TetraTechInc_NERT_11302016

Reason Code Legend

Reason Code	*Description*
bl	Method Blank Contamination
m	Matrix Spike Lower Estimation
m	Matrix Spike Lower Rejection
m	Matrix Spike Upper Estimation
sp	Reporting Limit Trace Value

* denotes a non-reportable result

Project Name and Number: 114-520225-2015-MO5 - NERT Soil Flushing

Reporting Limit Outliers

Lab Reporting Batch ID: 440-104698-1 **Laboratory: TA IRV**

EDD Filename: Prep440-104698-1 **eQAPP Name: TetraTechInc_NERT_11302016**

Method: 300.1B_Leach
Matrix: AQ

SampleID	Analyte	Lab Qual	Result	Reporting Limit	RL Type	Units	Flag
Tt-TP1-B1-18	Chlorate	J	17	20	MRL	ug/L	J (all detects)

Method: 6010B
Matrix: AQ

SampleID	Analyte	Lab Qual	Result	Reporting Limit	RL Type	Units	Flag
EB-03/17/15	TITANIUM	J	0.0026	0.0050	MRL	mg/L	J (all detects)

Method: 6020
Matrix: AQ

SampleID	Analyte	Lab Qual	Result	Reporting Limit	RL Type	Units	Flag
EB-03/17/15	MOLYBDENUM	J	0.94	2.0	MRL	ug/L	J (all detects)

Method: 6020
Matrix: SO

SampleID	Analyte	Lab Qual	Result	Reporting Limit	RL Type	Units	Flag
Tt-TP1-B1-10	MOLYBDENUM	J	0.85	1.1	MRL	mg/Kg	J (all detects)
Tt-TP1-B1-18	BERYLLIUM MOLYBDENUM	J J	0.27 0.92	0.32 1.1	MRL MRL	mg/Kg mg/Kg	J (all detects)

Method: 7471A
Matrix: SO

SampleID	Analyte	Lab Qual	Result	Reporting Limit	RL Type	Units	Flag
Tt-TP1-B1-10	MERCURY	J	0.014	0.022	MRL	mg/Kg	J (all detects)

Data Review Summary

Lab Reporting Batch ID: 440-104832-1 **Laboratory: TA IRV**

EDD Filename: Prep440-104832-1 **eQAPP Name: TetraTechInc_NERT_11302016**

Validation Area	*Note*
Technical Holding Times	A
Temperature	A
Initial Calibration	N
Continuing Calibration/Initial Calibration Verification	N
Method Blanks	SR
Surrogate/Tracer Spikes	A
Matrix Spike/Matrix Spike Duplicates	SR
Laboratory Duplicates	A
Laboratory Replicates	N
Laboratory Control Samples	A
Compound Quantitation	SR
Field Duplicates	SR
Field Triplicates	N
Field Blanks	A

A = Acceptable, N = Not provided/applicable, SR = See report

The contents of this report reflect findings made by ADR during Automated Data Review, manual applied qualifiers are not considered. Please refer to the Overall Qualifier Summary report for manual qualifiers.

Field Duplicate RPD Report

Lab Reporting Batch ID: 440-104832-1 **Laboratory: TA IRV**

EDD Filename: Prep440-104832-1 **eQAPP Name: TetraTechInc_NERT_11302016**

Method: 2540C_Leach
Matrix: AQ

Analyte	Concentration (mg/L)		Sample RPD	eQAPP RPD	Flag
	Tt-TP1-B4-6	Tt-TP1-B4-6-dup			
TOTAL DISSOLVED SOLIDS	72	68	6	30.00	No Qualifiers Applied

Analyte	Concentration (mg/L)		Sample RPD	eQAPP RPD	Flag
	Tt-TP2-B1-22	Tt-TP2-B1-22-dup			
TOTAL DISSOLVED SOLIDS	600	1100	59	30.00	J(all detects) UJ(all non-detects)

Analyte	Concentration (mg/L)		Sample RPD	eQAPP RPD	Flag
	Tt-TP1-B2-14	Tt-TP1-B2-14-dup			
TOTAL DISSOLVED SOLIDS	150	190	24	30.00	No Qualifiers Applied

Method: 314.0
Matrix: SO

Analyte	Concentration (mg/Kg)		Sample RPD	eQAPP RPD	Flag
	Tt-TP1-B4-6	Tt-TP1-B4-6-dup			
PERCHLORATE	0.77	1.4	58	30.00	J(all detects) UJ(all non-detects)

Analyte	Concentration (mg/Kg)		Sample RPD	eQAPP RPD	Flag
	Tt-TP2-B1-22	Tt-TP2-B1-22-dup			
PERCHLORATE	520	7900	175	30.00	J(all detects) UJ(all non-detects)

Analyte	Concentration (mg/Kg)		Sample RPD	eQAPP RPD	Flag
	Tt-TP1-B2-14	Tt-TP1-B2-14-dup			
PERCHLORATE	2.3	1.6	36	30.00	J(all detects) UJ(all non-detects)

Project Name and Number: 114-520225-2015-MO5 - NERT Soil Flushing

Matrix Spike/Matrix Spike Duplicate Outlier Report

Lab Reporting Batch ID: 440-104832-1 **Laboratory: TA IRV**

EDD Filename: Prep440-104832-1 **eQAPP Name: TetraTechInc_NERT_11302016**

Method: 314.0
Matrix: AQ

QC Sample ID (Associated Samples)	Compound	MS %R	MSD %R	%R Limits	RPD (Limits)	Affected Compounds	Flag
EB-03/18/15MS EB-03/18/15MSD (EB-03/18/15)	PERCHLORATE	172	171	80.00-120.00	-	PERCHLORATE	J+(all detects)

Method: 6010B_Leach
Matrix: AQ

QC Sample ID (Associated Samples)	Compound	MS %R	MSD %R	%R Limits	RPD (Limits)	Affected Compounds	Flag
Tt-TP1-B3-6MSD (TOT) (Tt-TP1-B3-6)	CALCIUM	-	12	75.00-125.00	-	CALCIUM	J-(all detects) R(all non-detects)

Method: 300.1B_Leach
Matrix: AQ

QC Sample ID (Associated Samples)	Compound	MS %R	MSD %R	%R Limits	RPD (Limits)	Affected Compounds	Flag
Tt-TP1-B3-6MS Tt-TP1-B3-6MSD (Tt-TP1-B3-6)	Chlorate	130	130	75.00-125.00	-	Chlorate	J+(all detects)

Method: 6010B
Matrix: SO

QC Sample ID (Associated Samples)	Compound	MS %R	MSD %R	%R Limits	RPD (Limits)	Affected Compounds	Flag
Tt-TP1-B2-6MS (TOT) Tt-TP1-B2-6MSD (TOT) (Tt-TP1-B2-6)	IRON MANGANESE	-1859 12	-2617 -30	75.00-125.00 75.00-125.00	- -	IRON MANGANESE	J- (all detects) R (all non-detects)
Tt-TP1-B2-6MS (TOT) Tt-TP1-B2-6MSD (TOT) (Tt-TP1-B2-6)	BORON	57	61	75.00-125.00	-	BORON	J-(all detects) UJ(all non-detects)
Tt-TP1-B2-6MS (TOT) Tt-TP1-B2-6MSD (TOT) (Tt-TP1-B2-6)	TITANIUM	586	825	75.00-125.00	-	TITANIUM	J+(all detects)

Matrix Spike/Matrix Spike Duplicate Outlier Report

Lab Reporting Batch ID: 440-104832-1 **Laboratory: TA IRV**

EDD Filename: Prep440-104832-1 **eQAPP Name: TetraTechInc_NERT_11302016**

Method: 6020
Matrix: SO

QC Sample ID (Associated Samples)	Compound	MS %R	MSD %R	%R Limits	RPD (Limits)	Affected Compounds	Flag
Tt-TP1-B2-6MS (TOT) Tt-TP1-B2-6MSD (TOT) (Tt-TP1-B2-6)	ARSENIC ZINC	22 -40	28 -32	80.00-120.00 80.00-120.00	- -	ARSENIC ZINC	J-(all detects) R(all non-detects)
Tt-TP1-B2-6MS (TOT) Tt-TP1-B2-6MSD (TOT) (Tt-TP1-B2-6)	ANTIMONY COPPER NICKEL	34 73 70	37 - 77	80.00-120.00 80.00-120.00 80.00-120.00	- - -	ANTIMONY COPPER NICKEL	J-(all detects) UJ(all non-detects)

Method: 314.0
Matrix: SO

QC Sample ID (Associated Samples)	Compound	MS %R	MSD %R	%R Limits	RPD (Limits)	Affected Compounds	Flag
Tt-TP1-B3-6MS Tt-TP1-B3-6MSD (Tt-TP1-B3-6)	PERCHLORATE	-85	-44	80.00-120.00	-	PERCHLORATE	J-(all detects) R(all non-detects)
Tt-TP1-B4-6MS Tt-TP1-B4-6MSD (Tt-TP1-B4-6)	PERCHLORATE	125	171	80.00-120.00	-	PERCHLORATE	J+(all detects)
Tt-TP2-B1-22MS Tt-TP2-B1-22MSD (Tt-TP2-B1-22)	PERCHLORATE	1697	862	80.00-120.00	-	PERCHLORATE	J+(all detects)

Method Blank Outlier Report

Lab Reporting Batch ID: 440-104832-1 **Laboratory: TA IRV**

EDD Filename: Prep440-104832-1 **eQAPP Name: TetraTechInc_NERT_11302016**

Method: **6010B**
Matrix: **AQ**

Method Blank Sample ID	Analysis Date	Analyte	Result	Associated Samples
MB 440-245023/1-A	3/27/2015 9:11:00 PM	IRON	0.0180 mg/L	EB-03/18/15 EB-03/18/15-2

Method: **6010B_Leach**
Matrix: **AQ**

Method Blank Sample ID	Analysis Date	Analyte	Result	Associated Samples
MB 440-245772/1-B	3/30/2015 12:18:00 PM	CALCIUM MAGNESIUM	0.0860 mg/L 0.0146 mg/L	Tt-TP1-B2-22 Tt-TP1-B2-6 Tt-TP1-B3-18 Tt-TP1-B3-6 Tt-TP1-B4-2 Tt-TP1-B4-26 Tt-TP2-B1-14 Tt-TP2-B1-2 Tt-TP2-B2-10 Tt-TP2-B2-26

Method: **6020**
Matrix: **AQ**

Method Blank Sample ID	Analysis Date	Analyte	Result	Associated Samples
MB 440-245079/1-A	3/27/2015 3:02:00 PM	ZINC	16.4 ug/L	EB-03/18/15 EB-03/18/15-2

Data Qualifier Summary

Lab Reporting Batch ID: 440-104832-1 **Laboratory: TA IRV**

EDD Filename: Prep440-104832-1 **eQAPP Name: TetraTechInc_NERT_11302016**

Method Category: GENCHEM

Method: 2540C_Leach **Matrix: AQ**

Sample ID: Tt-TP2-B1-22 **Collected:** 3/18/2015 11:01:00 AM **Analysis Type:** RES **Dilution:** 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
TOTAL DISSOLVED SOLIDS	600		5.0	MDL	10	MRL	mg/L	J	fd

Sample ID: Tt-TP2-B1-22-dup **Collected:** 3/18/2015 11:01:00 AM **Analysis Type:** RES **Dilution:** 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
TOTAL DISSOLVED SOLIDS	1100		5.0	MDL	10	MRL	mg/L	J	fd

Method Category: GENCHEM

Method: 314.0 **Matrix: SO**

Sample ID: Tt-TP1-B2-14 **Collected:** 3/17/2015 2:27:00 PM **Analysis Type:** RES **Dilution:** 10

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
PERCHLORATE	2.3		0.10	MDL	0.43	MRL	mg/Kg	J	fd

Sample ID: Tt-TP1-B2-14-dup **Collected:** 3/17/2015 2:27:00 PM **Analysis Type:** RES **Dilution:** 10

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
PERCHLORATE	1.6		0.10	MDL	0.42	MRL	mg/Kg	J	fd

Sample ID: Tt-TP1-B3-6 **Collected:** 3/18/2015 8:06:00 AM **Analysis Type:** RES **Dilution:** 100

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
PERCHLORATE	11		1.1	MDL	4.5	MRL	mg/Kg	J-	m

Sample ID: Tt-TP1-B4-6 **Collected:** 3/18/2015 9:22:00 AM **Analysis Type:** RES **Dilution:** 10

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
PERCHLORATE	0.77	F1	0.10	MDL	0.44	MRL	mg/Kg	J+	m, fd

* denotes a non-reportable result

Project Name and Number: 114-520225-2015-MO5 - NERT Soil Flushing

Data Qualifier Summary

Lab Reporting Batch ID: 440-104832-1 **Laboratory: TA IRV**

EDD Filename: Prep440-104832-1 **eQAPP Name: TetraTechInc_NERT_11302016**

Method Category: GENCHEM

Method: 314.0 **Matrix: SO**

Sample ID: Tt-TP1-B4-6-dup **Collected:** 3/18/2015 9:22:00 AM **Analysis Type:** RES **Dilution:** 10

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
PERCHLORATE	1.4		0.10	MDL	0.44	MRL	mg/Kg	J	fd

Sample ID: Tt-TP2-B1-22 **Collected:** 3/18/2015 11:01:00 AM **Analysis Type:** RES **Dilution:** 1000

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
PERCHLORATE	520		11	MDL	46	MRL	mg/Kg	J+	m, fd

Sample ID: Tt-TP2-B1-22-dup **Collected:** 3/18/2015 11:01:00 AM **Analysis Type:** RES **Dilution:** 10000

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
PERCHLORATE	7900		120	MDL	500	MRL	mg/Kg	J	fd

Method Category: METALS

Method: 6010B **Matrix: AQ**

Sample ID: EB-03/18/15 **Collected:** 3/18/2015 12:00:00 PM **Analysis Type:** RES/TOT **Dilution:** 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
MANGANESE	0.012	J	0.010	MDL	0.020	MRL	mg/L	J	sp
TITANIUM	0.0038	J	0.0025	MDL	0.0050	MRL	mg/L	J	sp

Sample ID: EB-03/18/15-2 **Collected:** 3/18/2015 1:41:00 PM **Analysis Type:** RES/TOT **Dilution:** 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
SODIUM	0.26	J	0.25	MDL	0.50	MRL	mg/L	J	sp

* denotes a non-reportable result

Project Name and Number: 114-520225-2015-MO5 - NERT Soil Flushing

Data Qualifier Summary

Lab Reporting Batch ID: 440-104832-1 **Laboratory: TA IRV**

EDD Filename: Prep440-104832-1 **eQAPP Name: TetraTechInc_NERT_11302016**

Method Category: METALS

Method: 6010B **Matrix: SO**

Sample ID: Tt-TP1-B2-6 **Collected:** 3/17/2015 2:18:00 PM **Analysis Type:** RES/TOT **Dilution:** 5

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
BORON	24	F1	2.8	MDL	5.6	MRL	mg/Kg	J-	m
IRON	18000		5.6	MDL	11	MRL	mg/Kg	J-	m
MANGANESE	330		1.1	MDL	2.2	MRL	mg/Kg	J-	m
TITANIUM	470		1.1	MDL	2.2	MRL	mg/Kg	J+	m

Sample ID: Tt-TP1-B4-2 **Collected:** 3/18/2015 9:10:00 AM **Analysis Type:** RES/TOT **Dilution:** 5

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
BORON	4.3	J	2.7	MDL	5.4	MRL	mg/Kg	J	sp

Sample ID: Tt-TP2-B1-2 **Collected:** 3/18/2015 10:40:00 AM **Analysis Type:** RES/TOT **Dilution:** 5

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
BORON	5.2	J	2.8	MDL	5.5	MRL	mg/Kg	J	sp

Sample ID: Tt-TP2-B2-10 **Collected:** 3/18/2015 1:10:00 PM **Analysis Type:** RES/TOT **Dilution:** 5

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
BORON	4.1	J	2.7	MDL	5.3	MRL	mg/Kg	J	sp

Sample ID: Tt-TP2-B2-26 **Collected:** 3/18/2015 1:31:00 PM **Analysis Type:** RES/TOT **Dilution:** 5

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
BORON	3.1	J	2.9	MDL	5.7	MRL	mg/Kg	J	sp

Method Category: METALS

Method: 6010B_Leach **Matrix: AQ**

Sample ID: Tt-TP1-B2-6 **Collected:** 3/17/2015 2:18:00 PM **Analysis Type:** RES/TOT **Dilution:** 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
POTASSIUM	0.38	J	0.37	MDL	0.50	MRL	mg/L	J	sp

* denotes a non-reportable result

Project Name and Number: 114-520225-2015-MO5 - NERT Soil Flushing

Data Qualifier Summary

Lab Reporting Batch ID: 440-104832-1 **Laboratory: TA IRV**

EDD Filename: Prep440-104832-1 **eQAPP Name: TetraTechInc_NERT_11302016**

Method Category: METALS

Method: 6010B_Leach **Matrix: AQ**

Sample ID: Tt-TP1-B3-18 **Collected:** 3/18/2015 8:20:00 AM **Analysis Type:** RES/TOT **Dilution:** 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
MAGNESIUM	0.27	J B	0.012	MDL	0.40	MRL	mg/L	J	sp

Sample ID: Tt-TP1-B3-6 **Collected:** 3/18/2015 8:06:00 AM **Analysis Type:** RES/TOT **Dilution:** 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
CALCIUM	52	B	0.050	MDL	0.10	MRL	mg/L	J-	m

Method Category: METALS

Method: 6020 **Matrix: AQ**

Sample ID: EB-03/18/15 **Collected:** 3/18/2015 12:00:00 PM **Analysis Type:** RES/TOT **Dilution:** 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
COPPER	1.1	J	0.50	MDL	2.0	MRL	ug/L	J	sp
MOLYBDENUM	0.79	J	0.50	MDL	2.0	MRL	ug/L	J	sp
NICKEL	1.2	J	0.50	MDL	2.0	MRL	ug/L	J	sp

Sample ID: EB-03/18/15-2 **Collected:** 3/18/2015 1:41:00 PM **Analysis Type:** RES/TOT **Dilution:** 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
BARIUM	0.68	J	0.50	MDL	1.0	MRL	ug/L	J	sp
NICKEL	0.59	J	0.50	MDL	2.0	MRL	ug/L	J	sp

Method Category: METALS

Method: 6020 **Matrix: SO**

Sample ID: Tt-TP1-B2-22 **Collected:** 3/17/2015 2:38:00 PM **Analysis Type:** RES/TOT **Dilution:** 20

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
MOLYBDENUM	0.82	J	0.53	MDL	1.1	MRL	mg/Kg	J	sp
SILVER	0.11	J	0.11	MDL	0.53	MRL	mg/Kg	J	sp

* denotes a non-reportable result

Project Name and Number: 114-520225-2015-MO5 - NERT Soil Flushing

Data Qualifier Summary

Lab Reporting Batch ID: 440-104832-1 **Laboratory: TA IRV**

EDD Filename: Prep440-104832-1 **eQAPP Name: TetraTechInc_NERT_11302016**

Method Category: **METALS**

Method: **6020** ***Matrix:*** **SO**

Sample ID: **Tt-TP1-B2-6** ***Collected:*** **3/17/2015 2:18:00 PM** ***Analysis Type:*** **RES/TOT** ***Dilution:*** **20**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
ANTIMONY	2.4	F1	0.56	MDL	1.1	MRL	mg/Kg	J-	m
ARSENIC	47	F1	0.28	MDL	0.56	MRL	mg/Kg	J-	m
COPPER	23	F1	0.56	MDL	1.1	MRL	mg/Kg	J-	m
NICKEL	24	F1	0.56	MDL	1.1	MRL	mg/Kg	J-	m
SELENIUM	0.80	J	0.22	MDL	1.1	MRL	mg/Kg	J	sp
SILVER	0.19	J	0.11	MDL	0.56	MRL	mg/Kg	J	sp
ZINC	110	F1	5.6	MDL	11	MRL	mg/Kg	J-	m

Sample ID: **Tt-TP1-B3-18** ***Collected:*** **3/18/2015 8:20:00 AM** ***Analysis Type:*** **RES/TOT** ***Dilution:*** **20**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
MOLYBDENUM	0.68	J	0.52	MDL	1.0	MRL	mg/Kg	J	sp

Sample ID: **Tt-TP1-B4-2** ***Collected:*** **3/18/2015 9:10:00 AM** ***Analysis Type:*** **RES/TOT** ***Dilution:*** **20**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
MOLYBDENUM	0.56	J	0.54	MDL	1.1	MRL	mg/Kg	J	sp

Sample ID: **Tt-TP1-B4-26** ***Collected:*** **3/18/2015 9:49:00 AM** ***Analysis Type:*** **RES/TOT** ***Dilution:*** **20**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
MOLYBDENUM	1.1	J	0.80	MDL	1.6	MRL	mg/Kg	J	sp

Sample ID: **Tt-TP2-B1-14** ***Collected:*** **3/18/2015 10:53:00 AM** ***Analysis Type:*** **RES/TOT** ***Dilution:*** **20**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
MOLYBDENUM	0.66	J	0.54	MDL	1.1	MRL	mg/Kg	J	sp

Sample ID: **Tt-TP2-B1-2** ***Collected:*** **3/18/2015 10:40:00 AM** ***Analysis Type:*** **RES/TOT** ***Dilution:*** **20**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
MOLYBDENUM	0.83	J	0.55	MDL	1.1	MRL	mg/Kg	J	sp

* denotes a non-reportable result

Project Name and Number: 114-520225-2015-MO5 - NERT Soil Flushing

Data Qualifier Summary

Lab Reporting Batch ID: 440-104832-1 **Laboratory: TA IRV**

EDD Filename: Prep440-104832-1 **eQAPP Name: TetraTechInc_NERT_11302016**

Method Category: METALS

Method: 6020 **Matrix: SO**

Sample ID: Tt-TP2-B2-10 **Collected:** 3/18/2015 1:10:00 PM **Analysis Type:** RES/TOT **Dilution:** 20

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
MOLYBDENUM	0.65	J	0.53	MDL	1.1	MRL	mg/Kg	J	sp

Sample ID: Tt-TP2-B2-26 **Collected:** 3/18/2015 1:31:00 PM **Analysis Type:** RES/TOT **Dilution:** 20

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
BERYLLIUM	0.31	J	0.17	MDL	0.34	MRL	mg/Kg	J	sp
MOLYBDENUM	0.62	J	0.57	MDL	1.1	MRL	mg/Kg	J	sp

Method Category: METALS

Method: 7199 **Matrix: SO**

Sample ID: Tt-TP2-B1-2 **Collected:** 3/18/2015 10:40:00 AM **Analysis Type:** RES/TOT **Dilution:** 10

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
Chromium, hexavalent	0.72	J	0.44	MDL	0.89	MRL	mg/Kg	J	sp

Method Category: METALS

Method: 7471A **Matrix: SO**

Sample ID: Tt-TP1-B2-22 **Collected:** 3/17/2015 2:38:00 PM **Analysis Type:** RES/TOT **Dilution:** 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
MERCURY	0.015	J	0.013	MDL	0.021	MRL	mg/Kg	J	sp

Sample ID: Tt-TP1-B3-18 **Collected:** 3/18/2015 8:20:00 AM **Analysis Type:** RES/TOT **Dilution:** 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
MERCURY	0.015	J	0.012	MDL	0.021	MRL	mg/Kg	J	sp

* denotes a non-reportable result

Project Name and Number: 114-520225-2015-MO5 - NERT Soil Flushing

Data Qualifier Summary

Lab Reporting Batch ID: 440-104832-1 **Laboratory: TA IRV**

EDD Filename: Prep440-104832-1 **eQAPP Name: TetraTechInc_NERT_11302016**

Method Category: **METALS**

Method: **7471A** ***Matrix:*** **SO**

Sample ID: **Tt-TP1-B3-6** ***Collected:*** **3/18/2015 8:06:00 AM** ***Analysis Type:*** **RES/TOT** ***Dilution:*** **1**

Analyte	*Lab Result*	*Lab Qual*	*DL*	*DL Type*	*RL*	*RL Type*	*Units*	*Data Review Qual*	*Reason Code*
MERCURY	0.022	J	0.014	MDL	0.023	MRL	mg/Kg	J	sp

* denotes a non-reportable result

Project Name and Number: 114-520225-2015-MO5 - NERT Soil Flushing

Data Qualifier Summary

Lab Reporting Batch ID: 440-104832-1

Laboratory: TA IRV

EDD Filename: Prep440-104832-1

eQAPP Name: TetraTechInc_NERT_11302016

Reason Code Legend

Reason Code	*Description*
bl	Method Blank Contamination
fd	Field Duplicate Precision
m	Matrix Spike Lower Estimation
m	Matrix Spike Lower Rejection
m	Matrix Spike Upper Estimation
sp	Reporting Limit Trace Value

* denotes a non-reportable result

Project Name and Number: 114-520225-2015-MO5 - NERT Soil Flushing

Reporting Limit Outliers

Lab Reporting Batch ID: 440-104832-1 **Laboratory: TA IRV**

EDD Filename: Prep440-104832-1 **eQAPP Name: TetraTechInc_NERT_11302016**

Method: 6010B
Matrix: AQ

SampleID	Analyte	Lab Qual	Result	Reporting Limit	RL Type	Units	Flag
EB-03/18/15	MANGANESE TITANIUM	J J	0.012 0.0038	0.020 0.0050	MRL MRL	mg/L mg/L	J (all detects)
EB-03/18/15-2	SODIUM	J	0.26	0.50	MRL	mg/L	J (all detects)

Method: 6010B_Leach
Matrix: AQ

SampleID	Analyte	Lab Qual	Result	Reporting Limit	RL Type	Units	Flag
Tt-TP1-B2-6	POTASSIUM	J	0.38	0.50	MRL	mg/L	J (all detects)
Tt-TP1-B3-18	MAGNESIUM	J B	0.27	0.40	MRL	mg/L	J (all detects)

Method: 6020
Matrix: AQ

SampleID	Analyte	Lab Qual	Result	Reporting Limit	RL Type	Units	Flag
EB-03/18/15	COPPER MOLYBDENUM NICKEL	J J J	1.1 0.79 1.2	2.0 2.0 2.0	MRL MRL MRL	ug/L ug/L ug/L	J (all detects)
EB-03/18/15-2	BARIUM NICKEL	J J	0.68 0.59	1.0 2.0	MRL MRL	ug/L ug/L	J (all detects)

Method: 6010B
Matrix: SO

SampleID	Analyte	Lab Qual	Result	Reporting Limit	RL Type	Units	Flag
Tt-TP1-B4-2	BORON	J	4.3	5.4	MRL	mg/Kg	J (all detects)
Tt-TP2-B1-2	BORON	J	5.2	5.5	MRL	mg/Kg	J (all detects)
Tt-TP2-B2-10	BORON	J	4.1	5.3	MRL	mg/Kg	J (all detects)
Tt-TP2-B2-26	BORON	J	3.1	5.7	MRL	mg/Kg	J (all detects)

Method: 6020
Matrix: SO

SampleID	Analyte	Lab Qual	Result	Reporting Limit	RL Type	Units	Flag
Tt-TP1-B2-22	MOLYBDENUM SILVER	J J	0.82 0.11	1.1 0.53	MRL MRL	mg/Kg mg/Kg	J (all detects)
Tt-TP1-B2-6	SELENIUM SILVER	J J	0.80 0.19	1.1 0.56	MRL MRL	mg/Kg mg/Kg	J (all detects)
Tt-TP1-B3-18	MOLYBDENUM	J	0.68	1.0	MRL	mg/Kg	J (all detects)

Project Name and Number: 114-520225-2015-MO5 - NERT Soil Flushing

Reporting Limit Outliers

Lab Reporting Batch ID: 440-104832-1 **Laboratory: TA IRV**

EDD Filename: Prep440-104832-1 **eQAPP Name: TetraTechInc_NERT_11302016**

Method: 6020

Matrix: SO

SampleID	Analyte	Lab Qual	Result	Reporting Limit	RL Type	Units	Flag
Tt-TP1-B4-2	MOLYBDENUM	J	0.56	1.1	MRL	mg/Kg	J (all detects)
Tt-TP1-B4-26	MOLYBDENUM	J	1.1	1.6	MRL	mg/Kg	J (all detects)
Tt-TP2-B1-14	MOLYBDENUM	J	0.66	1.1	MRL	mg/Kg	J (all detects)
Tt-TP2-B1-2	MOLYBDENUM	J	0.83	1.1	MRL	mg/Kg	J (all detects)
Tt-TP2-B2-10	MOLYBDENUM	J	0.65	1.1	MRL	mg/Kg	J (all detects)
Tt-TP2-B2-26	BERYLLIUM MOLYBDENUM	J J	0.31 0.62	0.34 1.1	MRL MRL	mg/Kg mg/Kg	J (all detects)

Method: 7199

Matrix: SO

SampleID	Analyte	Lab Qual	Result	Reporting Limit	RL Type	Units	Flag
Tt-TP2-B1-2	Chromium, hexavalent	J	0.72	0.89	MRL	mg/Kg	J (all detects)

Method: 7471A

Matrix: SO

SampleID	Analyte	Lab Qual	Result	Reporting Limit	RL Type	Units	Flag
Tt-TP1-B2-22	MERCURY	J	0.015	0.021	MRL	mg/Kg	J (all detects)
Tt-TP1-B3-18	MERCURY	J	0.015	0.021	MRL	mg/Kg	J (all detects)
Tt-TP1-B3-6	MERCURY	J	0.022	0.023	MRL	mg/Kg	J (all detects)

Data Review Summary

Lab Reporting Batch ID: 440-104925-1 **Laboratory: TA IRV**

EDD Filename: Prep440-104925-1 **eQAPP Name: TetraTechInc_NERT_11302016**

Validation Area	*Note*
Technical Holding Times	A
Temperature	A
Initial Calibration	N
Continuing Calibration/Initial Calibration Verification	N
Method Blanks	SR
Surrogate/Tracer Spikes	A
Matrix Spike/Matrix Spike Duplicates	SR
Laboratory Duplicates	A
Laboratory Replicates	N
Laboratory Control Samples	A
Compound Quantitation	SR
Field Duplicates	SR
Field Triplicates	N
Field Blanks	A

A = Acceptable, N = Not provided/applicable, SR = See report

The contents of this report reflect findings made by ADR during Automated Data Review, manual applied qualifiers are not considered. Please refer to the Overall Qualifier Summary report for manual qualifiers.

Field Duplicate RPD Report

Lab Reporting Batch ID: 440-104925-1 **Laboratory: TA IRV**

EDD Filename: Prep440-104925-1 **eQAPP Name: TetraTechInc_NERT_11302016**

Method: 2320B_Leach
Matrix: AQ

Analyte	Concentration (mg/L)		Sample RPD	eQAPP RPD	Flag
	Tt-TP2-B3-14	Tt-TP2-B3-14-dup			
Alkalinity as CaCO3	14	5.9	81	30.00	J (all detects) UJ (all non-detects)

Method: 2540C_Leach
Matrix: AQ

Analyte	Concentration (mg/L)		Sample RPD	eQAPP RPD	Flag
	Tt-TP3-B1-6	Tt-TP3-B1-6-dup			
TOTAL DISSOLVED SOLIDS	230	170	30	30.00	No Qualifiers Applied

Analyte	Concentration (mg/L)		Sample RPD	eQAPP RPD	Flag
	Tt-TP3-B2-22	Tt-TP3-B2-22-dup			
TOTAL DISSOLVED SOLIDS	240	240	0	30.00	No Qualifiers Applied

Analyte	Concentration (mg/L)		Sample RPD	eQAPP RPD	Flag
	Tt-TP3-B2-26	Tt-TP3-B2-26-dup			
TOTAL DISSOLVED SOLIDS	550	500	10	30.00	No Qualifiers Applied

Analyte	Concentration (mg/L)		Sample RPD	eQAPP RPD	Flag
	Tt-TP3-B4-14	Tt-TP3-B4-14-dup			
TOTAL DISSOLVED SOLIDS	160	190	17	30.00	No Qualifiers Applied

Analyte	Concentration (mg/L)		Sample RPD	eQAPP RPD	Flag
	Tt-TP2-B3-14	Tt-TP2-B3-14-dup			
TOTAL DISSOLVED SOLIDS	2400	3300	32	30.00	J(all detects) UJ(all non-detects)

Method: 300.0_Leach
Matrix: AQ

Analyte	Concentration (mg/L)		Sample RPD	eQAPP RPD	Flag
	Tt-TP2-B3-14	Tt-TP2-B3-14-dup			
CHLORIDE	150	180	18	30.00	No Qualifiers Applied
Nitrate as NO3	33	24	32	30.00	J(all detects)
SULFATE	500	960	63	30.00	UJ(all non-detects)

Method: 300.1B_Leach
Matrix: AQ

Analyte	Concentration (ug/L)		Sample RPD	eQAPP RPD	Flag
	Tt-TP2-B3-14	Tt-TP2-B3-14-dup			
Chlorate	47000	26000	58	30.00	J(all detects) UJ(all non-detects)

Project Name and Number: 114-520225-2015-MO5 - NERT Soil Flushing

Field Duplicate RPD Report

Lab Reporting Batch ID: 440-104925-1 **Laboratory: TA IRV**

EDD Filename: Prep440-104925-1 **eQAPP Name: TetraTechInc_NERT_11302016**

Method: 300.1B_Leach
Matrix: AQ

Method: 6010B_Leach
Matrix: AQ

Analyte	Concentration (mg/L)		Sample RPD	eQAPP RPD	Flag
	Tt-TP2-B3-14 (TOT)	Tt-TP2-B3-14-dup (TOT)			
CALCIUM	540	510	6	30.00	No Qualifiers Applied
MAGNESIUM	9.6	14	37	30.00	J(all detects) UJ(all non-detects)
POTASSIUM	0.83	1.5	58	30.00	
SODIUM	60	140	80	30.00	

Method: 314.0
Matrix: SO

Analyte	Concentration (mg/Kg)		Sample RPD	eQAPP RPD	Flag
	Tt-TP3-B1-6	Tt-TP3-B1-6-dup			
PERCHLORATE	430	210	69	30.00	J(all detects) UJ(all non-detects)

Analyte	Concentration (mg/Kg)		Sample RPD	eQAPP RPD	Flag
	Tt-TP3-B2-22	Tt-TP3-B2-22-dup			
PERCHLORATE	4.6	4.6	0	30.00	No Qualifiers Applied

Analyte	Concentration (mg/Kg)		Sample RPD	eQAPP RPD	Flag
	Tt-TP3-B2-26	Tt-TP3-B2-26-dup			
PERCHLORATE	3100	3100	0	30.00	No Qualifiers Applied

Analyte	Concentration (mg/Kg)		Sample RPD	eQAPP RPD	Flag
	Tt-TP3-B4-14	Tt-TP3-B4-14-dup			
PERCHLORATE	0.49	0.90	59	30.00	J(all detects) UJ(all non-detects)

Analyte	Concentration (mg/Kg)		Sample RPD	eQAPP RPD	Flag
	Tt-TP2-B3-14	Tt-TP2-B3-14-dup			
PERCHLORATE	5600	7400	28	30.00	No Qualifiers Applied

Method: 6010B
Matrix: SO

Analyte	Concentration (mg/Kg)		Sample RPD	eQAPP RPD	Flag
	Tt-TP2-B3-14 (TOT)	Tt-TP2-B3-14-dup (TOT)			
IRON	12000	13000	8	30.00	No Qualifiers Applied
TITANIUM	560	590	5	30.00	
BORON	26	10	89	30.00	J(all detects) UJ(all non-detects)
MANGANESE	230	350	41	30.00	

Project Name and Number: 114-520225-2015-MO5 - NERT Soil Flushing

Field Duplicate RPD Report

Lab Reporting Batch ID: 440-104925-1 **Laboratory: TA IRV**

EDD Filename: Prep440-104925-1 **eQAPP Name: TetraTechInc_NERT_11302016**

Method: 6020
Matrix: SO

Analyte	Concentration (mg/Kg)		Sample RPD	eQAPP RPD	Flag
	Tt-TP2-B3-14 (TOT)	Tt-TP2-B3-14-dup (TOT)			
COBALT	4.3	5.0	15	30.00	No Qualifiers Applied
COPPER	9.5	12	23	30.00	
LEAD	5.8	7.1	20	30.00	
MOLYBDENUM	0.84	0.66	24	30.00	
NICKEL	13	13	0	30.00	
ZINC	30	25	18	30.00	
ARSENIC	25	14	56	30.00	J(all detects) UJ(all non-detects)
BARIUM	68	120	55	30.00	
BERYLLIUM	0.56	0.41	31	30.00	
CHROMIUM	18	12	40	30.00	

Method: 7199
Matrix: SO

Analyte	Concentration (mg/Kg)		Sample RPD	eQAPP RPD	Flag
	Tt-TP2-B3-14 (TOT)	Tt-TP2-B3-14-dup (TOT)			
Chromium, hexavalent	1.2	0.88 U	200	30.00	J(all detects) UJ(all non-detects)

Method: 7471A
Matrix: SO

Analyte	Concentration (mg/Kg)		Sample RPD	eQAPP RPD	Flag
	Tt-TP2-B3-14 (TOT)	Tt-TP2-B3-14-dup (TOT)			
MERCURY	0.021	0.014	40	30.00	J(all detects) UJ(all non-detects)

Method: 9045C
Matrix: SO

Analyte	Concentration (SU)		Sample RPD	eQAPP RPD	Flag
	Tt-TP2-B3-14	Tt-TP2-B3-14-dup			
PH	7.60	7.54	1	30.00	No Qualifiers Applied

QC Outlier Report: HoldingTimes

Lab Reporting Batch ID: 440-104925-1 **Laboratory: TA IRV**

EDD Filename: Prep440-104925-1 **eQAPP Name: TetraTechInc_NERT_11302016**

Method: 7199 **Preparation Method: Gen Prep**

Matrix: AQ

Sample ID	Type	Actual	Criteria	Units	Flag
EB-03/19/15MS (RES/TOT)	Sampling To Analysis	30.75	24.00	HOURS	J- (all detects)
EB-03/19/15MSD (RES/TOT)		31.00	24.00	HOURS	UJ (all non-detects)

Project Name and Number: 114-520225-2015-MO5 -

Matrix Spike/Matrix Spike Duplicate Outlier Report

Lab Reporting Batch ID: 440-104925-1 **Laboratory: TA IRV**

EDD Filename: Prep440-104925-1 **eQAPP Name: TetraTechInc_NERT_11302016**

Method: 6010B_Leach
Matrix: AQ

QC Sample ID (Associated Samples)	Compound	MS %R	MSD %R	%R Limits	RPD (Limits)	Affected Compounds	Flag
Tt-TP2-B3-14MS (TOT) Tt-TP2-B3-14MSD (TOT) (Tt-TP2-B3-14)	CALCIUM	-248	289	75.00-125.00	-	CALCIUM	J(all detects) R(all non-detects)

Method: 300.0_Leach
Matrix: AQ

QC Sample ID (Associated Samples)	Compound	MS %R	MSD %R	%R Limits	RPD (Limits)	Affected Compounds	Flag
Tt-TP2-B3-14MS Tt-TP2-B3-14MSD (Tt-TP2-B3-14)	CHLORIDE SULFATE	-14 64	-30 9	80.00-120.00 80.00-120.00	- -	CHLORIDE SULFATE	J-(all detects) R(all non-detects)

Method: 300.1B_Leach
Matrix: AQ

QC Sample ID (Associated Samples)	Compound	MS %R	MSD %R	%R Limits	RPD (Limits)	Affected Compounds	Flag
Tt-TP2-B3-2MS Tt-TP2-B3-2MSD (Tt-TP2-B3-2)	Chlorate	2	7	75.00-125.00	-	Chlorate	J-(all detects) R(all non-detects)
Tt-TP2-B3-14MS Tt-TP2-B3-14MSD (Tt-TP2-B3-14)	Chlorate	1	-562	75.00-125.00	-	Chlorate	J-(all detects) R(all non-detects)

Method: 314.0
Matrix: AQ

QC Sample ID (Associated Samples)	Compound	MS %R	MSD %R	%R Limits	RPD (Limits)	Affected Compounds	Flag
EB-03/19/15MS EB-03/19/15MSD (EB-03/19/15)	PERCHLORATE	167	168	80.00-120.00	-	PERCHLORATE	J+(all detects)

Method: 6010B
Matrix: SO

QC Sample ID (Associated Samples)	Compound	MS %R	MSD %R	%R Limits	RPD (Limits)	Affected Compounds	Flag
Tt-TP2-B3-14MS (TOT) Tt-TP2-B3-14MSD (TOT) (Tt-TP2-B3-14)	MANGANESE	31	48	75.00-125.00	-	MANGANESE	J- (all detects) UJ (all non-detects)

Project Name and Number: 114-520225-2015-MO5 - NERT Soil Flushing

Matrix Spike/Matrix Spike Duplicate Outlier Report

Lab Reporting Batch ID: 440-104925-1 **Laboratory: TA IRV**

EDD Filename: Prep440-104925-1 **eQAPP Name: TetraTechInc_NERT_11302016**

Method: 6010B
Matrix: SO

QC Sample ID (Associated Samples)	Compound	MS %R	MSD %R	%R Limits	RPD (Limits)	Affected Compounds	Flag
Tt-TP2-B3-14MS (TOT) Tt-TP2-B3-14MSD (TOT) (Tt-TP2-B3-14)	IRON TITANIUM	1793 423	1018 457	75.00-125.00 75.00-125.00	- -	IRON TITANIUM	J+(all detects)

Method: 6020
Matrix: SO

QC Sample ID (Associated Samples)	Compound	MS %R	MSD %R	%R Limits	RPD (Limits)	Affected Compounds	Flag
Tt-TP2-B3-14MS (TOT) Tt-TP2-B3-14MSD (TOT) (Tt-TP2-B3-14)	ANTIMONY	78	78	80.00-120.00	-	ANTIMONY	J-(all detects) UJ(all non-detects)
Tt-TP2-B3-14MS (TOT) Tt-TP2-B3-14MSD (TOT) (Tt-TP2-B3-14)	BARIUM	209	154	80.00-120.00	-	BARIUM	J+(all detects)

Method: 314.0
Matrix: SO

QC Sample ID (Associated Samples)	Compound	MS %R	MSD %R	%R Limits	RPD (Limits)	Affected Compounds	Flag
Tt-TP2-B3-14MS Tt-TP2-B3-14MSD (Tt-TP2-B3-14)	PERCHLORATE	-35	-33	80.00-120.00	-	PERCHLORATE	J-(all detects) R(all non-detects)
Tt-TP3-B3-6MS Tt-TP3-B3-6MSD (Tt-TP3-B3-6)	PERCHLORATE	-6	1	80.00-120.00	-	PERCHLORATE	J-(all detects) R(all non-detects)

Method Blank Outlier Report

Lab Reporting Batch ID: 440-104925-1 **Laboratory: TA IRV**

EDD Filename: Prep440-104925-1 **eQAPP Name: TetraTechInc_NERT_11302016**

Method: **6010B**
Matrix: **AQ**

Method Blank Sample ID	Analysis Date	Analyte	Result	Associated Samples
MB 440-245023/1-A	3/27/2015 9:11:00 PM	IRON	0.0180 mg/L	EB-03/19/15 EB-03/19/15-2

Method: **6010B_Leach**
Matrix: **AQ**

Method Blank Sample ID	Analysis Date	Analyte	Result	Associated Samples
MB 440-245772/1-B	3/30/2015 12:18:00 PM	CALCIUM MAGNESIUM	0.0860 mg/L 0.0146 mg/L	Tt-TP3-B4-18
MB 440-245825/1-B	3/30/2015 10:49:00 AM	CALCIUM MAGNESIUM	0.236 mg/L 0.0262 mg/L	Tt-TP2-B3-14 Tt-TP2-B3-14-dup Tt-TP2-B3-2 Tt-TP2-B4-22 Tt-TP2-B4-6 Tt-TP3-B1-10 Tt-TP3-B1-18 Tt-TP3-B2-14 Tt-TP3-B3-10 Tt-TP3-B3-26 Tt-TP3-B4-2

Method: **6020**
Matrix: **AQ**

Method Blank Sample ID	Analysis Date	Analyte	Result	Associated Samples
MB 440-245079/1-A	3/27/2015 3:02:00 PM	ZINC	16.4 ug/L	EB-03/19/15 EB-03/19/15-2

The following samples and their listed target analytes were qualified due to contamination reported in this blank

Sample ID	Analyte	Reported Result	Modified Final Result
EB-03/19/15(RES/TOT)	ZINC	6.1 ug/L	20J+ ug/L

Project Name and Number: 114-520225-2015-MO5 - NERT Soil Flushing

Data Qualifier Summary

Lab Reporting Batch ID: 440-104925-1 **Laboratory: TA IRV**

EDD Filename: Prep440-104925-1 **eQAPP Name: TetraTechInc_NERT_11302016**

Method Category: ALK

Method: 2320B_Leach **Matrix: AQ**

Sample ID: Tt-TP2-B3-14 **Collected:** 3/18/2015 2:36:00 PM **Analysis Type:** RES **Dilution:** 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
Alkalinity as CaCO3	14		4.0	MDL	4.0	MRL	mg/L	J	fd

Sample ID: Tt-TP2-B3-14-dup **Collected:** 3/18/2015 2:36:00 PM **Analysis Type:** RES **Dilution:** 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
Alkalinity as CaCO3	5.9		4.0	MDL	4.0	MRL	mg/L	J	fd

Method Category: GENCHEM

Method: 2540C_Leach **Matrix: AQ**

Sample ID: Tt-TP2-B3-14 **Collected:** 3/18/2015 2:36:00 PM **Analysis Type:** RES **Dilution:** 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
TOTAL DISSOLVED SOLIDS	2400		10	MDL	20	MRL	mg/L	J	fd

Sample ID: Tt-TP2-B3-14-dup **Collected:** 3/18/2015 2:36:00 PM **Analysis Type:** RES **Dilution:** 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
TOTAL DISSOLVED SOLIDS	3300		10	MDL	20	MRL	mg/L	J	fd

Method Category: GENCHEM

Method: 300.0_Leach **Matrix: AQ**

Sample ID: Tt-TP2-B3-14 **Collected:** 3/18/2015 2:36:00 PM **Analysis Type:** RES **Dilution:** 50

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
CHLORIDE	150		2.5	MDL	5.0	MRL	mg/L	J-	m

Sample ID: Tt-TP2-B3-14 **Collected:** 3/18/2015 2:36:00 PM **Analysis Type:** RES2 **Dilution:** 10

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
Nitrate as NO3	33		2.5	MDL	5.0	MRL	mg/L	J	fd

* denotes a non-reportable result

Project Name and Number: 114-520225-2015-MO5 - NERT Soil Flushing

Data Qualifier Summary

Lab Reporting Batch ID: 440-104925-1 **Laboratory: TA IRV**

EDD Filename: Prep440-104925-1 **eQAPP Name: TetraTechInc_NERT_11302016**

Method Category: GENCHEM

Method: 300.0_Leach **Matrix: AQ**

Sample ID: Tt-TP2-B3-14 **Collected:** 3/18/2015 2:36:00 PM **Analysis Type:** RES3 **Dilution:** 10

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
SULFATE	500		13	MDL	25	MRL	mg/L	J-	m, m, fd

Sample ID: Tt-TP2-B3-14-dup **Collected:** 3/18/2015 2:36:00 PM **Analysis Type:** RES **Dilution:** 200

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
SULFATE	960		50	MDL	100	MRL	mg/L	J	fd

Sample ID: Tt-TP2-B3-14-dup **Collected:** 3/18/2015 2:36:00 PM **Analysis Type:** RES2 **Dilution:** 5

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
Nitrate as NO3	24		1.3	MDL	2.5	MRL	mg/L	J	fd

Sample ID: Tt-TP3-B3-10 **Collected:** 3/19/2015 12:51:00 PM **Analysis Type:** RES **Dilution:** 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
CHLORIDE	0.41	J	0.25	MDL	0.50	MRL	mg/L	J	sp

Method Category: GENCHEM

Method: 300.1B_Leach **Matrix: AQ**

Sample ID: Tt-TP2-B3-14 **Collected:** 3/18/2015 2:36:00 PM **Analysis Type:** RES **Dilution:** 500

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
Chlorate	47000		5000	MDL	10000	MRL	ug/L	J-	m, fd

Sample ID: Tt-TP2-B3-14-dup **Collected:** 3/18/2015 2:36:00 PM **Analysis Type:** RES **Dilution:** 200

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
Chlorate	26000		2000	MDL	4000	MRL	ug/L	J	fd

* denotes a non-reportable result

Project Name and Number: 114-520225-2015-MO5 - NERT Soil Flushing

Data Qualifier Summary

Lab Reporting Batch ID: 440-104925-1 **Laboratory: TA IRV**

EDD Filename: Prep440-104925-1 **eQAPP Name: TetraTechInc_NERT_11302016**

Method Category: GENCHEM

Method: 300.1B_Leach **Matrix: AQ**

Sample ID: Tt-TP2-B3-2 **Collected:** 3/18/2015 2:12:00 PM **Analysis Type:** RES **Dilution:** 10

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
Chlorate	2600		100	MDL	200	MRL	ug/L	J-	m

Sample ID: Tt-TP3-B4-18 **Collected:** 3/19/2015 2:00:00 PM **Analysis Type:** RES **Dilution:** 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
Chlorate	15	J	10	MDL	20	MRL	ug/L	J	sp

Sample ID: Tt-TP3-B4-2 **Collected:** 3/19/2015 1:40:00 PM **Analysis Type:** RES **Dilution:** 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
Chlorate	15	J	10	MDL	20	MRL	ug/L	J	sp

Method Category: GENCHEM

Method: 314.0 **Matrix: SO**

Sample ID: Tt-TP2-B3-14 **Collected:** 3/18/2015 2:36:00 PM **Analysis Type:** RES **Dilution:** 10000

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
PERCHLORATE	5600	F1	110	MDL	460	MRL	mg/Kg	J-	m

Sample ID: Tt-TP3-B1-6 **Collected:** 3/19/2015 9:31:00 AM **Analysis Type:** RES **Dilution:** 1000

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
PERCHLORATE	430		11	MDL	45	MRL	mg/Kg	J	fd

Sample ID: Tt-TP3-B1-6-dup **Collected:** 3/19/2015 9:35:00 AM **Analysis Type:** RES **Dilution:** 1000

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
PERCHLORATE	210		10	MDL	44	MRL	mg/Kg	J	fd

* denotes a non-reportable result

Project Name and Number: 114-520225-2015-MO5 - NERT Soil Flushing

Data Qualifier Summary

Lab Reporting Batch ID: 440-104925-1 **Laboratory: TA IRV**

EDD Filename: Prep440-104925-1 **eQAPP Name: TetraTechInc_NERT_11302016**

Method Category: GENCHEM

Method: 314.0 **Matrix: SO**

Sample ID: Tt-TP3-B3-6 **Collected:** 3/19/2015 12:46:00 PM **Analysis Type:** RES **Dilution:** 10

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
PERCHLORATE	1.4	F1	0.11	MDL	0.45	MRL	mg/Kg	J-	m

Sample ID: Tt-TP3-B4-14 **Collected:** 3/19/2015 1:53:00 PM **Analysis Type:** RES **Dilution:** 10

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
PERCHLORATE	0.49		0.10	MDL	0.43	MRL	mg/Kg	J	fd

Sample ID: Tt-TP3-B4-14-dup **Collected:** 3/19/2015 1:53:00 PM **Analysis Type:** RES **Dilution:** 10

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
PERCHLORATE	0.90		0.10	MDL	0.43	MRL	mg/Kg	J	fd

Method Category: METALS

Method: 6010B **Matrix: AQ**

Sample ID: EB-03/19/15 **Collected:** 3/19/2015 11:50:00 AM **Analysis Type:** RES/TOT **Dilution:** 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
SODIUM	0.28	J	0.25	MDL	0.50	MRL	mg/L	J	sp
TITANIUM	0.0026	J	0.0025	MDL	0.0050	MRL	mg/L	J	sp

Sample ID: EB-03/19/15-2 **Collected:** 3/19/2015 1:40:00 PM **Analysis Type:** RES/TOT **Dilution:** 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
TITANIUM	0.0034	J	0.0025	MDL	0.0050	MRL	mg/L	J	sp

* denotes a non-reportable result

Project Name and Number: 114-520225-2015-MO5 - NERT Soil Flushing

Data Qualifier Summary

Lab Reporting Batch ID: 440-104925-1 **Laboratory: TA IRV**

EDD Filename: Prep440-104925-1 **eQAPP Name: TetraTechInc_NERT_11302016**

Method Category: METALS

Method: 6010B **Matrix: SO**

Sample ID: Tt-TP2-B3-14 **Collected:** 3/18/2015 2:36:00 PM **Analysis Type:** RE2/TOT **Dilution:** 5

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
BORON	26		2.9	MDL	5.8	MRL	mg/Kg	J	fd

Sample ID: Tt-TP2-B3-14 **Collected:** 3/18/2015 2:36:00 PM **Analysis Type:** RES/TOT **Dilution:** 5

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
IRON	12000		5.8	MDL	12	MRL	mg/Kg	J+	m
MANGANESE	230		1.2	MDL	2.3	MRL	mg/Kg	J-	m, fd
TITANIUM	560		1.2	MDL	2.3	MRL	mg/Kg	J+	m

Sample ID: Tt-TP2-B3-14-dup **Collected:** 3/18/2015 2:36:00 PM **Analysis Type:** RE2/TOT **Dilution:** 5

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
BORON	10		2.7	MDL	5.5	MRL	mg/Kg	J	fd

Sample ID: Tt-TP2-B3-14-dup **Collected:** 3/18/2015 2:36:00 PM **Analysis Type:** RES/TOT **Dilution:** 5

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
MANGANESE	350		1.1	MDL	2.2	MRL	mg/Kg	J	fd

Method Category: METALS

Method: 6010B_Leach **Matrix: AQ**

Sample ID: Tt-TP2-B3-14 **Collected:** 3/18/2015 2:36:00 PM **Analysis Type:** RES/TOT **Dilution:** 2

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
CALCIUM	540	B	0.10	MDL	0.20	MRL	mg/L	J	m, m
MAGNESIUM	9.6	B	0.024	MDL	0.80	MRL	mg/L	J	fd
POTASSIUM	0.83	J	0.74	MDL	1.0	MRL	mg/L	J	sp, fd
SODIUM	60		0.38	MDL	1.0	MRL	mg/L	J	fd

* denotes a non-reportable result

Project Name and Number: 114-520225-2015-MO5 - NERT Soil Flushing

Data Qualifier Summary

Lab Reporting Batch ID: 440-104925-1 **Laboratory: TA IRV**

EDD Filename: Prep440-104925-1 **eQAPP Name: TetraTechInc_NERT_11302016**

Method Category: METALS

Method: 6010B_Leach **Matrix: AQ**

Sample ID: Tt-TP2-B3-14-dup **Collected:** 3/18/2015 2:36:00 PM **Analysis Type:** RES/TOT **Dilution:** 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
MAGNESIUM	14	B	0.012	MDL	0.40	MRL	mg/L	J	fd
POTASSIUM	1.5		0.37	MDL	0.50	MRL	mg/L	J	fd
SODIUM	140		0.19	MDL	0.50	MRL	mg/L	J	fd

Sample ID: Tt-TP3-B1-10 **Collected:** 3/19/2015 9:35:00 AM **Analysis Type:** RES/TOT **Dilution:** 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
POTASSIUM	0.38	J	0.37	MDL	0.50	MRL	mg/L	J	sp

Sample ID: Tt-TP3-B4-18 **Collected:** 3/19/2015 2:00:00 PM **Analysis Type:** RES/TOT **Dilution:** 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
POTASSIUM	0.45	J	0.37	MDL	0.50	MRL	mg/L	J	sp

Method Category: METALS

Method: 6020 **Matrix: AQ**

Sample ID: EB-03/19/15 **Collected:** 3/19/2015 11:50:00 AM **Analysis Type:** RES/TOT **Dilution:** 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
BARIUM	0.83	J	0.50	MDL	1.0	MRL	ug/L	J	sp
NICKEL	0.60	J	0.50	MDL	2.0	MRL	ug/L	J	sp
ZINC	6.1	J B	2.5	MDL	20	MRL	ug/L	J+	bl

Sample ID: EB-03/19/15-2 **Collected:** 3/19/2015 1:40:00 PM **Analysis Type:** RES/TOT **Dilution:** 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
CHROMIUM	1.4	J	0.50	MDL	2.0	MRL	ug/L	J	sp
NICKEL	0.56	J	0.50	MDL	2.0	MRL	ug/L	J	sp

* denotes a non-reportable result

Project Name and Number: 114-520225-2015-MO5 - NERT Soil Flushing

Data Qualifier Summary

Lab Reporting Batch ID: 440-104925-1 **Laboratory: TA IRV**

EDD Filename: Prep440-104925-1 **eQAPP Name: TetraTechInc_NERT_11302016**

Method Category: **METALS**

Method: **6020** ***Matrix:*** **SO**

Sample ID: **Tt-TP2-B3-14** ***Collected:*** **3/18/2015 2:36:00 PM** ***Analysis Type:*** **RES/TOT** ***Dilution:*** **20**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
ANTIMONY	0.58	U F1	0.58	MDL	1.2	MRL	mg/Kg	UJ	m
ARSENIC	25		0.29	MDL	0.58	MRL	mg/Kg	J	fd
BARIUM	68	F1	0.29	MDL	0.58	MRL	mg/Kg	J+	m, fd
BERYLLIUM	0.56		0.17	MDL	0.35	MRL	mg/Kg	J	fd
CHROMIUM	18		0.58	MDL	1.2	MRL	mg/Kg	J	fd
MOLYBDENUM	0.84	J	0.58	MDL	1.2	MRL	mg/Kg	J	sp

Sample ID: **Tt-TP2-B3-14-dup** ***Collected:*** **3/18/2015 2:36:00 PM** ***Analysis Type:*** **RES/TOT** ***Dilution:*** **20**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
ARSENIC	14		0.27	MDL	0.55	MRL	mg/Kg	J	fd
BARIUM	120		0.27	MDL	0.55	MRL	mg/Kg	J	fd
BERYLLIUM	0.41		0.16	MDL	0.33	MRL	mg/Kg	J	fd
CHROMIUM	12		0.55	MDL	1.1	MRL	mg/Kg	J	fd
MOLYBDENUM	0.66	J	0.55	MDL	1.1	MRL	mg/Kg	J	sp

Sample ID: **Tt-TP2-B3-2** ***Collected:*** **3/18/2015 2:12:00 PM** ***Analysis Type:*** **RES/TOT** ***Dilution:*** **20**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
SILVER	0.11	J	0.11	MDL	0.56	MRL	mg/Kg	J	sp

Sample ID: **Tt-TP3-B1-10** ***Collected:*** **3/19/2015 9:35:00 AM** ***Analysis Type:*** **RES/TOT** ***Dilution:*** **20**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
MOLYBDENUM	0.57	J	0.56	MDL	1.1	MRL	mg/Kg	J	sp

Sample ID: **Tt-TP3-B1-18** ***Collected:*** **3/19/2015 9:43:00 AM** ***Analysis Type:*** **RES/TOT** ***Dilution:*** **20**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
MOLYBDENUM	0.56	J	0.56	MDL	1.1	MRL	mg/Kg	J	sp

* denotes a non-reportable result

Project Name and Number: 114-520225-2015-MO5 - NERT Soil Flushing

Data Qualifier Summary

Lab Reporting Batch ID: 440-104925-1 **Laboratory: TA IRV**

EDD Filename: Prep440-104925-1 **eQAPP Name: TetraTechInc_NERT_11302016**

Method Category: **METALS**

Method: **6020** ***Matrix:*** **SO**

Sample ID: **Tt-TP3-B2-14** ***Collected:*** **3/19/2015 10:54:00 AM** ***Analysis Type:*** **RES/TOT** ***Dilution:*** **20**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
SILVER	0.23	J	0.11	MDL	0.54	MRL	mg/Kg	J	sp

Sample ID: **Tt-TP3-B2-6** ***Collected:*** **3/19/2015 10:45:00 AM** ***Analysis Type:*** **RES/TOT** ***Dilution:*** **20**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
MOLYBDENUM	0.58	J	0.53	MDL	1.1	MRL	mg/Kg	J	sp

Sample ID: **Tt-TP3-B3-10** ***Collected:*** **3/19/2015 12:51:00 PM** ***Analysis Type:*** **RES/TOT** ***Dilution:*** **20**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
MOLYBDENUM	0.57	J	0.54	MDL	1.1	MRL	mg/Kg	J	sp
SILVER	0.27	J	0.11	MDL	0.54	MRL	mg/Kg	J	sp

Sample ID: **Tt-TP3-B3-26** ***Collected:*** **3/19/2015 1:07:00 PM** ***Analysis Type:*** **RES/TOT** ***Dilution:*** **20**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
MOLYBDENUM	1.3	J	0.77	MDL	1.5	MRL	mg/Kg	J	sp

Sample ID: **Tt-TP3-B4-18** ***Collected:*** **3/19/2015 2:00:00 PM** ***Analysis Type:*** **RES/TOT** ***Dilution:*** **20**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
MOLYBDENUM	0.86	J	0.60	MDL	1.2	MRL	mg/Kg	J	sp

Sample ID: **Tt-TP3-B4-2** ***Collected:*** **3/19/2015 1:40:00 PM** ***Analysis Type:*** **RES/TOT** ***Dilution:*** **20**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
MOLYBDENUM	0.56	J	0.55	MDL	1.1	MRL	mg/Kg	J	sp

* denotes a non-reportable result

Project Name and Number: 114-520225-2015-MO5 - NERT Soil Flushing

Data Qualifier Summary

Lab Reporting Batch ID: 440-104925-1 **Laboratory: TA IRV**

EDD Filename: Prep440-104925-1 **eQAPP Name: TetraTechInc_NERT_11302016**

Method Category: METALS

Method: 7199 **Matrix: SO**

Sample ID: **Tt-TP2-B3-14** ***Collected:*** **3/18/2015 2:36:00 PM** ***Analysis Type:*** **RES/TOT** ***Dilution:*** **10**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
Chromium, hexavalent	1.2		0.46	MDL	0.92	MRL	mg/Kg	J	fd

Sample ID: **Tt-TP2-B3-14-dup** ***Collected:*** **3/18/2015 2:36:00 PM** ***Analysis Type:*** **RES/TOT** ***Dilution:*** **10**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
Chromium, hexavalent	0.44	U	0.44	MDL	0.88	MRL	mg/Kg	UJ	fd

Method Category: METALS

Method: 7471A **Matrix: SO**

Sample ID: **Tt-TP2-B3-14** ***Collected:*** **3/18/2015 2:36:00 PM** ***Analysis Type:*** **RES/TOT** ***Dilution:*** **1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
MERCURY	0.021	J	0.014	MDL	0.023	MRL	mg/Kg	J	sp, fd

Sample ID: **Tt-TP2-B3-14-dup** ***Collected:*** **3/18/2015 2:36:00 PM** ***Analysis Type:*** **RES/TOT** ***Dilution:*** **1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
MERCURY	0.014	J	0.014	MDL	0.023	MRL	mg/Kg	J	sp, fd

Sample ID: **Tt-TP2-B4-6** ***Collected:*** **3/19/2015 8:04:00 AM** ***Analysis Type:*** **RES/TOT** ***Dilution:*** **1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
MERCURY	0.013	J	0.013	MDL	0.022	MRL	mg/Kg	J	sp

Sample ID: **Tt-TP3-B1-10** ***Collected:*** **3/19/2015 9:35:00 AM** ***Analysis Type:*** **RES/TOT** ***Dilution:*** **1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
MERCURY	0.020	J	0.013	MDL	0.022	MRL	mg/Kg	J	sp

* denotes a non-reportable result

Project Name and Number: 114-520225-2015-MO5 - NERT Soil Flushing

Data Qualifier Summary

Lab Reporting Batch ID: 440-104925-1 **Laboratory: TA IRV**

EDD Filename: Prep440-104925-1 **eQAPP Name: TetraTechInc_NERT_11302016**

Method Category: **METALS**

Method: **7471A** ***Matrix:*** **SO**

Sample ID: **Tt-TP3-B1-18** ***Collected:*** **3/19/2015 9:43:00 AM** ***Analysis Type:*** **RES/TOT** ***Dilution:*** **1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
MERCURY	0.017	J	0.013	MDL	0.022	MRL	mg/Kg	J	sp

Sample ID: **Tt-TP3-B2-14** ***Collected:*** **3/19/2015 10:54:00 AM** ***Analysis Type:*** **RES/TOT** ***Dilution:*** **1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
MERCURY	0.013	J	0.013	MDL	0.021	MRL	mg/Kg	J	sp

Sample ID: **Tt-TP3-B3-10** ***Collected:*** **3/19/2015 12:51:00 PM** ***Analysis Type:*** **RES/TOT** ***Dilution:*** **1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
MERCURY	0.018	J	0.013	MDL	0.022	MRL	mg/Kg	J	sp

Sample ID: **Tt-TP3-B3-26** ***Collected:*** **3/19/2015 1:07:00 PM** ***Analysis Type:*** **RES/TOT** ***Dilution:*** **1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
MERCURY	0.020	J	0.019	MDL	0.031	MRL	mg/Kg	J	sp

Sample ID: **Tt-TP3-B4-18** ***Collected:*** **3/19/2015 2:00:00 PM** ***Analysis Type:*** **RES/TOT** ***Dilution:*** **1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
MERCURY	0.021	J	0.014	MDL	0.023	MRL	mg/Kg	J	sp

* denotes a non-reportable result

Project Name and Number: 114-520225-2015-MO5 - NERT Soil Flushing

Data Qualifier Summary

Lab Reporting Batch ID: 440-104925-1

Laboratory: TA IRV

EDD Filename: Prep440-104925-1

eQAPP Name: TetraTechInc_NERT_11302016

Reason Code Legend

Reason Code	*Description*
bl	Method Blank Contamination
fd	Field Duplicate Precision
m	Matrix Spike Lower Estimation
m	Matrix Spike Lower Rejection
m	Matrix Spike Upper Estimation
sp	Reporting Limit Trace Value

* denotes a non-reportable result

Project Name and Number: 114-520225-2015-MO5 - NERT Soil Flushing

Reporting Limit Outliers

Lab Reporting Batch ID: 440-104925-1 **Laboratory: TA IRV**

EDD Filename: Prep440-104925-1 **eQAPP Name: TetraTechInc_NERT_11302016**

Method: 300.0_Leach
Matrix: AQ

SampleID	Analyte	Lab Qual	Result	Reporting Limit	RL Type	Units	Flag
Tt-TP3-B3-10	CHLORIDE	J	0.41	0.50	MRL	mg/L	J (all detects)

Method: 300.1B_Leach
Matrix: AQ

SampleID	Analyte	Lab Qual	Result	Reporting Limit	RL Type	Units	Flag
Tt-TP3-B4-18	Chlorate	J	15	20	MRL	ug/L	J (all detects)
Tt-TP3-B4-2	Chlorate	J	15	20	MRL	ug/L	J (all detects)

Method: 6010B
Matrix: AQ

SampleID	Analyte	Lab Qual	Result	Reporting Limit	RL Type	Units	Flag
EB-03/19/15	SODIUM TITANIUM	J J	0.28 0.0026	0.50 0.0050	MRL MRL	mg/L mg/L	J (all detects)
EB-03/19/15-2	TITANIUM	J	0.0034	0.0050	MRL	mg/L	J (all detects)

Method: 6010B_Leach
Matrix: AQ

SampleID	Analyte	Lab Qual	Result	Reporting Limit	RL Type	Units	Flag
Tt-TP2-B3-14	POTASSIUM	J	0.83	1.0	MRL	mg/L	J (all detects)
Tt-TP3-B1-10	POTASSIUM	J	0.38	0.50	MRL	mg/L	J (all detects)
Tt-TP3-B4-18	POTASSIUM	J	0.45	0.50	MRL	mg/L	J (all detects)

Method: 6020
Matrix: AQ

SampleID	Analyte	Lab Qual	Result	Reporting Limit	RL Type	Units	Flag
EB-03/19/15	BARIUM NICKEL ZINC	J J J B	0.83 0.60 6.1	1.0 2.0 20	MRL MRL MRL	ug/L ug/L ug/L	J (all detects)
EB-03/19/15-2	CHROMIUM NICKEL	J J	1.4 0.56	2.0 2.0	MRL MRL	ug/L ug/L	J (all detects)

Reporting Limit Outliers

Lab Reporting Batch ID: 440-104925-1 **Laboratory: TA IRV**

EDD Filename: Prep440-104925-1 **eQAPP Name: TetraTechInc_NERT_11302016**

Method: 6020

Matrix: SO

SampleID	Analyte	Lab Qual	Result	Reporting Limit	RL Type	Units	Flag
Tt-TP2-B3-14	MOLYBDENUM	J	0.84	1.2	MRL	mg/Kg	J (all detects)
Tt-TP2-B3-14-dup	MOLYBDENUM	J	0.66	1.1	MRL	mg/Kg	J (all detects)
Tt-TP2-B3-2	SILVER	J	0.11	0.56	MRL	mg/Kg	J (all detects)
Tt-TP3-B1-10	MOLYBDENUM	J	0.57	1.1	MRL	mg/Kg	J (all detects)
Tt-TP3-B1-18	MOLYBDENUM	J	0.56	1.1	MRL	mg/Kg	J (all detects)
Tt-TP3-B2-14	SILVER	J	0.23	0.54	MRL	mg/Kg	J (all detects)
Tt-TP3-B2-6	MOLYBDENUM	J	0.58	1.1	MRL	mg/Kg	J (all detects)
Tt-TP3-B3-10	MOLYBDENUM SILVER	J J	0.57 0.27	1.1 0.54	MRL MRL	mg/Kg mg/Kg	J (all detects)
Tt-TP3-B3-26	MOLYBDENUM	J	1.3	1.5	MRL	mg/Kg	J (all detects)
Tt-TP3-B4-18	MOLYBDENUM	J	0.86	1.2	MRL	mg/Kg	J (all detects)
Tt-TP3-B4-2	MOLYBDENUM	J	0.56	1.1	MRL	mg/Kg	J (all detects)

Method: 7471A

Matrix: SO

SampleID	Analyte	Lab Qual	Result	Reporting Limit	RL Type	Units	Flag
Tt-TP2-B3-14	MERCURY	J	0.021	0.023	MRL	mg/Kg	J (all detects)
Tt-TP2-B3-14-dup	MERCURY	J	0.014	0.023	MRL	mg/Kg	J (all detects)
Tt-TP2-B4-6	MERCURY	J	0.013	0.022	MRL	mg/Kg	J (all detects)
Tt-TP3-B1-10	MERCURY	J	0.020	0.022	MRL	mg/Kg	J (all detects)
Tt-TP3-B1-18	MERCURY	J	0.017	0.022	MRL	mg/Kg	J (all detects)
Tt-TP3-B2-14	MERCURY	J	0.013	0.021	MRL	mg/Kg	J (all detects)
Tt-TP3-B3-10	MERCURY	J	0.018	0.022	MRL	mg/Kg	J (all detects)
Tt-TP3-B3-26	MERCURY	J	0.020	0.031	MRL	mg/Kg	J (all detects)
Tt-TP3-B4-18	MERCURY	J	0.021	0.023	MRL	mg/Kg	J (all detects)

Data Review Summary

Lab Reporting Batch ID: 440-105015-1 **Laboratory: TA IRV**

EDD Filename: Prep440-105015-1 **eQAPP Name: TetraTechInc_NERT_11302016**

Validation Area	*Note*
Technical Holding Times	A
Temperature	A
Initial Calibration	N
Continuing Calibration/Initial Calibration Verification	N
Method Blanks	SR
Surrogate/Tracer Spikes	A
Matrix Spike/Matrix Spike Duplicates	SR
Laboratory Duplicates	A
Laboratory Replicates	N
Laboratory Control Samples	A
Compound Quantitation	SR
Field Duplicates	SR
Field Triplicates	N
Field Blanks	A

A = Acceptable, N = Not provided/applicable, SR = See report

The contents of this report reflect findings made by ADR during Automated Data Review, manual applied qualifiers are not considered. Please refer to the Overall Qualifier Summary report for manual qualifiers.

Field Duplicate RPD Report

Lab Reporting Batch ID: 440-105015-1 **Laboratory: TA IRV**

EDD Filename: Prep440-105015-1 **eQAPP Name: TetraTechInc_NERT_11302016**

Method: 2320B_Leach
Matrix: AQ

Analyte	Concentration (mg/L)		Sample RPD	eQAPP RPD	Flag
	Tt-TP4-B3-22	Tt-TP4-B3-22-dup			
Alkalinity as CaCO3	34	100	99	30.00	J (all detects) UJ (all non-detects)

Method: 2540C_Leach
Matrix: AQ

Analyte	Concentration (mg/L)		Sample RPD	eQAPP RPD	Flag
	Tt-TP4-B2-6	Tt-TP4-B2-6-dup			
TOTAL DISSOLVED SOLIDS	150	130	14	30.00	No Qualifiers Applied

Analyte	Concentration (mg/L)		Sample RPD	eQAPP RPD	Flag
	Tt-TP4-B3-22	Tt-TP4-B3-22-dup			
TOTAL DISSOLVED SOLIDS	500	320	44	30.00	J(all detects) UJ(all non-detects)

Method: 300.0_Leach
Matrix: AQ

Analyte	Concentration (mg/L)		Sample RPD	eQAPP RPD	Flag
	Tt-TP4-B3-22	Tt-TP4-B3-22-dup			
CHLORIDE SULFATE	6.1 19	4.9 18	22 5	30.00 30.00	No Qualifiers Applied
Nitrate as NO3	76	120	45	30.00	J(all detects) UJ(all non-detects)

Method: 300.1B_Leach
Matrix: AQ

Analyte	Concentration (ug/L)		Sample RPD	eQAPP RPD	Flag
	Tt-TP4-B3-22	Tt-TP4-B3-22-dup			
Chlorate	120	790	147	30.00	J(all detects) UJ(all non-detects)

Method: 6010B_Leach
Matrix: AQ

Analyte	Concentration (mg/L)		Sample RPD	eQAPP RPD	Flag
	Tt-TP4-B3-22 (TOT)	Tt-TP4-B3-22-dup (TOT)			
MAGNESIUM POTASSIUM	1.9 1.2	2.1 1.1	10 9	30.00 30.00	No Qualifiers Applied
CALCIUM SODIUM	5.7 110	3.6 63	45 54	30.00 30.00	J(all detects) UJ(all non-detects)

Project Name and Number: 114-520225-2015-MO5 - NERT Soil Flushing

Field Duplicate RPD Report

Lab Reporting Batch ID: 440-105015-1 **Laboratory: TA IRV**

EDD Filename: Prep440-105015-1 **eQAPP Name: TetraTechInc_NERT_11302016**

Method: 314.0
Matrix: SO

Analyte	Concentration (mg/Kg)		Sample RPD	eQAPP RPD	Flag
	Tt-TP4-B2-6	Tt-TP4-B2-6-dup			
PERCHLORATE	3.0	2.8	7	30.00	No Qualifiers Applied

Analyte	Concentration (mg/Kg)		Sample RPD	eQAPP RPD	Flag
	Tt-TP4-B3-22	Tt-TP4-B3-22-dup			
PERCHLORATE	170	68	86	30.00	J(all detects) UJ(all non-detects)

Method: 6010B
Matrix: SO

Analyte	Concentration (mg/Kg)		Sample RPD	eQAPP RPD	Flag
	Tt-TP4-B3-22 (TOT)	Tt-TP4-B3-22-dup (TOT)			
BORON	17	16	6	30.00	
IRON	6900	5800	17	30.00	No Qualifiers Applied
TITANIUM	350	320	9	30.00	
MANGANESE	130	93	33	30.00	J(all detects) UJ(all non-detects)

Method: 6020
Matrix: SO

Analyte	Concentration (mg/Kg)		Sample RPD	eQAPP RPD	Flag
	Tt-TP4-B3-22 (TOT)	Tt-TP4-B3-22-dup (TOT)			
BARIUM	30	33	10	30.00	
BERYLLIUM	0.39	0.29	29	30.00	
COBALT	2.5	2.1	17	30.00	No Qualifiers Applied
COPPER	6.5	5.9	10	30.00	
ZINC	20	15	29	30.00	
ARSENIC	25	18	33	30.00	
CHROMIUM	37	66	56	30.00	J(all detects)
LEAD	4.1	2.9	34	30.00	UJ(all non-detects)
NICKEL	9.1	6.2	38	30.00	

Method: 7471A
Matrix: SO

Analyte	Concentration (mg/Kg)		Sample RPD	eQAPP RPD	Flag
	Tt-TP4-B3-22 (TOT)	Tt-TP4-B3-22-dup (TOT)			
MERCURY	0.026 U	0.023	200	30.00	J(all detects) UJ(all non-detects)

Method: 9045C
Matrix: SO

Analyte	Concentration (SU)		Sample RPD	eQAPP RPD	Flag
	Tt-TP4-B3-22	Tt-TP4-B3-22-dup			
PH	8.86	8.80	1	30.00	No Qualifiers Applied

Project Name and Number: 114-520225-2015-MO5 - NERT Soil Flushing

Field Duplicate RPD Report

Lab Reporting Batch ID: 440-105015-1 **Laboratory: TA IRV**

EDD Filename: Prep440-105015-1 **eQAPP Name: TetraTechInc_NERT_11302016**

Method: 9045C
Matrix: SO

Method: 9060
Matrix: SO

Analyte	Concentration (mg/Kg)		Sample RPD	eQAPP RPD	Flag
	Tt-TP4-B3-22	Tt-TP4-B3-22-dup			
TOTAL ORGANIC CARBON (TOC)	18000	18000	0	30.00	No Qualifiers Applied

QC Outlier Report: HoldingTimes

Lab Reporting Batch ID: 440-105015-1 **Laboratory: TA IRV**

EDD Filename: Prep440-105015-1 **eQAPP Name: TetraTechInc_NERT_11302016**

Method: 7199 **Preparation Method: Gen Prep**

Matrix: AQ

Sample ID	Type	Actual	Criteria	Units	Flag
EB-03/20/15MS (RES/TOT)	Sampling To Analysis	24.50	24.00	HOURS	J- (all detects)
EB-03/20/15MSD (RES/TOT)		24.50	24.00	HOURS	UJ (all non-detects)

Project Name and Number: 114-520225-2015-MO5 -

Matrix Spike/Matrix Spike Duplicate Outlier Report

Lab Reporting Batch ID: 440-105015-1 **Laboratory: TA IRV**

EDD Filename: Prep440-105015-1 **eQAPP Name: TetraTechInc_NERT_11302016**

Method: 300.0_Leach
Matrix: AQ

QC Sample ID (Associated Samples)	Compound	MS %R	MSD %R	%R Limits	RPD (Limits)	Affected Compounds	Flag
Tt-TP4-B1-6MSD (Tt-TP4-B1-6)	Nitrate as NO3	-	122	80.00-120.00	-	Nitrate as NO3	J+(all detects)

Method: 6010B
Matrix: SO

QC Sample ID (Associated Samples)	Compound	MS %R	MSD %R	%R Limits	RPD (Limits)	Affected Compounds	Flag
Tt-TP4-B1-6MS (TOT) Tt-TP4-B1-6MSD (TOT) (Tt-TP4-B1-6)	IRON MANGANESE TITANIUM	1367 248 538	1777 - 474	75.00-125.00 75.00-125.00 75.00-125.00	- - -	IRON MANGANESE TITANIUM	J+ (all detects)

Method: 6020
Matrix: SO

QC Sample ID (Associated Samples)	Compound	MS %R	MSD %R	%R Limits	RPD (Limits)	Affected Compounds	Flag
Tt-TP4-B1-6MS (TOT) Tt-TP4-B1-6MSD (TOT) (Tt-TP4-B1-6)	ANTIMONY	65	68	80.00-120.00	-	ANTIMONY	J-(all detects) UJ(all non-detects)
Tt-TP4-B1-6MS (TOT) Tt-TP4-B1-6MSD (TOT) (Tt-TP4-B1-6)	BARIUM	188	183	80.00-120.00	-	BARIUM	J+(all detects)

Method: 314.0
Matrix: SO

QC Sample ID (Associated Samples)	Compound	MS %R	MSD %R	%R Limits	RPD (Limits)	Affected Compounds	Flag
Tt-TP4-B4-22MS Tt-TP4-B4-22MSD (Tt-TP4-B4-22)	PERCHLORATE	296	307	80.00-120.00	-	PERCHLORATE	J+(all detects)

Method Blank Outlier Report

Lab Reporting Batch ID: 440-105015-1 **Laboratory: TA IRV**

EDD Filename: Prep440-105015-1 **eQAPP Name: TetraTechInc_NERT_11302016**

Method: **6010B_Leach**
Matrix: **AQ**

Method Blank Sample ID	Analysis Date	Analyte	Result	Associated Samples
MB 440-245825/1-B	3/30/2015 10:49:00 AM	CALCIUM MAGNESIUM	0.236 mg/L 0.0262 mg/L	Tt-TP4-B1-14 Tt-TP4-B1-6 Tt-TP4-B2-22 Tt-TP4-B3-22 Tt-TP4-B3-22-dup Tt-TP4-B4-26
MB 440-245996/1-B	4/1/2015 1:57:00 PM	CALCIUM	0.0808 mg/L	Tt-TP4-B2-10 Tt-TP4-B3-2 Tt-TP4-B4-10

Method: **6020**
Matrix: **AQ**

Method Blank Sample ID	Analysis Date	Analyte	Result	Associated Samples
MB 440-245829/1-A	3/30/2015 10:24:00 PM	MOLYBDENUM ZINC	0.529 ug/L 3.83 ug/L	EB-03/20/15

Data Qualifier Summary

Lab Reporting Batch ID: 440-105015-1 **Laboratory: TA IRV**

EDD Filename: Prep440-105015-1 **eQAPP Name: TetraTechInc_NERT_11302016**

Method Category: ALK

Method: 2320B_Leach **Matrix: AQ**

Sample ID: Tt-TP4-B3-22 **Collected:** 3/20/2015 9:34:00 AM **Analysis Type:** RES **Dilution:** 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
Alkalinity as CaCO3	34		4.0	MDL	4.0	MRL	mg/L	J	fd

Sample ID: Tt-TP4-B3-22-dup **Collected:** 3/20/2015 9:34:00 AM **Analysis Type:** RES **Dilution:** 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
Alkalinity as CaCO3	100		4.0	MDL	4.0	MRL	mg/L	J	fd

Method Category: GENCHEM

Method: 2540C_Leach **Matrix: AQ**

Sample ID: Tt-TP4-B3-22 **Collected:** 3/20/2015 9:34:00 AM **Analysis Type:** RES **Dilution:** 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
TOTAL DISSOLVED SOLIDS	500		5.0	MDL	10	MRL	mg/L	J	fd

Sample ID: Tt-TP4-B3-22-dup **Collected:** 3/20/2015 9:34:00 AM **Analysis Type:** RES **Dilution:** 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
TOTAL DISSOLVED SOLIDS	320		5.0	MDL	10	MRL	mg/L	J	fd

Method Category: GENCHEM

Method: 300.0_Leach **Matrix: AQ**

Sample ID: Tt-TP4-B1-14 **Collected:** 3/19/2015 2:52:00 PM **Analysis Type:** RES2 **Dilution:** 10

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
CHLORIDE	0.38	J	0.25	MDL	0.50	MRL	mg/L	J	sp

Sample ID: Tt-TP4-B1-6 **Collected:** 3/19/2015 2:43:00 PM **Analysis Type:** RES **Dilution:** 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
Nitrate as NO3	22		0.25	MDL	0.50	MRL	mg/L	J+	m

* denotes a non-reportable result

Project Name and Number: 114-520225-2015-MO5 - NERT Soil Flushing

Data Qualifier Summary

Lab Reporting Batch ID: 440-105015-1 **Laboratory: TA IRV**

EDD Filename: Prep440-105015-1 **eQAPP Name: TetraTechInc_NERT_11302016**

Method Category: GENCHEM

Method: 300.0_Leach **Matrix: AQ**

Sample ID: Tt-TP4-B3-2 **Collected:** 3/20/2015 9:05:00 AM **Analysis Type:** RES **Dilution:** 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
Nitrate as NO3	0.44	J	0.25	MDL	0.50	MRL	mg/L	J	sp

Sample ID: Tt-TP4-B3-2 **Collected:** 3/20/2015 9:05:00 AM **Analysis Type:** RES2 **Dilution:** 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
CHLORIDE	0.40	J	0.25	MDL	0.50	MRL	mg/L	J	sp

Sample ID: Tt-TP4-B3-22 **Collected:** 3/20/2015 9:34:00 AM **Analysis Type:** RES2 **Dilution:** 10

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
Nitrate as NO3	76		2.5	MDL	5.0	MRL	mg/L	J	fd

Sample ID: Tt-TP4-B3-22-dup **Collected:** 3/20/2015 9:34:00 AM **Analysis Type:** RES2 **Dilution:** 20

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
Nitrate as NO3	120		5.0	MDL	10	MRL	mg/L	J	fd

Sample ID: Tt-TP4-B4-10 **Collected:** 3/20/2015 10:14:00 AM **Analysis Type:** RES2 **Dilution:** 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
CHLORIDE	0.44	J	0.25	MDL	0.50	MRL	mg/L	J	sp

Method Category: GENCHEM

Method: 300.1B_Leach **Matrix: AQ**

Sample ID: Tt-TP4-B3-2 **Collected:** 3/20/2015 9:05:00 AM **Analysis Type:** RES **Dilution:** 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
Chlorate	18	J	10	MDL	20	MRL	ug/L	J	sp

* denotes a non-reportable result

Project Name and Number: 114-520225-2015-MO5 - NERT Soil Flushing

Data Qualifier Summary

Lab Reporting Batch ID: 440-105015-1 **Laboratory: TA IRV**

EDD Filename: Prep440-105015-1 **eQAPP Name: TetraTechInc_NERT_11302016**

Method Category: GENCHEM

Method: 300.1B_Leach **Matrix: AQ**

Sample ID: Tt-TP4-B3-22 **Collected:** 3/20/2015 9:34:00 AM **Analysis Type:** RES **Dilution:** 2

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
Chlorate	120		20	MDL	40	MRL	ug/L	J	fd

Sample ID: Tt-TP4-B3-22-dup **Collected:** 3/20/2015 9:34:00 AM **Analysis Type:** RES **Dilution:** 10

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
Chlorate	790		100	MDL	200	MRL	ug/L	J	fd

Sample ID: Tt-TP4-B4-10 **Collected:** 3/20/2015 10:14:00 AM **Analysis Type:** RES **Dilution:** 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
Chlorate	15	J	10	MDL	20	MRL	ug/L	J	sp

Method Category: GENCHEM

Method: 314.0 **Matrix: SO**

Sample ID: Tt-TP4-B3-22 **Collected:** 3/20/2015 9:34:00 AM **Analysis Type:** RES **Dilution:** 1000

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
PERCHLORATE	170		13	MDL	53	MRL	mg/Kg	J	fd

Sample ID: Tt-TP4-B3-22-dup **Collected:** 3/20/2015 9:34:00 AM **Analysis Type:** RES **Dilution:** 100

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
PERCHLORATE	68		1.3	MDL	5.5	MRL	mg/Kg	J	fd

Sample ID: Tt-TP4-B4-22 **Collected:** 3/20/2015 10:27:00 AM **Analysis Type:** RES **Dilution:** 100

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
PERCHLORATE	78		1.2	MDL	5.0	MRL	mg/Kg	J+	m

* denotes a non-reportable result

Project Name and Number: 114-520225-2015-MO5 - NERT Soil Flushing

Data Qualifier Summary

Lab Reporting Batch ID: 440-105015-1 **Laboratory: TA IRV**

EDD Filename: Prep440-105015-1 **eQAPP Name: TetraTechInc_NERT_11302016**

Method Category: METALS

Method: 6010B **Matrix: SO**

Sample ID: Tt-TP4-B1-6 **Collected:** 3/19/2015 2:43:00 PM **Analysis Type:** RES/TOT **Dilution:** 5

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
BORON	5.3	J	2.7	MDL	5.4	MRL	mg/Kg	J	sp
IRON	15000		5.4	MDL	11	MRL	mg/Kg	J+	m
MANGANESE	270		1.1	MDL	2.2	MRL	mg/Kg	J+	m
TITANIUM	600		1.1	MDL	2.2	MRL	mg/Kg	J+	m

Sample ID: Tt-TP4-B3-22 **Collected:** 3/20/2015 9:34:00 AM **Analysis Type:** RES/TOT **Dilution:** 10

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
MANGANESE	130		2.6	MDL	5.3	MRL	mg/Kg	J	fd

Sample ID: Tt-TP4-B3-22-dup **Collected:** 3/20/2015 9:34:00 AM **Analysis Type:** RES/TOT **Dilution:** 5

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
MANGANESE	93		1.4	MDL	2.8	MRL	mg/Kg	J	fd

Sample ID: Tt-TP4-B4-10 **Collected:** 3/20/2015 10:14:00 AM **Analysis Type:** RES/TOT **Dilution:** 5

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
BORON	5.2	J	2.7	MDL	5.3	MRL	mg/Kg	J	sp

Method Category: METALS

Method: 6010B_Leach **Matrix: AQ**

Sample ID: Tt-TP4-B1-6 **Collected:** 3/19/2015 2:43:00 PM **Analysis Type:** RES/TOT **Dilution:** 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
MAGNESIUM	0.37	J B	0.012	MDL	0.40	MRL	mg/L	J	sp

Sample ID: Tt-TP4-B3-2 **Collected:** 3/20/2015 9:05:00 AM **Analysis Type:** RES/TOT **Dilution:** 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
MAGNESIUM	0.33	J	0.012	MDL	0.40	MRL	mg/L	J	sp
POTASSIUM	0.43	J	0.37	MDL	0.50	MRL	mg/L	J	sp

* denotes a non-reportable result

Project Name and Number: 114-520225-2015-MO5 - NERT Soil Flushing

Data Qualifier Summary

Lab Reporting Batch ID: 440-105015-1 **Laboratory: TA IRV**

EDD Filename: Prep440-105015-1 **eQAPP Name: TetraTechInc_NERT_11302016**

Method Category: METALS

Method: 6010B_Leach **Matrix: AQ**

Sample ID: Tt-TP4-B3-22 **Collected:** 3/20/2015 9:34:00 AM **Analysis Type:** RES/TOT **Dilution:** 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
CALCIUM	5.7	B	0.050	MDL	0.10	MRL	mg/L	J	fd
SODIUM	110		0.19	MDL	0.50	MRL	mg/L	J	fd

Sample ID: Tt-TP4-B3-22-dup **Collected:** 3/20/2015 9:34:00 AM **Analysis Type:** RES/TOT **Dilution:** 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
CALCIUM	3.6	B	0.050	MDL	0.10	MRL	mg/L	J	fd
SODIUM	63		0.19	MDL	0.50	MRL	mg/L	J	fd

Sample ID: Tt-TP4-B4-10 **Collected:** 3/20/2015 10:14:00 AM **Analysis Type:** RES/TOT **Dilution:** 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
MAGNESIUM	0.16	J	0.012	MDL	0.40	MRL	mg/L	J	sp

Method Category: METALS

Method: 6020 **Matrix: AQ**

Sample ID: EB-03/20/15 **Collected:** 3/20/2015 11:20:00 AM **Analysis Type:** RES/TOT **Dilution:** 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
CHROMIUM	0.56	J	0.50	MDL	2.0	MRL	ug/L	J	sp
COPPER	0.80	J	0.50	MDL	2.0	MRL	ug/L	J	sp
NICKEL	0.67	J	0.50	MDL	2.0	MRL	ug/L	J	sp

Method Category: METALS

Method: 6020 **Matrix: SO**

Sample ID: Tt-TP4-B1-14 **Collected:** 3/19/2015 2:52:00 PM **Analysis Type:** RES/TOT **Dilution:** 20

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
MOLYBDENUM	0.98	J	0.52	MDL	1.0	MRL	mg/Kg	J	sp
SILVER	0.12	J	0.10	MDL	0.52	MRL	mg/Kg	J	sp

* denotes a non-reportable result

Project Name and Number: 114-520225-2015-MO5 - NERT Soil Flushing

Data Qualifier Summary

Lab Reporting Batch ID: 440-105015-1 **Laboratory: TA IRV**

EDD Filename: Prep440-105015-1 **eQAPP Name: TetraTechInc_NERT_11302016**

Method Category: **METALS**

Method: **6020** ***Matrix:*** **SO**

Sample ID: **Tt-TP4-B1-6** ***Collected:*** **3/19/2015 2:43:00 PM** ***Analysis Type:*** **RES/TOT** ***Dilution:*** **20**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
ANTIMONY	0.54	U F1	0.54	MDL	1.1	MRL	mg/Kg	UJ	m
BARIUM	160	F1	0.27	MDL	0.54	MRL	mg/Kg	J+	m
MOLYBDENUM	0.70	J	0.54	MDL	1.1	MRL	mg/Kg	J	sp

Sample ID: **Tt-TP4-B2-22** ***Collected:*** **3/20/2015 8:31:00 AM** ***Analysis Type:*** **RES/TOT** ***Dilution:*** **20**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
BERYLLIUM	0.31	J	0.16	MDL	0.33	MRL	mg/Kg	J	sp

Sample ID: **Tt-TP4-B3-22** ***Collected:*** **3/20/2015 9:34:00 AM** ***Analysis Type:*** **RES/TOT** ***Dilution:*** **20**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
ARSENIC	25		0.33	MDL	0.66	MRL	mg/Kg	J	fd
BERYLLIUM	0.39	J	0.20	MDL	0.40	MRL	mg/Kg	J	sp
CHROMIUM	37		0.66	MDL	1.3	MRL	mg/Kg	J	fd
LEAD	4.1		0.33	MDL	0.66	MRL	mg/Kg	J	fd
NICKEL	9.1		0.66	MDL	1.3	MRL	mg/Kg	J	fd

Sample ID: **Tt-TP4-B3-22-dup** ***Collected:*** **3/20/2015 9:34:00 AM** ***Analysis Type:*** **RES/TOT** ***Dilution:*** **20**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
ARSENIC	18		0.34	MDL	0.69	MRL	mg/Kg	J	fd
BERYLLIUM	0.29	J	0.21	MDL	0.41	MRL	mg/Kg	J	sp
CHROMIUM	66		0.69	MDL	1.4	MRL	mg/Kg	J	fd
LEAD	2.9		0.34	MDL	0.69	MRL	mg/Kg	J	fd
NICKEL	6.2		0.69	MDL	1.4	MRL	mg/Kg	J	fd

Sample ID: **Tt-TP4-B4-26** ***Collected:*** **3/20/2015 10:31:00 AM** ***Analysis Type:*** **RES/TOT** ***Dilution:*** **20**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
MOLYBDENUM	0.83	J	0.56	MDL	1.1	MRL	mg/Kg	J	sp

* denotes a non-reportable result

Project Name and Number: 114-520225-2015-MO5 - NERT Soil Flushing

Data Qualifier Summary

Lab Reporting Batch ID: 440-105015-1 **Laboratory: TA IRV**

EDD Filename: Prep440-105015-1 **eQAPP Name: TetraTechInc_NERT_11302016**

Method Category: **METALS**

Method: **7471A** ***Matrix:*** **SO**

Sample ID: **Tt-TP4-B1-6** ***Collected:*** **3/19/2015 2:43:00 PM** ***Analysis Type:*** **RES/TOT** ***Dilution:*** **1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
MERCURY	0.019	J	0.013	MDL	0.022	MRL	mg/Kg	J	sp

Sample ID: **Tt-TP4-B2-10** ***Collected:*** **3/20/2015 8:17:00 AM** ***Analysis Type:*** **RES/TOT** ***Dilution:*** **1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
MERCURY	0.020	J	0.013	MDL	0.021	MRL	mg/Kg	J	sp

Sample ID: **Tt-TP4-B2-22** ***Collected:*** **3/20/2015 8:31:00 AM** ***Analysis Type:*** **RES/TOT** ***Dilution:*** **1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
MERCURY	0.017	J	0.013	MDL	0.022	MRL	mg/Kg	J	sp

Sample ID: **Tt-TP4-B3-22** ***Collected:*** **3/20/2015 9:34:00 AM** ***Analysis Type:*** **RES/TOT** ***Dilution:*** **1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
MERCURY	0.016	U	0.016	MDL	0.026	MRL	mg/Kg	UJ	fd

Sample ID: **Tt-TP4-B3-22-dup** ***Collected:*** **3/20/2015 9:34:00 AM** ***Analysis Type:*** **RES/TOT** ***Dilution:*** **1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
MERCURY	0.023	J	0.017	MDL	0.028	MRL	mg/Kg	J	sp, fd

Sample ID: **Tt-TP4-B4-10** ***Collected:*** **3/20/2015 10:14:00 AM** ***Analysis Type:*** **RES/TOT** ***Dilution:*** **1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
MERCURY	0.016	J	0.013	MDL	0.021	MRL	mg/Kg	J	sp

* denotes a non-reportable result

Project Name and Number: 114-520225-2015-MO5 - NERT Soil Flushing

Data Qualifier Summary

Lab Reporting Batch ID: 440-105015-1

Laboratory: TA IRV

EDD Filename: Prep440-105015-1

eQAPP Name: TetraTechInc_NERT_11302016

Reason Code Legend

Reason Code	*Description*
bl	Method Blank Contamination
fd	Field Duplicate Precision
m	Matrix Spike Lower Estimation
m	Matrix Spike Upper Estimation
sp	Reporting Limit Trace Value

* denotes a non-reportable result

Project Name and Number: 114-520225-2015-MO5 - NERT Soil Flushing

Reporting Limit Outliers

Lab Reporting Batch ID: 440-105015-1 **Laboratory: TA IRV**

EDD Filename: Prep440-105015-1 **eQAPP Name: TetraTechInc_NERT_11302016**

Method: 300.0_Leach
Matrix: AQ

SampleID	Analyte	Lab Qual	Result	Reporting Limit	RL Type	Units	Flag
Tt-TP4-B1-14	CHLORIDE	J	0.38	0.50	MRL	mg/L	J (all detects)
Tt-TP4-B3-2	CHLORIDE Nitrate as NO3	J J	0.40 0.44	0.50 0.50	MRL MRL	mg/L mg/L	J (all detects)
Tt-TP4-B4-10	CHLORIDE	J	0.44	0.50	MRL	mg/L	J (all detects)

Method: 300.1B_Leach
Matrix: AQ

SampleID	Analyte	Lab Qual	Result	Reporting Limit	RL Type	Units	Flag
Tt-TP4-B3-2	Chlorate	J	18	20	MRL	ug/L	J (all detects)
Tt-TP4-B4-10	Chlorate	J	15	20	MRL	ug/L	J (all detects)

Method: 6010B_Leach
Matrix: AQ

SampleID	Analyte	Lab Qual	Result	Reporting Limit	RL Type	Units	Flag
Tt-TP4-B1-6	MAGNESIUM	J B	0.37	0.40	MRL	mg/L	J (all detects)
Tt-TP4-B3-2	MAGNESIUM POTASSIUM	J J	0.33 0.43	0.40 0.50	MRL MRL	mg/L mg/L	J (all detects)
Tt-TP4-B4-10	MAGNESIUM	J	0.16	0.40	MRL	mg/L	J (all detects)

Method: 6020
Matrix: AQ

SampleID	Analyte	Lab Qual	Result	Reporting Limit	RL Type	Units	Flag
EB-03/20/15	CHROMIUM COPPER NICKEL	J J J	0.56 0.80 0.67	2.0 2.0 2.0	MRL MRL MRL	ug/L ug/L ug/L	J (all detects)

Method: 6010B
Matrix: SO

SampleID	Analyte	Lab Qual	Result	Reporting Limit	RL Type	Units	Flag
Tt-TP4-B1-6	BORON	J	5.3	5.4	MRL	mg/Kg	J (all detects)
Tt-TP4-B4-10	BORON	J	5.2	5.3	MRL	mg/Kg	J (all detects)

Reporting Limit Outliers

Lab Reporting Batch ID: 440-105015-1 **Laboratory: TA IRV**

EDD Filename: Prep440-105015-1 **eQAPP Name: TetraTechInc_NERT_11302016**

Method: 6020

Matrix: SO

SampleID	Analyte	Lab Qual	Result	Reporting Limit	RL Type	Units	Flag
Tt-TP4-B1-14	MOLYBDENUM SILVER	J J	0.98 0.12	1.0 0.52	MRL MRL	mg/Kg mg/Kg	J (all detects)
Tt-TP4-B1-6	MOLYBDENUM	J	0.70	1.1	MRL	mg/Kg	J (all detects)
Tt-TP4-B2-22	BERYLLIUM	J	0.31	0.33	MRL	mg/Kg	J (all detects)
Tt-TP4-B3-22	BERYLLIUM	J	0.39	0.40	MRL	mg/Kg	J (all detects)
Tt-TP4-B3-22-dup	BERYLLIUM	J	0.29	0.41	MRL	mg/Kg	J (all detects)
Tt-TP4-B4-26	MOLYBDENUM	J	0.83	1.1	MRL	mg/Kg	J (all detects)

Method: 7471A

Matrix: SO

SampleID	Analyte	Lab Qual	Result	Reporting Limit	RL Type	Units	Flag
Tt-TP4-B1-6	MERCURY	J	0.019	0.022	MRL	mg/Kg	J (all detects)
Tt-TP4-B2-10	MERCURY	J	0.020	0.021	MRL	mg/Kg	J (all detects)
Tt-TP4-B2-22	MERCURY	J	0.017	0.022	MRL	mg/Kg	J (all detects)
Tt-TP4-B3-22-dup	MERCURY	J	0.023	0.028	MRL	mg/Kg	J (all detects)
Tt-TP4-B4-10	MERCURY	J	0.016	0.021	MRL	mg/Kg	J (all detects)

Data Review Summary

Lab Reporting Batch ID: 440-105330-1 **Laboratory: TA IRV**

EDD Filename: Prep440-105330-1 **eQAPP Name: TetraTechInc_NERT_11302016**

Validation Area	*Note*
Technical Holding Times	A
Temperature	A
Initial Calibration	N
Continuing Calibration/Initial Calibration Verification	N
Method Blanks	SR
Surrogate/Tracer Spikes	A
Matrix Spike/Matrix Spike Duplicates	SR
Laboratory Duplicates	A
Laboratory Replicates	N
Laboratory Control Samples	A
Compound Quantitation	SR
Field Duplicates	SR
Field Triplicates	N
Field Blanks	A

A = Acceptable, N = Not provided/applicable, SR = See report

The contents of this report reflect findings made by ADR during Automated Data Review, manual applied qualifiers are not considered. Please refer to the Overall Qualifier Summary report for manual qualifiers.

Field Duplicate RPD Report

Lab Reporting Batch ID: 440-105330-1 **Laboratory: TA IRV**

EDD Filename: Prep440-105330-1 **eQAPP Name: TetraTechInc_NERT_11302016**

Method: 2320B_Leach
Matrix: AQ

Analyte	Concentration (mg/L)		Sample RPD	eQAPP RPD	Flag
	Tt-TP4-L2-22	Tt-TP4-L2-22-dup			
Alkalinity as CaCO3	87	74	16	30.00	No Qualifiers Applied

Method: 2540C_Leach
Matrix: AQ

Analyte	Concentration (mg/L)		Sample RPD	eQAPP RPD	Flag
	Tt-TP4-L2-26	Tt-TP4-L2-26-dup			
TOTAL DISSOLVED SOLIDS	670	790	16	30.00	No Qualifiers Applied

Analyte	Concentration (mg/L)		Sample RPD	eQAPP RPD	Flag
	Tt-TP4-L2-22	Tt-TP4-L2-22-dup			
TOTAL DISSOLVED SOLIDS	240	280	15	30.00	No Qualifiers Applied

Method: 300.0_Leach
Matrix: AQ

Analyte	Concentration (mg/L)		Sample RPD	eQAPP RPD	Flag
	Tt-TP4-L2-22	Tt-TP4-L2-22-dup			
SULFATE	11	9.4	16	30.00	No Qualifiers Applied
CHLORIDE	7.0	0.63	167	30.00	J(all detects)
Nitrate as NO3	3.0	31	165	30.00	UJ(all non-detects)

Method: 300.1B_Leach
Matrix: AQ

Analyte	Concentration (ug/L)		Sample RPD	eQAPP RPD	Flag
	Tt-TP4-L2-22	Tt-TP4-L2-22-dup			
Chlorate	23000	53	199	30.00	J(all detects) UJ(all non-detects)

Method: 6010B_Leach
Matrix: AQ

Analyte	Concentration (mg/L)		Sample RPD	eQAPP RPD	Flag
	Tt-TP4-L2-22 (TOT)	Tt-TP4-L2-22-dup (TOT)			
POTASSIUM	0.49	0.57	15	30.00	No Qualifiers Applied
SODIUM	60	62	3	30.00	
CALCIUM	6.3	1.0	145	30.00	J(all detects)
MAGNESIUM	0.75	0.49	42	30.00	UJ(all non-detects)

Project Name and Number: 114-520225-2015-MO5 - NERT Soil Flushing

Field Duplicate RPD Report

Lab Reporting Batch ID: 440-105330-1 **Laboratory: TA IRV**

EDD Filename: Prep440-105330-1 **eQAPP Name: TetraTechInc_NERT_11302016**

Method: 314.0
Matrix: SO

Analyte	Concentration (mg/Kg)		Sample RPD	eQAPP RPD	Flag
	Tt-TP4-L2-26	Tt-TP4-L2-26-dup			
PERCHLORATE	380	460	19	30.00	No Qualifiers Applied

Analyte	Concentration (mg/Kg)		Sample RPD	eQAPP RPD	Flag
	Tt-TP4-L2-22	Tt-TP4-L2-22-dup			
PERCHLORATE	83	2.5	188	30.00	J(all detects) UJ(all non-detects)

Method: 6010B
Matrix: SO

Analyte	Concentration (mg/Kg)		Sample RPD	eQAPP RPD	Flag
	Tt-TP4-L2-22 (TOT)	Tt-TP4-L2-22-dup (TOT)			
IRON	8500	10000	16	30.00	
MANGANESE	140	170	19	30.00	No Qualifiers Applied
TITANIUM	430	560	26	30.00	
BORON	8.8	19	73	30.00	J(all detects) UJ(all non-detects)

Method: 6020
Matrix: SO

Analyte	Concentration (mg/Kg)		Sample RPD	eQAPP RPD	Flag
	Tt-TP4-L2-22 (TOT)	Tt-TP4-L2-22-dup (TOT)			
BARIUM	46	55	18	30.00	
BERYLLIUM	0.32	0.38	17	30.00	
COBALT	3.4	3.8	11	30.00	
COPPER	7.9	8.8	11	30.00	No Qualifiers Applied
LEAD	4.3	4.7	9	30.00	
NICKEL	9.8	11	12	30.00	
ZINC	18	23	24	30.00	
ARSENIC	13	25	63	30.00	J(all detects)
CHROMIUM	15	26	54	30.00	UJ(all non-detects)

Method: 7199
Matrix: SO

Analyte	Concentration (mg/Kg)		Sample RPD	eQAPP RPD	Flag
	Tt-TP4-L2-22 (TOT)	Tt-TP4-L2-22-dup (TOT)			
Chromium, hexavalent	1.0	0.96 U	200	30.00	J(all detects) UJ(all non-detects)

Project Name and Number: 114-520225-2015-MO5 - NERT Soil Flushing

Field Duplicate RPD Report

Lab Reporting Batch ID: 440-105330-1 **Laboratory: TA IRV**

EDD Filename: Prep440-105330-1 **eQAPP Name: TetraTechInc_NERT_11302016**

Method: 7471A
Matrix: SO

Analyte	Concentration (mg/Kg)		Sample RPD	eQAPP RPD	Flag
	Tt-TP4-L2-22 (TOT)	Tt-TP4-L2-22-dup (TOT)			
MERCURY	0.013	0.023	56	30.00	J(all detects) UJ(all non-detects)

Method: 9045C
Matrix: SO

Analyte	Concentration (SU)		Sample RPD	eQAPP RPD	Flag
	Tt-TP4-L2-22	Tt-TP4-L2-22-dup			
PH	8.86	9.12	3	30.00	No Qualifiers Applied

Matrix Spike/Matrix Spike Duplicate Outlier Report

Lab Reporting Batch ID: 440-105330-1 **Laboratory: TA IRV**

EDD Filename: Prep440-105330-1 **eQAPP Name: TetraTechInc_NERT_11302016**

Method: 6010B_Leach
Matrix: AQ

QC Sample ID (Associated Samples)	Compound	MS %R	MSD %R	%R Limits	RPD (Limits)	Affected Compounds	Flag
Tt-TP4-L2-22MS (TOT) (Tt-TP4-L2-22)	SODIUM	67	-	75.00-125.00	-	SODIUM	J-(all detects) UJ(all non-detects)

Method: 300.1B_Leach
Matrix: AQ

QC Sample ID (Associated Samples)	Compound	MS %R	MSD %R	%R Limits	RPD (Limits)	Affected Compounds	Flag
Tt-TP4-L2-22MS (Tt-TP4-L2-22)	Chlorate	-95	-	75.00-125.00	-	Chlorate	J-(all detects) R(all non-detects)

Method: 6010B
Matrix: SO

QC Sample ID (Associated Samples)	Compound	MS %R	MSD %R	%R Limits	RPD (Limits)	Affected Compounds	Flag
Tt-TP4-L2-22MS (TOT) Tt-TP4-L2-22MSD (TOT) (Tt-TP4-L2-22)	IRON MANGANESE TITANIUM	4658 154 426	3905 - 358	75.00-125.00 75.00-125.00 75.00-125.00	- - -	IRON MANGANESE TITANIUM	J+ (all detects)

Method: 6020
Matrix: SO

QC Sample ID (Associated Samples)	Compound	MS %R	MSD %R	%R Limits	RPD (Limits)	Affected Compounds	Flag
Tt-TP4-L2-22MS (TOT) Tt-TP4-L2-22MSD (TOT) (Tt-TP4-L2-22)	BARIUM	165	126	80.00-120.00	-	BARIUM	J+(all detects)

Method: 314.0
Matrix: SO

QC Sample ID (Associated Samples)	Compound	MS %R	MSD %R	%R Limits	RPD (Limits)	Affected Compounds	Flag
Tt-TP4-L2-22MS Tt-TP4-L2-22MSD (Tt-TP4-L2-22)	PERCHLORATE	-594	-597	80.00-120.00	-	PERCHLORATE	J-(all detects) R(all non-detects)
Tt-TP4-L2-26MS Tt-TP4-L2-26MSD (Tt-TP4-L2-26)	PERCHLORATE	-1894	-904	80.00-120.00	-	PERCHLORATE	J-(all detects) R(all non-detects)

Method Blank Outlier Report

Lab Reporting Batch ID: 440-105330-1 **Laboratory: TA IRV**

EDD Filename: Prep440-105330-1 **eQAPP Name: TetraTechInc_NERT_11302016**

Method: **6010B_Leach**
Matrix: **AQ**

Method Blank Sample ID	Analysis Date	Analyte	Result	Associated Samples
MB 440-246276/1-B	4/1/2015 5:28:00 PM	CALCIUM	0.0625 mg/L	Tt-TP4-L2-10 Tt-TP4-L2-22 Tt-TP4-L2-22-dup

Method: **6020**
Matrix: **AQ**

Method Blank Sample ID	Analysis Date	Analyte	Result	Associated Samples
MB 440-245829/1-A	3/30/2015 10:24:00 PM	MOLYBDENUM ZINC	0.529 ug/L 3.83 ug/L	EB-03/25/15

Method: **7470A**
Matrix: **AQ**

Method Blank Sample ID	Analysis Date	Analyte	Result	Associated Samples
MB 440-245361/1-A	3/27/2015 2:18:00 PM	MERCURY	0.000171 mg/L	EB-03/25/15

The following samples and their listed target analytes were qualified due to contamination reported in this blank

Sample ID	Analyte	Reported Result	Modified Final Result
EB-03/25/15(RES/TOT)	MERCURY	0.00015 mg/L	0.00020J+ mg/L

Project Name and Number: 114-520225-2015-MO5 - NERT Soil Flushing

Data Qualifier Summary

Lab Reporting Batch ID: 440-105330-1 **Laboratory: TA IRV**

EDD Filename: Prep440-105330-1 **eQAPP Name: TetraTechInc_NERT_11302016**

Method Category: GENCHEM

Method: 300.0_Leach **Matrix: AQ**

Sample ID: Tt-TP4-L2-10 **Collected:** 3/25/2015 1:28:00 PM **Analysis Type:** RES **Dilution:** 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
CHLORIDE	0.39	J	0.25	MDL	0.50	MRL	mg/L	J	sp

Sample ID: Tt-TP4-L2-22 **Collected:** 3/25/2015 1:42:00 PM **Analysis Type:** RES **Dilution:** 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
Nitrate as NO3	3.0		0.25	MDL	0.50	MRL	mg/L	J	fd

Sample ID: Tt-TP4-L2-22 **Collected:** 3/25/2015 1:42:00 PM **Analysis Type:** RES2 **Dilution:** 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
CHLORIDE	7.0		0.25	MDL	0.50	MRL	mg/L	J	fd

Sample ID: Tt-TP4-L2-22-dup **Collected:** 3/25/2015 1:42:00 PM **Analysis Type:** RES **Dilution:** 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
CHLORIDE	0.63		0.25	MDL	0.50	MRL	mg/L	J	fd

Sample ID: Tt-TP4-L2-22-dup **Collected:** 3/25/2015 1:42:00 PM **Analysis Type:** RES2 **Dilution:** 20

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
Nitrate as NO3	31		5.0	MDL	10	MRL	mg/L	J	fd

Method Category: GENCHEM

Method: 300.1B_Leach **Matrix: AQ**

Sample ID: Tt-TP4-L2-22 **Collected:** 3/25/2015 1:42:00 PM **Analysis Type:** RES **Dilution:** 200

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
Chlorate	23000		2000	MDL	4000	MRL	ug/L	J-	m, fd

* denotes a non-reportable result

Project Name and Number: 114-520225-2015-MO5 - NERT Soil Flushing

Data Qualifier Summary

Lab Reporting Batch ID: 440-105330-1 **Laboratory: TA IRV**

EDD Filename: Prep440-105330-1 **eQAPP Name: TetraTechInc_NERT_11302016**

Method Category: GENCHEM

Method: 300.1B_Leach **Matrix: AQ**

Sample ID: Tt-TP4-L2-22-dup **Collected:** 3/25/2015 1:42:00 PM **Analysis Type:** RES **Dilution:** 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
Chlorate	53		10	MDL	20	MRL	ug/L	J	fd

Method Category: GENCHEM

Method: 314.0 **Matrix: SO**

Sample ID: Tt-TP4-L2-22 **Collected:** 3/25/2015 1:42:00 PM **Analysis Type:** RES **Dilution:** 500

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
PERCHLORATE	83		5.3	MDL	23	MRL	mg/Kg	J-	m, fd

Sample ID: Tt-TP4-L2-22-dup **Collected:** 3/25/2015 1:42:00 PM **Analysis Type:** RES **Dilution:** 10

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
PERCHLORATE	2.5		0.11	MDL	0.48	MRL	mg/Kg	J	fd

Method Category: METALS

Method: 6010B **Matrix: AQ**

Sample ID: EB-03/25/15 **Collected:** 3/25/2015 2:00:00 PM **Analysis Type:** RES/TOT **Dilution:** 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
SODIUM	0.40	J	0.25	MDL	0.50	MRL	mg/L	J	sp

Method Category: METALS

Method: 6010B **Matrix: SO**

Sample ID: Tt-TP4-L2-22 **Collected:** 3/25/2015 1:42:00 PM **Analysis Type:** RES/TOT **Dilution:** 5

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
BORON	8.8		2.8	MDL	5.6	MRL	mg/Kg	J	fd
IRON	8500		5.6	MDL	11	MRL	mg/Kg	J+	m
MANGANESE	140	F1	1.1	MDL	2.3	MRL	mg/Kg	J+	m

* denotes a non-reportable result

Project Name and Number: 114-520225-2015-MO5 - NERT Soil Flushing

Data Qualifier Summary

Lab Reporting Batch ID: 440-105330-1 **Laboratory: TA IRV**

EDD Filename: Prep440-105330-1 **eQAPP Name: TetraTechInc_NERT_11302016**

Method Category: METALS

Method: 6010B **Matrix: SO**

Sample ID: Tt-TP4-L2-22 **Collected:** 3/25/2015 1:42:00 PM **Analysis Type:** RES/TOT **Dilution:** 5

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
TITANIUM	430		1.1	MDL	2.3	MRL	mg/Kg	J+	m

Sample ID: Tt-TP4-L2-22-dup **Collected:** 3/25/2015 1:42:00 PM **Analysis Type:** RES/TOT **Dilution:** 5

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
BORON	19		3.0	MDL	6.0	MRL	mg/Kg	J	fd

Method Category: METALS

Method: 6010B_Leach **Matrix: AQ**

Sample ID: Tt-TP4-L2-10 **Collected:** 3/25/2015 1:28:00 PM **Analysis Type:** RES/TOT **Dilution:** 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
POTASSIUM	0.48	J	0.37	MDL	0.50	MRL	mg/L	J	sp

Sample ID: Tt-TP4-L2-22 **Collected:** 3/25/2015 1:42:00 PM **Analysis Type:** RES/TOT **Dilution:** 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
CALCIUM	6.3	B	0.050	MDL	0.10	MRL	mg/L	J	fd
MAGNESIUM	0.75		0.012	MDL	0.40	MRL	mg/L	J	fd
POTASSIUM	0.49	J	0.37	MDL	0.50	MRL	mg/L	J	sp
SODIUM	60		0.19	MDL	0.50	MRL	mg/L	J-	m

Sample ID: Tt-TP4-L2-22-dup **Collected:** 3/25/2015 1:42:00 PM **Analysis Type:** RES/TOT **Dilution:** 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
CALCIUM	1.0	B	0.050	MDL	0.10	MRL	mg/L	J	fd
MAGNESIUM	0.49		0.012	MDL	0.40	MRL	mg/L	J	fd

* denotes a non-reportable result

Project Name and Number: 114-520225-2015-MO5 - NERT Soil Flushing

Data Qualifier Summary

Lab Reporting Batch ID: 440-105330-1 **Laboratory: TA IRV**

EDD Filename: Prep440-105330-1 **eQAPP Name: TetraTechInc_NERT_11302016**

Method Category: METALS

Method: 6020 **Matrix: AQ**

Sample ID: EB-03/25/15 **Collected:** 3/25/2015 2:00:00 PM **Analysis Type:** RES/TOT **Dilution:** 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
BARIUM	0.55	J	0.50	MDL	1.0	MRL	ug/L	J	sp

Method Category: METALS

Method: 6020 **Matrix: SO**

Sample ID: Tt-TP4-L2-10 **Collected:** 3/25/2015 1:28:00 PM **Analysis Type:** RES/TOT **Dilution:** 20

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
SILVER	0.12	J	0.11	MDL	0.55	MRL	mg/Kg	J	sp

Sample ID: Tt-TP4-L2-22 **Collected:** 3/25/2015 1:42:00 PM **Analysis Type:** RES/TOT **Dilution:** 20

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
ARSENIC	13		0.28	MDL	0.56	MRL	mg/Kg	J	fd
BARIUM	46	F1	0.28	MDL	0.56	MRL	mg/Kg	J+	m
BERYLLIUM	0.32	J	0.17	MDL	0.34	MRL	mg/Kg	J	sp
CHROMIUM	15		0.56	MDL	1.1	MRL	mg/Kg	J	fd

Sample ID: Tt-TP4-L2-22-dup **Collected:** 3/25/2015 1:42:00 PM **Analysis Type:** RES/TOT **Dilution:** 20

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
ARSENIC	25		0.30	MDL	0.60	MRL	mg/Kg	J	fd
CHROMIUM	26		0.60	MDL	1.2	MRL	mg/Kg	J	fd

Method Category: METALS

Method: 7199 **Matrix: SO**

Sample ID: Tt-TP4-L2-22 **Collected:** 3/25/2015 1:42:00 PM **Analysis Type:** RES/TOT **Dilution:** 10

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
Chromium, hexavalent	1.0		0.45	MDL	0.90	MRL	mg/Kg	J	fd

* denotes a non-reportable result

Project Name and Number: 114-520225-2015-MO5 - NERT Soil Flushing

Data Qualifier Summary

Lab Reporting Batch ID: 440-105330-1 **Laboratory: TA IRV**

EDD Filename: Prep440-105330-1 **eQAPP Name: TetraTechInc_NERT_11302016**

Method Category: METALS
Method: 7199 **Matrix: SO**

Sample ID: Tt-TP4-L2-22-dup **Collected:** 3/25/2015 1:42:00 PM **Analysis Type:** RES/TOT **Dilution:** 10

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
Chromium, hexavalent	0.48	U	0.48	MDL	0.96	MRL	mg/Kg	UJ	fd

Method Category: METALS
Method: 7470A **Matrix: AQ**

Sample ID: EB-03/25/15 **Collected:** 3/25/2015 2:00:00 PM **Analysis Type:** RES/TOT **Dilution:** 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
MERCURY	0.00015	J B	0.00010	MDL	0.00020	MRL	mg/L	J+	bl

Method Category: METALS
Method: 7471A **Matrix: SO**

Sample ID: Tt-TP4-L2-22 **Collected:** 3/25/2015 1:42:00 PM **Analysis Type:** RES/TOT **Dilution:** 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
MERCURY	0.013	J	0.013	MDL	0.022	MRL	mg/Kg	J	sp, fd

Sample ID: Tt-TP4-L2-22-dup **Collected:** 3/25/2015 1:42:00 PM **Analysis Type:** RES/TOT **Dilution:** 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
MERCURY	0.023	J	0.014	MDL	0.024	MRL	mg/Kg	J	sp, fd

* denotes a non-reportable result

Project Name and Number: 114-520225-2015-MO5 - NERT Soil Flushing

Data Qualifier Summary

Lab Reporting Batch ID: 440-105330-1

Laboratory: TA IRV

EDD Filename: Prep440-105330-1

eQAPP Name: TetraTechInc_NERT_11302016

Reason Code Legend

Reason Code	*Description*
bl	Method Blank Contamination
fd	Field Duplicate Precision
m	Matrix Spike Lower Estimation
m	Matrix Spike Lower Rejection
m	Matrix Spike Upper Estimation
sp	Reporting Limit Trace Value

* denotes a non-reportable result

Project Name and Number: 114-520225-2015-MO5 - NERT Soil Flushing

Reporting Limit Outliers

Lab Reporting Batch ID: 440-105330-1 **Laboratory: TA IRV**

EDD Filename: Prep440-105330-1 **eQAPP Name: TetraTechInc_NERT_11302016**

Method: 300.0_Leach
Matrix: AQ

SampleID	Analyte	Lab Qual	Result	Reporting Limit	RL Type	Units	Flag
Tt-TP4-L2-10	CHLORIDE	J	0.39	0.50	MRL	mg/L	J (all detects)

Method: 6010B
Matrix: AQ

SampleID	Analyte	Lab Qual	Result	Reporting Limit	RL Type	Units	Flag
EB-03/25/15	SODIUM	J	0.40	0.50	MRL	mg/L	J (all detects)

Method: 6010B_Leach
Matrix: AQ

SampleID	Analyte	Lab Qual	Result	Reporting Limit	RL Type	Units	Flag
Tt-TP4-L2-10	POTASSIUM	J	0.48	0.50	MRL	mg/L	J (all detects)
Tt-TP4-L2-22	POTASSIUM	J	0.49	0.50	MRL	mg/L	J (all detects)

Method: 6020
Matrix: AQ

SampleID	Analyte	Lab Qual	Result	Reporting Limit	RL Type	Units	Flag
EB-03/25/15	BARIUM	J	0.55	1.0	MRL	ug/L	J (all detects)

Method: 7470A
Matrix: AQ

SampleID	Analyte	Lab Qual	Result	Reporting Limit	RL Type	Units	Flag
EB-03/25/15	MERCURY	J B	0.00015	0.00020	MRL	mg/L	J (all detects)

Method: 6020
Matrix: SO

SampleID	Analyte	Lab Qual	Result	Reporting Limit	RL Type	Units	Flag
Tt-TP4-L2-10	SILVER	J	0.12	0.55	MRL	mg/Kg	J (all detects)
Tt-TP4-L2-22	BERYLLIUM	J	0.32	0.34	MRL	mg/Kg	J (all detects)

Reporting Limit Outliers

Lab Reporting Batch ID: 440-105330-1 **Laboratory: TA IRV**

EDD Filename: Prep440-105330-1 **eQAPP Name: TetraTechInc_NERT_11302016**

Method: **7471A**

Matrix: **SO**

SampleID	*Analyte*	*Lab Qual*	*Result*	*Reporting Limit*	*RL Type*	*Units*	*Flag*
Tt-TP4-L2-22	MERCURY	J	0.013	0.022	MRL	mg/Kg	J (all detects)
Tt-TP4-L2-22-dup	MERCURY	J	0.023	0.024	MRL	mg/Kg	J (all detects)

Data Review Summary

Lab Reporting Batch ID: 440-105406-1 **Laboratory: TA IRV**

EDD Filename: Prep440-105406-1 **eQAPP Name: TetraTechInc_NERT_11302016**

Validation Area	*Note*
Technical Holding Times	A
Temperature	A
Initial Calibration	N
Continuing Calibration/Initial Calibration Verification	N
Method Blanks	SR
Surrogate/Tracer Spikes	A
Matrix Spike/Matrix Spike Duplicates	SR
Laboratory Duplicates	A
Laboratory Replicates	N
Laboratory Control Samples	A
Compound Quantitation	SR
Field Duplicates	SR
Field Triplicates	N
Field Blanks	A

A = Acceptable, N = Not provided/applicable, SR = See report

The contents of this report reflect findings made by ADR during Automated Data Review, manual applied qualifiers are not considered. Please refer to the Overall Qualifier Summary report for manual qualifiers.

Field Duplicate RPD Report

Lab Reporting Batch ID: 440-105406-1 **Laboratory: TA IRV**

EDD Filename: Prep440-105406-1 **eQAPP Name: TetraTechInc_NERT_11302016**

Method: 2320B_Leach
Matrix: AQ

Analyte	Concentration (mg/L)		Sample RPD	eQAPP RPD	Flag
	Tt-TP3-L2-6	Tt-TP3-L2-6-dup			
Alkalinity as CaCO3	61	48	24	30.00	No Qualifiers Applied

Method: 2540C_Leach
Matrix: AQ

Analyte	Concentration (mg/L)		Sample RPD	eQAPP RPD	Flag
	Tt-TP3-L2-6	Tt-TP3-L2-6-dup			
TOTAL DISSOLVED SOLIDS	200	240	18	30.00	No Qualifiers Applied

Analyte	Concentration (mg/L)		Sample RPD	eQAPP RPD	Flag
	Tt-TP1-L2-14	Tt-TP1-L2-14-dup			
TOTAL DISSOLVED SOLIDS	220	190	15	30.00	No Qualifiers Applied

Method: 300.0_Leach
Matrix: AQ

Analyte	Concentration (mg/L)		Sample RPD	eQAPP RPD	Flag
	Tt-TP3-L2-6	Tt-TP3-L2-6-dup			
SULFATE	2.9	3.3	13	30.00	No Qualifiers Applied
CHLORIDE	0.41	0.67	48	30.00	J(all detects)
Nitrate as NO3	40	75	61	30.00	UJ(all non-detects)

Method: 300.1B_Leach
Matrix: AQ

Analyte	Concentration (ug/L)		Sample RPD	eQAPP RPD	Flag
	Tt-TP3-L2-6	Tt-TP3-L2-6-dup			
Chlorate	20 U	16	200	30.00	J(all detects) UJ(all non-detects)

Method: 6010B_Leach
Matrix: AQ

Analyte	Concentration (mg/L)		Sample RPD	eQAPP RPD	Flag
	Tt-TP3-L2-6 (TOT)	Tt-TP3-L2-6-dup (TOT)			
CALCIUM	2.7	2.2	20	30.00	No Qualifiers Applied
MAGNESIUM	0.36	0.49	31	30.00	J(all detects)
POTASSIUM	0.42	0.50 U	200	30.00	UJ(all non-detects)
SODIUM	81	50	47	30.00	

Project Name and Number: 114-520225-2015-MO5 - NERT Soil Flushing

Field Duplicate RPD Report

Lab Reporting Batch ID: 440-105406-1 **Laboratory: TA IRV**

EDD Filename: Prep440-105406-1 **eQAPP Name: TetraTechInc_NERT_11302016**

Method: 314.0
Matrix: SO

Analyte	Concentration (mg/Kg)		Sample RPD	eQAPP RPD	Flag
	Tt-TP3-L2-6	Tt-TP3-L2-6-dup			
PERCHLORATE	0.83	1.2	36	30.00	J(all detects) UJ(all non-detects)

Analyte	Concentration (mg/Kg)		Sample RPD	eQAPP RPD	Flag
	Tt-TP1-L2-14	Tt-TP1-L2-14-dup			
PERCHLORATE	1.3	3.1	82	30.00	J(all detects) UJ(all non-detects)

Method: 6010B
Matrix: SO

Analyte	Concentration (mg/Kg)		Sample RPD	eQAPP RPD	Flag
	Tt-TP3-L2-6 (TOT)	Tt-TP3-L2-6-dup (TOT)			
BORON	6.7	7.1	6	30.00	No Qualifiers Applied
IRON	17000	17000	0	30.00	
MANGANESE	300	320	6	30.00	
TITANIUM	820	820	0	30.00	

Method: 6020
Matrix: SO

Analyte	Concentration (mg/Kg)		Sample RPD	eQAPP RPD	Flag
	Tt-TP3-L2-6 (TOT)	Tt-TP3-L2-6-dup (TOT)			
ARSENIC	5.5	5.4	2	30.00	No Qualifiers Applied
BARIUM	220	290	27	30.00	
BERYLLIUM	0.62	0.64	3	30.00	
CHROMIUM	14	15	7	30.00	
COBALT	7.0	7.4	6	30.00	
COPPER	16	17	6	30.00	
LEAD	7.7	7.9	3	30.00	
MOLYBDENUM	0.70	0.73	4	30.00	
NICKEL	16	16	0	30.00	
ZINC	35	35	0	30.00	
SILVER	0.55 U	0.12	200	30.00	J(all detects) UJ(all non-detects)

Method: 7471A
Matrix: SO

Analyte	Concentration (mg/Kg)		Sample RPD	eQAPP RPD	Flag
	Tt-TP3-L2-6 (TOT)	Tt-TP3-L2-6-dup (TOT)			
MERCURY	0.022 U	0.018	200	30.00	J(all detects) UJ(all non-detects)

Field Duplicate RPD Report

Lab Reporting Batch ID: 440-105406-1 **Laboratory: TA IRV**

EDD Filename: Prep440-105406-1 **eQAPP Name: TetraTechInc_NERT_11302016**

Method: 9045C
Matrix: SO

Analyte	Concentration (SU)		Sample RPD	eQAPP RPD	Flag
	Tt-TP3-L2-6	Tt-TP3-L2-6-dup			
PH	9.34	9.49	2	30.00	No Qualifiers Applied

Project Name and Number: 114-520225-2015-MO5 - NERT Soil Flushing

Matrix Spike/Matrix Spike Duplicate Outlier Report

Lab Reporting Batch ID: 440-105406-1 **Laboratory: TA IRV**

EDD Filename: Prep440-105406-1 **eQAPP Name: TetraTechInc_NERT_11302016**

Method: 6010B
Matrix: SO

QC Sample ID (Associated Samples)	Compound	MS %R	MSD %R	%R Limits	RPD (Limits)	Affected Compounds	Flag
Tt-TP3-L2-6MS (TOT) Tt-TP3-L2-6MSD (TOT) (Tt-TP3-L2-6)	IRON	-1852	524	75.00-125.00	-	IRON	J (all detects) R (all non-detects)
Tt-TP3-L2-6MS (TOT) Tt-TP3-L2-6MSD (TOT) (Tt-TP3-L2-6)	MANGANESE TITANIUM	145 260	142 297	75.00-125.00 75.00-125.00	- -	MANGANESE TITANIUM	J+(all detects)

Method: 6020
Matrix: SO

QC Sample ID (Associated Samples)	Compound	MS %R	MSD %R	%R Limits	RPD (Limits)	Affected Compounds	Flag
Tt-TP3-L2-6MS (TOT) Tt-TP3-L2-6MSD (TOT) (Tt-TP3-L2-6)	ANTIMONY	60	55	80.00-120.00	-	ANTIMONY	J-(all detects) UJ(all non-detects)
Tt-TP3-L2-6MS (TOT) Tt-TP3-L2-6MSD (TOT) (Tt-TP3-L2-6)	BARIUM	149	160	80.00-120.00	-	BARIUM	J+(all detects)

Method Blank Outlier Report

Lab Reporting Batch ID: 440-105406-1 **Laboratory: TA IRV**

EDD Filename: Prep440-105406-1 **eQAPP Name: TetraTechInc_NERT_11302016**

Method: **6010B**
Matrix: **AQ**

Method Blank Sample ID	Analysis Date	Analyte	Result	Associated Samples
MB 440-246404/1-A	4/2/2015 11:28:00 AM	CALCIUM	0.0660 mg/L	EB-03/26/15

Method: **6010B_Leach**
Matrix: **AQ**

Method Blank Sample ID	Analysis Date	Analyte	Result	Associated Samples
MB 440-246276/1-B	4/1/2015 5:28:00 PM	CALCIUM	0.0625 mg/L	Tt-TP1-L2-18 Tt-TP1-L2-6 Tt-TP2-L2-2 Tt-TP2-L2-26 Tt-TP3-L2-14 Tt-TP3-L2-6 Tt-TP3-L2-6-dup

Data Qualifier Summary

Lab Reporting Batch ID: 440-105406-1 **Laboratory: TA IRV**

EDD Filename: Prep440-105406-1 **eQAPP Name: TetraTechInc_NERT_11302016**

Method Category: GENCHEM

Method: 300.0_Leach **Matrix: AQ**

Sample ID: Tt-TP3-L2-6 **Collected:** 3/26/2015 8:04:00 AM **Analysis Type:** RES **Dilution:** 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
CHLORIDE	0.41	J	0.25	MDL	0.50	MRL	mg/L	J	sp, fd

Sample ID: Tt-TP3-L2-6 **Collected:** 3/26/2015 8:04:00 AM **Analysis Type:** RES2 **Dilution:** 20

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
Nitrate as NO3	40		5.0	MDL	10	MRL	mg/L	J	fd

Sample ID: Tt-TP3-L2-6-dup **Collected:** 3/26/2015 8:04:00 AM **Analysis Type:** RES **Dilution:** 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
CHLORIDE	0.67		0.25	MDL	0.50	MRL	mg/L	J	fd

Sample ID: Tt-TP3-L2-6-dup **Collected:** 3/26/2015 8:04:00 AM **Analysis Type:** RES2 **Dilution:** 20

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
Nitrate as NO3	75		5.0	MDL	10	MRL	mg/L	J	fd

Method Category: GENCHEM

Method: 300.1B_Leach **Matrix: AQ**

Sample ID: Tt-TP1-L2-18 **Collected:** 3/26/2015 12:09:00 PM **Analysis Type:** RES **Dilution:** 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
Chlorate	15	J	10	MDL	20	MRL	ug/L	J	sp

Sample ID: Tt-TP3-L2-6 **Collected:** 3/26/2015 8:04:00 AM **Analysis Type:** RES **Dilution:** 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
Chlorate	10	U	10	MDL	20	MRL	ug/L	UJ	fd

* denotes a non-reportable result

Project Name and Number: 114-520225-2015-MO5 - NERT Soil Flushing

Data Qualifier Summary

Lab Reporting Batch ID: 440-105406-1 **Laboratory: TA IRV**

EDD Filename: Prep440-105406-1 **eQAPP Name: TetraTechInc_NERT_11302016**

Method Category: GENCHEM

Method: 300.1B_Leach **Matrix: AQ**

Sample ID: Tt-TP3-L2-6-dup **Collected:** 3/26/2015 8:04:00 AM **Analysis Type:** RES **Dilution:** 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
Chlorate	16	J	10	MDL	20	MRL	ug/L	J	sp, fd

Method Category: GENCHEM

Method: 314.0 **Matrix: SO**

Sample ID: Tt-TP1-L2-14 **Collected:** 3/26/2015 12:03:00 PM **Analysis Type:** RES **Dilution:** 10

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
PERCHLORATE	1.3		0.099	MDL	0.42	MRL	mg/Kg	J	fd

Sample ID: Tt-TP1-L2-14-dup **Collected:** 3/26/2015 12:03:00 PM **Analysis Type:** RES **Dilution:** 10

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
PERCHLORATE	3.1		0.11	MDL	0.45	MRL	mg/Kg	J	fd

Sample ID: Tt-TP3-L2-6 **Collected:** 3/26/2015 8:04:00 AM **Analysis Type:** RES **Dilution:** 10

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
PERCHLORATE	0.83		0.10	MDL	0.44	MRL	mg/Kg	J	fd

Sample ID: Tt-TP3-L2-6-dup **Collected:** 3/26/2015 8:04:00 AM **Analysis Type:** RES **Dilution:** 10

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
PERCHLORATE	1.2		0.11	MDL	0.45	MRL	mg/Kg	J	fd

Method Category: METALS

Method: 6010B **Matrix: AQ**

Sample ID: EB-03/26/15 **Collected:** 3/26/2015 2:00:00 PM **Analysis Type:** RES/TOT **Dilution:** 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
SODIUM	0.39	J	0.25	MDL	0.50	MRL	mg/L	J	sp

* denotes a non-reportable result

Project Name and Number: 114-520225-2015-MO5 - NERT Soil Flushing

Data Qualifier Summary

Lab Reporting Batch ID: 440-105406-1 **Laboratory: TA IRV**

EDD Filename: Prep440-105406-1 **eQAPP Name: TetraTechInc_NERT_11302016**

Method Category: METALS

Method: 6010B **Matrix: SO**

Sample ID: **Tt-TP3-L2-6** ***Collected:*** **3/26/2015 8:04:00 AM** ***Analysis Type:*** **RES/TOT** ***Dilution:*** **5**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
IRON	17000		5.5	MDL	11	MRL	mg/Kg	J	m, m
MANGANESE	300		1.1	MDL	2.2	MRL	mg/Kg	J+	m
TITANIUM	820		1.1	MDL	2.2	MRL	mg/Kg	J+	m

Method Category: METALS

Method: 6010B_Leach **Matrix: AQ**

Sample ID: **Tt-TP3-L2-6** ***Collected:*** **3/26/2015 8:04:00 AM** ***Analysis Type:*** **RES/TOT** ***Dilution:*** **1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
MAGNESIUM	0.36	J	0.012	MDL	0.40	MRL	mg/L	J	sp, fd
POTASSIUM	0.42	J	0.37	MDL	0.50	MRL	mg/L	J	sp, fd
SODIUM	81		0.19	MDL	0.50	MRL	mg/L	J	fd

Sample ID: **Tt-TP3-L2-6-dup** ***Collected:*** **3/26/2015 8:04:00 AM** ***Analysis Type:*** **RES/TOT** ***Dilution:*** **1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
MAGNESIUM	0.49		0.012	MDL	0.40	MRL	mg/L	J	fd
POTASSIUM	0.37	U	0.37	MDL	0.50	MRL	mg/L	UJ	fd
SODIUM	50		0.19	MDL	0.50	MRL	mg/L	J	fd

Method Category: METALS

Method: 6020 **Matrix: AQ**

Sample ID: **EB-03/26/15** ***Collected:*** **3/26/2015 2:00:00 PM** ***Analysis Type:*** **RES/TOT** ***Dilution:*** **1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
CHROMIUM	0.70	J	0.50	MDL	2.0	MRL	ug/L	J	sp
NICKEL	0.59	J	0.50	MDL	2.0	MRL	ug/L	J	sp

* denotes a non-reportable result

Project Name and Number: 114-520225-2015-MO5 - NERT Soil Flushing

Data Qualifier Summary

Lab Reporting Batch ID: 440-105406-1 **Laboratory: TA IRV**

EDD Filename: Prep440-105406-1 **eQAPP Name: TetraTechInc_NERT_11302016**

Method Category: METALS

Method: 6020 **Matrix: SO**

Sample ID: Tt-TP1-L2-18 **Collected:** 3/26/2015 12:09:00 PM **Analysis Type:** RES/TOT **Dilution:** 20

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
BERYLLIUM	0.31	J	0.16	MDL	0.32	MRL	mg/Kg	J	sp

Sample ID: Tt-TP2-L2-2 **Collected:** 3/26/2015 9:56:00 AM **Analysis Type:** RES/TOT **Dilution:** 20

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
MOLYBDENUM	0.64	J	0.55	MDL	1.1	MRL	mg/Kg	J	sp

Sample ID: Tt-TP3-L2-14 **Collected:** 3/26/2015 8:15:00 AM **Analysis Type:** RES/TOT **Dilution:** 20

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
MOLYBDENUM	0.71	J	0.61	MDL	1.2	MRL	mg/Kg	J	sp

Sample ID: Tt-TP3-L2-6 **Collected:** 3/26/2015 8:04:00 AM **Analysis Type:** RES/TOT **Dilution:** 20

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
ANTIMONY	0.55	U F1	0.55	MDL	1.1	MRL	mg/Kg	UJ	m
BARIUM	220		0.27	MDL	0.55	MRL	mg/Kg	J+	m
MOLYBDENUM	0.70	J	0.55	MDL	1.1	MRL	mg/Kg	J	sp
SILVER	0.11	U	0.11	MDL	0.55	MRL	mg/Kg	UJ	fd

Sample ID: Tt-TP3-L2-6-dup **Collected:** 3/26/2015 8:04:00 AM **Analysis Type:** RES/TOT **Dilution:** 20

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
MOLYBDENUM	0.73	J	0.55	MDL	1.1	MRL	mg/Kg	J	sp
SILVER	0.12	J	0.11	MDL	0.55	MRL	mg/Kg	J	sp, fd

Method Category: METALS

Method: 7471A **Matrix: SO**

Sample ID: Tt-TP3-L2-14 **Collected:** 3/26/2015 8:15:00 AM **Analysis Type:** RES/TOT **Dilution:** 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
MERCURY	0.019	J	0.015	MDL	0.024	MRL	mg/Kg	J	sp

* denotes a non-reportable result

Project Name and Number: 114-520225-2015-MO5 - NERT Soil Flushing

Data Qualifier Summary

Lab Reporting Batch ID: 440-105406-1 **Laboratory: TA IRV**

EDD Filename: Prep440-105406-1 **eQAPP Name: TetraTechInc_NERT_11302016**

Method Category: **METALS**

Method: **7471A** ***Matrix:*** **SO**

Sample ID: **Tt-TP3-L2-6** ***Collected:*** **3/26/2015 8:04:00 AM** ***Analysis Type:*** **RES/TOT** ***Dilution:*** **1**

Analyte	*Lab Result*	*Lab Qual*	*DL*	*DL Type*	*RL*	*RL Type*	*Units*	*Data Review Qual*	*Reason Code*
MERCURY	0.013	U	0.013	MDL	0.022	MRL	mg/Kg	UJ	fd

Sample ID: **Tt-TP3-L2-6-dup** ***Collected:*** **3/26/2015 8:04:00 AM** ***Analysis Type:*** **RES/TOT** ***Dilution:*** **1**

Analyte	*Lab Result*	*Lab Qual*	*DL*	*DL Type*	*RL*	*RL Type*	*Units*	*Data Review Qual*	*Reason Code*
MERCURY	0.018	J	0.013	MDL	0.022	MRL	mg/Kg	J	sp, fd

* denotes a non-reportable result

Project Name and Number: 114-520225-2015-MO5 - NERT Soil Flushing

Data Qualifier Summary

Lab Reporting Batch ID: 440-105406-1

Laboratory: TA IRV

EDD Filename: Prep440-105406-1

eQAPP Name: TetraTechInc_NERT_11302016

Reason Code Legend

Reason Code	*Description*
bl	Method Blank Contamination
fd	Field Duplicate Precision
m	Matrix Spike Lower Estimation
m	Matrix Spike Lower Rejection
m	Matrix Spike Upper Estimation
sp	Reporting Limit Trace Value

* denotes a non-reportable result

Project Name and Number: 114-520225-2015-MO5 - NERT Soil Flushing

Reporting Limit Outliers

Lab Reporting Batch ID: 440-105406-1 **Laboratory: TA IRV**

EDD Filename: Prep440-105406-1 **eQAPP Name: TetraTechInc_NERT_11302016**

Method: 300.0_Leach
Matrix: AQ

SampleID	Analyte	Lab Qual	Result	Reporting Limit	RL Type	Units	Flag
Tt-TP3-L2-6	CHLORIDE	J	0.41	0.50	MRL	mg/L	J (all detects)

Method: 300.1B_Leach
Matrix: AQ

SampleID	Analyte	Lab Qual	Result	Reporting Limit	RL Type	Units	Flag
Tt-TP1-L2-18	Chlorate	J	15	20	MRL	ug/L	J (all detects)
Tt-TP3-L2-6-dup	Chlorate	J	16	20	MRL	ug/L	J (all detects)

Method: 6010B
Matrix: AQ

SampleID	Analyte	Lab Qual	Result	Reporting Limit	RL Type	Units	Flag
EB-03/26/15	SODIUM	J	0.39	0.50	MRL	mg/L	J (all detects)

Method: 6010B_Leach
Matrix: AQ

SampleID	Analyte	Lab Qual	Result	Reporting Limit	RL Type	Units	Flag
Tt-TP3-L2-6	MAGNESIUM POTASSIUM	J J	0.36 0.42	0.40 0.50	MRL MRL	mg/L mg/L	J (all detects)

Method: 6020
Matrix: AQ

SampleID	Analyte	Lab Qual	Result	Reporting Limit	RL Type	Units	Flag
EB-03/26/15	CHROMIUM NICKEL	J J	0.70 0.59	2.0 2.0	MRL MRL	ug/L ug/L	J (all detects)

Method: 6020
Matrix: SO

SampleID	Analyte	Lab Qual	Result	Reporting Limit	RL Type	Units	Flag
Tt-TP1-L2-18	BERYLLIUM	J	0.31	0.32	MRL	mg/Kg	J (all detects)
Tt-TP2-L2-2	MOLYBDENUM	J	0.64	1.1	MRL	mg/Kg	J (all detects)
Tt-TP3-L2-14	MOLYBDENUM	J	0.71	1.2	MRL	mg/Kg	J (all detects)
Tt-TP3-L2-6	MOLYBDENUM	J	0.70	1.1	MRL	mg/Kg	J (all detects)

Project Name and Number: 114-520225-2015-MO5 - NERT Soil Flushing

Reporting Limit Outliers

Lab Reporting Batch ID: 440-105406-1 **Laboratory: TA IRV**

EDD Filename: Prep440-105406-1 **eQAPP Name: TetraTechInc_NERT_11302016**

Method: 6020

Matrix: SO

SampleID	Analyte	Lab Qual	Result	Reporting Limit	RL Type	Units	Flag
Tt-TP3-L2-6-dup	MOLYBDENUM SILVER	J J	0.73 0.12	1.1 0.55	MRL MRL	mg/Kg mg/Kg	J (all detects)

Method: 7471A

Matrix: SO

SampleID	Analyte	Lab Qual	Result	Reporting Limit	RL Type	Units	Flag
Tt-TP3-L2-14	MERCURY	J	0.019	0.024	MRL	mg/Kg	J (all detects)
Tt-TP3-L2-6-dup	MERCURY	J	0.018	0.022	MRL	mg/Kg	J (all detects)

Data Review Summary

Lab Reporting Batch ID: 440-130543-1 **Laboratory: TA IRV**

EDD Filename: Prep440-130543-1 **eQAPP Name: TetraTechInc_NERT_11302016**

Validation Area	*Note*
Technical Holding Times	SR
Temperature	A
Initial Calibration	N
Continuing Calibration/Initial Calibration Verification	N
Method Blanks	A
Surrogate/Tracer Spikes	A
Matrix Spike/Matrix Spike Duplicates	N
Laboratory Duplicates	N
Laboratory Replicates	N
Laboratory Control Samples	A
Compound Quantitation	SR
Field Duplicates	N
Field Triplicates	N
Field Blanks	N

A = Acceptable, N = Not provided/applicable, SR = See report

The contents of this report reflect findings made by ADR during Automated Data Review, manual applied qualifiers are not considered. Please refer to the Overall Qualifier Summary report for manual qualifiers.

QC Outlier Report: HoldingTimes

Lab Reporting Batch ID: 440-130543-1 **Laboratory: TA IRV**

EDD Filename: Prep440-130543-1 **eQAPP Name: TetraTechInc_NERT_11302016**

Method: 7199 **Preparation Method: Gen Prep**

Matrix: AQ

Sample ID	Type	Actual	Criteria	Units	Flag
TT-TP4-M3-20151209 (RES/TOT)	Sampling To Analysis	60.50	24.00	HOURS	J- (all detects) R (all non-detects)

Project Name and Number: 114-520225-2015-MO5 -

Data Qualifier Summary

Lab Reporting Batch ID: 440-130543-1 **Laboratory: TA IRV**

EDD Filename: Prep440-130543-1 **eQAPP Name: TetraTechInc_NERT_11302016**

Method Category: METALS
Method: 6020 **Matrix:** AQ

Sample ID: TT-TP4-M3-20151209 **Collected:** 12/9/2015 1:41:00 PM **Analysis Type:** RES/TOT **Dilution:** 5

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
SELENIUM	4.1	J	2.5	MDL	10	MRL	ug/L	J	sp

Method Category: METALS
Method: 7199 **Matrix:** AQ

Sample ID: TT-TP4-M3-20151209 **Collected:** 12/9/2015 1:41:00 PM **Analysis Type:** RES/TOT **Dilution:** 500

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
Chromium, hexavalent	18000	H	130	MDL	1000	MRL	ug/L	J-	h

* denotes a non-reportable result

Project Name and Number: 114-520225-2015-MO5 - NERT Soil Flushing

Data Qualifier Summary

Lab Reporting Batch ID: 440-130543-1

Laboratory: TA IRV

EDD Filename: Prep440-130543-1

eQAPP Name: TetraTechInc_NERT_11302016

Reason Code Legend

Reason Code	*Description*
h	Sampling to Analysis Rejection
sp	Reporting Limit Trace Value

* denotes a non-reportable result

Project Name and Number: 114-520225-2015-MO5 - NERT Soil Flushing

Reporting Limit Outliers

Lab Reporting Batch ID: 440-130543-1 **Laboratory: TA IRV**

EDD Filename: Prep440-130543-1 **eQAPP Name: TetraTechInc_NERT_11302016**

Method: **6020**

Matrix: **AQ**

SampleID	*Analyte*	*Lab Qual*	*Result*	*Reporting Limit*	*RL Type*	*Units*	*Flag*
TT-TP4-M3-20151209	SELENIUM	J	4.1	10	MRL	ug/L	J (all detects)

Data Review Summary

Lab Reporting Batch ID: 440-130588-1 **Laboratory: TA IRV**

EDD Filename: Prep440-130588-1 **eQAPP Name: TetraTechInc_NERT_11302016**

Validation Area	*Note*
Technical Holding Times	SR
Temperature	A
Initial Calibration	N
Continuing Calibration/Initial Calibration Verification	N
Method Blanks	A
Surrogate/Tracer Spikes	A
Matrix Spike/Matrix Spike Duplicates	SR
Laboratory Duplicates	A
Laboratory Replicates	N
Laboratory Control Samples	A
Compound Quantitation	SR
Field Duplicates	SR
Field Triplicates	N
Field Blanks	N

A = Acceptable, N = Not provided/applicable, SR = See report

The contents of this report reflect findings made by ADR during Automated Data Review, manual applied qualifiers are not considered. Please refer to the Overall Qualifier Summary report for manual qualifiers.

Field Duplicate RPD Report

Lab Reporting Batch ID: 440-130588-1 **Laboratory: TA IRV**

EDD Filename: Prep440-130588-1 **eQAPP Name: TetraTechInc_NERT_11302016**

Method: 2320B
Matrix: AQ

Analyte	Concentration (mg/L)		Sample RPD	eQAPP RPD	Flag
	Tt-TP3-M1-20151210	Tt-TP3-M1-20151210-DUP			
Alkalinity as CaCO3	130	130	0	30.00	No Qualifiers Applied
Bicarbonate ion as HCO3	160	160	0		

Method: 2540C
Matrix: AQ

Analyte	Concentration (mg/L)		Sample RPD	eQAPP RPD	Flag
	Tt-TP3-M1-20151210	Tt-TP3-M1-20151210-DUP			
TOTAL DISSOLVED SOLIDS	11000	11000	0	30.00	No Qualifiers Applied

Method: 300.0
Matrix: AQ

Analyte	Concentration (mg/L)		Sample RPD	eQAPP RPD	Flag
	Tt-TP3-M1-20151210	Tt-TP3-M1-20151210-DUP			
CHLORIDE	1400	1300	7	30.00	No Qualifiers Applied
Nitrate as N	16	15	6	30.00	
SULFATE	1500	1500	0	30.00	

Method: 300.1B
Matrix: AQ

Analyte	Concentration (ug/L)		Sample RPD	eQAPP RPD	Flag
	Tt-TP3-M1-20151210	Tt-TP3-M1-20151210-DUP			
Chlorate	4200000	4300000	2	30.00	No Qualifiers Applied

Method: 314.0
Matrix: AQ

Analyte	Concentration (ug/L)		Sample RPD	eQAPP RPD	Flag
	Tt-TP3-M1-20151210	Tt-TP3-M1-20151210-DUP			
PERCHLORATE	610000	580000	5	30.00	No Qualifiers Applied

Method: 6010B
Matrix: AQ

Analyte	Concentration (mg/L)		Sample RPD	eQAPP RPD	Flag
	Tt-TP3-M1-20151210 (TOT)	Tt-TP3-M1-20151210-DUP (TOT)			
BORON	3.4	3.5	3	30.00	No Qualifiers Applied
CALCIUM	400	400	0	30.00	
MAGNESIUM	200	200	0	30.00	
POTASSIUM	25	24	4	30.00	
SODIUM	1800	1800	0	30.00	

Project Name and Number: 114-520225-2015-MO5 - NERT Soil Flushing

Field Duplicate RPD Report

Lab Reporting Batch ID: 440-130588-1 **Laboratory: TA IRV**

EDD Filename: Prep440-130588-1 **eQAPP Name: TetraTechInc_NERT_11302016**

Method: 6020
Matrix: AQ

Analyte	Concentration (ug/L)		Sample RPD	eQAPP RPD	Flag
	Tt-TP3-M1-20151210 (TOT)	Tt-TP3-M1-20151210-DUP (TOT)			
ARSENIC	100	98	2	30.00	No Qualifiers Applied
BARIUM	30	30	0	30.00	
CHROMIUM	17000	17000	0	30.00	
MOLYBDENUM	40	39	3	30.00	
SELENIUM	3.8	5.2	31	30.00	J(all detects) UJ(all non-detects)

Method: 7199
Matrix: AQ

Analyte	Concentration (ug/L)		Sample RPD	eQAPP RPD	Flag
	Tt-TP3-M1-20151210 (TOT)	Tt-TP3-M1-20151210-DUP (TOT)			
Chromium, hexavalent	19000	19000	0	30.00	No Qualifiers Applied

Method: SM5310B
Matrix: AQ

Analyte	Concentration (mg/L)		Sample RPD	eQAPP RPD	Flag
	Tt-TP3-M1-20151210	Tt-TP3-M1-20151210-DUP			
Total organic carbon	1.3	1.3	0	30.00	No Qualifiers Applied

Project Name and Number: 114-520225-2015-MO5 - NERT Soil Flushing

QC Outlier Report: HoldingTimes

Lab Reporting Batch ID: 440-130588-1 **Laboratory: TA IRV**

EDD Filename: Prep440-130588-1 **eQAPP Name: TetraTechInc_NERT_11302016**

Method: 7199 **Preparation Method: Gen Prep**

Matrix: AQ

Sample ID	Type	Actual	Criteria	Units	Flag
Tt-TP1-L1-20151210 (RES/TOT)	Sampling To Analysis	47.75	24.00	HOURS	J- (all detects)
Tt-TP1-L2-20151210 (RES/TOT)		47.75	24.00	HOURS	UJ (all non-detects)
Tt-TP1-M1-20151210 (RES/TOT)		39.50	24.00	HOURS	
Tt-TP1-M2-20151210 (RES/TOT)		39.25	24.00	HOURS	
Tt-TP1-M3-20151210 (RES/TOT)		39.00	24.00	HOURS	
Tt-TP1-M3-20151210 (RE2/TOT)		48.00	24.00	HOURS	
Tt-TP2-L1-20151210 (RES/TOT)		47.25	24.00	HOURS	
Tt-TP2-L2-20151210 (RES/TOT)		47.75	24.00	HOURS	
Tt-TP2-M1-20151210 (RES/TOT)		40.25	24.00	HOURS	
Tt-TP2-M2-20151210 (RES/TOT)		40.00	24.00	HOURS	
Tt-TP3-L1-20151210 (RES/TOT)		47.25	24.00	HOURS	
Tt-TP3-L2-20151210 (RES/TOT)		47.25	24.00	HOURS	
Tt-TP3-M1-20151210 (RES/TOT)		41.00	24.00	HOURS	
Tt-TP3-M1-20151210-DUP (RES/TOT)		43.25	24.00	HOURS	
Tt-TP3-M2-20151210 (RES/TOT)		40.25	24.00	HOURS	
Tt-TP4-L1-20151210 (RES/TOT)		43.25	24.00	HOURS	
Tt-TP4-L2-20151210 (RES/TOT)		43.25	24.00	HOURS	
Tt-TP4-M2-20151210 (RES/TOT)		41.25	24.00	HOURS	
Tt-TP1-M3-20151210MS (RES/TOT)	Sampling To Analysis	48.25	24.00	HOURS	J-(all detects)
Tt-TP1-M3-20151210MSD (RES/TOT)		48.50	24.00	HOURS	R(all non-detects)
Tt-TP4-M1-20151210 (RES/TOT)		53.50	24.00	HOURS	

Project Name and Number: 114-520225-2015-MO5 -

Matrix Spike/Matrix Spike Duplicate Outlier Report

Lab Reporting Batch ID: 440-130588-1 **Laboratory: TA IRV**

EDD Filename: Prep440-130588-1 **eQAPP Name: TetraTechInc_NERT_11302016**

Method: 300.0
Matrix: AQ

QC Sample ID (Associated Samples)	Compound	MS %R	MSD %R	%R Limits	RPD (Limits)	Affected Compounds	Flag
Tt-TP2-L1-20151210MS Tt-TP2-L1-20151210MSD (Tt-TP2-L1-20151210)	Nitrate as N	76	76	80.00-120.00	-	Nitrate as N	J- (all detects) UJ (all non-detects)
Tt-TP2-L1-20151210MS Tt-TP2-L1-20151210MSD (Tt-TP2-L1-20151210)	SULFATE	3	-8	80.00-120.00	-	SULFATE	J-(all detects) R(all non-detects)
Tt-TP2-L1-20151210MS Tt-TP2-L1-20151210MSD (Tt-TP2-L1-20151210)	CHLORIDE	66	58	80.00-120.00	-	CHLORIDE	J-(all detects) UJ(all non-detects)
Tt-TP1-M3-20151210MSD (Tt-TP1-M3-20151210)	Nitrate as N	-	47	80.00-120.00	-	Nitrate as N	J-(all detects) UJ(all non-detects)
Tt-TP1-M3-20151210MS Tt-TP1-M3-20151210MSD (Tt-TP1-M3-20151210)	CHLORIDE SULFATE	-66 45	-82 -162	80.00-120.00 80.00-120.00	- -	CHLORIDE SULFATE	J-(all detects) R(all non-detects)

Method: 7199
Matrix: AQ

QC Sample ID (Associated Samples)	Compound	MS %R	MSD %R	%R Limits	RPD (Limits)	Affected Compounds	Flag
Tt-TP1-M3-20151210MS (TOT) Tt-TP1-M3-20151210MSD (TOT) (Tt-TP1-M3-20151210)	Chromium, hexavalent	167	166	85.00-115.00	-	Chromium, hexavalent	J+(all detects)

Method: 6020
Matrix: AQ

QC Sample ID (Associated Samples)	Compound	MS %R	MSD %R	%R Limits	RPD (Limits)	Affected Compounds	Flag
Tt-TP1-M3-20151210MS (TOT) Tt-TP1-M3-20151210MSD (TOT) (Tt-TP1-M3-20151210)	CHROMIUM	2	-407	75.00-125.00	-	CHROMIUM	J-(all detects) R(all non-detects)

Method: 6010B
Matrix: AQ

QC Sample ID (Associated Samples)	Compound	MS %R	MSD %R	%R Limits	RPD (Limits)	Affected Compounds	Flag
Tt-TP1-M3-20151210MS (TOT) Tt-TP1-M3-20151210MSD (TOT) (Tt-TP1-M3-20151210)	CALCIUM MAGNESIUM SODIUM	-632 -39 -646	-510 -65 -539	75.00-125.00 75.00-125.00 75.00-125.00	- - -	CALCIUM MAGNESIUM SODIUM	J-(all detects) R(all non-detects)

Matrix Spike/Matrix Spike Duplicate Outlier Report

Lab Reporting Batch ID: 440-130588-1 **Laboratory: TA IRV**

EDD Filename: Prep440-130588-1 **eQAPP Name: TetraTechInc_NERT_11302016**

Method: 6010B
Matrix: AQ

QC Sample ID (Associated Samples)	Compound	MS %R	MSD %R	%R Limits	RPD (Limits)	Affected Compounds	Flag
Tt-TP1-M3-20151210MS (TOT) Tt-TP1-M3-20151210MSD (TOT) (Tt-TP1-M3-20151210)	POTASSIUM	57	65	75.00-125.00	-	POTASSIUM	J-(all detects) UJ(all non-detects)

Method: 300.1B
Matrix: AQ

QC Sample ID (Associated Samples)	Compound	MS %R	MSD %R	%R Limits	RPD (Limits)	Affected Compounds	Flag
Tt-TP1-M3-20151210MS Tt-TP1-M3-20151210MSD (Tt-TP1-M3-20151210)	Chlorate	-9213	-3058	75.00-125.00	-	Chlorate	J-(all detects) R(all non-detects)

Method: 314.0
Matrix: AQ

QC Sample ID (Associated Samples)	Compound	MS %R	MSD %R	%R Limits	RPD (Limits)	Affected Compounds	Flag
Tt-TP1-M3-20151210MS Tt-TP1-M3-20151210MSD (Tt-TP1-M3-20151210)	PERCHLORATE	-2195	-2978	80.00-120.00	-	PERCHLORATE	J-(all detects) R(all non-detects)

Data Qualifier Summary

Lab Reporting Batch ID: 440-130588-1 **Laboratory: TA IRV**

EDD Filename: Prep440-130588-1 **eQAPP Name: TetraTechInc_NERT_11302016**

Method Category: **GENCHEM**

Method: **300.0** ***Matrix:*** **AQ**

Sample ID: **Tt-TP1-M3-20151210** ***Collected:*** **12/10/2015 1:34:00 PM** ***Analysis Type:*** **RE2** ***Dilution:*** **20**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
Nitrate as N	62	F1	1.1	MDL	2.2	MRL	mg/L	J-	m

Sample ID: **Tt-TP1-M3-20151210** ***Collected:*** **12/10/2015 1:34:00 PM** ***Analysis Type:*** **RE3** ***Dilution:*** **500**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
SULFATE	1400		130	MDL	250	MRL	mg/L	J-	m, m

Sample ID: **Tt-TP1-M3-20151210** ***Collected:*** **12/10/2015 1:34:00 PM** ***Analysis Type:*** **RES** ***Dilution:*** **500**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
CHLORIDE	1300		130	MDL	250	MRL	mg/L	J-	m

Sample ID: **Tt-TP2-L1-20151210** ***Collected:*** **12/10/2015 10:50:00 AM** ***Analysis Type:*** **RE2** ***Dilution:*** **100**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
Nitrate as N	31	F1	5.5	MDL	11	MRL	mg/L	J-	m

Sample ID: **Tt-TP2-L1-20151210** ***Collected:*** **12/10/2015 10:50:00 AM** ***Analysis Type:*** **RES** ***Dilution:*** **100**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
CHLORIDE	240	F1	25	MDL	50	MRL	mg/L	J-	m
SULFATE	580		25	MDL	50	MRL	mg/L	J-	m

Sample ID: **Tt-TP3-L1-20151210** ***Collected:*** **12/10/2015 10:30:00 AM** ***Analysis Type:*** **RES** ***Dilution:*** **500**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
CHLORIDE	220	J	130	MDL	250	MRL	mg/L	J	sp

* denotes a non-reportable result

Project Name and Number: 114-520225-2015-MO5 - NERT Soil Flushing

Data Qualifier Summary

Lab Reporting Batch ID: 440-130588-1 **Laboratory: TA IRV**

EDD Filename: Prep440-130588-1 **eQAPP Name: TetraTechInc_NERT_11302016**

Method Category: GENCHEM

Method: 300.1B **Matrix: AQ**

Sample ID: Tt-TP1-M3-20151210 **Collected:** 12/10/2015 1:34:00 PM **Analysis Type:** RES **Dilution:** 20000

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
Chlorate	3600000		200000	MDL	400000	MRL	ug/L	J-	m

Method Category: METALS

Method: 6010B **Matrix: AQ**

Sample ID: Tt-TP1-M3-20151210 **Collected:** 12/10/2015 1:34:00 PM **Analysis Type:** RES/TOT **Dilution:** 5

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
CALCIUM	530		0.25	MDL	0.50	MRL	mg/L	J-	m
MAGNESIUM	260		0.050	MDL	0.10	MRL	mg/L	J-	m
POTASSIUM	35	F1	1.3	MDL	2.5	MRL	mg/L	J-	m
SODIUM	1400		1.3	MDL	2.5	MRL	mg/L	J-	m

Method Category: METALS

Method: 6020 **Matrix: AQ**

Sample ID: Tt-TP1-M1-20151210 **Collected:** 12/10/2015 12:26:00 PM **Analysis Type:** RES/TOT **Dilution:** 5

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
SELENIUM	4.6	J	2.5	MDL	10	MRL	ug/L	J	sp

Sample ID: Tt-TP1-M2-20151210 **Collected:** 12/10/2015 12:59:00 PM **Analysis Type:** RES/TOT **Dilution:** 5

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
SELENIUM	4.4	J	2.5	MDL	10	MRL	ug/L	J	sp

Sample ID: Tt-TP1-M3-20151210 **Collected:** 12/10/2015 1:34:00 PM **Analysis Type:** RES/TOT **Dilution:** 5

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
CHROMIUM	13000		2.5	MDL	10	MRL	ug/L	J-	m
SELENIUM	5.3	J	2.5	MDL	10	MRL	ug/L	J	sp

* denotes a non-reportable result

Project Name and Number: 114-520225-2015-MO5 - NERT Soil Flushing

Data Qualifier Summary

Lab Reporting Batch ID: 440-130588-1 **Laboratory: TA IRV**

EDD Filename: Prep440-130588-1 **eQAPP Name: TetraTechInc_NERT_11302016**

Method Category: **METALS**

Method: **6020** ***Matrix:*** **AQ**

Sample ID: **Tt-TP2-M1-20151210** ***Collected:*** **12/10/2015 11:22:00 AM** ***Analysis Type:*** **RES/TOT** ***Dilution:*** **5**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
SELENIUM	4.7	J	2.5	MDL	10	MRL	ug/L	J	sp

Sample ID: **Tt-TP2-M2-20151210** ***Collected:*** **12/10/2015 11:48:00 AM** ***Analysis Type:*** **RES/TOT** ***Dilution:*** **5**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
SELENIUM	4.7	J	2.5	MDL	10	MRL	ug/L	J	sp

Sample ID: **Tt-TP3-L1-20151210** ***Collected:*** **12/10/2015 10:30:00 AM** ***Analysis Type:*** **RES/TOT** ***Dilution:*** **1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
ANTIMONY	4.7	J	2.5	MDL	10	MRL	ug/L	J	sp
CHROMIUM	3.2	J	2.5	MDL	10	MRL	ug/L	J	sp
COPPER	5.5	J	2.5	MDL	10	MRL	ug/L	J	sp
NICKEL	5.4	J	2.5	MDL	10	MRL	ug/L	J	sp

Sample ID: **Tt-TP3-M1-20151210** ***Collected:*** **12/10/2015 9:51:00 AM** ***Analysis Type:*** **RES/TOT** ***Dilution:*** **5**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
SELENIUM	3.8	J	2.5	MDL	10	MRL	ug/L	J	sp, fd

Sample ID: **Tt-TP3-M1-20151210-DUP** ***Collected:*** **12/10/2015 9:51:00 AM** ***Analysis Type:*** **RES/TOT** ***Dilution:*** **5**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
SELENIUM	5.2	J	2.5	MDL	10	MRL	ug/L	J	sp, fd

Sample ID: **Tt-TP3-M2-20151210** ***Collected:*** **12/10/2015 10:42:00 AM** ***Analysis Type:*** **RES/TOT** ***Dilution:*** **5**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
SELENIUM	4.4	J	2.5	MDL	10	MRL	ug/L	J	sp

* denotes a non-reportable result

Project Name and Number: 114-520225-2015-MO5 - NERT Soil Flushing

Data Qualifier Summary

Lab Reporting Batch ID: 440-130588-1 **Laboratory: TA IRV**

EDD Filename: Prep440-130588-1 **eQAPP Name: TetraTechInc_NERT_11302016**

Method Category: METALS

Method: 6020 **Matrix: AQ**

Sample ID: Tt-TP4-M1-20151210 **Collected: 12/10/2015 9:12:00 AM** **Analysis Type: RES/TOT** **Dilution: 5**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
SELENIUM	5.5	J	2.5	MDL	10	MRL	ug/L	J	sp

Sample ID: Tt-TP4-M2-20151210 **Collected: 12/10/2015 9:14:00 AM** **Analysis Type: RES/TOT** **Dilution: 5**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
NICKEL	4.2	J	2.5	MDL	10	MRL	ug/L	J	sp
SELENIUM	4.5	J	2.5	MDL	10	MRL	ug/L	J	sp

Method Category: METALS

Method: 7199 **Matrix: AQ**

Sample ID: Tt-TP1-L1-20151210 **Collected: 12/10/2015 11:20:00 AM** **Analysis Type: RES/TOT** **Dilution: 1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
Chromium, hexavalent	0.25	U H	0.25	MDL	2.0	MRL	ug/L	UJ	h

Sample ID: Tt-TP1-L2-20151210 **Collected: 12/10/2015 11:30:00 AM** **Analysis Type: RES/TOT** **Dilution: 1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
Chromium, hexavalent	0.25	U H	0.25	MDL	2.0	MRL	ug/L	UJ	h

Sample ID: Tt-TP1-M1-20151210 **Collected: 12/10/2015 12:26:00 PM** **Analysis Type: RES/TOT** **Dilution: 500**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
Chromium, hexavalent	15000	H	130	MDL	1000	MRL	ug/L	J-	h

Sample ID: Tt-TP1-M2-20151210 **Collected: 12/10/2015 12:59:00 PM** **Analysis Type: RES/TOT** **Dilution: 500**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
Chromium, hexavalent	16000	H	130	MDL	1000	MRL	ug/L	J-	h

* denotes a non-reportable result

Project Name and Number: 114-520225-2015-MO5 - NERT Soil Flushing

Data Qualifier Summary

Lab Reporting Batch ID: 440-130588-1 **Laboratory: TA IRV**

EDD Filename: Prep440-130588-1 **eQAPP Name: TetraTechInc_NERT_11302016**

Method Category: **METALS**

Method: **7199** ***Matrix:*** **AQ**

Sample ID: **Tt-TP1-M3-20151210** ***Collected:*** **12/10/2015 1:34:00 PM** ***Analysis Type:*** **RE2/TOT** ***Dilution:*** **500**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
Chromium, hexavalent	15000	H	130	MDL	1000	MRL	ug/L	J	m, h

Sample ID: **Tt-TP2-L1-20151210** ***Collected:*** **12/10/2015 10:50:00 AM** ***Analysis Type:*** **RES/TOT** ***Dilution:*** **1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
Chromium, hexavalent	1.5	J H	0.25	MDL	2.0	MRL	ug/L	J-	sp, h

Sample ID: **Tt-TP2-L2-20151210** ***Collected:*** **12/10/2015 11:05:00 AM** ***Analysis Type:*** **RES/TOT** ***Dilution:*** **200**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
Chromium, hexavalent	1800	H	50	MDL	400	MRL	ug/L	J-	h

Sample ID: **Tt-TP2-M1-20151210** ***Collected:*** **12/10/2015 11:22:00 AM** ***Analysis Type:*** **RES/TOT** ***Dilution:*** **500**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
Chromium, hexavalent	16000	H	130	MDL	1000	MRL	ug/L	J-	h

Sample ID: **Tt-TP2-M2-20151210** ***Collected:*** **12/10/2015 11:48:00 AM** ***Analysis Type:*** **RES/TOT** ***Dilution:*** **500**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
Chromium, hexavalent	15000	H	130	MDL	1000	MRL	ug/L	J-	h

Sample ID: **Tt-TP3-L1-20151210** ***Collected:*** **12/10/2015 10:30:00 AM** ***Analysis Type:*** **RES/TOT** ***Dilution:*** **1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
Chromium, hexavalent	0.25	U H	0.25	MDL	2.0	MRL	ug/L	UJ	h

Sample ID: **Tt-TP3-L2-20151210** ***Collected:*** **12/10/2015 10:40:00 AM** ***Analysis Type:*** **RES/TOT** ***Dilution:*** **1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
Chromium, hexavalent	0.25	U H	0.25	MDL	2.0	MRL	ug/L	UJ	h

* denotes a non-reportable result

Project Name and Number: 114-520225-2015-MO5 - NERT Soil Flushing

Data Qualifier Summary

Lab Reporting Batch ID: 440-130588-1 **Laboratory: TA IRV**

EDD Filename: Prep440-130588-1 **eQAPP Name: TetraTechInc_NERT_11302016**

Method Category: METALS

Method: 7199 **Matrix:** AQ

Sample ID: Tt-TP3-M1-20151210 **Collected:** 12/10/2015 9:51:00 AM **Analysis Type:** RES/TOT **Dilution:** 500

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
Chromium, hexavalent	19000	H	130	MDL	1000	MRL	ug/L	J-	h

Sample ID: Tt-TP3-M1-20151210-DUP **Collected:** 12/10/2015 9:51:00 AM **Analysis Type:** RES/TOT **Dilution:** 500

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
Chromium, hexavalent	19000	H	130	MDL	1000	MRL	ug/L	J-	h

Sample ID: Tt-TP3-M2-20151210 **Collected:** 12/10/2015 10:42:00 AM **Analysis Type:** RES/TOT **Dilution:** 500

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
Chromium, hexavalent	18000	H	130	MDL	1000	MRL	ug/L	J-	h

Sample ID: Tt-TP4-L1-20151210 **Collected:** 12/10/2015 10:06:00 AM **Analysis Type:** RES/TOT **Dilution:** 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
Chromium, hexavalent	0.25	U H	0.25	MDL	2.0	MRL	ug/L	UJ	h

Sample ID: Tt-TP4-L2-20151210 **Collected:** 12/10/2015 10:15:00 AM **Analysis Type:** RES/TOT **Dilution:** 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
Chromium, hexavalent	3.3	H	0.25	MDL	2.0	MRL	ug/L	J-	h

Sample ID: Tt-TP4-M1-20151210 **Collected:** 12/10/2015 9:12:00 AM **Analysis Type:** RES/TOT **Dilution:** 1000

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
Chromium, hexavalent	19000	H	250	MDL	2000	MRL	ug/L	J-	h

Sample ID: Tt-TP4-M2-20151210 **Collected:** 12/10/2015 9:14:00 AM **Analysis Type:** RES/TOT **Dilution:** 500

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
Chromium, hexavalent	18000	H	130	MDL	1000	MRL	ug/L	J-	h

* denotes a non-reportable result

Project Name and Number: 114-520225-2015-MO5 - NERT Soil Flushing

Data Qualifier Summary

Lab Reporting Batch ID: 440-130588-1

Laboratory: TA IRV

EDD Filename: Prep440-130588-1

eQAPP Name: TetraTechInc_NERT_11302016

* denotes a non-reportable result

Project Name and Number: 114-520225-2015-MO5 - NERT Soil Flushing

Data Qualifier Summary

Lab Reporting Batch ID: 440-130588-1

Laboratory: TA IRV

EDD Filename: Prep440-130588-1

eQAPP Name: TetraTechInc_NERT_11302016

Reason Code Legend

Reason Code	*Description*
e	Sampling to Analysis Estimation
fd	Field Duplicate Precision
h	Sampling to Analysis Estimation
h	Sampling to Analysis Rejection
m	Matrix Spike Lower Estimation
m	Matrix Spike Lower Rejection
m	Matrix Spike Upper Estimation
sp	Reporting Limit Trace Value

* denotes a non-reportable result

Project Name and Number: 114-520225-2015-MO5 - NERT Soil Flushing

Reporting Limit Outliers

Lab Reporting Batch ID: 440-130588-1 **Laboratory: TA IRV**

EDD Filename: Prep440-130588-1 **eQAPP Name: TetraTechInc_NERT_11302016**

Method: 300.0

Matrix: AQ

SampleID	Analyte	Lab Qual	Result	Reporting Limit	RL Type	Units	Flag
Tt-TP3-L1-20151210	CHLORIDE	J	220	250	MRL	mg/L	J (all detects)

Method: 6020

Matrix: AQ

SampleID	Analyte	Lab Qual	Result	Reporting Limit	RL Type	Units	Flag
Tt-TP1-M1-20151210	SELENIUM	J	4.6	10	MRL	ug/L	J (all detects)
Tt-TP1-M2-20151210	SELENIUM	J	4.4	10	MRL	ug/L	J (all detects)
Tt-TP1-M3-20151210	SELENIUM	J	5.3	10	MRL	ug/L	J (all detects)
Tt-TP2-M1-20151210	SELENIUM	J	4.7	10	MRL	ug/L	J (all detects)
Tt-TP2-M2-20151210	SELENIUM	J	4.7	10	MRL	ug/L	J (all detects)
Tt-TP3-L1-20151210	ANTIMONY CHROMIUM COPPER NICKEL	J J J J	4.7 3.2 5.5 5.4	10 10 10 10	MRL MRL MRL MRL	ug/L ug/L ug/L ug/L	J (all detects)
Tt-TP3-M1-20151210	SELENIUM	J	3.8	10	MRL	ug/L	J (all detects)
Tt-TP3-M1-20151210-DUP	SELENIUM	J	5.2	10	MRL	ug/L	J (all detects)
Tt-TP3-M2-20151210	SELENIUM	J	4.4	10	MRL	ug/L	J (all detects)
Tt-TP4-M1-20151210	SELENIUM	J	5.5	10	MRL	ug/L	J (all detects)
Tt-TP4-M2-20151210	NICKEL SELENIUM	J J	4.2 4.5	10 10	MRL MRL	ug/L ug/L	J (all detects)

Method: 7199

Matrix: AQ

SampleID	Analyte	Lab Qual	Result	Reporting Limit	RL Type	Units	Flag
Tt-TP2-L1-20151210	Chromium, hexavalent	J H	1.5	2.0	MRL	ug/L	J (all detects)

Data Review Summary

Lab Reporting Batch ID: 440-132876-1 **Laboratory: TA IRV**

EDD Filename: Prep440-132876-1 **eQAPP Name: TetraTechInc_NERT_11302016**

Validation Area	*Note*
Technical Holding Times	A
Temperature	A
Initial Calibration	N
Continuing Calibration/Initial Calibration Verification	N
Method Blanks	A
Surrogate/Tracer Spikes	N
Matrix Spike/Matrix Spike Duplicates	SR
Laboratory Duplicates	A
Laboratory Replicates	N
Laboratory Control Samples	A
Compound Quantitation	A
Field Duplicates	A
Field Triplicates	N
Field Blanks	N

A = Acceptable, N = Not provided/applicable, SR = See report

The contents of this report reflect findings made by ADR during Automated Data Review, manual applied qualifiers are not considered. Please refer to the Overall Qualifier Summary report for manual qualifiers.

Field Duplicate RPD Report

Lab Reporting Batch ID: 440-132876-1 **Laboratory: TA IRV**

EDD Filename: Prep440-132876-1 **eQAPP Name: TetraTechInc_NERT_11302016**

Method: 2540C
Matrix: AQ

Analyte	Concentration (mg/L)		Sample RPD	eQAPP RPD	Flag
	TT-TP2-M2-20160103	TT-TP2-M2-20160103-Dup			
TOTAL DISSOLVED SOLIDS	9900	10000	1	30.00	No Qualifiers Applied

Method: 314.0
Matrix: AQ

Analyte	Concentration (ug/L)		Sample RPD	eQAPP RPD	Flag
	TT-TP2-M2-20160103	TT-TP2-M2-20160103-Dup			
PERCHLORATE	440000	500000	13	30.00	No Qualifiers Applied

Method: 6020
Matrix: AQ

Analyte	Concentration (ug/L)		Sample RPD	eQAPP RPD	Flag
	TT-TP2-M2-20160103 (DIS)	TT-TP2-M2-20160103-Dup (DIS)			
CHROMIUM	15000	14000	7	30.00	No Qualifiers Applied

Method: SM5310B
Matrix: AQ

Analyte	Concentration (mg/L)		Sample RPD	eQAPP RPD	Flag
	TT-TP2-M2-20160103	TT-TP2-M2-20160103-Dup			
Total organic carbon	1.3	1.2	8	30.00	No Qualifiers Applied

Project Name and Number: 114-520225-2015-MO5 - NERT Soil Flushing

Matrix Spike/Matrix Spike Duplicate Outlier Report

Lab Reporting Batch ID: 440-132876-1 **Laboratory: TA IRV**

EDD Filename: Prep440-132876-1 **eQAPP Name: TetraTechInc_NERT_11302016**

Method: 314.0
Matrix: AQ

QC Sample ID (Associated Samples)	Compound	MS %R	MSD %R	%R Limits	RPD (Limits)	Affected Compounds	Flag
TT-TP2-M2-20160103MS TT-TP2-M2-20160103MSD (TT-TP2-M2-20160103)	PERCHLORATE	-500	11493	80.00-120.00	-	PERCHLORATE	J (all detects) R (all non-detects)

Method: 6020
Matrix: AQ

QC Sample ID (Associated Samples)	Compound	MS %R	MSD %R	%R Limits	RPD (Limits)	Affected Compounds	Flag
TT-TP2-M2-20160103MS (DIS) TT-TP2-M2-20160103MSD (DIS) (TT-TP2-M2-20160103)	CHROMIUM	-148	-1108	75.00-125.00	-	CHROMIUM	J-(all detects) R(all non-detects)

Data Qualifier Summary

Lab Reporting Batch ID: 440-132876-1 **Laboratory: TA IRV**

EDD Filename: Prep440-132876-1 **eQAPP Name: TetraTechInc_NERT_11302016**

Method Category: GENCHEM

Method: 314.0 **Matrix: AQ**

Sample ID: TT-TP2-M2-20160103 **Collected:** 1/3/2016 12:59:00 PM **Analysis Type:** RES **Dilution:** 10000

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
PERCHLORATE	440000		5000	MDL	10000	MRL	ug/L	J	m, m

Method Category: METALS

Method: 6020 **Matrix: AQ**

Sample ID: TT-TP2-M2-20160103 **Collected:** 1/3/2016 12:59:00 PM **Analysis Type:** RES/DIS **Dilution:** 5

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
CHROMIUM	15000		2.5	MDL	10	MRL	ug/L	J-	m

* denotes a non-reportable result

Project Name and Number: 114-520225-2015-MO5 - NERT Soil Flushing

Data Qualifier Summary

Lab Reporting Batch ID: 440-132876-1

Laboratory: TA IRV

EDD Filename: Prep440-132876-1

eQAPP Name: TetraTechInc_NERT_11302016

Reason Code Legend

Reason Code	*Description*
m	Matrix Spike Lower Rejection
m	Matrix Spike Upper Estimation

* denotes a non-reportable result

Project Name and Number: 114-520225-2015-MO5 - NERT Soil Flushing

Data Review Summary

Lab Reporting Batch ID: 440-135664-1 **Laboratory: TA IRV**

EDD Filename: Prep440-135664-1 **eQAPP Name: TetraTechInc_NERT_11302016**

Validation Area	*Note*
Technical Holding Times	SR
Temperature	A
Initial Calibration	N
Continuing Calibration/Initial Calibration Verification	N
Method Blanks	A
Surrogate/Tracer Spikes	N
Matrix Spike/Matrix Spike Duplicates	SR
Laboratory Duplicates	A
Laboratory Replicates	N
Laboratory Control Samples	A
Compound Quantitation	A
Field Duplicates	A
Field Triplicates	N
Field Blanks	N

A = Acceptable, N = Not provided/applicable, SR = See report

The contents of this report reflect findings made by ADR during Automated Data Review, manual applied qualifiers are not considered. Please refer to the Overall Qualifier Summary report for manual qualifiers.

Field Duplicate RPD Report

Lab Reporting Batch ID: 440-135664-1 **Laboratory: TA IRV**

EDD Filename: Prep440-135664-1 **eQAPP Name: TetraTechInc_NERT_11302016**

Method: 2540C
Matrix: AQ

Analyte	Concentration (mg/L)		Sample RPD	eQAPP RPD	Flag
	TT-TP2-M2-20160120	TT-TP2-M2-20160120-DUP			
TOTAL DISSOLVED SOLIDS	11000	11000	0	30.00	No Qualifiers Applied

Method: 314.0
Matrix: AQ

Analyte	Concentration (ug/L)		Sample RPD	eQAPP RPD	Flag
	TT-TP2-M2-20160120	TT-TP2-M2-20160120-DUP			
PERCHLORATE	1800000	1900000	5	30.00	No Qualifiers Applied

Method: 6020
Matrix: AQ

Analyte	Concentration (ug/L)		Sample RPD	eQAPP RPD	Flag
	TT-TP2-M2-20160120 (TOT)	TT-TP2-M2-20160120-DUP (TOT)			
CHROMIUM	13000	13000	0	30.00	No Qualifiers Applied

Method: 7199
Matrix: AQ

Analyte	Concentration (ug/L)		Sample RPD	eQAPP RPD	Flag
	TT-TP2-M2-20160120 (TOT)	TT-TP2-M2-20160120-DUP (TOT)			
Chromium, hexavalent	14000	14000	0	30.00	No Qualifiers Applied

Method: SM5310B
Matrix: AQ

Analyte	Concentration (mg/L)		Sample RPD	eQAPP RPD	Flag
	TT-TP2-M2-20160120	TT-TP2-M2-20160120-DUP			
Total organic carbon	1.3	1.4	7	30.00	No Qualifiers Applied

Project Name and Number: 100-SBO-T35000-2016-MO5 - NERT Soil Flushing

QC Outlier Report: HoldingTimes

Lab Reporting Batch ID: 440-135664-1 **Laboratory: TA IRV**

EDD Filename: Prep440-135664-1 **eQAPP Name: TetraTechInc_NERT_11302016**

Method: 7199 **Preparation Method: Gen Prep**

Matrix: AQ

Sample ID	Type	Actual	Criteria	Units	Flag
TT-TP2-M2-20160120-DUP (RES/TOT	Sampling To Analysis	32.25	24.00	HOURS	J- (all detects)
TT-TP2-M2-20160120MS (RES/TOT)		24.25	24.00	HOURS	UJ (all non-detects)
TT-TP2-M2-20160120MSD (RES/TOT		24.50	24.00	HOURS	

Project Name and Number: 100-SBO-T35000-2016-

Matrix Spike/Matrix Spike Duplicate Outlier Report

Lab Reporting Batch ID: 440-135664-1 **Laboratory: TA IRV**

EDD Filename: Prep440-135664-1 **eQAPP Name: TetraTechInc_NERT_11302016**

Method: 7199
Matrix: AQ

QC Sample ID (Associated Samples)	Compound	MS %R	MSD %R	%R Limits	RPD (Limits)	Affected Compounds	Flag
TT-TP2-M2-20160120MS (TOT) TT-TP2-M2-20160120MSD (TOT) (TT-TP2-M2-20160120)	Chromium, hexavalent	72	70	85.00-115.00	-	Chromium, hexavalent	J- (all detects) UJ (all non-detects)

Method: 6020
Matrix: AQ

QC Sample ID (Associated Samples)	Compound	MS %R	MSD %R	%R Limits	RPD (Limits)	Affected Compounds	Flag
TT-TP2-M2-20160120MS (TOT) TT-TP2-M2-20160120MSD (TOT) (TT-TP2-M2-20160120)	CHROMIUM	241	-115	75.00-125.00	-	CHROMIUM	J(all detects) R(all non-detects)

Method: 314.0
Matrix: AQ

QC Sample ID (Associated Samples)	Compound	MS %R	MSD %R	%R Limits	RPD (Limits)	Affected Compounds	Flag
TT-TP2-M2-20160120MS TT-TP2-M2-20160120MSD (TT-TP2-M2-20160120)	PERCHLORATE	36811	23920	80.00-120.00	-	PERCHLORATE	J+(all detects)

Data Qualifier Summary

Lab Reporting Batch ID: 440-135664-1 **Laboratory: TA IRV**

EDD Filename: Prep440-135664-1 **eQAPP Name: TetraTechInc_NERT_11302016**

Method Category: GENCHEM

Method: 314.0 **Matrix: AQ**

Sample ID: **TT-TP2-M2-20160120** ***Collected:*** **1/20/2016 9:29:00 AM** ***Analysis Type:*** **RES** ***Dilution:*** **50000**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
PERCHLORATE	1800000		25000	MDL	50000	MRL	ug/L	J+	m

Method Category: METALS

Method: 6020 **Matrix: AQ**

Sample ID: **TT-TP2-M2-20160120** ***Collected:*** **1/20/2016 9:29:00 AM** ***Analysis Type:*** **RES/TOT** ***Dilution:*** **5**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
CHROMIUM	13000		2.5	MDL	10	MRL	ug/L	J	m, m

Method Category: METALS

Method: 7199 **Matrix: AQ**

Sample ID: **TT-TP2-M2-20160120** ***Collected:*** **1/20/2016 9:29:00 AM** ***Analysis Type:*** **RES/TOT** ***Dilution:*** **1000**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
Chromium, hexavalent	14000		250	MDL	2000	MRL	ug/L	J-	m

Sample ID: **TT-TP2-M2-20160120-DUP** ***Collected:*** **1/20/2016 9:29:00 AM** ***Analysis Type:*** **RES/TOT** ***Dilution:*** **1000**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
Chromium, hexavalent	14000	H	250	MDL	2000	MRL	ug/L	J-	h

* denotes a non-reportable result

Project Name and Number: 100-SBO-T35000-2016-MO5 - NERT Soil Flushing

Data Qualifier Summary

Lab Reporting Batch ID: 440-135664-1

Laboratory: TA IRV

EDD Filename: Prep440-135664-1

eQAPP Name: TetraTechInc_NERT_11302016

Reason Code Legend

Reason Code	*Description*
e	Sampling to Analysis Estimation
h	Sampling to Analysis Estimation
m	Matrix Spike Lower Estimation
m	Matrix Spike Lower Rejection
m	Matrix Spike Upper Estimation

* denotes a non-reportable result

Project Name and Number: 100-SBO-T35000-2016-MO5 - NERT Soil Flushing

Data Review Summary

Lab Reporting Batch ID: 440-137164-1 **Laboratory: TA IRV**

EDD Filename: Prep440-137164-1 **eQAPP Name: TetraTechInc_NERT_11302016**

Validation Area	*Note*
Technical Holding Times	A
Temperature	A
Initial Calibration	N
Continuing Calibration/Initial Calibration Verification	N
Method Blanks	A
Surrogate/Tracer Spikes	N
Matrix Spike/Matrix Spike Duplicates	SR
Laboratory Duplicates	N
Laboratory Replicates	N
Laboratory Control Samples	A
Compound Quantitation	A
Field Duplicates	N
Field Triplicates	N
Field Blanks	N

A = Acceptable, N = Not provided/applicable, SR = See report

The contents of this report reflect findings made by ADR during Automated Data Review, manual applied qualifiers are not considered. Please refer to the Overall Qualifier Summary report for manual qualifiers.

QC Outlier Report: HoldingTimes

Lab Reporting Batch ID: 440-137164-1 **Laboratory: TA IRV**

EDD Filename: Prep440-137164-1 **eQAPP Name: TetraTechInc_NERT_11302016**

Method: 7199 **Preparation Method: Gen Prep**

Matrix: AQ

Sample ID	Type	Actual	Criteria	Units	Flag
TT-TP2-M1-20160203MS (RES/TOT)	Sampling To Analysis	29.75	24.00	HOURS	J- (all detects)
TT-TP2-M1-20160203MSD (RES/TOT		30.00	24.00	HOURS	UJ (all non-detects)

Project Name and Number: 114-520225-2015-MO5 -

Matrix Spike/Matrix Spike Duplicate Outlier Report

Lab Reporting Batch ID: 440-137164-1 **Laboratory: TA IRV**

EDD Filename: Prep440-137164-1 **eQAPP Name: TetraTechInc_NERT_11302016**

Method: 7199
Matrix: AQ

QC Sample ID (Associated Samples)	Compound	MS %R	MSD %R	%R Limits	RPD (Limits)	Affected Compounds	Flag
TT-TP2-M1-20160203MS (TOT) TT-TP2-M1-20160203MSD (TOT) (TT-TP2-M1-20160203)	Chromium, hexavalent	-121	-153	85.00-115.00	-	Chromium, hexavalent	J- (all detects) R (all non-detects)

Method: 6020
Matrix: AQ

QC Sample ID (Associated Samples)	Compound	MS %R	MSD %R	%R Limits	RPD (Limits)	Affected Compounds	Flag
TT-TP1-M1-20160203MS (TOT) TT-TP1-M1-20160203MSD (TOT) (TT-TP1-M1-20160203)	CHROMIUM	1513	-700	75.00-125.00	-	CHROMIUM	J(all detects) R(all non-detects)

Data Qualifier Summary

Lab Reporting Batch ID: 440-137164-1 **Laboratory: TA IRV**

EDD Filename: Prep440-137164-1 **eQAPP Name: TetraTechInc_NERT_11302016**

Method Category: **METALS**

Method: **6020** ***Matrix:*** **AQ**

Sample ID: **TT-TP1-M1-20160203** ***Collected:*** **2/3/2016 10:16:00 AM** ***Analysis Type:*** **RES/TOT** ***Dilution:*** **5**

Analyte	*Lab Result*	*Lab Qual*	*DL*	*DL Type*	*RL*	*RL Type*	*Units*	*Data Review Qual*	*Reason Code*
CHROMIUM	8400		2.5	MDL	10	MRL	ug/L	J	m, m

Method Category: **METALS**

Method: **7199** ***Matrix:*** **AQ**

Sample ID: **TT-TP2-M1-20160203** ***Collected:*** **2/3/2016 12:40:00 PM** ***Analysis Type:*** **RES/TOT** ***Dilution:*** **1000**

Analyte	*Lab Result*	*Lab Qual*	*DL*	*DL Type*	*RL*	*RL Type*	*Units*	*Data Review Qual*	*Reason Code*
Chromium, hexavalent	9200		250	MDL	2000	MRL	ug/L	J-	m

* denotes a non-reportable result

Project Name and Number: 114-520225-2015-MO5 - NERT Soil Flushing

Data Qualifier Summary

Lab Reporting Batch ID: 440-137164-1

Laboratory: TA IRV

EDD Filename: Prep440-137164-1

eQAPP Name: TetraTechInc_NERT_11302016

Reason Code Legend

Reason Code	*Description*
m	Matrix Spike Lower Rejection
m	Matrix Spike Upper Estimation

* denotes a non-reportable result

Project Name and Number: 114-520225-2015-MO5 - NERT Soil Flushing

Data Review Summary

Lab Reporting Batch ID: 440-137358-1 **Laboratory: TA IRV**

EDD Filename: Prep440-137358-1 **eQAPP Name: TetraTechInc_NERT_11302016**

Validation Area	*Note*
Technical Holding Times	A
Temperature	A
Initial Calibration	N
Continuing Calibration/Initial Calibration Verification	N
Method Blanks	A
Surrogate/Tracer Spikes	N
Matrix Spike/Matrix Spike Duplicates	SR
Laboratory Duplicates	A
Laboratory Replicates	N
Laboratory Control Samples	A
Compound Quantitation	SR
Field Duplicates	A
Field Triplicates	N
Field Blanks	N

A = Acceptable, N = Not provided/applicable, SR = See report

The contents of this report reflect findings made by ADR during Automated Data Review, manual applied qualifiers are not considered. Please refer to the Overall Qualifier Summary report for manual qualifiers.

Field Duplicate RPD Report

Lab Reporting Batch ID: 440-137358-1 **Laboratory: TA IRV**

EDD Filename: Prep440-137358-1 **eQAPP Name: TetraTechInc_NERT_11302016**

Method: 2540C
Matrix: AQ

Analyte	Concentration (mg/L)		Sample RPD	eQAPP RPD	Flag
	TT-TP4-M3-20160204	TT-TP4-M3-20160204-DUP			
TOTAL DISSOLVED SOLIDS	11000	11000	0	30.00	No Qualifiers Applied

Method: 314.0
Matrix: AQ

Analyte	Concentration (ug/L)		Sample RPD	eQAPP RPD	Flag
	TT-TP4-M3-20160204	TT-TP4-M3-20160204-DUP			
PERCHLORATE	800000	670000	18	30.00	No Qualifiers Applied

Method: 6020
Matrix: AQ

Analyte	Concentration (ug/L)		Sample RPD	eQAPP RPD	Flag
	TT-TP4-M3-20160204 (TOT)	TT-TP4-M3-20160204-DUP (TOT)			
CHROMIUM	17000	17000	0	30.00	No Qualifiers Applied

Method: 7199
Matrix: AQ

Analyte	Concentration (ug/L)		Sample RPD	eQAPP RPD	Flag
	TT-TP4-M3-20160204 (TOT)	TT-TP4-M3-20160204-DUP (TOT)			
Chromium, hexavalent	19000	19000	0	30.00	No Qualifiers Applied

Method: SM5310B
Matrix: AQ

Analyte	Concentration (mg/L)		Sample RPD	eQAPP RPD	Flag
	TT-TP4-M3-20160204	TT-TP4-M3-20160204-DUP			
Total organic carbon	1.5	1.5	0	30.00	No Qualifiers Applied

QC Outlier Report: HoldingTimes

Lab Reporting Batch ID: 440-137358-1 **Laboratory: TA IRV**

EDD Filename: Prep440-137358-1 **eQAPP Name: TetraTechInc_NERT_11302016**

Method: 7199 **Preparation Method: Gen Prep**

Matrix: AQ

Sample ID	Type	Actual	Criteria	Units	Flag
TT-TP4-M3-20160204MS (RES/TOT)	Sampling To Analysis	26.00	24.00	HOURS	J- (all detects)
TT-TP4-M3-20160204MSD (RES/TOT		26.25	24.00	HOURS	UJ (all non-detects)

Project Name and Number: 114-520225-2015-MO5 -

Matrix Spike/Matrix Spike Duplicate Outlier Report

Lab Reporting Batch ID: 440-137358-1 **Laboratory: TA IRV**

EDD Filename: Prep440-137358-1 **eQAPP Name: TetraTechInc_NERT_11302016**

Method: 7199
Matrix: AQ

QC Sample ID (Associated Samples)	Compound	MS %R	MSD %R	%R Limits	RPD (Limits)	Affected Compounds	Flag
TT-TP4-M3-20160204MS (TOT) TT-TP4-M3-20160204MSD (TOT) (TT-TP4-M3-20160204)	Chromium, hexavalent	54	53	85.00-115.00	-	Chromium, hexavalent	J- (all detects) UJ (all non-detects)

Method: 6020
Matrix: AQ

QC Sample ID (Associated Samples)	Compound	MS %R	MSD %R	%R Limits	RPD (Limits)	Affected Compounds	Flag
TT-TP4-M3-20160204MS (TOT) TT-TP4-M3-20160204MSD (TOT) (TT-TP4-M3-20160204)	CHROMIUM	168	287	75.00-125.00	-	CHROMIUM	J+(all detects)

Method: 314.0
Matrix: AQ

QC Sample ID (Associated Samples)	Compound	MS %R	MSD %R	%R Limits	RPD (Limits)	Affected Compounds	Flag
TT-TP4-M3-20160204MS TT-TP4-M3-20160204MSD (TT-TP4-M3-20160204)	PERCHLORATE	-1345	-1730	80.00-120.00	-	PERCHLORATE	J-(all detects) R(all non-detects)

Data Qualifier Summary

Lab Reporting Batch ID: 440-137358-1 **Laboratory: TA IRV**

EDD Filename: Prep440-137358-1 **eQAPP Name: TetraTechInc_NERT_11302016**

Method Category: GENCHEM

Method: 314.0 **Matrix: AQ**

Sample ID: TT-TP4-M3-20160204 **Collected:** 2/4/2016 10:23:00 AM **Analysis Type:** RES **Dilution:** 10000

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
PERCHLORATE	800000		5000	MDL	10000	MRL	ug/L	J-	m

Method Category: METALS

Method: 6020 **Matrix: AQ**

Sample ID: TT-TP1-L2-20160204 **Collected:** 2/4/2016 1:15:00 PM **Analysis Type:** RES/TOT **Dilution:** 5

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
CHROMIUM	5.2	J	2.5	MDL	10	MRL	ug/L	J	sp

Sample ID: TT-TP4-M3-20160204 **Collected:** 2/4/2016 10:23:00 AM **Analysis Type:** RES/TOT **Dilution:** 5

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
CHROMIUM	17000		2.5	MDL	10	MRL	ug/L	J+	m

Method Category: METALS

Method: 7199 **Matrix: AQ**

Sample ID: TT-TP4-L2-20160204 **Collected:** 2/4/2016 11:50:00 AM **Analysis Type:** RES/TOT **Dilution:** 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
Chromium, hexavalent	1.1	J	0.25	MDL	2.0	MRL	ug/L	J	sp

Sample ID: TT-TP4-M3-20160204 **Collected:** 2/4/2016 10:23:00 AM **Analysis Type:** RES/TOT **Dilution:** 1000

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
Chromium, hexavalent	19000		250	MDL	2000	MRL	ug/L	J-	m

* denotes a non-reportable result

Project Name and Number: 114-520225-2015-MO5 - NERT Soil Flushing

Data Qualifier Summary

Lab Reporting Batch ID: 440-137358-1

Laboratory: TA IRV

EDD Filename: Prep440-137358-1

eQAPP Name: TetraTechInc_NERT_11302016

Reason Code Legend

Reason Code	*Description*
m	Matrix Spike Lower Estimation
m	Matrix Spike Lower Rejection
m	Matrix Spike Upper Estimation
sp	Reporting Limit Trace Value

* denotes a non-reportable result

Project Name and Number: 114-520225-2015-MO5 - NERT Soil Flushing

Reporting Limit Outliers

Lab Reporting Batch ID: 440-137358-1 **Laboratory: TA IRV**

EDD Filename: Prep440-137358-1 **eQAPP Name: TetraTechInc_NERT_11302016**

Method: 6020

Matrix: AQ

SampleID	Analyte	Lab Qual	Result	Reporting Limit	RL Type	Units	Flag
TT-TP1-L2-20160204	CHROMIUM	J	5.2	10	MRL	ug/L	J (all detects)

Method: 7199

Matrix: AQ

SampleID	Analyte	Lab Qual	Result	Reporting Limit	RL Type	Units	Flag
TT-TP4-L2-20160204	Chromium, hexavalent	J	1.1	2.0	MRL	ug/L	J (all detects)

Data Review Summary

Lab Reporting Batch ID: 16-0997 **Laboratory: SSAL**

EDD Filename: Prep440-137910-1 **eQAPP Name: TetraTechInc_NERT_11302016**

Validation Area	*Note*
Technical Holding Times	A
Temperature	A
Initial Calibration	N
Continuing Calibration/Initial Calibration Verification	N
Method Blanks	SR
Surrogate/Tracer Spikes	A
Matrix Spike/Matrix Spike Duplicates	N
Laboratory Duplicates	A
Laboratory Replicates	N
Laboratory Control Samples	A
Compound Quantitation	SR
Field Duplicates	N
Field Triplicates	N
Field Blanks	N

A = Acceptable, N = Not provided/applicable, SR = See report

The contents of this report reflect findings made by ADR during Automated Data Review, manual applied qualifiers are not considered. Please refer to the Overall Qualifier Summary report for manual qualifiers.

QC Outlier Report: HoldingTimes

Lab Reporting Batch ID: 16-0997 **Laboratory: SSAL**

EDD Filename: Prep440-137910-1 **eQAPP Name: TetraTechInc_NERT_11302016**

Method: 300.0 **Preparation Method: Gen Prep**

Matrix: AQ

Sample ID	Type	Actual	Criteria	Units	Flag
TT-TP1-M1-20160210 (RES)	Sampling To Analysis	294.50	48.00	HOURS	J- (all detects)
TT-TP1-M2-20160210 (RES)		295.00	48.00	HOURS	R (all non-detects)
TT-TP1-M3-20160210 (RES)		296.75	48.00	HOURS	
TT-TP2-M1-20160210 (RES)		296.25	48.00	HOURS	
TT-TP2-M2-20160210 (RES)		296.00	48.00	HOURS	
TT-TP3-M2-20160210 (RES)		295.50	48.00	HOURS	

Project Name and Number: 114-520225-2015-MO5 -

Method Blank Outlier Report

Lab Reporting Batch ID: 16-0997 **Laboratory: SSAL**

EDD Filename: Prep440-137910-1 **eQAPP Name: TetraTechInc_NERT_11302016**

Method: **6020**
Matrix: **AQ**

Method Blank Sample ID	Analysis Date	Analyte	Result	Associated Samples
MB 440-311592/1-B	2/24/2016 5:44:00 PM	COPPER	0.999 ug/L	TT-TP1-M1-20160210 TT-TP1-M2-20160210 TT-TP1-M3-20160210 TT-TP2-M1-20160210 TT-TP2-M2-20160210 TT-TP3-M2-20160210

The following samples and their listed target analytes were qualified due to contamination reported in this blank

Sample ID	Analyte	Reported Result	Modified Final Result
TT-TP1-M1-20160210(RES/DIS)	COPPER	3.1 ug/L	10J+ ug/L
TT-TP1-M2-20160210(RES/DIS)	COPPER	4.0 ug/L	10J+ ug/L
TT-TP2-M2-20160210(RES/DIS)	COPPER	4.1 ug/L	10J+ ug/L
TT-TP3-M2-20160210(RES/DIS)	COPPER	4.6 ug/L	10J+ ug/L

Data Qualifier Summary

Lab Reporting Batch ID: 16-0997 **Laboratory: SSAL**

EDD Filename: Prep440-137910-1 **eQAPP Name: TetraTechInc_NERT_11302016**

Method Category: **METALS**

Method: **6020** ***Matrix:*** **AQ**

Sample ID: **TT-TP1-M1-20160210** ***Collected:*** **2/10/2016 11:10:00 AM** ***Analysis Type:*** **RES/DIS** ***Dilution:*** **5**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
COPPER	3.1	J B	2.5	MDL	10	MRL	ug/L	J+	bl
SELENIUM	4.6	J	2.5	MDL	10	MRL	ug/L	J	sp
NICKEL	6.6	J	2.5	MDL	10	MRL	ug/L	J	sp

Sample ID: **TT-TP1-M2-20160210** ***Collected:*** **2/10/2016 10:27:00 AM** ***Analysis Type:*** **RES/DIS** ***Dilution:*** **5**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
COPPER	4.0	J B	2.5	MDL	10	MRL	ug/L	J+	bl
NICKEL	6.5	J	2.5	MDL	10	MRL	ug/L	J	sp
SELENIUM	5.5	J	2.5	MDL	10	MRL	ug/L	J	sp

Sample ID: **TT-TP1-M3-20160210** ***Collected:*** **2/10/2016 11:56:00 AM** ***Analysis Type:*** **RES/DIS** ***Dilution:*** **5**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
COPPER	6.4	J B	2.5	MDL	10	MRL	ug/L	J	sp
NICKEL	6.4	J	2.5	MDL	10	MRL	ug/L	J	sp
SELENIUM	5.0	J	2.5	MDL	10	MRL	ug/L	J	sp

Sample ID: **TT-TP2-M1-20160210** ***Collected:*** **2/10/2016 12:34:00 PM** ***Analysis Type:*** **RES/DIS** ***Dilution:*** **5**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
COPPER	5.4	J B	2.5	MDL	10	MRL	ug/L	J	sp
NICKEL	5.9	J	2.5	MDL	10	MRL	ug/L	J	sp
SELENIUM	4.3	J	2.5	MDL	10	MRL	ug/L	J	sp
ZINC	16	J	13	MDL	100	MRL	ug/L	J	sp

Sample ID: **TT-TP2-M2-20160210** ***Collected:*** **2/10/2016 1:11:00 PM** ***Analysis Type:*** **RES/DIS** ***Dilution:*** **5**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
COPPER	4.1	J B	2.5	MDL	10	MRL	ug/L	J+	bl
NICKEL	5.3	J	2.5	MDL	10	MRL	ug/L	J	sp
SELENIUM	4.7	J	2.5	MDL	10	MRL	ug/L	J	sp

* denotes a non-reportable result

Project Name and Number: 114-520225-2015-MO5 - NERT Soil Flushing

Data Qualifier Summary

Lab Reporting Batch ID: 16-0997 **Laboratory: SSAL**

EDD Filename: Prep440-137910-1 **eQAPP Name: TetraTechInc_NERT_11302016**

Method Category: **METALS**

Method: **6020** ***Matrix:*** **AQ**

Sample ID: **TT-TP3-M2-20160210** ***Collected:*** **2/10/2016 1:53:00 PM** ***Analysis Type:*** **RES/DIS** ***Dilution:*** **5**

Analyte	*Lab Result*	*Lab Qual*	*DL*	*DL Type*	*RL*	*RL Type*	*Units*	*Data Review Qual*	*Reason Code*
COPPER	4.6	J B	2.5	MDL	10	MRL	ug/L	J+	bl
NICKEL	5.5	J	2.5	MDL	10	MRL	ug/L	J	sp
SELENIUM	3.9	J	2.5	MDL	10	MRL	ug/L	J	sp
ZINC	15	J	13	MDL	100	MRL	ug/L	J	sp

* denotes a non-reportable result

Project Name and Number: 114-520225-2015-MO5 - NERT Soil Flushing

Data Qualifier Summary

Lab Reporting Batch ID: 16-0997

Laboratory: SSAL

EDD Filename: Prep440-137910-1

eQAPP Name: TetraTechInc_NERT_11302016

Reason Code Legend

Reason Code	*Description*
bl	Method Blank Contamination
sp	Reporting Limit Trace Value

* denotes a non-reportable result

Project Name and Number: 114-520225-2015-MO5 - NERT Soil Flushing

Reporting Limit Outliers

Lab Reporting Batch ID: 16-0997 **Laboratory: SSAL**

EDD Filename: Prep440-137910-1 **eQAPP Name: TetraTechInc_NERT_11302016**

Method: **6020**

Matrix: **AQ**

SampleID	*Analyte*	*Lab Qual*	*Result*	*Reporting Limit*	*RL Type*	*Units*	*Flag*
TT-TP1-M1-20160210	COPPER	J B	3.1	10	MRL	ug/L	J (all detects)
	NICKEL	J	6.6	10	MRL	ug/L	
	SELENIUM	J	4.6	10	MRL	ug/L	
TT-TP1-M2-20160210	COPPER	J B	4.0	10	MRL	ug/L	J (all detects)
	NICKEL	J	6.5	10	MRL	ug/L	
	SELENIUM	J	5.5	10	MRL	ug/L	
TT-TP1-M3-20160210	COPPER	J B	6.4	10	MRL	ug/L	J (all detects)
	NICKEL	J	6.4	10	MRL	ug/L	
	SELENIUM	J	5.0	10	MRL	ug/L	
TT-TP2-M1-20160210	COPPER	J B	5.4	10	MRL	ug/L	J (all detects)
	NICKEL	J	5.9	10	MRL	ug/L	
	SELENIUM	J	4.3	10	MRL	ug/L	
	ZINC	J	16	100	MRL	ug/L	
TT-TP2-M2-20160210	COPPER	J B	4.1	10	MRL	ug/L	J (all detects)
	NICKEL	J	5.3	10	MRL	ug/L	
	SELENIUM	J	4.7	10	MRL	ug/L	
TT-TP3-M2-20160210	COPPER	J B	4.6	10	MRL	ug/L	J (all detects)
	NICKEL	J	5.5	10	MRL	ug/L	
	SELENIUM	J	3.9	10	MRL	ug/L	
	ZINC	J	15	100	MRL	ug/L	

Data Review Summary

Lab Reporting Batch ID: 16-1018 **Laboratory: SSAL**

EDD Filename: Prep440-138059-1 **eQAPP Name: TetraTechInc_NERT_11302016**

Validation Area	*Note*
Technical Holding Times	SR
Temperature	A
Initial Calibration	N
Continuing Calibration/Initial Calibration Verification	N
Method Blanks	SR
Surrogate/Tracer Spikes	A
Matrix Spike/Matrix Spike Duplicates	SR
Laboratory Duplicates	A
Laboratory Replicates	N
Laboratory Control Samples	A
Compound Quantitation	SR
Field Duplicates	SR
Field Triplicates	N
Field Blanks	N

A = Acceptable, N = Not provided/applicable, SR = See report

The contents of this report reflect findings made by ADR during Automated Data Review, manual applied qualifiers are not considered. Please refer to the Overall Qualifier Summary report for manual qualifiers.

Field Duplicate RPD Report

Lab Reporting Batch ID: 16-1018 **Laboratory: SSAL**

EDD Filename: Prep440-138059-1 **eQAPP Name: TetraTechInc_NERT_11302016**

Method: 218.6_SUB
Matrix: AQ

Analyte	Concentration (mg/L)		Sample RPD	eQAPP RPD	Flag
	TT-TP4-M2-20160211 (DIS)	TT-TP4-M2-20160211-DUP (DIS)			
Chromium, hexavalent	18.2	18.6	2	30.00	No Qualifiers Applied

Method: 2320B
Matrix: AQ

Analyte	Concentration (mg/L)		Sample RPD	eQAPP RPD	Flag
	TT-TP4-M2-20160211	TT-TP4-M2-20160211-DUP			
Bicarbonate ion as HCO3 Carbonate as CO3	230 2.4 U	640 380	94 200		No Qualifiers Applied
Alkalinity as CaCO3	190	1200	145	30.00	J(all detects) UJ(all non-detects)

Method: 2540C
Matrix: AQ

Analyte	Concentration (mg/L)		Sample RPD	eQAPP RPD	Flag
	TT-TP4-M2-20160211	TT-TP4-M2-20160211-DUP			
TOTAL DISSOLVED SOLIDS	11000	11000	0	30.00	No Qualifiers Applied

Method: 300.0_SUB
Matrix: AQ

Analyte	Concentration (mg/L)		Sample RPD	eQAPP RPD	Flag
	TT-TP4-M2-20160211	TT-TP4-M2-20160211-DUP			
Nitrate as N	36.7	37.7	3	30.00	No Qualifiers Applied

Method: 300.1B
Matrix: AQ

Analyte	Concentration (ug/L)		Sample RPD	eQAPP RPD	Flag
	TT-TP4-M2-20160211	TT-TP4-M2-20160211-DUP			
Chlorate	4400000	4400000	0	30.00	No Qualifiers Applied

Method: 314.0
Matrix: AQ

Analyte	Concentration (ug/L)		Sample RPD	eQAPP RPD	Flag
	TT-TP4-M2-20160211	TT-TP4-M2-20160211-DUP			
PERCHLORATE	940000	950000	1	30.00	No Qualifiers Applied

Project Name and Number: 114-520225-2015-MO5 - NERT Soil Flushing

Field Duplicate RPD Report

Lab Reporting Batch ID: 16-1018 **Laboratory: SSAL**

EDD Filename: Prep440-138059-1 **eQAPP Name: TetraTechInc_NERT_11302016**

Method: 6010B
Matrix: AQ

Analyte	Concentration (mg/L)		Sample RPD	eQAPP RPD	Flag
	TT-TP4-M2-20160211 (DIS)	TT-TP4-M2-20160211-DUP (DIS)			
BORON	3.5	3.5	0	30.00	No Qualifiers Applied
CALCIUM	400	430	7	30.00	
MAGNESIUM	190	190	0	30.00	
POTASSIUM	32	33	3	30.00	
SODIUM	2200	2300	4	30.00	

Method: 6020
Matrix: AQ

Analyte	Concentration (ug/L)		Sample RPD	eQAPP RPD	Flag
	TT-TP4-M2-20160211 (DIS)	TT-TP4-M2-20160211-DUP (DIS)			
ARSENIC	110	110	0	30.00	No Qualifiers Applied
CHROMIUM	17000	17000	0	30.00	
COPPER	3.9	3.7	5	30.00	
MOLYBDENUM	43	43	0	30.00	
NICKEL	6.2	7.4	18	30.00	
SELENIUM	5.0	4.4	13	30.00	
BARIUM	53	35	41	30.00	J(all detects) UJ(all non-detects)

Method: SM5310B
Matrix: AQ

Analyte	Concentration (mg/L)		Sample RPD	eQAPP RPD	Flag
	TT-TP4-M2-20160211	TT-TP4-M2-20160211-DUP			
Total organic carbon	1.5	1.4	7	30.00	No Qualifiers Applied

Project Name and Number: 114-520225-2015-MO5 - NERT Soil Flushing

QC Outlier Report: HoldingTimes

Lab Reporting Batch ID: 16-1018 **Laboratory: SSAL**

EDD Filename: Prep440-138059-1 **eQAPP Name: TetraTechInc_NERT_11302016**

Method: 218.6_SUB **Preparation Method: 218.6**

Matrix: AQ

Sample ID	Type	Actual	Criteria	Units	Flag
TT-TP1-L2-20160211 (RES/DIS)	Sampling To Analysis	332.00	24.00	HOURS	J- (all detects)
TT-TP2-L1-20160211 (RES/DIS)		332.25	24.00	HOURS	R (all non-detects)
TT-TP2-L2-20160211 (RES/DIS)		332.00	24.00	HOURS	
TT-TP3-L1-20160211 (RES/DIS)		332.25	24.00	HOURS	
TT-TP3-M1-20160211 (RES/DIS)		334.25	24.00	HOURS	
TT-TP4-L1-20160211 (RES/DIS)		332.50	24.00	HOURS	
TT-TP4-L2-20160211 (RES/DIS)		332.50	24.00	HOURS	
TT-TP4-M1-20160211 (RES/DIS)		333.50	24.00	HOURS	
TT-TP4-M2-20160211 (RES/DIS)		331.50	24.00	HOURS	
TT-TP4-M2-20160211-DUP (RES/DIS)		331.50	24.00	HOURS	
TT-TP4-M3-20160211 (RES/DIS)		330.50	24.00	HOURS	

Project Name and Number: 114-520225-2015-MO5 -

Matrix Spike/Matrix Spike Duplicate Outlier Report

Lab Reporting Batch ID: 16-1018 **Laboratory: SSAL**

EDD Filename: Prep440-138059-1 **eQAPP Name: TetraTechInc_NERT_11302016**

Method: 6020
Matrix: AQ

QC Sample ID (Associated Samples)	Compound	MS %R	MSD %R	%R Limits	RPD (Limits)	Affected Compounds	Flag
TT-TP4-M3-20160211MS (DIS) TT-TP4-M3-20160211MSD (DIS) (TT-TP4-M3-20160211)	CHROMIUM ZINC	1034 159	1452 146	75.00-125.00 75.00-125.00	- -	CHROMIUM ZINC	J+ (all detects)

Method: 6010B
Matrix: AQ

QC Sample ID (Associated Samples)	Compound	MS %R	MSD %R	%R Limits	RPD (Limits)	Affected Compounds	Flag
TT-TP4-M3-20160211MS (DIS) TT-TP4-M3-20160211MSD (DIS) (TT-TP4-M3-20160211)	CALCIUM MAGNESIUM SODIUM	953 255 2029	987 - 889	75.00-125.00 75.00-125.00 75.00-125.00	- - -	CALCIUM MAGNESIUM SODIUM	J+(all detects)

Method: 300.1B
Matrix: AQ

QC Sample ID (Associated Samples)	Compound	MS %R	MSD %R	%R Limits	RPD (Limits)	Affected Compounds	Flag
TT-TP4-M3-20160211MS TT-TP4-M3-20160211MSD (TT-TP4-M3-20160211)	Chlorate	-6443	-4122	75.00-125.00	-	Chlorate	J-(all detects) R(all non-detects)

Method: 314.0
Matrix: AQ

QC Sample ID (Associated Samples)	Compound	MS %R	MSD %R	%R Limits	RPD (Limits)	Affected Compounds	Flag
TT-TP4-M3-20160211MS TT-TP4-M3-20160211MSD (TT-TP4-M3-20160211)	PERCHLORATE	-2053	-1069	80.00-120.00	-	PERCHLORATE	J-(all detects) R(all non-detects)

Method Blank Outlier Report

Lab Reporting Batch ID: 16-1018 **Laboratory: SSAL**

EDD Filename: Prep440-138059-1 **eQAPP Name: TetraTechInc_NERT_11302016**

Method: **6020**
Matrix: **AQ**

Method Blank Sample ID	Analysis Date	Analyte	Result	Associated Samples
MB 440-311592/1-B	2/24/2016 5:44:00 PM	COPPER	0.999 ug/L	TT-TP1-L2-20160211 TT-TP3-M1-20160211 TT-TP4-M1-20160211 TT-TP4-M2-20160211 TT-TP4-M2-20160211-DUP TT-TP4-M3-20160211

The following samples and their listed target analytes were qualified due to contamination reported in this blank

Sample ID	Analyte	Reported Result	Modified Final Result
TT-TP3-M1-20160211(RES/DIS)	COPPER	3.6 ug/L	10J+ ug/L
TT-TP4-M2-20160211(RES/DIS)	COPPER	3.9 ug/L	10J+ ug/L
TT-TP4-M2-20160211-DUP(RES/DIS)	COPPER	3.7 ug/L	10J+ ug/L

Data Qualifier Summary

Lab Reporting Batch ID: 16-1018 **Laboratory: SSAL**

EDD Filename: Prep440-138059-1 **eQAPP Name: TetraTechInc_NERT_11302016**

Method Category: ALK

Method: 2320B **Matrix: AQ**

Sample ID: TT-TP4-M2-20160211 **Collected:** 2/11/2016 12:36:00 PM **Analysis Type:** RES **Dilution:** 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
Alkalinity as CaCO3	190		4.0	MDL	4.0	MRL	mg/L	J	fd

Sample ID: TT-TP4-M2-20160211-DUP **Collected:** 2/11/2016 12:36:00 PM **Analysis Type:** RES **Dilution:** 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
Alkalinity as CaCO3	1200		4.0	MDL	4.0	MRL	mg/L	J	fd

Method Category: GENCHEM

Method: 300.1B **Matrix: AQ**

Sample ID: TT-TP4-M3-20160211 **Collected:** 2/11/2016 1:30:00 PM **Analysis Type:** RES **Dilution:** 20000

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
Chlorate	4500000		200000	MDL	400000	MRL	ug/L	J-	m

Method Category: GENCHEM

Method: 314.0 **Matrix: AQ**

Sample ID: TT-TP4-M3-20160211 **Collected:** 2/11/2016 1:30:00 PM **Analysis Type:** RES **Dilution:** 10000

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
PERCHLORATE	820000	F1	5000	MDL	10000	MRL	ug/L	J-	m

Method Category: METALS

Method: 218.6_SUB **Matrix: AQ**

Sample ID: TT-TP1-L2-20160211 **Collected:** 2/11/2016 12:05:00 PM **Analysis Type:** RES/DIS **Dilution:** 10

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
Chromium, hexavalent	0.056		0.01	MDL	0.01	MRL	mg/L	J-	h

* denotes a non-reportable result

Project Name and Number: 114-520225-2015-MO5 - NERT Soil Flushing

Data Qualifier Summary

Lab Reporting Batch ID: 16-1018 **Laboratory: SSAL**

EDD Filename: Prep440-138059-1 **eQAPP Name: TetraTechInc_NERT_11302016**

Method Category: METALS

Method: 218.6_SUB **Matrix:** AQ

Sample ID: TT-TP2-L1-20160211 **Collected:** 2/11/2016 11:50:00 AM **Analysis Type:** RES/DIS **Dilution:** 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
Chromium, hexavalent	0.012		0.001	MDL	0.001	MRL	mg/L	J-	h

Sample ID: TT-TP2-L2-20160211 **Collected:** 2/11/2016 11:55:00 AM **Analysis Type:** RES/DIS **Dilution:** 1000

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
Chromium, hexavalent	3.47		1.0	MDL	1.0	MRL	mg/L	J-	h

Sample ID: TT-TP3-L1-20160211 **Collected:** 2/11/2016 11:45:00 AM **Analysis Type:** RES/DIS **Dilution:** 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
Chromium, hexavalent	0.009		0.001	MDL	0.001	MRL	mg/L	J-	h

Sample ID: TT-TP3-M1-20160211 **Collected:** 2/11/2016 9:42:00 AM **Analysis Type:** RES/DIS **Dilution:** 10

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
Chromium, hexavalent	0.93		0.01	MDL	0.01	MRL	mg/L	J-	h

Sample ID: TT-TP4-L1-20160211 **Collected:** 2/11/2016 11:30:00 AM **Analysis Type:** RES/DIS **Dilution:** 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
Chromium, hexavalent	0.071		0.001	MDL	0.001	MRL	mg/L	J-	h

Sample ID: TT-TP4-L2-20160211 **Collected:** 2/11/2016 11:37:00 AM **Analysis Type:** RES/DIS **Dilution:** 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
Chromium, hexavalent	0.006		0.001	MDL	0.001	MRL	mg/L	J-	h

Sample ID: TT-TP4-M1-20160211 **Collected:** 2/11/2016 10:27:00 AM **Analysis Type:** RES/DIS **Dilution:** 1000

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
Chromium, hexavalent	18.4		1.0	MDL	1.0	MRL	mg/L	J-	h

* denotes a non-reportable result

Project Name and Number: 114-520225-2015-MO5 - NERT Soil Flushing

Data Qualifier Summary

Lab Reporting Batch ID: 16-1018 **Laboratory: SSAL**

EDD Filename: Prep440-138059-1 **eQAPP Name: TetraTechInc_NERT_11302016**

Method Category: METALS

Method: 218.6_SUB **Matrix: AQ**

Sample ID: TT-TP4-M2-20160211 **Collected:** 2/11/2016 12:36:00 PM **Analysis Type:** RES/DIS **Dilution:** 1000

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
Chromium, hexavalent	18.2		1.0	MDL	1.0	MRL	mg/L	J-	h

Sample ID: TT-TP4-M2-20160211-DUP **Collected:** 2/11/2016 12:36:00 PM **Analysis Type:** RES/DIS **Dilution:** 1000

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
Chromium, hexavalent	18.6		1.0	MDL	1.0	MRL	mg/L	J-	h

Sample ID: TT-TP4-M3-20160211 **Collected:** 2/11/2016 1:30:00 PM **Analysis Type:** RES/DIS **Dilution:** 1000

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
Chromium, hexavalent	19.7		1.0	MDL	1.0	MRL	mg/L	J-	h

Method Category: METALS

Method: 6010B **Matrix: AQ**

Sample ID: TT-TP4-M3-20160211 **Collected:** 2/11/2016 1:30:00 PM **Analysis Type:** RES/DIS **Dilution:** 10

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
CALCIUM	390		0.50	MDL	1.0	MRL	mg/L	J+	m
MAGNESIUM	200		0.10	MDL	0.20	MRL	mg/L	J+	m
SODIUM	2000		2.5	MDL	5.0	MRL	mg/L	J+	m

Method Category: METALS

Method: 6020 **Matrix: AQ**

Sample ID: TT-TP1-L2-20160211 **Collected:** 2/11/2016 12:05:00 PM **Analysis Type:** RES/DIS **Dilution:** 5

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
CHROMIUM	8.4	J	2.5	MDL	10	MRL	ug/L	J	sp

* denotes a non-reportable result

Project Name and Number: 114-520225-2015-MO5 - NERT Soil Flushing

Data Qualifier Summary

Lab Reporting Batch ID: 16-1018 **Laboratory: SSAL**

EDD Filename: Prep440-138059-1 **eQAPP Name: TetraTechInc_NERT_11302016**

Method Category: **METALS**

Method: **6020** ***Matrix:*** **AQ**

Sample ID: **TT-TP3-M1-20160211** ***Collected:*** **2/11/2016 9:42:00 AM** ***Analysis Type:*** **RES/DIS** ***Dilution:*** **5**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
COBALT	3.9	J	2.5	MDL	5.0	MRL	ug/L	J	sp
COPPER	3.6	J B	2.5	MDL	10	MRL	ug/L	J+	bl
NICKEL	8.8	J	2.5	MDL	10	MRL	ug/L	J	sp
SELENIUM	3.1	J	2.5	MDL	10	MRL	ug/L	J	sp

Sample ID: **TT-TP4-M1-20160211** ***Collected:*** **2/11/2016 10:27:00 AM** ***Analysis Type:*** **RES/DIS** ***Dilution:*** **5**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
COPPER	5.9	J B	2.5	MDL	10	MRL	ug/L	J	sp
NICKEL	5.0	J	2.5	MDL	10	MRL	ug/L	J	sp
SELENIUM	5.3	J	2.5	MDL	10	MRL	ug/L	J	sp

Sample ID: **TT-TP4-M2-20160211** ***Collected:*** **2/11/2016 12:36:00 PM** ***Analysis Type:*** **RES/DIS** ***Dilution:*** **5**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
BARIUM	53		2.5	MDL	5.0	MRL	ug/L	J	fd
COPPER	3.9	J B	2.5	MDL	10	MRL	ug/L	J+	bl
NICKEL	6.2	J	2.5	MDL	10	MRL	ug/L	J	sp
SELENIUM	5.0	J	2.5	MDL	10	MRL	ug/L	J	sp

Sample ID: **TT-TP4-M2-20160211-DUP** ***Collected:*** **2/11/2016 12:36:00 PM** ***Analysis Type:*** **RES/DIS** ***Dilution:*** **5**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
BARIUM	35		2.5	MDL	5.0	MRL	ug/L	J	fd
COPPER	3.7	J B	2.5	MDL	10	MRL	ug/L	J+	bl
NICKEL	7.4	J	2.5	MDL	10	MRL	ug/L	J	sp
SELENIUM	4.4	J	2.5	MDL	10	MRL	ug/L	J	sp

Sample ID: **TT-TP4-M3-20160211** ***Collected:*** **2/11/2016 1:30:00 PM** ***Analysis Type:*** **RES/DIS** ***Dilution:*** **5**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
CHROMIUM	18000		2.5	MDL	10	MRL	ug/L	J+	m
COPPER	9.9	J B	2.5	MDL	10	MRL	ug/L	J	sp

* denotes a non-reportable result

Project Name and Number: 114-520225-2015-MO5 - NERT Soil Flushing

Data Qualifier Summary

Lab Reporting Batch ID: 16-1018 **Laboratory: SSAL**

EDD Filename: Prep440-138059-1 **eQAPP Name: TetraTechInc_NERT_11302016**

Method Category: **METALS**

Method: **6020** ***Matrix:*** **AQ**

Sample ID: **TT-TP4-M3-20160211** ***Collected:*** **2/11/2016 1:30:00 PM** ***Analysis Type:*** **RES/DIS** ***Dilution:*** **5**

Analyte	*Lab Result*	*Lab Qual*	*DL*	*DL Type*	*RL*	*RL Type*	*Units*	*Data Review Qual*	*Reason Code*
NICKEL	4.9	J	2.5	MDL	10	MRL	ug/L	J	sp
SELENIUM	5.4	J	2.5	MDL	10	MRL	ug/L	J	sp

* denotes a non-reportable result

Project Name and Number: 114-520225-2015-MO5 - NERT Soil Flushing

Data Qualifier Summary

Lab Reporting Batch ID: 16-1018

Laboratory: SSAL

EDD Filename: Prep440-138059-1

eQAPP Name: TetraTechInc_NERT_11302016

Reason Code Legend

Reason Code	*Description*
bl	Method Blank Contamination
fd	Field Duplicate Precision
h	Sampling to Analysis Rejection
m	Matrix Spike Lower Rejection
m	Matrix Spike Upper Estimation
sp	Reporting Limit Trace Value

* denotes a non-reportable result

Project Name and Number: 114-520225-2015-MO5 - NERT Soil Flushing

Reporting Limit Outliers

Lab Reporting Batch ID: 16-1018 **Laboratory: SSAL**

EDD Filename: Prep440-138059-1 **eQAPP Name: TetraTechInc_NERT_11302016**

Method: **6020**

Matrix: **AQ**

SampleID	*Analyte*	*Lab Qual*	*Result*	*Reporting Limit*	*RL Type*	*Units*	*Flag*
TT-TP1-L2-20160211	CHROMIUM	J	8.4	10	MRL	ug/L	J (all detects)
TT-TP3-M1-20160211	COBALT	J	3.9	5.0	MRL	ug/L	J (all detects)
	COPPER	J B	3.6	10	MRL	ug/L	
	NICKEL	J	8.8	10	MRL	ug/L	
	SELENIUM	J	3.1	10	MRL	ug/L	
TT-TP4-M1-20160211	COPPER	J B	5.9	10	MRL	ug/L	J (all detects)
	NICKEL	J	5.0	10	MRL	ug/L	
	SELENIUM	J	5.3	10	MRL	ug/L	
TT-TP4-M2-20160211	COPPER	J B	3.9	10	MRL	ug/L	J (all detects)
	NICKEL	J	6.2	10	MRL	ug/L	
	SELENIUM	J	5.0	10	MRL	ug/L	
TT-TP4-M2-20160211-DUP	COPPER	J B	3.7	10	MRL	ug/L	J (all detects)
	NICKEL	J	7.4	10	MRL	ug/L	
	SELENIUM	J	4.4	10	MRL	ug/L	
TT-TP4-M3-20160211	COPPER	J B	9.9	10	MRL	ug/L	J (all detects)
	NICKEL	J	4.9	10	MRL	ug/L	
	SELENIUM	J	5.4	10	MRL	ug/L	

Data Review Summary

Lab Reporting Batch ID: 16-1132 **Laboratory: SSAL**

EDD Filename: Prep440-138539-1 **eQAPP Name: TetraTechInc_NERT_11302016**

Validation Area	*Note*
Technical Holding Times	A
Temperature	A
Initial Calibration	N
Continuing Calibration/Initial Calibration Verification	N
Method Blanks	A
Surrogate/Tracer Spikes	N
Matrix Spike/Matrix Spike Duplicates	SR
Laboratory Duplicates	N
Laboratory Replicates	N
Laboratory Control Samples	A
Compound Quantitation	A
Field Duplicates	N
Field Triplicates	N
Field Blanks	N

A = Acceptable, N = Not provided/applicable, SR = See report

The contents of this report reflect findings made by ADR during Automated Data Review, manual applied qualifiers are not considered. Please refer to the Overall Qualifier Summary report for manual qualifiers.

Matrix Spike/Matrix Spike Duplicate Outlier Report

Lab Reporting Batch ID: 16-1132 **Laboratory: SSAL**

EDD Filename: Prep440-138539-1 **eQAPP Name: TetraTechInc_NERT_11302016**

Method: **6020**
Matrix: **AQ**

QC Sample ID (Associated Samples)	*Compound*	*MS %R*	*MSD %R*	*%R Limits*	*RPD (Limits)*	*Affected Compounds*	*Flag*
TT-TP1-M1-20160217MS (DIS) TT-TP1-M1-20160217MSD (DIS) (TT-TP1-M1-20160217)	CHROMIUM	-90	-1	75.00-125.00	-	CHROMIUM	J- (all detects) R (all non-detects)

Project Name and Number: 114-520225-2015-MO5 - NERT Soil Flushing

Data Qualifier Summary

Lab Reporting Batch ID: 16-1132 **Laboratory: SSAL**

EDD Filename: Prep440-138539-1 **eQAPP Name: TetraTechInc_NERT_11302016**

Method Category: **METALS**

Method: **6020** ***Matrix:*** **AQ**

Sample ID: **TT-TP1-M1-20160217** ***Collected:*** **2/17/2016 11:27:00 AM** ***Analysis Type:*** **RES/DIS** ***Dilution:*** **5**

Analyte	*Lab Result*	*Lab Qual*	*DL*	*DL Type*	*RL*	*RL Type*	*Units*	*Data Review Qual*	*Reason Code*
CHROMIUM	2600		2.5	MDL	10	MRL	ug/L	J-	m

* denotes a non-reportable result

Project Name and Number: 114-520225-2015-MO5 - NERT Soil Flushing

Data Qualifier Summary

Lab Reporting Batch ID: 16-1132

Laboratory: SSAL

EDD Filename: Prep440-138539-1

eQAPP Name: TetraTechInc_NERT_11302016

Reason Code Legend

Reason Code	*Description*
m	Matrix Spike Lower Rejection

* denotes a non-reportable result

Project Name and Number: 114-520225-2015-MO5 - NERT Soil Flushing

Data Review Summary

Lab Reporting Batch ID: 16-1185 **Laboratory: SSAL**

EDD Filename: Prep440-138657-1 **eQAPP Name: TetraTechInc_NERT_11302016**

Validation Area	*Note*
Technical Holding Times	SR
Temperature	A
Initial Calibration	N
Continuing Calibration/Initial Calibration Verification	N
Method Blanks	A
Surrogate/Tracer Spikes	N
Matrix Spike/Matrix Spike Duplicates	SR
Laboratory Duplicates	A
Laboratory Replicates	N
Laboratory Control Samples	A
Compound Quantitation	SR
Field Duplicates	A
Field Triplicates	N
Field Blanks	N

A = Acceptable, N = Not provided/applicable, SR = See report

The contents of this report reflect findings made by ADR during Automated Data Review, manual applied qualifiers are not considered. Please refer to the Overall Qualifier Summary report for manual qualifiers.

Field Duplicate RPD Report

Lab Reporting Batch ID: 16-1185 **Laboratory: SSAL**

EDD Filename: Prep440-138657-1 **eQAPP Name: TetraTechInc_NERT_11302016**

Method: 218.6_SUB
Matrix: AQ

Analyte	Concentration (mg/L)		Sample RPD	eQAPP RPD	Flag
	TT-TP4-M3-20160218 (DIS)	TT-TP4-M3-20160218-DUP (DIS)			
Chromium, hexavalent	18.7	19.1	2	30.00	No Qualifiers Applied

Method: 2540C
Matrix: AQ

Analyte	Concentration (mg/L)		Sample RPD	eQAPP RPD	Flag
	TT-TP4-M3-20160218	TT-TP4-M3-20160218-DUP			
TOTAL DISSOLVED SOLIDS	11000	11000	0	30.00	No Qualifiers Applied

Method: 314.0
Matrix: AQ

Analyte	Concentration (ug/L)		Sample RPD	eQAPP RPD	Flag
	TT-TP4-M3-20160218	TT-TP4-M3-20160218-DUP			
PERCHLORATE	780000	740000	5	30.00	No Qualifiers Applied

Method: 6020
Matrix: AQ

Analyte	Concentration (ug/L)		Sample RPD	eQAPP RPD	Flag
	TT-TP4-M3-20160218 (DIS)	TT-TP4-M3-20160218-DUP (DIS)			
CHROMIUM	13000	15000	14	30.00	No Qualifiers Applied

Method: SM5310B
Matrix: AQ

Analyte	Concentration (mg/L)		Sample RPD	eQAPP RPD	Flag
	TT-TP4-M3-20160218	TT-TP4-M3-20160218-DUP			
Total organic carbon	1.5	1.6	6	30.00	No Qualifiers Applied

Project Name and Number: 114-520225-2015-MO5 - NERT Soil Flushing

QC Outlier Report: HoldingTimes

Lab Reporting Batch ID: 16-1185 **Laboratory: SSAL**

EDD Filename: Prep440-138657-1 **eQAPP Name: TetraTechInc_NERT_11302016**

Method: 218.6_SUB **Preparation Method: 218.6**

Matrix: AQ

Sample ID	Type	Actual	Criteria	Units	Flag
TT-TP1-L1-20160218 (RES/DIS)	Sampling To Analysis	179.50	24.00	HOURS	J- (all detects)
TT-TP1-L2-20160218 (RES/DIS)		179.25	24.00	HOURS	R (all non-detects)
TT-TP2-L1-20160218 (RES/DIS)		179.75	24.00	HOURS	
TT-TP2-L2-20160218 (RES/DIS)		179.50	24.00	HOURS	
TT-TP3-L1-20160218 (RES/DIS)		179.75	24.00	HOURS	
TT-TP3-M1-20160218 (RES/DIS)		182.50	24.00	HOURS	
TT-TP3-M2-20160218 (RES/DIS)		182.00	24.00	HOURS	
TT-TP4-L1-20160218 (RES/DIS)		180.25	24.00	HOURS	
TT-TP4-L2-20160218 (RES/DIS)		180.00	24.00	HOURS	
TT-TP4-M1-20160218 (RES/DIS)		181.50	24.00	HOURS	
TT-TP4-M2-20160218 (RES/DIS)		181.00	24.00	HOURS	
TT-TP4-M3-20160218 (RES/DIS)		180.50	24.00	HOURS	
TT-TP4-M3-20160218-DUP (RES/DIS)		180.50	24.00	HOURS	

Project Name and Number: 114-520225-2015-MO5 -

Matrix Spike/Matrix Spike Duplicate Outlier Report

Lab Reporting Batch ID: 16-1185 **Laboratory: SSAL**

EDD Filename: Prep440-138657-1 **eQAPP Name: TetraTechInc_NERT_11302016**

Method: 6020
Matrix: AQ

QC Sample ID (Associated Samples)	Compound	MS %R	MSD %R	%R Limits	RPD (Limits)	Affected Compounds	Flag
TT-TP4-M3-20160218MS (DIS) TT-TP4-M3-20160218MSD (DIS) (TT-TP4-M3-20160218)	CHROMIUM	-176	2506	75.00-125.00	-	CHROMIUM	J (all detects) R (all non-detects)

Method: 314.0
Matrix: AQ

QC Sample ID (Associated Samples)	Compound	MS %R	MSD %R	%R Limits	RPD (Limits)	Affected Compounds	Flag
TT-TP4-M3-20160218MS TT-TP4-M3-20160218MSD (TT-TP4-M3-20160218)	PERCHLORATE	-1342	8113	80.00-120.00	-	PERCHLORATE	J(all detects) R(all non-detects)

Data Qualifier Summary

Lab Reporting Batch ID: 16-1185 **Laboratory: SSAL**

EDD Filename: Prep440-138657-1 **eQAPP Name: TetraTechInc_NERT_11302016**

Method Category: GENCHEM

Method: 314.0 **Matrix: AQ**

Sample ID: TT-TP4-M3-20160218 **Collected:** 2/18/2016 11:25:00 AM **Analysis Type:** RES **Dilution:** 10000

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
PERCHLORATE	780000	F1	5000	MDL	10000	MRL	ug/L	J	m, m

Method Category: METALS

Method: 218.6_SUB **Matrix: AQ**

Sample ID: TT-TP1-L1-20160218 **Collected:** 2/18/2016 12:30:00 PM **Analysis Type:** RES/DIS **Dilution:** 10

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
Chromium, hexavalent	0.023		0.01	MDL	0.01	MRL	mg/L	J-	h

Sample ID: TT-TP1-L2-20160218 **Collected:** 2/18/2016 12:40:00 PM **Analysis Type:** RES/DIS **Dilution:** 10

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
Chromium, hexavalent	0.111		0.01	MDL	0.01	MRL	mg/L	J-	h

Sample ID: TT-TP2-L1-20160218 **Collected:** 2/18/2016 12:20:00 PM **Analysis Type:** RES/DIS **Dilution:** 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
Chromium, hexavalent	0.022		0.001	MDL	0.001	MRL	mg/L	J-	h

Sample ID: TT-TP2-L2-20160218 **Collected:** 2/18/2016 12:25:00 PM **Analysis Type:** RES/DIS **Dilution:** 1000

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
Chromium, hexavalent	2.8		1.0	MDL	1.0	MRL	mg/L	J-	h

Sample ID: TT-TP3-L1-20160218 **Collected:** 2/18/2016 12:10:00 PM **Analysis Type:** RES/DIS **Dilution:** 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
Chromium, hexavalent	0.004		0.001	MDL	0.001	MRL	mg/L	J-	h

* denotes a non-reportable result

Project Name and Number: 114-520225-2015-MO5 - NERT Soil Flushing

Data Qualifier Summary

Lab Reporting Batch ID: 16-1185 **Laboratory: SSAL**

EDD Filename: Prep440-138657-1 **eQAPP Name: TetraTechInc_NERT_11302016**

Method Category: **METALS**

Method: **218.6_SUB** ***Matrix:*** **AQ**

Sample ID: **TT-TP3-M1-20160218** ***Collected:*** **2/18/2016 9:31:00 AM** ***Analysis Type:*** **RES/DIS** ***Dilution:*** **1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
Chromium, hexavalent	0.026		0.001	MDL	0.001	MRL	mg/L	J-	h

Sample ID: **TT-TP3-M2-20160218** ***Collected:*** **2/18/2016 10:06:00 AM** ***Analysis Type:*** **RES/DIS** ***Dilution:*** **1000**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
Chromium, hexavalent	5.2		1.0	MDL	1.0	MRL	mg/L	J-	h

Sample ID: **TT-TP4-L1-20160218** ***Collected:*** **2/18/2016 11:50:00 AM** ***Analysis Type:*** **RES/DIS** ***Dilution:*** **10**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
Chromium, hexavalent	0.068		0.01	MDL	0.01	MRL	mg/L	J-	h

Sample ID: **TT-TP4-L2-20160218** ***Collected:*** **2/18/2016 12:00:00 PM** ***Analysis Type:*** **RES/DIS** ***Dilution:*** **1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
Chromium, hexavalent	0.006		0.001	MDL	0.001	MRL	mg/L	J-	h

Sample ID: **TT-TP4-M1-20160218** ***Collected:*** **2/18/2016 10:33:00 AM** ***Analysis Type:*** **RES/DIS** ***Dilution:*** **1000**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
Chromium, hexavalent	8.4		1.0	MDL	1.0	MRL	mg/L	J-	h

Sample ID: **TT-TP4-M2-20160218** ***Collected:*** **2/18/2016 10:59:00 AM** ***Analysis Type:*** **RES/DIS** ***Dilution:*** **1000**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
Chromium, hexavalent	17.0		1.0	MDL	1.0	MRL	mg/L	J-	h

Sample ID: **TT-TP4-M3-20160218** ***Collected:*** **2/18/2016 11:25:00 AM** ***Analysis Type:*** **RES/DIS** ***Dilution:*** **1000**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
Chromium, hexavalent	18.7		1.0	MDL	1.0	MRL	mg/L	J-	h

* denotes a non-reportable result

Project Name and Number: 114-520225-2015-MO5 - NERT Soil Flushing

Data Qualifier Summary

Lab Reporting Batch ID: 16-1185 **Laboratory: SSAL**

EDD Filename: Prep440-138657-1 **eQAPP Name: TetraTechInc_NERT_11302016**

Method Category: METALS

Method: 218.6_SUB **Matrix: AQ**

Sample ID: TT-TP4-M3-20160218-DUP **Collected:** 2/18/2016 11:25:00 AM **Analysis Type:** RES/DIS **Dilution:** 1000

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
Chromium, hexavalent	19.1		1.0	MDL	1.0	MRL	mg/L	J-	h

Method Category: METALS

Method: 6020 **Matrix: AQ**

Sample ID: TT-TP4-L1-20160218 **Collected:** 2/18/2016 11:50:00 AM **Analysis Type:** RES/DIS **Dilution:** 5

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
CHROMIUM	4.8	J	2.5	MDL	10	MRL	ug/L	J	sp

Sample ID: TT-TP4-L2-20160218 **Collected:** 2/18/2016 12:00:00 PM **Analysis Type:** RES/DIS **Dilution:** 5

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
CHROMIUM	3.7	J	2.5	MDL	10	MRL	ug/L	J	sp

Sample ID: TT-TP4-M3-20160218 **Collected:** 2/18/2016 11:25:00 AM **Analysis Type:** RES/DIS **Dilution:** 10

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
CHROMIUM	13000		5.0	MDL	20	MRL	ug/L	J	m, m

* denotes a non-reportable result

Project Name and Number: 114-520225-2015-MO5 - NERT Soil Flushing

Data Qualifier Summary

Lab Reporting Batch ID: 16-1185

Laboratory: SSAL

EDD Filename: Prep440-138657-1

eQAPP Name: TetraTechInc_NERT_11302016

Reason Code Legend

Reason Code	*Description*
h	Sampling to Analysis Rejection
m	Matrix Spike Lower Rejection
m	Matrix Spike Upper Estimation
sp	Reporting Limit Trace Value

* denotes a non-reportable result

Project Name and Number: 114-520225-2015-MO5 - NERT Soil Flushing

Reporting Limit Outliers

Lab Reporting Batch ID: 16-1185 **Laboratory: SSAL**

EDD Filename: Prep440-138657-1 **eQAPP Name: TetraTechInc_NERT_11302016**

Method: **6020**

Matrix: **AQ**

SampleID	*Analyte*	*Lab Qual*	*Result*	*Reporting Limit*	*RL Type*	*Units*	*Flag*
TT-TP4-L1-20160218	CHROMIUM	J	4.8	10	MRL	ug/L	J (all detects)
TT-TP4-L2-20160218	CHROMIUM	J	3.7	10	MRL	ug/L	J (all detects)

Data Review Summary

Lab Reporting Batch ID: 440-139185-1 **Laboratory: TA IRV**

EDD Filename: Prep440-139185-1 **eQAPP Name: TetraTechInc_NERT_11302016**

Validation Area	*Note*
Technical Holding Times	A
Temperature	A
Initial Calibration	N
Continuing Calibration/Initial Calibration Verification	N
Method Blanks	A
Surrogate/Tracer Spikes	N
Matrix Spike/Matrix Spike Duplicates	N
Laboratory Duplicates	A
Laboratory Replicates	N
Laboratory Control Samples	A
Compound Quantitation	A
Field Duplicates	N
Field Triplicates	N
Field Blanks	N

A = Acceptable, N = Not provided/applicable, SR = See report

The contents of this report reflect findings made by ADR during Automated Data Review, manual applied qualifiers are not considered. Please refer to the Overall Qualifier Summary report for manual qualifiers.

Data Qualifier Summary

Lab Reporting Batch ID: 440-139185-1

Laboratory: TA IRV

EDD Filename: Prep440-139185-1

eQAPP Name: TetraTechInc_NERT_11302016

No Data Review Qualifiers Applied.

Data Review Summary

Lab Reporting Batch ID: 440-139326-1 **Laboratory: TA IRV**

EDD Filename: Prep440-139326-1 **eQAPP Name: TetraTechInc_NERT_11302016**

Validation Area	*Note*
Technical Holding Times	A
Temperature	A
Initial Calibration	N
Continuing Calibration/Initial Calibration Verification	N
Method Blanks	A
Surrogate/Tracer Spikes	N
Matrix Spike/Matrix Spike Duplicates	SR
Laboratory Duplicates	A
Laboratory Replicates	N
Laboratory Control Samples	A
Compound Quantitation	SR
Field Duplicates	A
Field Triplicates	N
Field Blanks	N

A = Acceptable, N = Not provided/applicable, SR = See report

The contents of this report reflect findings made by ADR during Automated Data Review, manual applied qualifiers are not considered. Please refer to the Overall Qualifier Summary report for manual qualifiers.

Matrix Spike/Matrix Spike Duplicate Outlier Report

Lab Reporting Batch ID: 440-139326-1 **Laboratory: TA IRV**

EDD Filename: Prep440-139326-1 **eQAPP Name: TetraTechInc_NERT_11302016**

Method: 6020
Matrix: AQ

QC Sample ID (Associated Samples)	Compound	MS %R	MSD %R	%R Limits	RPD (Limits)	Affected Compounds	Flag
TT-TP4-M3-20160225MS (DIS) TT-TP4-M3-20160225MSD (DIS) (TT-TP4-M3-20160225)	CHROMIUM	-382	-165	75.00-125.00	-	CHROMIUM	J- (all detects) R (all non-detects)

Method: 314.0
Matrix: AQ

QC Sample ID (Associated Samples)	Compound	MS %R	MSD %R	%R Limits	RPD (Limits)	Affected Compounds	Flag
TT-TP4-M3-20160225MS TT-TP4-M3-20160225MSD (TT-TP4-M3-20160225)	PERCHLORATE	-1516	-2171	80.00-120.00	-	PERCHLORATE	J-(all detects) R(all non-detects)

Data Qualifier Summary

Lab Reporting Batch ID: 440-139326-1 **Laboratory: TA IRV**

EDD Filename: Prep440-139326-1 **eQAPP Name: TetraTechInc_NERT_11302016**

Method Category: METALS

Method: 6020 **Matrix: AQ**

Sample ID: TT-TP3-L2-20160225 **Collected:** 2/25/2016 12:35:00 PM **Analysis Type:** RES/DIS **Dilution:** 10

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
CHROMIUM	16	J	5.0	MDL	20	MRL	ug/L	J	sp

Sample ID: TT-TP4-M3-20160225 **Collected:** 2/25/2016 12:14:00 PM **Analysis Type:** RES/DIS **Dilution:** 10

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
CHROMIUM	18000		5.0	MDL	20	MRL	ug/L	J-	m

Method Category: METALS

Method: 7199 **Matrix: AQ**

Sample ID: TT-TP3-L1-20160225 **Collected:** 2/25/2016 12:30:00 PM **Analysis Type:** RES/DIS **Dilution:** 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
Chromium, hexavalent	1.7	J	0.25	MDL	2.0	MRL	ug/L	J	sp

* denotes a non-reportable result

Project Name and Number: 114-520225-2015-MO5 - NERT Soil Flushing

Data Qualifier Summary

Lab Reporting Batch ID: 440-139326-1

Laboratory: TA IRV

EDD Filename: Prep440-139326-1

eQAPP Name: TetraTechInc_NERT_11302016

Reason Code Legend

Reason Code	*Description*
m	Matrix Spike Lower Rejection
sp	Reporting Limit Trace Value

* denotes a non-reportable result

Project Name and Number: 114-520225-2015-MO5 - NERT Soil Flushing

Reporting Limit Outliers

Lab Reporting Batch ID: 440-139326-1 **Laboratory: TA IRV**

EDD Filename: Prep440-139326-1 **eQAPP Name: TetraTechInc_NERT_11302016**

Method: 6020

Matrix: AQ

SampleID	Analyte	Lab Qual	Result	Reporting Limit	RL Type	Units	Flag
TT-TP3-L2-20160225	CHROMIUM	J	16	20	MRL	ug/L	J (all detects)

Method: 7199

Matrix: AQ

SampleID	Analyte	Lab Qual	Result	Reporting Limit	RL Type	Units	Flag
TT-TP3-L1-20160225	Chromium, hexavalent	J	1.7	2.0	MRL	ug/L	J (all detects)

Data Review Summary

Lab Reporting Batch ID: 440-139843-1 **Laboratory: TA IRV**

EDD Filename: Prep440-139843-1 **eQAPP Name: TetraTechInc_NERT_11302016**

Validation Area	*Note*
Technical Holding Times	A
Temperature	A
Initial Calibration	N
Continuing Calibration/Initial Calibration Verification	N
Method Blanks	A
Surrogate/Tracer Spikes	N
Matrix Spike/Matrix Spike Duplicates	SR
Laboratory Duplicates	N
Laboratory Replicates	N
Laboratory Control Samples	A
Compound Quantitation	A
Field Duplicates	N
Field Triplicates	N
Field Blanks	N

A = Acceptable, N = Not provided/applicable, SR = See report

The contents of this report reflect findings made by ADR during Automated Data Review, manual applied qualifiers are not considered. Please refer to the Overall Qualifier Summary report for manual qualifiers.

Matrix Spike/Matrix Spike Duplicate Outlier Report

Lab Reporting Batch ID: 440-139843-1 **Laboratory: TA IRV**

EDD Filename: Prep440-139843-1 **eQAPP Name: TetraTechInc_NERT_11302016**

Method: **7199**
Matrix: **AQ**

QC Sample ID (Associated Samples)	*Compound*	*MS %R*	*MSD %R*	*%R Limits*	*RPD (Limits)*	*Affected Compounds*	*Flag*
TT-TP1-M1-20160302MS (DIS) TT-TP1-M1-20160302MSD (DIS) (TT-TP1-M1-20160302)	Chromium, hexavalent	43	36	85.00-115.00	-	Chromium, hexavalent	J- (all detects) UJ (all non-detects)

Data Qualifier Summary

Lab Reporting Batch ID: 440-139843-1 **Laboratory: TA IRV**

EDD Filename: Prep440-139843-1 **eQAPP Name: TetraTechInc_NERT_11302016**

Method Category: **METALS**

Method: **7199** ***Matrix:*** **AQ**

Sample ID: **TT-TP1-M1-20160302** ***Collected:*** **3/2/2016 12:56:00 PM** ***Analysis Type:*** **RES/DIS** ***Dilution:*** **100**

Analyte	*Lab Result*	*Lab Qual*	*DL*	*DL Type*	*RL*	*RL Type*	*Units*	*Data Review Qual*	*Reason Code*
Chromium, hexavalent	2900		25	MDL	200	MRL	ug/L	J-	m

* denotes a non-reportable result

Project Name and Number: 114-520225-2015-MO5 - NERT Soil Flushing

Data Qualifier Summary

Lab Reporting Batch ID: 440-139843-1

Laboratory: TA IRV

EDD Filename: Prep440-139843-1

eQAPP Name: TetraTechInc_NERT_11302016

Reason Code Legend

Reason Code	*Description*
m	Matrix Spike Lower Estimation

* denotes a non-reportable result

Project Name and Number: 114-520225-2015-MO5 - NERT Soil Flushing

Data Review Summary

Lab Reporting Batch ID: 440-139965-1 **Laboratory: TA IRV**

EDD Filename: Prep440-139965-1 **eQAPP Name: TetraTechInc_NERT_11302016**

Validation Area	*Note*
Technical Holding Times	SR
Temperature	A
Initial Calibration	N
Continuing Calibration/Initial Calibration Verification	N
Method Blanks	A
Surrogate/Tracer Spikes	N
Matrix Spike/Matrix Spike Duplicates	SR
Laboratory Duplicates	A
Laboratory Replicates	N
Laboratory Control Samples	A
Compound Quantitation	SR
Field Duplicates	A
Field Triplicates	N
Field Blanks	N

A = Acceptable, N = Not provided/applicable, SR = See report

The contents of this report reflect findings made by ADR during Automated Data Review, manual applied qualifiers are not considered. Please refer to the Overall Qualifier Summary report for manual qualifiers.

Field Duplicate RPD Report

Lab Reporting Batch ID: 440-139965-1 **Laboratory: TA IRV**

EDD Filename: Prep440-139965-1 **eQAPP Name: TetraTechInc_NERT_11302016**

Method: 2540C
Matrix: AQ

Analyte	Concentration (mg/L)		Sample RPD	eQAPP RPD	Flag
	TT-TP4-M3-20160303	TT-TP4-M3-20160303-DUP			
TOTAL DISSOLVED SOLIDS	11000	11000	0	30.00	No Qualifiers Applied

Method: 314.0
Matrix: AQ

Analyte	Concentration (ug/L)		Sample RPD	eQAPP RPD	Flag
	TT-TP4-M3-20160303	TT-TP4-M3-20160303-DUP			
PERCHLORATE	680000	700000	3	30.00	No Qualifiers Applied

Method: 6020
Matrix: AQ

Analyte	Concentration (ug/L)		Sample RPD	eQAPP RPD	Flag
	TT-TP4-M3-20160303 (DIS)	TT-TP4-M3-20160303-DUP (DIS)			
CHROMIUM	18000	19000	5	30.00	No Qualifiers Applied

Method: 7199
Matrix: AQ

Analyte	Concentration (ug/L)		Sample RPD	eQAPP RPD	Flag
	TT-TP4-M3-20160303 (DIS)	TT-TP4-M3-20160303-DUP (DIS)			
Chromium, hexavalent	19000	18000	5	30.00	No Qualifiers Applied

Method: SM5310B
Matrix: AQ

Analyte	Concentration (mg/L)		Sample RPD	eQAPP RPD	Flag
	TT-TP4-M3-20160303	TT-TP4-M3-20160303-DUP			
Total organic carbon	1.9	1.4	30	30.00	No Qualifiers Applied

Project Name and Number: 114-520225-2015-MO5 - NERT Soil Flushing

QC Outlier Report: HoldingTimes

Lab Reporting Batch ID: 440-139965-1 **Laboratory: TA IRV**

EDD Filename: Prep440-139965-1 **eQAPP Name: TetraTechInc_NERT_11302016**

Method: 7199 **Preparation Method: Gen Prep**

Matrix: AQ

Sample ID	Type	Actual	Criteria	Units	Flag
TT-TP3-L2-20160303 (RES/DIS)	Sampling To Analysis	24.25	24.00	HOURS	J- (all detects)
TT-TP3-M2-20160303 (RES/DIS)		25.50	24.00	HOURS	UJ (all non-detects)
TT-TP4-M3-20160303-DUP (RES/DIS)		25.00	24.00	HOURS	
TT-TP4-M3-20160303MS (RES/DIS)		25.75	24.00	HOURS	
TT-TP4-M3-20160303MSD (RES/DIS)		25.75	24.00	HOURS	

Project Name and Number: 114-520225-2015-MO5 -

Matrix Spike/Matrix Spike Duplicate Outlier Report

Lab Reporting Batch ID: 440-139965-1 **Laboratory: TA IRV**

EDD Filename: Prep440-139965-1 **eQAPP Name: TetraTechInc_NERT_11302016**

Method: 7199
Matrix: AQ

QC Sample ID (Associated Samples)	Compound	MS %R	MSD %R	%R Limits	RPD (Limits)	Affected Compounds	Flag
TT-TP4-M3-20160303MS (DIS) TT-TP4-M3-20160303MSD (DIS) (TT-TP4-M3-20160303)	Chromium, hexavalent	18	41	85.00-115.00	-	Chromium, hexavalent	J- (all detects) R (all non-detects)

Method: 6020
Matrix: AQ

QC Sample ID (Associated Samples)	Compound	MS %R	MSD %R	%R Limits	RPD (Limits)	Affected Compounds	Flag
TT-TP4-M3-20160303MS (DIS) TT-TP4-M3-20160303MSD (DIS) (TT-TP4-M3-20160303)	CHROMIUM	604	983	75.00-125.00	-	CHROMIUM	J+(all detects)

Method: 314.0
Matrix: AQ

QC Sample ID (Associated Samples)	Compound	MS %R	MSD %R	%R Limits	RPD (Limits)	Affected Compounds	Flag
TT-TP4-M3-20160303MS TT-TP4-M3-20160303MSD (TT-TP4-M3-20160303)	PERCHLORATE	-2884	-8802	80.00-120.00	-	PERCHLORATE	J-(all detects) R(all non-detects)

Data Qualifier Summary

Lab Reporting Batch ID: 440-139965-1 **Laboratory: TA IRV**

EDD Filename: Prep440-139965-1 **eQAPP Name: TetraTechInc_NERT_11302016**

Method Category: METALS

Method: 6020 **Matrix: AQ**

Sample ID: **TT-TP1-L2-20160303** ***Collected:*** **3/3/2016 12:41:00 PM** ***Analysis Type:*** **RES/DIS** ***Dilution:*** **1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
CHROMIUM	1.3	J	0.50	MDL	2.0	MRL	ug/L	J	sp

Sample ID: **TT-TP4-M3-20160303** ***Collected:*** **3/3/2016 11:49:00 AM** ***Analysis Type:*** **RES/DIS** ***Dilution:*** **10**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
CHROMIUM	18000		5.0	MDL	20	MRL	ug/L	J+	m

Method Category: METALS

Method: 7199 **Matrix: AQ**

Sample ID: **TT-TP3-L1-20160303** ***Collected:*** **3/3/2016 12:18:00 PM** ***Analysis Type:*** **RES/DIS** ***Dilution:*** **1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
Chromium, hexavalent	1.4	J H	0.25	MDL	2.0	MRL	ug/L	J	sp

Sample ID: **TT-TP3-L2-20160303** ***Collected:*** **3/3/2016 12:23:00 PM** ***Analysis Type:*** **RES/DIS** ***Dilution:*** **1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
Chromium, hexavalent	2.7	H	0.25	MDL	2.0	MRL	ug/L	J-	h

Sample ID: **TT-TP3-M2-20160303** ***Collected:*** **3/3/2016 10:12:00 AM** ***Analysis Type:*** **RES/DIS** ***Dilution:*** **100**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
Chromium, hexavalent	1100	H	25	MDL	200	MRL	ug/L	J-	h

Sample ID: **TT-TP4-M3-20160303** ***Collected:*** **3/3/2016 11:49:00 AM** ***Analysis Type:*** **RES/DIS** ***Dilution:*** **1000**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
Chromium, hexavalent	19000		250	MDL	2000	MRL	ug/L	J-	m, m

* denotes a non-reportable result

Project Name and Number: 114-520225-2015-MO5 - NERT Soil Flushing

Data Qualifier Summary

Lab Reporting Batch ID: 440-139965-1 **Laboratory: TA IRV**

EDD Filename: Prep440-139965-1 **eQAPP Name: TetraTechInc_NERT_11302016**

Method Category: **METALS**

Method: **7199** ***Matrix:*** **AQ**

Sample ID: **TT-TP4-M3-20160303-DUP** ***Collected:*** **3/3/2016 11:49:00 AM** ***Analysis Type:*** **RES/DIS** ***Dilution:*** **1000**

Analyte	*Lab Result*	*Lab Qual*	*DL*	*DL Type*	*RL*	*RL Type*	*Units*	*Data Review Qual*	*Reason Code*
Chromium, hexavalent	18000	H	250	MDL	2000	MRL	ug/L	J-	h

* denotes a non-reportable result

Project Name and Number: 114-520225-2015-MO5 - NERT Soil Flushing

Data Qualifier Summary

Lab Reporting Batch ID: 440-139965-1

Laboratory: TA IRV

EDD Filename: Prep440-139965-1

eQAPP Name: TetraTechInc_NERT_11302016

Reason Code Legend

Reason Code	*Description*
e	Sampling to Analysis Estimation
h	Sampling to Analysis Estimation
m	Matrix Spike Lower Estimation
m	Matrix Spike Lower Rejection
m	Matrix Spike Upper Estimation
sp	Reporting Limit Trace Value

* denotes a non-reportable result

Project Name and Number: 114-520225-2015-MO5 - NERT Soil Flushing

Reporting Limit Outliers

Lab Reporting Batch ID: 440-139965-1 **Laboratory: TA IRV**

EDD Filename: Prep440-139965-1 **eQAPP Name: TetraTechInc_NERT_11302016**

Method: 6020

Matrix: AQ

SampleID	Analyte	Lab Qual	Result	Reporting Limit	RL Type	Units	Flag
TT-TP1-L2-20160303	CHROMIUM	J	1.3	2.0	MRL	ug/L	J (all detects)

Method: 7199

Matrix: AQ

SampleID	Analyte	Lab Qual	Result	Reporting Limit	RL Type	Units	Flag
TT-TP3-L1-20160303	Chromium, hexavalent	J H	1.4	2.0	MRL	ug/L	J (all detects)

Data Review Summary

Lab Reporting Batch ID: 440-140696-1 **Laboratory: TA IRV**

EDD Filename: Prep440-140696-1 **eQAPP Name: TetraTechInc_NERT_11302016**

Validation Area	*Note*
Technical Holding Times	SR
Temperature	A
Initial Calibration	N
Continuing Calibration/Initial Calibration Verification	N
Method Blanks	A
Surrogate/Tracer Spikes	A
Matrix Spike/Matrix Spike Duplicates	SR
Laboratory Duplicates	N
Laboratory Replicates	N
Laboratory Control Samples	A
Compound Quantitation	SR
Field Duplicates	N
Field Triplicates	N
Field Blanks	N

A = Acceptable, N = Not provided/applicable, SR = See report

The contents of this report reflect findings made by ADR during Automated Data Review, manual applied qualifiers are not considered. Please refer to the Overall Qualifier Summary report for manual qualifiers.

QC Outlier Report: HoldingTimes

Lab Reporting Batch ID: 440-140696-1 **Laboratory: TA IRV**

EDD Filename: Prep440-140696-1 **eQAPP Name: TetraTechInc_NERT_11302016**

Method: 300.0 **Preparation Method: Gen Prep**

Matrix: AQ

Sample ID	Type	Actual	Criteria	Units	Flag
TT-TP1-M3-20160309 (RES)	Sampling To Analysis	61.75	48.00	HOURS	J- (all detects) UJ (all non-detects)
TT-TP2-M2-20160309 (RES2)	Sampling To Analysis	184.50	48.00	HOURS	J-(all detects) R(all non-detects)

Method: 7199 **Preparation Method: Gen Prep**

Matrix: AQ

Sample ID	Type	Actual	Criteria	Units	Flag
TT-TP1-M1-20160309 (RES/DIS)	Sampling To Analysis	24.25	24.00	HOURS	J-(all detects)
TT-TP1-M1-20160309MS (RES/DIS)		24.50	24.00	HOURS	UJ(all non-detects)
TT-TP1-M1-20160309MSD (RES/DIS)		24.75	24.00	HOURS	
TT-TP1-M3-20160309 (RES/DIS)		25.75	24.00	HOURS	

Project Name and Number: 114-520225-2015-MO5 -

Matrix Spike/Matrix Spike Duplicate Outlier Report

Lab Reporting Batch ID: 440-140696-1 **Laboratory: TA IRV**

EDD Filename: Prep440-140696-1 **eQAPP Name: TetraTechInc_NERT_11302016**

Method: 7199
Matrix: AQ

QC Sample ID (Associated Samples)	Compound	MS %R	MSD %R	%R Limits	RPD (Limits)	Affected Compounds	Flag
TT-TP1-M1-20160309MS (DIS) TT-TP1-M1-20160309MSD (DIS) (TT-TP1-M1-20160309)	Chromium, hexavalent	26	13	85.00-115.00	-	Chromium, hexavalent	J- (all detects) R (all non-detects)

Method: 300.0
Matrix: AQ

QC Sample ID (Associated Samples)	Compound	MS %R	MSD %R	%R Limits	RPD (Limits)	Affected Compounds	Flag
TT-TP2-M2-20160309MS (TT-TP2-M2-20160309)	Nitrate as N	79	-	80.00-120.00	-	Nitrate as N	J-(all detects) UJ(all non-detects)

Data Qualifier Summary

Lab Reporting Batch ID: 440-140696-1 **Laboratory: TA IRV**

EDD Filename: Prep440-140696-1 **eQAPP Name: TetraTechInc_NERT_11302016**

Method Category: GENCHEM

Method: 300.0 **Matrix: AQ**

Sample ID: TT-TP2-M2-20160309 **Collected:** 3/9/2016 12:49:00 PM **Analysis Type:** RES3 **Dilution:** 20

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
Nitrate as N	54		1.1	MDL	2.2	MRL	mg/L	J-	m

Method Category: METALS

Method: 6020 **Matrix: AQ**

Sample ID: TT-TP1-M1-20160309 **Collected:** 3/9/2016 12:16:00 PM **Analysis Type:** RES/DIS **Dilution:** 5

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
COPPER	4.3	J	2.5	MDL	10	MRL	ug/L	J	sp
NICKEL	3.6	J	2.5	MDL	10	MRL	ug/L	J	sp
SELENIUM	4.0	J	2.5	MDL	10	MRL	ug/L	J	sp

Sample ID: TT-TP1-M2-20160309 **Collected:** 3/9/2016 11:35:00 AM **Analysis Type:** RES/DIS **Dilution:** 5

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
COPPER	4.2	J	2.5	MDL	10	MRL	ug/L	J	sp
NICKEL	6.2	J	2.5	MDL	10	MRL	ug/L	J	sp
SELENIUM	3.1	J	2.5	MDL	10	MRL	ug/L	J	sp

Sample ID: TT-TP1-M3-20160309 **Collected:** 3/9/2016 10:36:00 AM **Analysis Type:** RES/DIS **Dilution:** 5

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
COPPER	2.8	J	2.5	MDL	10	MRL	ug/L	J	sp
NICKEL	5.3	J	2.5	MDL	10	MRL	ug/L	J	sp
SELENIUM	4.2	J	2.5	MDL	10	MRL	ug/L	J	sp

Sample ID: TT-TP2-M1-20160309 **Collected:** 3/9/2016 1:22:00 PM **Analysis Type:** RES/DIS **Dilution:** 10

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
COPPER	6.4	J	5.0	MDL	20	MRL	ug/L	J	sp

* denotes a non-reportable result

Project Name and Number: 114-520225-2015-MO5 - NERT Soil Flushing

Data Qualifier Summary

Lab Reporting Batch ID: 440-140696-1 **Laboratory: TA IRV**

EDD Filename: Prep440-140696-1 **eQAPP Name: TetraTechInc_NERT_11302016**

Method Category: METALS

Method: 6020 **Matrix: AQ**

Sample ID: **TT-TP2-M2-20160309** ***Collected:*** **3/9/2016 12:49:00 PM** ***Analysis Type:*** **RES/DIS** ***Dilution:*** **5**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
COPPER	3.4	J	2.5	MDL	10	MRL	ug/L	J	sp
NICKEL	3.8	J	2.5	MDL	10	MRL	ug/L	J	sp
SELENIUM	4.3	J	2.5	MDL	10	MRL	ug/L	J	sp

Method Category: METALS

Method: 7199 **Matrix: AQ**

Sample ID: **TT-TP1-M1-20160309** ***Collected:*** **3/9/2016 12:16:00 PM** ***Analysis Type:*** **RE2/DIS** ***Dilution:*** **100**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
Chromium, hexavalent	4700	F1	25	MDL	200	MRL	ug/L	J-	m

Sample ID: **TT-TP1-M3-20160309** ***Collected:*** **3/9/2016 10:36:00 AM** ***Analysis Type:*** **RES/DIS** ***Dilution:*** **1000**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
Chromium, hexavalent	11000	H	250	MDL	2000	MRL	ug/L	J-	h

Method Category: METALS

Method: 7470A **Matrix: AQ**

Sample ID: **TT-TP1-M1-20160309** ***Collected:*** **3/9/2016 12:16:00 PM** ***Analysis Type:*** **RES/DIS** ***Dilution:*** **1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
MERCURY	0.00013	J	0.00010	MDL	0.00020	MRL	mg/L	J	sp

Sample ID: **TT-TP1-M2-20160309** ***Collected:*** **3/9/2016 11:35:00 AM** ***Analysis Type:*** **RES/DIS** ***Dilution:*** **1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
MERCURY	0.00012	J	0.00010	MDL	0.00020	MRL	mg/L	J	sp

* denotes a non-reportable result

Project Name and Number: 114-520225-2015-MO5 - NERT Soil Flushing

Data Qualifier Summary

Lab Reporting Batch ID: 440-140696-1 **Laboratory: TA IRV**

EDD Filename: Prep440-140696-1 **eQAPP Name: TetraTechInc_NERT_11302016**

Method Category: **METALS**

Method: **7470A** ***Matrix:*** **AQ**

Sample ID: **TT-TP1-M3-20160309** ***Collected:*** **3/9/2016 10:36:00 AM** ***Analysis Type:*** **RES/DIS** ***Dilution:*** **1**

Analyte	*Lab Result*	*Lab Qual*	*DL*	*DL Type*	*RL*	*RL Type*	*Units*	*Data Review Qual*	*Reason Code*
MERCURY	0.00012	J	0.00010	MDL	0.00020	MRL	mg/L	J	sp

* denotes a non-reportable result

Project Name and Number: 114-520225-2015-MO5 - NERT Soil Flushing

Data Qualifier Summary

Lab Reporting Batch ID: 440-140696-1

Laboratory: TA IRV

EDD Filename: Prep440-140696-1

eQAPP Name: TetraTechInc_NERT_11302016

Reason Code Legend

Reason Code	*Description*
e	Sampling to Analysis Estimation
h	Sampling to Analysis Estimation
m	Matrix Spike Lower Estimation
m	Matrix Spike Lower Rejection
sp	Reporting Limit Trace Value

* denotes a non-reportable result

Project Name and Number: 114-520225-2015-MO5 - NERT Soil Flushing

Reporting Limit Outliers

Lab Reporting Batch ID: 440-140696-1 **Laboratory: TA IRV**

EDD Filename: Prep440-140696-1 **eQAPP Name: TetraTechInc_NERT_11302016**

Method: 6020

Matrix: AQ

SampleID	Analyte	Lab Qual	Result	Reporting Limit	RL Type	Units	Flag
TT-TP1-M1-20160309	COPPER	J	4.3	10	MRL	ug/L	
	NICKEL	J	3.6	10	MRL	ug/L	J (all detects)
	SELENIUM	J	4.0	10	MRL	ug/L	
TT-TP1-M2-20160309	COPPER	J	4.2	10	MRL	ug/L	
	NICKEL	J	6.2	10	MRL	ug/L	J (all detects)
	SELENIUM	J	3.1	10	MRL	ug/L	
TT-TP1-M3-20160309	COPPER	J	2.8	10	MRL	ug/L	
	NICKEL	J	5.3	10	MRL	ug/L	J (all detects)
	SELENIUM	J	4.2	10	MRL	ug/L	
TT-TP2-M1-20160309	COPPER	J	6.4	20	MRL	ug/L	J (all detects)
TT-TP2-M2-20160309	COPPER	J	3.4	10	MRL	ug/L	
	NICKEL	J	3.8	10	MRL	ug/L	J (all detects)
	SELENIUM	J	4.3	10	MRL	ug/L	

Method: 7470A

Matrix: AQ

SampleID	Analyte	Lab Qual	Result	Reporting Limit	RL Type	Units	Flag
TT-TP1-M1-20160309	MERCURY	J	0.00013	0.00020	MRL	mg/L	J (all detects)
TT-TP1-M2-20160309	MERCURY	J	0.00012	0.00020	MRL	mg/L	J (all detects)
TT-TP1-M3-20160309	MERCURY	J	0.00012	0.00020	MRL	mg/L	J (all detects)

Data Review Summary

Lab Reporting Batch ID: 440-140826-1 **Laboratory: TA IRV**

EDD Filename: Prep440-140826-1 **eQAPP Name: TetraTechInc_NERT_11302016**

Validation Area	*Note*
Technical Holding Times	SR
Temperature	A
Initial Calibration	N
Continuing Calibration/Initial Calibration Verification	N
Method Blanks	A
Surrogate/Tracer Spikes	A
Matrix Spike/Matrix Spike Duplicates	SR
Laboratory Duplicates	A
Laboratory Replicates	N
Laboratory Control Samples	A
Compound Quantitation	SR
Field Duplicates	SR
Field Triplicates	N
Field Blanks	N

A = Acceptable, N = Not provided/applicable, SR = See report

The contents of this report reflect findings made by ADR during Automated Data Review, manual applied qualifiers are not considered. Please refer to the Overall Qualifier Summary report for manual qualifiers.

Field Duplicate RPD Report

Lab Reporting Batch ID: 440-140826-1 **Laboratory: TA IRV**

EDD Filename: Prep440-140826-1 **eQAPP Name: TetraTechInc_NERT_11302016**

Method: 2320B
Matrix: AQ

Analyte	Concentration (mg/L)		Sample RPD	eQAPP RPD	Flag
	TT-TP4-M3-20160310	TT-TP4-M3-20160310-DUP			
Alkalinity as CaCO3	150	150	0	30.00	No Qualifiers Applied
Bicarbonate ion as HCO3	180	180	0		

Method: 2540C
Matrix: AQ

Analyte	Concentration (mg/L)		Sample RPD	eQAPP RPD	Flag
	TT-TP4-M3-20160310	TT-TP4-M3-20160310-DUP			
TOTAL DISSOLVED SOLIDS	11000	11000	0	30.00	No Qualifiers Applied

Method: 300.0
Matrix: AQ

Analyte	Concentration (mg/L)		Sample RPD	eQAPP RPD	Flag
	TT-TP4-M3-20160310	TT-TP4-M3-20160310-DUP			
CHLORIDE	1200	1300	8	30.00	No Qualifiers Applied
Nitrate as N	36	35	3	30.00	
SULFATE	1600	1500	6	30.00	

Method: 300.1B
Matrix: AQ

Analyte	Concentration (ug/L)		Sample RPD	eQAPP RPD	Flag
	TT-TP4-M3-20160310	TT-TP4-M3-20160310-DUP			
Chlorate	4700000	4600000	2	30.00	No Qualifiers Applied

Method: 314.0
Matrix: AQ

Analyte	Concentration (ug/L)		Sample RPD	eQAPP RPD	Flag
	TT-TP4-M3-20160310	TT-TP4-M3-20160310-DUP			
PERCHLORATE	620000	540000	14	30.00	No Qualifiers Applied

Method: 6010B
Matrix: AQ

Analyte	Concentration (mg/L)		Sample RPD	eQAPP RPD	Flag
	TT-TP4-M3-20160310 (DIS)	TT-TP4-M3-20160310-DUP (DIS)			
BORON	18	19	5	30.00	No Qualifiers Applied
CALCIUM	2100	2100	0	30.00	
MAGNESIUM	1000	1100	10	30.00	
POTASSIUM	140	150	7	30.00	
SODIUM	10000	11000	10	30.00	

Project Name and Number: 114-520225-2015-MO5 - NERT Soil Flushing

Field Duplicate RPD Report

Lab Reporting Batch ID: 440-140826-1 **Laboratory: TA IRV**

EDD Filename: Prep440-140826-1 **eQAPP Name: TetraTechInc_NERT_11302016**

Method: 6020
Matrix: AQ

Analyte	Concentration (ug/L)		Sample RPD	eQAPP RPD	Flag
	TT-TP4-M3-20160310 (DIS)	TT-TP4-M3-20160310-DUP (DIS)			
ARSENIC	110	110	0	30.00	
BARIUM	33	33	0	30.00	
CHROMIUM	17000	17000	0	30.00	No Qualifiers Applied
MOLYBDENUM	44	44	0	30.00	
SELENIUM	5.4	4.9	10	30.00	
COPPER	20 U	2.5	200	30.00	J(all detects)
NICKEL	20 U	3.4	200	30.00	UJ(all non-detects)

Method: 7199
Matrix: AQ

Analyte	Concentration (ug/L)		Sample RPD	eQAPP RPD	Flag
	TT-TP4-M3-20160310 (DIS)	TT-TP4-M3-20160310-DUP (DIS)			
Chromium, hexavalent	18000	18000	0	30.00	No Qualifiers Applied

Method: 7470A
Matrix: AQ

Analyte	Concentration (mg/L)		Sample RPD	eQAPP RPD	Flag
	TT-TP4-M3-20160310 (DIS)	TT-TP4-M3-20160310-DUP (DIS)			
MERCURY	0.00013	0.00020 U	200	30.00	J(all detects) UJ(all non-detects)

Method: SM5310B
Matrix: AQ

Analyte	Concentration (mg/L)		Sample RPD	eQAPP RPD	Flag
	TT-TP4-M3-20160310	TT-TP4-M3-20160310-DUP			
Total organic carbon	2.0	1.6	22	30.00	No Qualifiers Applied

Project Name and Number: 114-520225-2015-MO5 - NERT Soil Flushing

QC Outlier Report: HoldingTimes

Lab Reporting Batch ID: 440-140826-1 **Laboratory: TA IRV**

EDD Filename: Prep440-140826-1 **eQAPP Name: TetraTechInc_NERT_11302016**

Method: 300.0 **Preparation Method: Gen Prep**

Matrix: AQ

Sample ID	Type	Actual	Criteria	Units	Flag
TT-TP4-M3-20160310 (RES2)	Sampling To Analysis	149.75	48.00	HOURS	J- (all detects)
TT-TP4-M3-20160310MS (RES)		150.00	48.00	HOURS	R (all non-detects)
TT-TP4-M3-20160310MSD (RES)		150.25	48.00	HOURS	

Method: 7199 **Preparation Method: Gen Prep**

Matrix: AQ

Sample ID	Type	Actual	Criteria	Units	Flag
TT-TP2-L1-20160310 (RES/DIS)	Sampling To Analysis	24.75	24.00	HOURS	J-(all detects)
TT-TP2-L2-20160310 (RES/DIS)		24.75	24.00	HOURS	UJ(all non-detects)
TT-TP3-M1-20160310 (RES/DIS)		29.25	24.00	HOURS	
TT-TP3-M2-20160310 (RES/DIS)		29.50	24.00	HOURS	
TT-TP4-M3-20160310 (RE2/DIS)		26.25	24.00	HOURS	
TT-TP4-M3-20160310MS (RES/DIS)		26.50	24.00	HOURS	
TT-TP4-M3-20160310MSD (RES/DIS)		26.75	24.00	HOURS	

Matrix Spike/Matrix Spike Duplicate Outlier Report

Lab Reporting Batch ID: 440-140826-1 **Laboratory: TA IRV**

EDD Filename: Prep440-140826-1 **eQAPP Name: TetraTechInc_NERT_11302016**

Method: 7199
Matrix: AQ

QC Sample ID (Associated Samples)	Compound	MS %R	MSD %R	%R Limits	RPD (Limits)	Affected Compounds	Flag
TT-TP4-M3-20160310MS (DIS) TT-TP4-M3-20160310MSD (DIS) (TT-TP4-M3-20160310)	Chromium, hexavalent	121	125	85.00-115.00	-	Chromium, hexavalent	J+ (all detects)

Method: 300.0
Matrix: AQ

QC Sample ID (Associated Samples)	Compound	MS %R	MSD %R	%R Limits	RPD (Limits)	Affected Compounds	Flag
TT-TP4-M3-20160310MSD (TT-TP4-M3-20160310)	Nitrate as N	-	73	80.00-120.00	-	Nitrate as N	J-(all detects) UJ(all non-detects)

Method: 6020
Matrix: AQ

QC Sample ID (Associated Samples)	Compound	MS %R	MSD %R	%R Limits	RPD (Limits)	Affected Compounds	Flag
TT-TP4-M3-20160310MS (DIS) TT-TP4-M3-20160310MSD (DIS) (TT-TP4-M3-20160310)	CHROMIUM ZINC	-217 0	-142 0	75.00-125.00 75.00-125.00	- -	CHROMIUM ZINC	J-(all detects) R(all non-detects)

Method: 6010B
Matrix: AQ

QC Sample ID (Associated Samples)	Compound	MS %R	MSD %R	%R Limits	RPD (Limits)	Affected Compounds	Flag
TT-TP4-M3-20160310MS (DIS) TT-TP4-M3-20160310MSD (DIS) (TT-TP4-M3-20160310)	CALCIUM	472	44	75.00-125.00	-	CALCIUM	J(all detects) UJ(all non-detects)
TT-TP4-M3-20160310MS (DIS) TT-TP4-M3-20160310MSD (DIS) (TT-TP4-M3-20160310)	BORON IRON MAGNESIUM MANGANESE POTASSIUM SODIUM TITANIUM	490 445 365 440 459 1082 469	492 435 381 431 464 648 461	75.00-125.00 75.00-125.00 75.00-125.00 75.00-125.00 75.00-125.00 75.00-125.00 75.00-125.00	- - - - - - -	BORON IRON MAGNESIUM MANGANESE POTASSIUM SODIUM TITANIUM	J+(all detects)

Matrix Spike/Matrix Spike Duplicate Outlier Report

Lab Reporting Batch ID: 440-140826-1 **Laboratory: TA IRV**

EDD Filename: Prep440-140826-1 **eQAPP Name: TetraTechInc_NERT_11302016**

Method: 314.0
Matrix: AQ

QC Sample ID (Associated Samples)	Compound	MS %R	MSD %R	%R Limits	RPD (Limits)	Affected Compounds	Flag
TT-TP4-M3-20160310MS TT-TP4-M3-20160310MSD (TT-TP4-M3-20160310)	PERCHLORATE	-1194	-1042	80.00-120.00	-	PERCHLORATE	J-(all detects) R(all non-detects)

Method: 300.1B
Matrix: AQ

QC Sample ID (Associated Samples)	Compound	MS %R	MSD %R	%R Limits	RPD (Limits)	Affected Compounds	Flag
TT-TP4-M3-20160310MS TT-TP4-M3-20160310MSD (TT-TP4-M3-20160310)	Chlorate	-3970	-2214	75.00-125.00	-	Chlorate	J-(all detects) R(all non-detects)

Data Qualifier Summary

Lab Reporting Batch ID: 440-140826-1 **Laboratory: TA IRV**

EDD Filename: Prep440-140826-1 **eQAPP Name: TetraTechInc_NERT_11302016**

Method Category: GENCHEM

Method: 300.0 **Matrix: AQ**

Sample ID: TT-TP4-M3-20160310 **Collected:** 3/10/2016 12:05:00 PM **Analysis Type:** RES2 **Dilution:** 50

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
Nitrate as N	36	H F1	2.8	MDL	5.5	MRL	mg/L	J-	m, h

Method Category: GENCHEM

Method: 300.1B **Matrix: AQ**

Sample ID: TT-TP4-M3-20160310 **Collected:** 3/10/2016 12:05:00 PM **Analysis Type:** RES **Dilution:** 20000

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
Chlorate	4700000		200000	MDL	400000	MRL	ug/L	J-	m

Method Category: GENCHEM

Method: 314.0 **Matrix: AQ**

Sample ID: TT-TP4-M3-20160310 **Collected:** 3/10/2016 12:05:00 PM **Analysis Type:** RES **Dilution:** 10000

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
PERCHLORATE	620000		5000	MDL	10000	MRL	ug/L	J-	m

Method Category: METALS

Method: 6010B **Matrix: AQ**

Sample ID: TT-TP4-M3-20160310 **Collected:** 3/10/2016 12:05:00 PM **Analysis Type:** RES/DIS **Dilution:** 25

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
BORON	18		0.25	MDL	1.3	MRL	mg/L	J+	m
CALCIUM	2100		1.3	MDL	2.5	MRL	mg/L	J	m, m
MAGNESIUM	1000		0.25	MDL	0.50	MRL	mg/L	J+	m
POTASSIUM	140		6.3	MDL	13	MRL	mg/L	J+	m
SODIUM	10000		6.3	MDL	13	MRL	mg/L	J+	m

* denotes a non-reportable result

Project Name and Number: 114-520225-2015-MO5 - NERT Soil Flushing

Data Qualifier Summary

Lab Reporting Batch ID: 440-140826-1 **Laboratory: TA IRV**

EDD Filename: Prep440-140826-1 **eQAPP Name: TetraTechInc_NERT_11302016**

Method Category: **METALS**

Method: **6020** ***Matrix:*** **AQ**

Sample ID: **TT-TP3-L2-20160310** ***Collected:*** **3/10/2016 12:49:00 PM** ***Analysis Type:*** **RES/DIS** ***Dilution:*** **2**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
CHROMIUM	3.5	J	1.0	MDL	4.0	MRL	ug/L	J	sp

Sample ID: **TT-TP3-M1-20160310** ***Collected:*** **3/10/2016 10:12:00 AM** ***Analysis Type:*** **RES/DIS** ***Dilution:*** **2**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
SELENIUM	1.7	J	1.0	MDL	4.0	MRL	ug/L	J	sp

Sample ID: **TT-TP4-M1-20160310** ***Collected:*** **3/10/2016 10:57:00 AM** ***Analysis Type:*** **RES/DIS** ***Dilution:*** **5**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
COPPER	5.3	J	2.5	MDL	10	MRL	ug/L	J	sp
NICKEL	7.9	J	2.5	MDL	10	MRL	ug/L	J	sp
SELENIUM	3.2	J	2.5	MDL	10	MRL	ug/L	J	sp

Sample ID: **TT-TP4-M2-20160310** ***Collected:*** **3/10/2016 11:31:00 AM** ***Analysis Type:*** **RES/DIS** ***Dilution:*** **5**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
COPPER	3.1	J	2.5	MDL	10	MRL	ug/L	J	sp
NICKEL	3.1	J	2.5	MDL	10	MRL	ug/L	J	sp
SELENIUM	4.1	J	2.5	MDL	10	MRL	ug/L	J	sp

Sample ID: **TT-TP4-M3-20160310** ***Collected:*** **3/10/2016 12:05:00 PM** ***Analysis Type:*** **RE2/DIS** ***Dilution:*** **100**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
ZINC	250	U	250	MDL	2000	MRL	ug/L	R	m

Sample ID: **TT-TP4-M3-20160310** ***Collected:*** **3/10/2016 12:05:00 PM** ***Analysis Type:*** **RES/DIS** ***Dilution:*** **10**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
CHROMIUM	17000		5.0	MDL	20	MRL	ug/L	J-	m
COPPER	5.0	U	5.0	MDL	20	MRL	ug/L	UJ	fd
NICKEL	5.0	U	5.0	MDL	20	MRL	ug/L	UJ	fd
SELENIUM	5.4	J	5.0	MDL	20	MRL	ug/L	J	sp

* denotes a non-reportable result

Project Name and Number: 114-520225-2015-MO5 - NERT Soil Flushing

Data Qualifier Summary

Lab Reporting Batch ID: 440-140826-1 **Laboratory: TA IRV**

EDD Filename: Prep440-140826-1 **eQAPP Name: TetraTechInc_NERT_11302016**

Method Category: METALS

Method: 6020 **Matrix: AQ**

Sample ID: TT-TP4-M3-20160310-DUP **Collected:** 3/10/2016 12:05:00 PM **Analysis Type:** RES/DIS **Dilution:** 5

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
COPPER	2.5	J	2.5	MDL	10	MRL	ug/L	J	sp, fd
NICKEL	3.4	J	2.5	MDL	10	MRL	ug/L	J	sp, fd
SELENIUM	4.9	J	2.5	MDL	10	MRL	ug/L	J	sp

Method Category: METALS

Method: 7199 **Matrix: AQ**

Sample ID: TT-TP2-L1-20160310 **Collected:** 3/10/2016 12:57:00 PM **Analysis Type:** RES/DIS **Dilution:** 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
Chromium, hexavalent	19	H	0.25	MDL	2.0	MRL	ug/L	J-	h

Sample ID: TT-TP2-L2-20160310 **Collected:** 3/10/2016 1:00:00 PM **Analysis Type:** RES/DIS **Dilution:** 20

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
Chromium, hexavalent	1100	H	5.0	MDL	40	MRL	ug/L	J-	h

Sample ID: TT-TP3-L1-20160310 **Collected:** 3/10/2016 12:47:00 PM **Analysis Type:** RES/DIS **Dilution:** 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
Chromium, hexavalent	1.4	J	0.25	MDL	2.0	MRL	ug/L	J	sp

Sample ID: TT-TP3-M1-20160310 **Collected:** 3/10/2016 10:12:00 AM **Analysis Type:** RES/DIS **Dilution:** 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
Chromium, hexavalent	6.7	H	0.25	MDL	2.0	MRL	ug/L	J-	h

Sample ID: TT-TP3-M2-20160310 **Collected:** 3/10/2016 9:33:00 AM **Analysis Type:** RES/DIS **Dilution:** 20

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
Chromium, hexavalent	710	H	5.0	MDL	40	MRL	ug/L	J-	h

* denotes a non-reportable result

Project Name and Number: 114-520225-2015-MO5 - NERT Soil Flushing

Data Qualifier Summary

Lab Reporting Batch ID: 440-140826-1 **Laboratory: TA IRV**

EDD Filename: Prep440-140826-1 **eQAPP Name: TetraTechInc_NERT_11302016**

Method Category: METALS

Method: 7199 **Matrix: AQ**

Sample ID: TT-TP4-M3-20160310 **Collected:** 3/10/2016 12:05:00 PM **Analysis Type:** RES/DIS **Dilution:** 1000

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
Chromium, hexavalent	18000		250	MDL	2000	MRL	ug/L	J+	m

Method Category: METALS

Method: 7470A **Matrix: AQ**

Sample ID: TT-TP3-M2-20160310 **Collected:** 3/10/2016 9:33:00 AM **Analysis Type:** RES/DIS **Dilution:** 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
MERCURY	0.00011	J	0.00010	MDL	0.00020	MRL	mg/L	J	sp

Sample ID: TT-TP4-M1-20160310 **Collected:** 3/10/2016 10:57:00 AM **Analysis Type:** RES/DIS **Dilution:** 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
MERCURY	0.00016	J	0.00010	MDL	0.00020	MRL	mg/L	J	sp

Sample ID: TT-TP4-M3-20160310 **Collected:** 3/10/2016 12:05:00 PM **Analysis Type:** RES/DIS **Dilution:** 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
MERCURY	0.00013	J	0.00010	MDL	0.00020	MRL	mg/L	J	sp, fd

Sample ID: TT-TP4-M3-20160310-DUP **Collected:** 3/10/2016 12:05:00 PM **Analysis Type:** RES/DIS **Dilution:** 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
MERCURY	0.00010	U	0.00010	MDL	0.00020	MRL	mg/L	UJ	fd

* denotes a non-reportable result

Project Name and Number: 114-520225-2015-MO5 - NERT Soil Flushing

Data Qualifier Summary

Lab Reporting Batch ID: 440-140826-1

Laboratory: TA IRV

EDD Filename: Prep440-140826-1

eQAPP Name: TetraTechInc_NERT_11302016

Reason Code Legend

Reason Code	*Description*
e	Sampling to Analysis Estimation
fd	Field Duplicate Precision
h	Sampling to Analysis Estimation
h	Sampling to Analysis Rejection
m	Matrix Spike Lower Estimation
m	Matrix Spike Lower Rejection
m	Matrix Spike Upper Estimation
sp	Reporting Limit Trace Value

* denotes a non-reportable result

Project Name and Number: 114-520225-2015-MO5 - NERT Soil Flushing

Reporting Limit Outliers

Lab Reporting Batch ID: 440-140826-1 **Laboratory: TA IRV**

EDD Filename: Prep440-140826-1 **eQAPP Name: TetraTechInc_NERT_11302016**

Method: 6020
Matrix: AQ

SampleID	Analyte	Lab Qual	Result	Reporting Limit	RL Type	Units	Flag
TT-TP3-L2-20160310	CHROMIUM	J	3.5	4.0	MRL	ug/L	J (all detects)
TT-TP3-M1-20160310	SELENIUM	J	1.7	4.0	MRL	ug/L	J (all detects)
TT-TP4-M1-20160310	COPPER NICKEL SELENIUM	J J J	5.3 7.9 3.2	10 10 10	MRL MRL MRL	ug/L ug/L ug/L	J (all detects)
TT-TP4-M2-20160310	COPPER NICKEL SELENIUM	J J J	3.1 3.1 4.1	10 10 10	MRL MRL MRL	ug/L ug/L ug/L	J (all detects)
TT-TP4-M3-20160310	SELENIUM	J	5.4	20	MRL	ug/L	J (all detects)
TT-TP4-M3-20160310-DUP	COPPER NICKEL SELENIUM	J J J	2.5 3.4 4.9	10 10 10	MRL MRL MRL	ug/L ug/L ug/L	J (all detects)

Method: 7199
Matrix: AQ

SampleID	Analyte	Lab Qual	Result	Reporting Limit	RL Type	Units	Flag
TT-TP3-L1-20160310	Chromium, hexavalent	J	1.4	2.0	MRL	ug/L	J (all detects)

Method: 7470A
Matrix: AQ

SampleID	Analyte	Lab Qual	Result	Reporting Limit	RL Type	Units	Flag
TT-TP3-M2-20160310	MERCURY	J	0.00011	0.00020	MRL	mg/L	J (all detects)
TT-TP4-M1-20160310	MERCURY	J	0.00016	0.00020	MRL	mg/L	J (all detects)
TT-TP4-M3-20160310	MERCURY	J	0.00013	0.00020	MRL	mg/L	J (all detects)

Data Review Summary

Lab Reporting Batch ID: 440-141586-1 **Laboratory: TA IRV**

EDD Filename: Prep440-141586-1 **eQAPP Name: TetraTechInc_NERT_11302016**

Validation Area	*Note*
Technical Holding Times	A
Temperature	A
Initial Calibration	N
Continuing Calibration/Initial Calibration Verification	N
Method Blanks	A
Surrogate/Tracer Spikes	N
Matrix Spike/Matrix Spike Duplicates	A
Laboratory Duplicates	A
Laboratory Replicates	N
Laboratory Control Samples	A
Compound Quantitation	SR
Field Duplicates	N
Field Triplicates	N
Field Blanks	N

A = Acceptable, N = Not provided/applicable, SR = See report

The contents of this report reflect findings made by ADR during Automated Data Review, manual applied qualifiers are not considered. Please refer to the Overall Qualifier Summary report for manual qualifiers.

Data Qualifier Summary

Lab Reporting Batch ID: 440-141586-1 **Laboratory: TA IRV**

EDD Filename: Prep440-141586-1 **eQAPP Name: TetraTechInc_NERT_11302016**

Method Category: **METALS**

Method: **6020** ***Matrix:*** **AQ**

Sample ID: **TT-TP3-M1-20160316** ***Collected:*** **3/16/2016 1:38:00 PM** ***Analysis Type:*** **RES/DIS** ***Dilution:*** **10**

Analyte	*Lab Result*	*Lab Qual*	*DL*	*DL Type*	*RL*	*RL Type*	*Units*	*Data Review Qual*	*Reason Code*
CHROMIUM	5.5	J	5.0	MDL	20	MRL	ug/L	J	sp

* denotes a non-reportable result

Project Name and Number: 114-520225-2015-MO5 - NERT Soil Flushing

Data Qualifier Summary

Lab Reporting Batch ID: 440-141586-1

Laboratory: TA IRV

EDD Filename: Prep440-141586-1

eQAPP Name: TetraTechInc_NERT_11302016

Reason Code Legend

Reason Code	*Description*
sp	Reporting Limit Trace Value

* denotes a non-reportable result

Project Name and Number: 114-520225-2015-MO5 - NERT Soil Flushing

Reporting Limit Outliers

Lab Reporting Batch ID: 440-141586-1 **Laboratory: TA IRV**

EDD Filename: Prep440-141586-1 **eQAPP Name: TetraTechInc_NERT_11302016**

Method: **6020**

Matrix: **AQ**

SampleID	*Analyte*	*Lab Qual*	*Result*	*Reporting Limit*	*RL Type*	*Units*	*Flag*
TT-TP3-M1-20160316	CHROMIUM	J	5.5	20	MRL	ug/L	J (all detects)

Data Review Summary

Lab Reporting Batch ID: 440-141827-1 **Laboratory: TA IRV**

EDD Filename: Prep440-141827-1 **eQAPP Name: TetraTechInc_NERT_11302016**

Validation Area	*Note*
Technical Holding Times	A
Temperature	A
Initial Calibration	N
Continuing Calibration/Initial Calibration Verification	N
Method Blanks	A
Surrogate/Tracer Spikes	N
Matrix Spike/Matrix Spike Duplicates	SR
Laboratory Duplicates	A
Laboratory Replicates	N
Laboratory Control Samples	A
Compound Quantitation	A
Field Duplicates	A
Field Triplicates	N
Field Blanks	N

A = Acceptable, N = Not provided/applicable, SR = See report

The contents of this report reflect findings made by ADR during Automated Data Review, manual applied qualifiers are not considered. Please refer to the Overall Qualifier Summary report for manual qualifiers.

Field Duplicate RPD Report

Lab Reporting Batch ID: 440-141827-1 **Laboratory: TA IRV**

EDD Filename: Prep440-141827-1 **eQAPP Name: TetraTechInc_NERT_11302016**

Method: 2540C
Matrix: AQ

Analyte	Concentration (mg/L)		Sample RPD	eQAPP RPD	Flag
	TT-TP4-M3-20160317	TT-TP4-M3-20160317-DUP			
TOTAL DISSOLVED SOLIDS	11000	11000	0	30.00	No Qualifiers Applied

Method: 314.0
Matrix: AQ

Analyte	Concentration (ug/L)		Sample RPD	eQAPP RPD	Flag
	TT-TP4-M3-20160317	TT-TP4-M3-20160317-DUP			
PERCHLORATE	780000	730000	7	30.00	No Qualifiers Applied

Method: 6020
Matrix: AQ

Analyte	Concentration (ug/L)		Sample RPD	eQAPP RPD	Flag
	TT-TP4-M3-20160317 (DIS)	TT-TP4-M3-20160317-DUP (DIS)			
CHROMIUM	17000	18000	6	30.00	No Qualifiers Applied

Method: 7199
Matrix: AQ

Analyte	Concentration (ug/L)		Sample RPD	eQAPP RPD	Flag
	TT-TP4-M3-20160317 (DIS)	TT-TP4-M3-20160317-DUP (DIS)			
Chromium, hexavalent	20000	18000	11	30.00	No Qualifiers Applied

Method: SM5310B
Matrix: AQ

Analyte	Concentration (mg/L)		Sample RPD	eQAPP RPD	Flag
	TT-TP4-M3-20160317	TT-TP4-M3-20160317-DUP			
Total organic carbon	1.4	1.5	7	30.00	No Qualifiers Applied

Project Name and Number: 114-520225-2015-MO5 - NERT Soil Flushing

QC Outlier Report: HoldingTimes

Lab Reporting Batch ID: 440-141827-1 **Laboratory: TA IRV**

EDD Filename: Prep440-141827-1 **eQAPP Name: TetraTechInc_NERT_11302016**

Method: 7199 **Preparation Method: Gen Prep**

Matrix: AQ

Sample ID	Type	Actual	Criteria	Units	Flag
TT-TP4-M3-20160317MS (RES/DIS)	Sampling To Analysis	25.25	24.00	HOURS	J- (all detects)
TT-TP4-M3-20160317MSD (RES/DIS)		25.50	24.00	HOURS	UJ (all non-detects)

Project Name and Number: 114-520225-2015-MO5 -

Matrix Spike/Matrix Spike Duplicate Outlier Report

Lab Reporting Batch ID: 440-141827-1 **Laboratory: TA IRV**

EDD Filename: Prep440-141827-1 **eQAPP Name: TetraTechInc_NERT_11302016**

Method: 7199
Matrix: AQ

QC Sample ID (Associated Samples)	Compound	MS %R	MSD %R	%R Limits	RPD (Limits)	Affected Compounds	Flag
TT-TP4-M3-20160317MS (DIS) TT-TP4-M3-20160317MSD (DIS) (TT-TP4-M3-20160317)	Chromium, hexavalent	-21	-27	85.00-115.00	-	Chromium, hexavalent	J- (all detects) R (all non-detects)

Method: 6020
Matrix: AQ

QC Sample ID (Associated Samples)	Compound	MS %R	MSD %R	%R Limits	RPD (Limits)	Affected Compounds	Flag
TT-TP4-M3-20160317MS (DIS) (TT-TP4-M3-20160317)	CHROMIUM	12	-	75.00-125.00	-	CHROMIUM	J-(all detects) R(all non-detects)

Method: 314.0
Matrix: AQ

QC Sample ID (Associated Samples)	Compound	MS %R	MSD %R	%R Limits	RPD (Limits)	Affected Compounds	Flag
TT-TP4-M3-20160317MS TT-TP4-M3-20160317MSD (TT-TP4-M3-20160317)	PERCHLORATE	-5471	-3092	80.00-120.00	-	PERCHLORATE	J-(all detects) R(all non-detects)

Data Qualifier Summary

Lab Reporting Batch ID: 440-141827-1 **Laboratory: TA IRV**

EDD Filename: Prep440-141827-1 **eQAPP Name: TetraTechInc_NERT_11302016**

Method Category: GENCHEM

Method: 314.0 **Matrix: AQ**

Sample ID: TT-TP4-M3-20160317 **Collected:** 3/17/2016 10:13:00 AM **Analysis Type:** RES **Dilution:** 10000

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
PERCHLORATE	780000		5000	MDL	10000	MRL	ug/L	J-	m

Method Category: METALS

Method: 6020 **Matrix: AQ**

Sample ID: TT-TP4-M3-20160317 **Collected:** 3/17/2016 10:13:00 AM **Analysis Type:** RES/DIS **Dilution:** 10

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
CHROMIUM	17000		5.0	MDL	20	MRL	ug/L	J-	m

Method Category: METALS

Method: 7199 **Matrix: AQ**

Sample ID: TT-TP4-M3-20160317 **Collected:** 3/17/2016 10:13:00 AM **Analysis Type:** RES/DIS **Dilution:** 1000

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
Chromium, hexavalent	20000		250	MDL	2000	MRL	ug/L	J-	m

* denotes a non-reportable result

Project Name and Number: 114-520225-2015-MO5 - NERT Soil Flushing

Data Qualifier Summary

Lab Reporting Batch ID: 440-141827-1

Laboratory: TA IRV

EDD Filename: Prep440-141827-1

eQAPP Name: TetraTechInc_NERT_11302016

Reason Code Legend

Reason Code	*Description*
m	Matrix Spike Lower Rejection

* denotes a non-reportable result

Project Name and Number: 114-520225-2015-MO5 - NERT Soil Flushing

Data Review Summary

Lab Reporting Batch ID: 440-142439-1 **Laboratory: TA IRV**

EDD Filename: Prep440-142439-1 **eQAPP Name: TetraTechInc_NERT_11302016**

Validation Area	*Note*
Technical Holding Times	SR
Temperature	A
Initial Calibration	N
Continuing Calibration/Initial Calibration Verification	N
Method Blanks	A
Surrogate/Tracer Spikes	N
Matrix Spike/Matrix Spike Duplicates	A
Laboratory Duplicates	A
Laboratory Replicates	N
Laboratory Control Samples	A
Compound Quantitation	SR
Field Duplicates	N
Field Triplicates	N
Field Blanks	N

A = Acceptable, N = Not provided/applicable, SR = See report

The contents of this report reflect findings made by ADR during Automated Data Review, manual applied qualifiers are not considered. Please refer to the Overall Qualifier Summary report for manual qualifiers.

QC Outlier Report: HoldingTimes

Lab Reporting Batch ID: 440-142439-1 **Laboratory: TA IRV**

EDD Filename: Prep440-142439-1 **eQAPP Name: TetraTechInc_NERT_11302016**

Method: 7199 **Preparation Method: Gen Prep**

Matrix: AQ

Sample ID	Type	Actual	Criteria	Units	Flag
TT-TP2-L2-20160323 (RES/DIS)	Sampling To Analysis	24.25	24.00	HOURS	J- (all detects) UJ (all non-detects)

Project Name and Number: 114-520225-2015-MO5 -

Data Qualifier Summary

Lab Reporting Batch ID: 440-142439-1 **Laboratory: TA IRV**

EDD Filename: Prep440-142439-1 **eQAPP Name: TetraTechInc_NERT_11302016**

Method Category: **METALS**

Method: **7199** ***Matrix:*** **AQ**

Sample ID: **TT-TP2-L2-20160323** ***Collected:*** **3/23/2016 1:30:00 PM** ***Analysis Type:*** **RES/DIS** ***Dilution:*** **20**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
Chromium, hexavalent	630	H	5.0	MDL	40	MRL	ug/L	J-	h

Sample ID: **TT-TP3-L1-20160323** ***Collected:*** **3/23/2016 1:15:00 PM** ***Analysis Type:*** **RES/DIS** ***Dilution:*** **1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
Chromium, hexavalent	1.3	J	0.25	MDL	2.0	MRL	ug/L	J	sp

Sample ID: **TT-TP3-L2-20160323** ***Collected:*** **3/23/2016 1:20:00 PM** ***Analysis Type:*** **RES/DIS** ***Dilution:*** **1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
Chromium, hexavalent	1.3	J	0.25	MDL	2.0	MRL	ug/L	J	sp

* denotes a non-reportable result

Project Name and Number: 114-520225-2015-MO5 - NERT Soil Flushing

Data Qualifier Summary

Lab Reporting Batch ID: 440-142439-1

Laboratory: TA IRV

EDD Filename: Prep440-142439-1

eQAPP Name: TetraTechInc_NERT_11302016

Reason Code Legend

Reason Code	*Description*
e	Sampling to Analysis Estimation
h	Sampling to Analysis Estimation
sp	Reporting Limit Trace Value

* denotes a non-reportable result

Project Name and Number: 114-520225-2015-MO5 - NERT Soil Flushing

Reporting Limit Outliers

Lab Reporting Batch ID: 440-142439-1 **Laboratory: TA IRV**

EDD Filename: Prep440-142439-1 **eQAPP Name: TetraTechInc_NERT_11302016**

Method: **7199**

Matrix: **AQ**

SampleID	*Analyte*	*Lab Qual*	*Result*	*Reporting Limit*	*RL Type*	*Units*	*Flag*
TT-TP3-L1-20160323	Chromium, hexavalent	J	1.3	2.0	MRL	ug/L	J (all detects)
TT-TP3-L2-20160323	Chromium, hexavalent	J	1.3	2.0	MRL	ug/L	J (all detects)

Data Review Summary

Lab Reporting Batch ID: 440-142556-1 **Laboratory: TA IRV**

EDD Filename: Prep440-142556-1 **eQAPP Name: TetraTechInc_NERT_11302016**

Validation Area	*Note*
Technical Holding Times	A
Temperature	A
Initial Calibration	N
Continuing Calibration/Initial Calibration Verification	N
Method Blanks	A
Surrogate/Tracer Spikes	N
Matrix Spike/Matrix Spike Duplicates	SR
Laboratory Duplicates	N
Laboratory Replicates	N
Laboratory Control Samples	A
Compound Quantitation	A
Field Duplicates	A
Field Triplicates	N
Field Blanks	N

A = Acceptable, N = Not provided/applicable, SR = See report

The contents of this report reflect findings made by ADR during Automated Data Review, manual applied qualifiers are not considered. Please refer to the Overall Qualifier Summary report for manual qualifiers.

Field Duplicate RPD Report

Lab Reporting Batch ID: 440-142556-1 **Laboratory: TA IRV**

EDD Filename: Prep440-142556-1 **eQAPP Name: TetraTechInc_NERT_11302016**

Method: 2540C
Matrix: AQ

Analyte	Concentration (mg/L)		Sample RPD	eQAPP RPD	Flag
	TT-TP4-M3-20160324	TT-TP4-M3-20160324-DUP			
TOTAL DISSOLVED SOLIDS	11000	11000	0	30.00	No Qualifiers Applied

Method: 314.0
Matrix: AQ

Analyte	Concentration (ug/L)		Sample RPD	eQAPP RPD	Flag
	TT-TP4-M3-20160324	TT-TP4-M3-20160324-DUP			
PERCHLORATE	580000	590000	2	30.00	No Qualifiers Applied

Method: 6020
Matrix: AQ

Analyte	Concentration (ug/L)		Sample RPD	eQAPP RPD	Flag
	TT-TP4-M3-20160324 (DIS)	TT-TP4-M3-20160324-DUP (DIS)			
CHROMIUM	17000	17000	0	30.00	No Qualifiers Applied

Method: 7199
Matrix: AQ

Analyte	Concentration (ug/L)		Sample RPD	eQAPP RPD	Flag
	TT-TP4-M3-20160324 (DIS)	TT-TP4-M3-20160324-DUP (DIS)			
Chromium, hexavalent	17000	17000	0	30.00	No Qualifiers Applied

Method: SM5310B
Matrix: AQ

Analyte	Concentration (mg/L)		Sample RPD	eQAPP RPD	Flag
	TT-TP4-M3-20160324	TT-TP4-M3-20160324-DUP			
Total organic carbon	1.5	1.7	12	30.00	No Qualifiers Applied

Project Name and Number: 114-520225-2015-MO5 - NERT Soil Flushing

Matrix Spike/Matrix Spike Duplicate Outlier Report

Lab Reporting Batch ID: 440-142556-1 **Laboratory: TA IRV**

EDD Filename: Prep440-142556-1 **eQAPP Name: TetraTechInc_NERT_11302016**

Method: 7199
Matrix: AQ

QC Sample ID (Associated Samples)	Compound	MS %R	MSD %R	%R Limits	RPD (Limits)	Affected Compounds	Flag
TT-TP4-M3-20160324MS (DIS) TT-TP4-M3-20160324MSD (DIS) (TT-TP4-M3-20160324)	Chromium, hexavalent	58	53	85.00-115.00	-	Chromium, hexavalent	J- (all detects) UJ (all non-detects)

Method: 6020
Matrix: AQ

QC Sample ID (Associated Samples)	Compound	MS %R	MSD %R	%R Limits	RPD (Limits)	Affected Compounds	Flag
TT-TP4-M3-20160324MS (DIS) TT-TP4-M3-20160324MSD (DIS) (TT-TP4-M3-20160324)	CHROMIUM	-212	-747	75.00-125.00	-	CHROMIUM	J-(all detects) R(all non-detects)

Method: 314.0
Matrix: AQ

QC Sample ID (Associated Samples)	Compound	MS %R	MSD %R	%R Limits	RPD (Limits)	Affected Compounds	Flag
TT-TP4-M3-20160324MS TT-TP4-M3-20160324MSD (TT-TP4-M3-20160324)	PERCHLORATE	-1311	-2467	80.00-120.00	-	PERCHLORATE	J-(all detects) R(all non-detects)

Data Qualifier Summary

Lab Reporting Batch ID: 440-142556-1 **Laboratory: TA IRV**

EDD Filename: Prep440-142556-1 **eQAPP Name: TetraTechInc_NERT_11302016**

Method Category: GENCHEM

Method: 314.0 **Matrix: AQ**

Sample ID: TT-TP4-M3-20160324 **Collected:** 3/24/2016 12:21:00 PM **Analysis Type:** RES **Dilution:** 10000

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
PERCHLORATE	580000		5000	MDL	10000	MRL	ug/L	J-	m

Method Category: METALS

Method: 6020 **Matrix: AQ**

Sample ID: TT-TP4-M3-20160324 **Collected:** 3/24/2016 12:21:00 PM **Analysis Type:** RES/DIS **Dilution:** 10

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
CHROMIUM	17000		5.0	MDL	20	MRL	ug/L	J-	m

Method Category: METALS

Method: 7199 **Matrix: AQ**

Sample ID: TT-TP4-M3-20160324 **Collected:** 3/24/2016 12:21:00 PM **Analysis Type:** RES/DIS **Dilution:** 1000

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
Chromium, hexavalent	17000		250	MDL	2000	MRL	ug/L	J-	m

* denotes a non-reportable result

Project Name and Number: 114-520225-2015-MO5 - NERT Soil Flushing

Data Qualifier Summary

Lab Reporting Batch ID: 440-142556-1

Laboratory: TA IRV

EDD Filename: Prep440-142556-1

eQAPP Name: TetraTechInc_NERT_11302016

Reason Code Legend

Reason Code	*Description*
m	Matrix Spike Lower Estimation
m	Matrix Spike Lower Rejection

* denotes a non-reportable result

Project Name and Number: 114-520225-2015-MO5 - NERT Soil Flushing

Data Review Summary

Lab Reporting Batch ID: 440-142922-1 **Laboratory: TA IRV**

EDD Filename: Prep440-142922-1 **eQAPP Name: TetraTechInc_NERT_11302016**

Validation Area	*Note*
Technical Holding Times	A
Temperature	A
Initial Calibration	N
Continuing Calibration/Initial Calibration Verification	N
Method Blanks	A
Surrogate/Tracer Spikes	N
Matrix Spike/Matrix Spike Duplicates	SR
Laboratory Duplicates	N
Laboratory Replicates	N
Laboratory Control Samples	A
Compound Quantitation	A
Field Duplicates	N
Field Triplicates	N
Field Blanks	N

A = Acceptable, N = Not provided/applicable, SR = See report

The contents of this report reflect findings made by ADR during Automated Data Review, manual applied qualifiers are not considered. Please refer to the Overall Qualifier Summary report for manual qualifiers.

QC Outlier Report: HoldingTimes

Lab Reporting Batch ID: 440-142922-1 **Laboratory: TA IRV**

EDD Filename: Prep440-142922-1 **eQAPP Name: TetraTechInc_NERT_11302016**

Method: 7199 **Preparation Method: Gen Prep**

Matrix: AQ

Sample ID	Type	Actual	Criteria	Units	Flag
TT-TP1-M1-20160330MS (RES/DIS)	Sampling To Analysis	24.25	24.00	HOURS	J- (all detects)
TT-TP1-M1-20160330MSD (RES/DIS)		24.50	24.00	HOURS	UJ (all non-detects)

Project Name and Number: 114-520225-2015-MO5 -

Matrix Spike/Matrix Spike Duplicate Outlier Report

Lab Reporting Batch ID: 440-142922-1 **Laboratory: TA IRV**

EDD Filename: Prep440-142922-1 **eQAPP Name: TetraTechInc_NERT_11302016**

Method: 7199
Matrix: AQ

QC Sample ID (Associated Samples)	Compound	MS %R	MSD %R	%R Limits	RPD (Limits)	Affected Compounds	Flag
TT-TP1-M1-20160330MS (DIS) TT-TP1-M1-20160330MSD (DIS) (TT-TP1-M1-20160330)	Chromium, hexavalent	72	71	85.00-115.00	-	Chromium, hexavalent	J- (all detects) UJ (all non-detects)

Method: 6020
Matrix: AQ

QC Sample ID (Associated Samples)	Compound	MS %R	MSD %R	%R Limits	RPD (Limits)	Affected Compounds	Flag
TT-TP1-M1-20160330MS (DIS) TT-TP1-M1-20160330MSD (DIS) (TT-TP1-M1-20160330)	CHROMIUM	-7	-192	75.00-125.00	-	CHROMIUM	J-(all detects) R(all non-detects)

Data Qualifier Summary

Lab Reporting Batch ID: 440-142922-1 **Laboratory: TA IRV**

EDD Filename: Prep440-142922-1 **eQAPP Name: TetraTechInc_NERT_11302016**

Method Category: METALS

Method: 6020 **Matrix: AQ**

Sample ID: TT-TP1-M1-20160330 **Collected:** 3/30/2016 11:06:00 AM **Analysis Type:** RES/DIS **Dilution:** 10

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
CHROMIUM	6800		5.0	MDL	20	MRL	ug/L	J-	m

Method Category: METALS

Method: 7199 **Matrix: AQ**

Sample ID: TT-TP1-M1-20160330 **Collected:** 3/30/2016 11:06:00 AM **Analysis Type:** RE2/DIS **Dilution:** 1000

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
Chromium, hexavalent	6300	F1	250	MDL	2000	MRL	ug/L	J-	m

* denotes a non-reportable result

Project Name and Number: 114-520225-2015-MO5 - NERT Soil Flushing

Data Qualifier Summary

Lab Reporting Batch ID: 440-142922-1

Laboratory: TA IRV

EDD Filename: Prep440-142922-1

eQAPP Name: TetraTechInc_NERT_11302016

Reason Code Legend

Reason Code	*Description*
m	Matrix Spike Lower Estimation
m	Matrix Spike Lower Rejection

* denotes a non-reportable result

Project Name and Number: 114-520225-2015-MO5 - NERT Soil Flushing

Data Review Summary

Lab Reporting Batch ID: 440-143078-1 **Laboratory: TA IRV**

EDD Filename: Prep440-143078-1 **eQAPP Name: TetraTechInc_NERT_11302016**

Validation Area	*Note*
Technical Holding Times	A
Temperature	A
Initial Calibration	N
Continuing Calibration/Initial Calibration Verification	N
Method Blanks	A
Surrogate/Tracer Spikes	N
Matrix Spike/Matrix Spike Duplicates	SR
Laboratory Duplicates	A
Laboratory Replicates	N
Laboratory Control Samples	A
Compound Quantitation	SR
Field Duplicates	A
Field Triplicates	N
Field Blanks	N

A = Acceptable, N = Not provided/applicable, SR = See report

The contents of this report reflect findings made by ADR during Automated Data Review, manual applied qualifiers are not considered. Please refer to the Overall Qualifier Summary report for manual qualifiers.

Field Duplicate RPD Report

Lab Reporting Batch ID: 440-143078-1 **Laboratory: TA IRV**

EDD Filename: Prep440-143078-1 **eQAPP Name: TetraTechInc_NERT_11302016**

Method: 2540C
Matrix: AQ

Analyte	Concentration (mg/L)		Sample RPD	eQAPP RPD	Flag
	TT-TP4-M3-20160331	TT-TP4-M3-20160331-DUP			
TOTAL DISSOLVED SOLIDS	11000	11000	0	30.00	No Qualifiers Applied

Method: 314.0
Matrix: AQ

Analyte	Concentration (ug/L)		Sample RPD	eQAPP RPD	Flag
	TT-TP4-M3-20160331	TT-TP4-M3-20160331-DUP			
PERCHLORATE	600000	640000	6	30.00	No Qualifiers Applied

Method: 6020
Matrix: AQ

Analyte	Concentration (ug/L)		Sample RPD	eQAPP RPD	Flag
	TT-TP4-M3-20160331 (DIS)	TT-TP4-M3-20160331-DUP (DIS)			
CHROMIUM	16000	15000	6	30.00	No Qualifiers Applied

Method: 7199
Matrix: AQ

Analyte	Concentration (ug/L)		Sample RPD	eQAPP RPD	Flag
	TT-TP4-M3-20160331 (DIS)	TT-TP4-M3-20160331-DUP (DIS)			
Chromium, hexavalent	16000	16000	0	30.00	No Qualifiers Applied

Method: SM5310B
Matrix: AQ

Analyte	Concentration (mg/L)		Sample RPD	eQAPP RPD	Flag
	TT-TP4-M3-20160331	TT-TP4-M3-20160331-DUP			
Total organic carbon	1.5	1.5	0	30.00	No Qualifiers Applied

Project Name and Number: 114-520225-2015-MO5 - NERT Soil Flushing

Matrix Spike/Matrix Spike Duplicate Outlier Report

Lab Reporting Batch ID: 440-143078-1 **Laboratory: TA IRV**

EDD Filename: Prep440-143078-1 **eQAPP Name: TetraTechInc_NERT_11302016**

Method: 7199
Matrix: AQ

QC Sample ID (Associated Samples)	Compound	MS %R	MSD %R	%R Limits	RPD (Limits)	Affected Compounds	Flag
TT-TP4-M3-20160331MS (DIS) TT-TP4-M3-20160331MSD (DIS) (TT-TP4-M3-20160331)	Chromium, hexavalent	66	58	85.00-115.00	-	Chromium, hexavalent	J- (all detects) UJ (all non-detects)

Method: 314.0
Matrix: AQ

QC Sample ID (Associated Samples)	Compound	MS %R	MSD %R	%R Limits	RPD (Limits)	Affected Compounds	Flag
TT-TP4-M3-20160331MS TT-TP4-M3-20160331MSD (TT-TP4-M3-20160331)	PERCHLORATE	3740	-8145	80.00-120.00	-	PERCHLORATE	J(all detects) R(all non-detects)

Method: 6020
Matrix: AQ

QC Sample ID (Associated Samples)	Compound	MS %R	MSD %R	%R Limits	RPD (Limits)	Affected Compounds	Flag
TT-TP4-M3-20160331MS (DIS) (TT-TP4-M3-20160331)	CHROMIUM	-59	-	75.00-125.00	-	CHROMIUM	J-(all detects) R(all non-detects)

Data Qualifier Summary

Lab Reporting Batch ID: 440-143078-1 **Laboratory: TA IRV**

EDD Filename: Prep440-143078-1 **eQAPP Name: TetraTechInc_NERT_11302016**

Method Category: GENCHEM

Method: 314.0 **Matrix: AQ**

Sample ID: TT-TP4-M3-20160331 **Collected:** 3/31/2016 11:48:00 AM **Analysis Type:** RES **Dilution:** 10000

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
PERCHLORATE	600000		5000	MDL	10000	MRL	ug/L	J	m, m

Method Category: METALS

Method: 6020 **Matrix: AQ**

Sample ID: TT-TP4-M3-20160331 **Collected:** 3/31/2016 11:48:00 AM **Analysis Type:** RES/DIS **Dilution:** 10

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
CHROMIUM	16000		5.0	MDL	20	MRL	ug/L	J-	m

Method Category: METALS

Method: 7199 **Matrix: AQ**

Sample ID: TT-TP3-L2-20160331 **Collected:** 3/31/2016 12:15:00 PM **Analysis Type:** RES/DIS **Dilution:** 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
Chromium, hexavalent	1.4	J	0.25	MDL	2.0	MRL	ug/L	J	sp

Sample ID: TT-TP4-M3-20160331 **Collected:** 3/31/2016 11:48:00 AM **Analysis Type:** RES/DIS **Dilution:** 1000

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
Chromium, hexavalent	16000		250	MDL	2000	MRL	ug/L	J-	m

* denotes a non-reportable result

Project Name and Number: 114-520225-2015-MO5 - NERT Soil Flushing

Data Qualifier Summary

Lab Reporting Batch ID: 440-143078-1

Laboratory: TA IRV

EDD Filename: Prep440-143078-1

eQAPP Name: TetraTechInc_NERT_11302016

Reason Code Legend

Reason Code	*Description*
m	Matrix Spike Lower Estimation
m	Matrix Spike Lower Rejection
m	Matrix Spike Upper Estimation
sp	Reporting Limit Trace Value

* denotes a non-reportable result

Project Name and Number: 114-520225-2015-MO5 - NERT Soil Flushing

Reporting Limit Outliers

Lab Reporting Batch ID: 440-143078-1 **Laboratory: TA IRV**

EDD Filename: Prep440-143078-1 **eQAPP Name: TetraTechInc_NERT_11302016**

Method: **7199**

Matrix: **AQ**

SampleID	*Analyte*	*Lab Qual*	*Result*	*Reporting Limit*	*RL Type*	*Units*	*Flag*
TT-TP3-L2-20160331	Chromium, hexavalent	J	1.4	2.0	MRL	ug/L	J (all detects)

Data Review Summary

Lab Reporting Batch ID: 440-143273-1 **Laboratory: TA IRV**

EDD Filename: Prep440-143273-1 **eQAPP Name: TetraTechInc_NERT_11302016**

Validation Area	*Note*
Technical Holding Times	SR
Temperature	A
Initial Calibration	N
Continuing Calibration/Initial Calibration Verification	N
Method Blanks	SR
Surrogate/Tracer Spikes	A
Matrix Spike/Matrix Spike Duplicates	N
Laboratory Duplicates	A
Laboratory Replicates	N
Laboratory Control Samples	A
Compound Quantitation	SR
Field Duplicates	N
Field Triplicates	N
Field Blanks	N

A = Acceptable, N = Not provided/applicable, SR = See report

The contents of this report reflect findings made by ADR during Automated Data Review, manual applied qualifiers are not considered. Please refer to the Overall Qualifier Summary report for manual qualifiers.

QC Outlier Report: HoldingTimes

Lab Reporting Batch ID: 440-143273-1 **Laboratory: TA IRV**

EDD Filename: Prep440-143273-1 **eQAPP Name: TetraTechInc_NERT_11302016**

Method: 300.0 **Preparation Method: Gen Prep**

Matrix: AQ

Sample ID	Type	Actual	Criteria	Units	Flag
TT-TP2-M2-2016 (RES)	Sampling To Analysis	106.75	48.00	HOURS	J- (all detects) R (all non-detects)

Project Name and Number: 114-520225-2015-MO5 -

Method Blank Outlier Report

Lab Reporting Batch ID: 440-143273-1 **Laboratory: TA IRV**

EDD Filename: Prep440-143273-1 **eQAPP Name: TetraTechInc_NERT_11302016**

Method: **6020**
Matrix: **AQ**

Method Blank Sample ID	Analysis Date	Analyte	Result	Associated Samples
MB 440-322849/1-C	4/14/2016 9:56:00 PM	ZINC	3.82 ug/L	TT-TP1-M1-2016 TT-TP1-M2-2016 TT-TP1-M3-2016 TT-TP2-M1-2016 TT-TP2-M2-2016

Data Qualifier Summary

Lab Reporting Batch ID: 440-143273-1 **Laboratory: TA IRV**

EDD Filename: Prep440-143273-1 **eQAPP Name: TetraTechInc_NERT_11302016**

Method Category: GENCHEM

Method: 300.0 **Matrix: AQ**

Sample ID: TT-TP2-M2-2016 **Collected:** 4/4/2016 1:32:00 PM **Analysis Type:** RES **Dilution:** 50

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
Nitrate as N	68	H	2.8	MDL	5.5	MRL	mg/L	J-	h

Method Category: METALS

Method: 6010B **Matrix: AQ**

Sample ID: TT-TP1-M1-2016 **Collected:** 4/4/2016 11:04:00 AM **Analysis Type:** RES/DIS **Dilution:** 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
IRON	0.013	J	0.010	MDL	0.040	MRL	mg/L	J	sp
MANGANESE	0.019	J	0.010	MDL	0.020	MRL	mg/L	J	sp

Sample ID: TT-TP1-M2-2016 **Collected:** 4/4/2016 11:51:00 AM **Analysis Type:** RES/DIS **Dilution:** 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
MANGANESE	0.011	J	0.010	MDL	0.020	MRL	mg/L	J	sp

Method Category: METALS

Method: 6020 **Matrix: AQ**

Sample ID: TT-TP1-M1-2016 **Collected:** 4/4/2016 11:04:00 AM **Analysis Type:** RES/DIS **Dilution:** 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
COPPER	0.72	J	0.50	MDL	2.0	MRL	ug/L	J	sp
NICKEL	1.3	J	0.50	MDL	2.0	MRL	ug/L	J	sp
SELENIUM	0.53	J	0.50	MDL	2.0	MRL	ug/L	J	sp

Sample ID: TT-TP1-M2-2016 **Collected:** 4/4/2016 11:51:00 AM **Analysis Type:** RES/DIS **Dilution:** 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
COPPER	1.1	J	0.50	MDL	2.0	MRL	ug/L	J	sp
NICKEL	1.8	J	0.50	MDL	2.0	MRL	ug/L	J	sp
SELENIUM	0.68	J	0.50	MDL	2.0	MRL	ug/L	J	sp

* denotes a non-reportable result

Project Name and Number: 114-520225-2015-MO5 - NERT Soil Flushing

Data Qualifier Summary

Lab Reporting Batch ID: 440-143273-1 **Laboratory: TA IRV**

EDD Filename: Prep440-143273-1 **eQAPP Name: TetraTechInc_NERT_11302016**

Method Category: **METALS**

Method: **6020** ***Matrix:*** **AQ**

Sample ID: **TT-TP1-M3-2016** ***Collected:*** **4/4/2016 12:26:00 PM** ***Analysis Type:*** **RES/DIS** ***Dilution:*** **1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
COPPER	1.0	J	0.50	MDL	2.0	MRL	ug/L	J	sp
NICKEL	1.6	J	0.50	MDL	2.0	MRL	ug/L	J	sp
SELENIUM	0.81	J	0.50	MDL	2.0	MRL	ug/L	J	sp

Sample ID: **TT-TP2-M1-2016** ***Collected:*** **4/4/2016 12:59:00 PM** ***Analysis Type:*** **RES/DIS** ***Dilution:*** **1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
COPPER	0.64	J	0.50	MDL	2.0	MRL	ug/L	J	sp
NICKEL	1.2	J	0.50	MDL	2.0	MRL	ug/L	J	sp

Sample ID: **TT-TP2-M2-2016** ***Collected:*** **4/4/2016 1:32:00 PM** ***Analysis Type:*** **RES/DIS** ***Dilution:*** **1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
NICKEL	1.5	J	0.50	MDL	2.0	MRL	ug/L	J	sp
SELENIUM	0.70	J	0.50	MDL	2.0	MRL	ug/L	J	sp

* denotes a non-reportable result

Project Name and Number: 114-520225-2015-MO5 - NERT Soil Flushing

Data Qualifier Summary

Lab Reporting Batch ID: 440-143273-1

Laboratory: TA IRV

EDD Filename: Prep440-143273-1

eQAPP Name: TetraTechInc_NERT_11302016

Reason Code Legend

Reason Code	*Description*
bl	Method Blank Contamination
h	Sampling to Analysis Rejection
sp	Reporting Limit Trace Value

* denotes a non-reportable result

Project Name and Number: 114-520225-2015-MO5 - NERT Soil Flushing

Reporting Limit Outliers

Lab Reporting Batch ID: 440-143273-1 **Laboratory: TA IRV**

EDD Filename: Prep440-143273-1 **eQAPP Name: TetraTechInc_NERT_11302016**

Method: 6010B

Matrix: AQ

SampleID	Analyte	Lab Qual	Result	Reporting Limit	RL Type	Units	Flag
TT-TP1-M1-2016	IRON MANGANESE	J J	0.013 0.019	0.040 0.020	MRL MRL	mg/L mg/L	J (all detects)
TT-TP1-M2-2016	MANGANESE	J	0.011	0.020	MRL	mg/L	J (all detects)

Method: 6020

Matrix: AQ

SampleID	Analyte	Lab Qual	Result	Reporting Limit	RL Type	Units	Flag
TT-TP1-M1-2016	COPPER NICKEL SELENIUM	J J J	0.72 1.3 0.53	2.0 2.0 2.0	MRL MRL MRL	ug/L ug/L ug/L	J (all detects)
TT-TP1-M2-2016	COPPER NICKEL SELENIUM	J J J	1.1 1.8 0.68	2.0 2.0 2.0	MRL MRL MRL	ug/L ug/L ug/L	J (all detects)
TT-TP1-M3-2016	COPPER NICKEL SELENIUM	J J J	1.0 1.6 0.81	2.0 2.0 2.0	MRL MRL MRL	ug/L ug/L ug/L	J (all detects)
TT-TP2-M1-2016	COPPER NICKEL	J J	0.64 1.2	2.0 2.0	MRL MRL	ug/L ug/L	J (all detects)
TT-TP2-M2-2016	NICKEL SELENIUM	J J	1.5 0.70	2.0 2.0	MRL MRL	ug/L ug/L	J (all detects)

Data Review Summary

Lab Reporting Batch ID: 440-143458-1 **Laboratory: TA IRV**

EDD Filename: Prep440-143458-1 **eQAPP Name: TetraTechInc_NERT_11302016**

Validation Area	*Note*
Technical Holding Times	A
Temperature	A
Initial Calibration	N
Continuing Calibration/Initial Calibration Verification	N
Method Blanks	SR
Surrogate/Tracer Spikes	A
Matrix Spike/Matrix Spike Duplicates	SR
Laboratory Duplicates	A
Laboratory Replicates	N
Laboratory Control Samples	A
Compound Quantitation	SR
Field Duplicates	SR
Field Triplicates	N
Field Blanks	N

A = Acceptable, N = Not provided/applicable, SR = See report

The contents of this report reflect findings made by ADR during Automated Data Review, manual applied qualifiers are not considered. Please refer to the Overall Qualifier Summary report for manual qualifiers.

Field Duplicate RPD Report

Lab Reporting Batch ID: 440-143458-1 **Laboratory: TA IRV**

EDD Filename: Prep440-143458-1 **eQAPP Name: TetraTechInc_NERT_11302016**

Method: 2320B
Matrix: AQ

Analyte	Concentration (mg/L)		Sample RPD	eQAPP RPD	Flag
	TT-TP4-M3-20160405	TT-TP4-M3-20160405-DUP			
Alkalinity as CaCO3	160	160	0	30.00	No Qualifiers Applied
Bicarbonate ion as HCO3	200	200	0		

Method: 2540C
Matrix: AQ

Analyte	Concentration (mg/L)		Sample RPD	eQAPP RPD	Flag
	TT-TP4-M3-20160405	TT-TP4-M3-20160405-DUP			
TOTAL DISSOLVED SOLIDS	11000	11000	0	30.00	No Qualifiers Applied

Method: 300.0
Matrix: AQ

Analyte	Concentration (mg/L)		Sample RPD	eQAPP RPD	Flag
	TT-TP4-M3-20160405	TT-TP4-M3-20160405-DUP			
CHLORIDE	1000	1000	0	30.00	No Qualifiers Applied
Nitrate as N	160	190	17	30.00	
SULFATE	1400	1500	7	30.00	

Method: 300.1B
Matrix: AQ

Analyte	Concentration (ug/L)		Sample RPD	eQAPP RPD	Flag
	TT-TP4-M3-20160405	TT-TP4-M3-20160405-DUP			
Chlorate	3600000	3600000	0	30.00	No Qualifiers Applied

Method: 314.0
Matrix: AQ

Analyte	Concentration (ug/L)		Sample RPD	eQAPP RPD	Flag
	TT-TP4-M3-20160405	TT-TP4-M3-20160405-DUP			
PERCHLORATE	570000	580000	2	30.00	No Qualifiers Applied

Method: 6010B
Matrix: AQ

Analyte	Concentration (mg/L)		Sample RPD	eQAPP RPD	Flag
	TT-TP4-M3-20160405 (DIS)	TT-TP4-M3-20160405-DUP (DIS)			
BORON	3.9	3.9	0	30.00	No Qualifiers Applied
CALCIUM	420	420	0	30.00	
MAGNESIUM	180	180	0	30.00	
POTASSIUM	32	32	0	30.00	
SODIUM	1900	2100	10	30.00	
IRON	0.060	0.040 U	200	30.00	J(all detects) UJ(all non-detects)

Project Name and Number: 114-520225-2015-MO5 - NERT Soil Flushing

Field Duplicate RPD Report

Lab Reporting Batch ID: 440-143458-1 **Laboratory: TA IRV**

EDD Filename: Prep440-143458-1 **eQAPP Name: TetraTechInc_NERT_11302016**

Method: 6020
Matrix: AQ

Analyte	Concentration (ug/L)		Sample RPD	eQAPP RPD	Flag
	TT-TP4-M3-20160405 (DIS)	TT-TP4-M3-20160405-DUP (DIS)			
ARSENIC	100	110	10	30.00	No Qualifiers Applied
BARIUM	33	32	3	30.00	
CHROMIUM	14000	15000	7	30.00	
COPPER	6.3	7.3	15	30.00	
MOLYBDENUM	43	46	7	30.00	
NICKEL	6.6	7.5	13	30.00	
SELENIUM	10 U	3.1	200	30.00	J(all detects) UJ(all non-detects)

Method: 7199
Matrix: AQ

Analyte	Concentration (ug/L)		Sample RPD	eQAPP RPD	Flag
	TT-TP4-M3-20160405 (DIS)	TT-TP4-M3-20160405-DUP (DIS)			
Chromium, hexavalent	15000	17000	12	30.00	No Qualifiers Applied

Method: SM5310B
Matrix: AQ

Analyte	Concentration (mg/L)		Sample RPD	eQAPP RPD	Flag
	TT-TP4-M3-20160405	TT-TP4-M3-20160405-DUP			
Total organic carbon	1.6	1.6	0	30.00	No Qualifiers Applied

Project Name and Number: 114-520225-2015-MO5 - NERT Soil Flushing

QC Outlier Report: HoldingTimes

Lab Reporting Batch ID: 440-143458-1 **Laboratory: TA IRV**

EDD Filename: Prep440-143458-1 **eQAPP Name: TetraTechInc_NERT_11302016**

Method: 7199 **Preparation Method: Gen Prep**

Matrix: AQ

Sample ID	Type	Actual	Criteria	Units	Flag
TT-TP4-M3-20160405MS (RES/DIS)	Sampling To Analysis	24.25	24.00	HOURS	J- (all detects)
TT-TP4-M3-20160405MSD (RES/DIS)		26.00	24.00	HOURS	UJ (all non-detects)

Project Name and Number: 114-520225-2015-MO5 -

Matrix Spike/Matrix Spike Duplicate Outlier Report

Lab Reporting Batch ID: 440-143458-1 **Laboratory: TA IRV**

EDD Filename: Prep440-143458-1 **eQAPP Name: TetraTechInc_NERT_11302016**

Method: 7199
Matrix: AQ

QC Sample ID (Associated Samples)	Compound	MS %R	MSD %R	%R Limits	RPD (Limits)	Affected Compounds	Flag
TT-TP4-M3-20160405MS (DIS) TT-TP4-M3-20160405MSD (DIS) (TT-TP4-M3-20160405)	Chromium, hexavalent	-486	-463	85.00-115.00	-	Chromium, hexavalent	J- (all detects) R (all non-detects)

Method: 300.0
Matrix: AQ

QC Sample ID (Associated Samples)	Compound	MS %R	MSD %R	%R Limits	RPD (Limits)	Affected Compounds	Flag
TT-TP4-M3-20160405MS TT-TP4-M3-20160405MSD (TT-TP4-M3-20160405)	Nitrate as N	130	7	80.00-120.00	-	Nitrate as N	J(all detects) R(all non-detects)
TT-TP4-M3-20160405MS TT-TP4-M3-20160405MSD (TT-TP4-M3-20160405)	CHLORIDE SULFATE	79 -101	-7 -203	80.00-120.00 80.00-120.00	- -	CHLORIDE SULFATE	J-(all detects) R(all non-detects)

Method: 300.1B
Matrix: AQ

QC Sample ID (Associated Samples)	Compound	MS %R	MSD %R	%R Limits	RPD (Limits)	Affected Compounds	Flag
TT-TP4-M3-20160405MS TT-TP4-M3-20160405MSD (TT-TP4-M3-20160405)	Chlorate	2025	6243	75.00-125.00	-	Chlorate	J+(all detects)

Method: 6010B
Matrix: AQ

QC Sample ID (Associated Samples)	Compound	MS %R	MSD %R	%R Limits	RPD (Limits)	Affected Compounds	Flag
TT-TP4-M3-20160405MS (DIS) TT-TP4-M3-20160405MSD (DIS) (TT-TP4-M3-20160405)	CALCIUM MAGNESIUM SODIUM	426 296 1174	308 - 1654	75.00-125.00 75.00-125.00 75.00-125.00	- - -	CALCIUM MAGNESIUM SODIUM	J+(all detects)

Matrix Spike/Matrix Spike Duplicate Outlier Report

Lab Reporting Batch ID: 440-143458-1 **Laboratory: TA IRV**

EDD Filename: Prep440-143458-1 **eQAPP Name: TetraTechInc_NERT_11302016**

Method: 6020
Matrix: AQ

QC Sample ID (Associated Samples)	Compound	MS %R	MSD %R	%R Limits	RPD (Limits)	Affected Compounds	Flag
TT-TP4-M3-20160405MS (DIS) TT-TP4-M3-20160405MSD (DIS) (TT-TP4-M3-20160405)	CHROMIUM	128	9	75.00-125.00	-	CHROMIUM	J(all detects) R(all non-detects)

Method: SM5310B
Matrix: AQ

QC Sample ID (Associated Samples)	Compound	MS %R	MSD %R	%R Limits	RPD (Limits)	Affected Compounds	Flag
TT-TP4-M3-20160405MSD (TT-TP4-M3-20160405)	Total organic carbon	-	-	80.00-120.00	25 (20.00)	Total organic carbon	J(all detects) UJ(all non-detects)

Method: 314.0
Matrix: AQ

QC Sample ID (Associated Samples)	Compound	MS %R	MSD %R	%R Limits	RPD (Limits)	Affected Compounds	Flag
TT-TP4-M3-20160405MS TT-TP4-M3-20160405MSD (TT-TP4-M3-20160405)	PERCHLORATE	-1700	-9295	80.00-120.00	-	PERCHLORATE	J-(all detects) R(all non-detects)

Method Blank Outlier Report

Lab Reporting Batch ID: 440-143458-1 **Laboratory: TA IRV**

EDD Filename: Prep440-143458-1 **eQAPP Name: TetraTechInc_NERT_11302016**

Method: **6010B**
Matrix: **AQ**

Method Blank Sample ID	Analysis Date	Analyte	Result	Associated Samples
MB 440-323718/1-B	4/14/2016 10:41:00 AM	CALCIUM	0.0693 mg/L	TT-TP3-M1-20160405 TT-TP3-M2-20160405 TT-TP4-M1-20160405 TT-TP4-M2-20160405 TT-TP4-M3-20160405 TT-TP4-M3-20160405-DUP

Method: **6020**
Matrix: **AQ**

Method Blank Sample ID	Analysis Date	Analyte	Result	Associated Samples
MB 440-323718/1-D	4/18/2016 11:10:00 AM	CHROMIUM ZINC	1.21 ug/L 4.73 ug/L	TT-TP3-M1-20160405 TT-TP3-M2-20160405 TT-TP4-M1-20160405 TT-TP4-M2-20160405 TT-TP4-M3-20160405 TT-TP4-M3-20160405-DUP

Data Qualifier Summary

Lab Reporting Batch ID: 440-143458-1 **Laboratory: TA IRV**

EDD Filename: Prep440-143458-1 **eQAPP Name: TetraTechInc_NERT_11302016**

Method Category: GENCHEM

Method: 300.0 **Matrix: AQ**

Sample ID: TT-TP4-M3-20160405 **Collected:** 4/5/2016 12:38:00 PM **Analysis Type:** RES **Dilution:** 200

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
Nitrate as N	160		11	MDL	22	MRL	mg/L	J	m, m

Sample ID: TT-TP4-M3-20160405 **Collected:** 4/5/2016 12:38:00 PM **Analysis Type:** RES2 **Dilution:** 200

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
CHLORIDE	1000		50	MDL	100	MRL	mg/L	J-	m, m
SULFATE	1400		50	MDL	100	MRL	mg/L	J-	m

Method Category: GENCHEM

Method: 300.1B **Matrix: AQ**

Sample ID: TT-TP4-M3-20160405 **Collected:** 4/5/2016 12:38:00 PM **Analysis Type:** RES **Dilution:** 10000

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
Chlorate	3600000		100000	MDL	200000	MRL	ug/L	J+	m

Method Category: GENCHEM

Method: 314.0 **Matrix: AQ**

Sample ID: TT-TP4-M3-20160405 **Collected:** 4/5/2016 12:38:00 PM **Analysis Type:** RES **Dilution:** 10000

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
PERCHLORATE	570000		5000	MDL	10000	MRL	ug/L	J-	m

Method Category: GENCHEM

Method: SM5310B **Matrix: AQ**

Sample ID: TT-TP4-M3-20160405 **Collected:** 4/5/2016 12:38:00 PM **Analysis Type:** RES **Dilution:** 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
Total organic carbon	1.6	F2	0.65	MDL	1.0	MRL	mg/L	J	ld

* denotes a non-reportable result

Project Name and Number: 114-520225-2015-MO5 - NERT Soil Flushing

Data Qualifier Summary

Lab Reporting Batch ID: 440-143458-1 **Laboratory: TA IRV**

EDD Filename: Prep440-143458-1 **eQAPP Name: TetraTechInc_NERT_11302016**

Method Category: METALS

Method: 6010B **Matrix: AQ**

Sample ID: TT-TP4-M2-20160405 **Collected:** 4/5/2016 12:01:00 PM **Analysis Type:** RES/DIS **Dilution:** 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
IRON	0.010	J	0.010	MDL	0.040	MRL	mg/L	J	sp

Sample ID: TT-TP4-M3-20160405 **Collected:** 4/5/2016 12:38:00 PM **Analysis Type:** RE2/DIS **Dilution:** 100

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
SODIUM	1900		25	MDL	50	MRL	mg/L	J+	m

Sample ID: TT-TP4-M3-20160405 **Collected:** 4/5/2016 12:38:00 PM **Analysis Type:** RES/DIS **Dilution:** 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
CALCIUM	420	B	0.050	MDL	0.10	MRL	mg/L	J+	m
IRON	0.060		0.010	MDL	0.040	MRL	mg/L	J	fd
MAGNESIUM	180		0.010	MDL	0.020	MRL	mg/L	J+	m

Sample ID: TT-TP4-M3-20160405-DUP **Collected:** 4/5/2016 12:38:00 PM **Analysis Type:** RES/DIS **Dilution:** 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
IRON	0.010	U	0.010	MDL	0.040	MRL	mg/L	UJ	fd

Method Category: METALS

Method: 6020 **Matrix: AQ**

Sample ID: TT-TP3-M1-20160405 **Collected:** 4/5/2016 10:15:00 AM **Analysis Type:** RES/DIS **Dilution:** 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
COPPER	1.8	J	0.50	MDL	2.0	MRL	ug/L	J	sp
NICKEL	0.87	J	0.50	MDL	2.0	MRL	ug/L	J	sp
SELENIUM	1.3	J	0.50	MDL	2.0	MRL	ug/L	J	sp

Sample ID: TT-TP3-M2-20160405 **Collected:** 4/5/2016 10:46:00 AM **Analysis Type:** RES/DIS **Dilution:** 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
NICKEL	0.87	J	0.50	MDL	2.0	MRL	ug/L	J	sp

* denotes a non-reportable result

Project Name and Number: 114-520225-2015-MO5 - NERT Soil Flushing

Data Qualifier Summary

Lab Reporting Batch ID: 440-143458-1 **Laboratory: TA IRV**

EDD Filename: Prep440-143458-1 **eQAPP Name: TetraTechInc_NERT_11302016**

Method Category: **METALS**

Method: **6020** ***Matrix:*** **AQ**

Sample ID: **TT-TP3-M2-20160405** ***Collected:*** **4/5/2016 10:46:00 AM** ***Analysis Type:*** **RES/DIS** ***Dilution:*** **1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
SELENIUM	1.5	J	0.50	MDL	2.0	MRL	ug/L	J	sp

Sample ID: **TT-TP4-M1-20160405** ***Collected:*** **4/5/2016 11:23:00 AM** ***Analysis Type:*** **RES/DIS** ***Dilution:*** **5**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
NICKEL	4.2	J	2.5	MDL	10	MRL	ug/L	J	sp
SELENIUM	2.8	J	2.5	MDL	10	MRL	ug/L	J	sp
ZINC	41	J B	13	MDL	100	MRL	ug/L	J	sp

Sample ID: **TT-TP4-M2-20160405** ***Collected:*** **4/5/2016 12:01:00 PM** ***Analysis Type:*** **RES/DIS** ***Dilution:*** **5**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
COPPER	5.5	J	2.5	MDL	10	MRL	ug/L	J	sp
NICKEL	4.2	J	2.5	MDL	10	MRL	ug/L	J	sp
ZINC	33	J B	13	MDL	100	MRL	ug/L	J	sp

Sample ID: **TT-TP4-M3-20160405** ***Collected:*** **4/5/2016 12:38:00 PM** ***Analysis Type:*** **RES/DIS** ***Dilution:*** **5**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
CHROMIUM	14000	B	2.5	MDL	10	MRL	ug/L	J	m, m
COPPER	6.3	J	2.5	MDL	10	MRL	ug/L	J	sp
NICKEL	6.6	J	2.5	MDL	10	MRL	ug/L	J	sp
SELENIUM	2.5	U	2.5	MDL	10	MRL	ug/L	UJ	fd

Sample ID: **TT-TP4-M3-20160405-DUP** ***Collected:*** **4/5/2016 12:38:00 PM** ***Analysis Type:*** **RES/DIS** ***Dilution:*** **5**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
COPPER	7.3	J	2.5	MDL	10	MRL	ug/L	J	sp
NICKEL	7.5	J	2.5	MDL	10	MRL	ug/L	J	sp
SELENIUM	3.1	J	2.5	MDL	10	MRL	ug/L	J	sp, fd

* denotes a non-reportable result

Project Name and Number: 114-520225-2015-MO5 - NERT Soil Flushing

Data Qualifier Summary

Lab Reporting Batch ID: 440-143458-1 **Laboratory: TA IRV**

EDD Filename: Prep440-143458-1 **eQAPP Name: TetraTechInc_NERT_11302016**

Method Category: **METALS**

Method: **7199** ***Matrix:*** **AQ**

Sample ID: **TT-TP3-L2-20160405** ***Collected:*** **4/5/2016 12:39:00 PM** ***Analysis Type:*** **RES/DIS** ***Dilution:*** **1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
Chromium, hexavalent	1.1	J	0.25	MDL	2.0	MRL	ug/L	J	sp

Sample ID: **TT-TP4-M3-20160405** ***Collected:*** **4/5/2016 12:38:00 PM** ***Analysis Type:*** **RES/DIS** ***Dilution:*** **1000**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
Chromium, hexavalent	15000		250	MDL	2000	MRL	ug/L	J-	m

* denotes a non-reportable result

Project Name and Number: 114-520225-2015-MO5 - NERT Soil Flushing

Data Qualifier Summary

Lab Reporting Batch ID: 440-143458-1

Laboratory: TA IRV

EDD Filename: Prep440-143458-1

eQAPP Name: TetraTechInc_NERT_11302016

Reason Code Legend

Reason Code	*Description*
bl	Method Blank Contamination
f	Matrix Spike Precision
fd	Field Duplicate Precision
ld	Matrix Spike Precision
ldf	Matrix Spike Precision
m	Matrix Spike Lower Estimation
m	Matrix Spike Lower Rejection
m	Matrix Spike Upper Estimation
sp	Reporting Limit Trace Value

* denotes a non-reportable result

Project Name and Number: 114-520225-2015-MO5 - NERT Soil Flushing

Reporting Limit Outliers

Lab Reporting Batch ID: 440-143458-1 **Laboratory: TA IRV**

EDD Filename: Prep440-143458-1 **eQAPP Name: TetraTechInc_NERT_11302016**

Method: 6010B

Matrix: AQ

SampleID	Analyte	Lab Qual	Result	Reporting Limit	RL Type	Units	Flag
TT-TP4-M2-20160405	IRON	J	0.010	0.040	MRL	mg/L	J (all detects)

Method: 6020

Matrix: AQ

SampleID	Analyte	Lab Qual	Result	Reporting Limit	RL Type	Units	Flag
TT-TP3-M1-20160405	COPPER NICKEL SELENIUM	J J J	1.8 0.87 1.3	2.0 2.0 2.0	MRL MRL MRL	ug/L ug/L ug/L	J (all detects)
TT-TP3-M2-20160405	NICKEL SELENIUM	J J	0.87 1.5	2.0 2.0	MRL MRL	ug/L ug/L	J (all detects)
TT-TP4-M1-20160405	NICKEL SELENIUM ZINC	J J J B	4.2 2.8 41	10 10 100	MRL MRL MRL	ug/L ug/L ug/L	J (all detects)
TT-TP4-M2-20160405	COPPER NICKEL ZINC	J J J B	5.5 4.2 33	10 10 100	MRL MRL MRL	ug/L ug/L ug/L	J (all detects)
TT-TP4-M3-20160405	COPPER NICKEL	J J	6.3 6.6	10 10	MRL MRL	ug/L ug/L	J (all detects)
TT-TP4-M3-20160405-DUP	COPPER NICKEL SELENIUM	J J J	7.3 7.5 3.1	10 10 10	MRL MRL MRL	ug/L ug/L ug/L	J (all detects)

Method: 7199

Matrix: AQ

SampleID	Analyte	Lab Qual	Result	Reporting Limit	RL Type	Units	Flag
TT-TP3-L2-20160405	Chromium, hexavalent	J	1.1	2.0	MRL	ug/L	J (all detects)

Data Review Summary

Lab Reporting Batch ID: 440-144411-1 **Laboratory: TA IRV**

EDD Filename: Prep440-144411-1 **eQAPP Name: TetraTechInc_NERT_11302016**

Validation Area	*Note*
Technical Holding Times	A
Temperature	A
Initial Calibration	N
Continuing Calibration/Initial Calibration Verification	N
Method Blanks	A
Surrogate/Tracer Spikes	N
Matrix Spike/Matrix Spike Duplicates	SR
Laboratory Duplicates	N
Laboratory Replicates	N
Laboratory Control Samples	A
Compound Quantitation	A
Field Duplicates	N
Field Triplicates	N
Field Blanks	N

A = Acceptable, N = Not provided/applicable, SR = See report

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Matrix Spike/Matrix Spike Duplicate Outlier Report

Lab Reporting Batch ID: 440-144411-1 **Laboratory: TA IRV**

EDD Filename: Prep440-144411-1 **eQAPP Name: TetraTechInc_NERT_11302016**

Method: **7199**
Matrix: **AQ**

QC Sample ID (Associated Samples)	*Compound*	*MS %R*	*MSD %R*	*%R Limits*	*RPD (Limits)*	*Affected Compounds*	*Flag*
TT-TP1-M1-20160413MS (DIS) TT-TP1-M1-20160413MSD (DIS) (TT-TP1-M1-20160413)	Chromium, hexavalent	84	84	85.00-115.00	-	Chromium, hexavalent	J- (all detects) UJ (all non-detects)

Data Qualifier Summary

Lab Reporting Batch ID: 440-144411-1 **Laboratory: TA IRV**

EDD Filename: Prep440-144411-1 **eQAPP Name: TetraTechInc_NERT_11302016**

Method Category: **METALS**

Method: **7199** ***Matrix:*** **AQ**

Sample ID: **TT-TP1-M1-20160413** ***Collected:*** **4/13/2016 12:37:00 PM** ***Analysis Type:*** **RES/DIS** ***Dilution:*** **1**

Analyte	*Lab Result*	*Lab Qual*	*DL*	*DL Type*	*RL*	*RL Type*	*Units*	*Data Review Qual*	*Reason Code*
Chromium, hexavalent	10		0.25	MDL	2.0	MRL	ug/L	J-	m

* denotes a non-reportable result

Project Name and Number: 114-520225-2015-MO5 - NERT Soil Flushing

Data Qualifier Summary

Lab Reporting Batch ID: 440-144411-1

Laboratory: TA IRV

EDD Filename: Prep440-144411-1

eQAPP Name: TetraTechInc_NERT_11302016

Reason Code Legend

Reason Code	*Description*
m	Matrix Spike Lower Estimation

* denotes a non-reportable result

Project Name and Number: 114-520225-2015-MO5 - NERT Soil Flushing

Data Review Summary

Lab Reporting Batch ID: 440-145020-1 **Laboratory: TA IRV**

EDD Filename: Prep440-145020-1 **eQAPP Name: TetraTechInc_NERT_11302016**

Validation Area	*Note*
Technical Holding Times	SR
Temperature	A
Initial Calibration	N
Continuing Calibration/Initial Calibration Verification	N
Method Blanks	A
Surrogate/Tracer Spikes	N
Matrix Spike/Matrix Spike Duplicates	SR
Laboratory Duplicates	N
Laboratory Replicates	N
Laboratory Control Samples	A
Compound Quantitation	A
Field Duplicates	A
Field Triplicates	N
Field Blanks	N

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Field Duplicate RPD Report

Lab Reporting Batch ID: 440-145020-1 **Laboratory: TA IRV**

EDD Filename: Prep440-145020-1 **eQAPP Name: TetraTechInc_NERT_11302016**

Method: 314.0
Matrix: AQ

Analyte	Concentration (ug/L)		Sample RPD	eQAPP RPD	Flag
	TT-TP4-M3-20160420	TT-TP4-M3-20160420-DUP			
PERCHLORATE	410000	410000	0	30.00	No Qualifiers Applied

Method: 6020
Matrix: AQ

Analyte	Concentration (ug/L)		Sample RPD	eQAPP RPD	Flag
	TT-TP4-M3-20160420 (DIS)	TT-TP4-M3-20160420-DUP (DIS)			
CHROMIUM	11000	11000	0	30.00	No Qualifiers Applied

Method: 7199
Matrix: AQ

Analyte	Concentration (ug/L)		Sample RPD	eQAPP RPD	Flag
	TT-TP4-M3-20160420 (DIS)	TT-TP4-M3-20160420-DUP (DIS)			
Chromium, hexavalent	13000	13000	0	30.00	No Qualifiers Applied

Method: SM5310B
Matrix: AQ

Analyte	Concentration (mg/L)		Sample RPD	eQAPP RPD	Flag
	TT-TP4-M3-20160420	TT-TP4-M3-20160420-DUP			
Total organic carbon	1.8	1.8	0	30.00	No Qualifiers Applied

Project Name and Number: 114-520225-2015-MO5 - NERT Soil Flushing

QC Outlier Report: HoldingTimes

Lab Reporting Batch ID: 440-145020-1 **Laboratory: TA IRV**

EDD Filename: Prep440-145020-1 **eQAPP Name: TetraTechInc_NERT_11302016**

Method: 7199 **Preparation Method: Gen Prep**

Matrix: AQ

Sample ID	Type	Actual	Criteria	Units	Flag
TT-TP4-M2-20160420 (RES/DIS)	Sampling To Analysis	25.00	24.00	HOURS	J- (all detects) UJ (all non-detects)

Project Name and Number: 114-520225-2015-MO5 -

Matrix Spike/Matrix Spike Duplicate Outlier Report

Lab Reporting Batch ID: 440-145020-1 **Laboratory: TA IRV**

EDD Filename: Prep440-145020-1 **eQAPP Name: TetraTechInc_NERT_11302016**

Method: 7199
Matrix: AQ

QC Sample ID (Associated Samples)	Compound	MS %R	MSD %R	%R Limits	RPD (Limits)	Affected Compounds	Flag
TT-TP4-M3-20160420MS (DIS) TT-TP4-M3-20160420MSD (DIS) (TT-TP4-M3-20160420)	Chromium, hexavalent	84	74	85.00-115.00	-	Chromium, hexavalent	J- (all detects) UJ (all non-detects)

Method: 6020
Matrix: AQ

QC Sample ID (Associated Samples)	Compound	MS %R	MSD %R	%R Limits	RPD (Limits)	Affected Compounds	Flag
TT-TP4-M3-20160420MS (DIS) TT-TP4-M3-20160420MSD (DIS) (TT-TP4-M3-20160420)	CHROMIUM	43	-71	75.00-125.00	-	CHROMIUM	J-(all detects) R(all non-detects)

Method: 314.0
Matrix: AQ

QC Sample ID (Associated Samples)	Compound	MS %R	MSD %R	%R Limits	RPD (Limits)	Affected Compounds	Flag
TT-TP4-M3-20160420MS TT-TP4-M3-20160420MSD (TT-TP4-M3-20160420)	PERCHLORATE	87309	17637	80.00-120.00	-	PERCHLORATE	J+(all detects)

Data Qualifier Summary

Lab Reporting Batch ID: 440-145020-1 **Laboratory: TA IRV**

EDD Filename: Prep440-145020-1 **eQAPP Name: TetraTechInc_NERT_11302016**

Method Category: GENCHEM

Method: 314.0 **Matrix: AQ**

Sample ID: TT-TP4-M3-20160420 **Collected:** 4/20/2016 12:25:00 PM **Analysis Type:** RES **Dilution:** 10000

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
PERCHLORATE	410000		5000	MDL	10000	MRL	ug/L	J+	m

Method Category: METALS

Method: 6020 **Matrix: AQ**

Sample ID: TT-TP4-M3-20160420 **Collected:** 4/20/2016 12:25:00 PM **Analysis Type:** RES/DIS **Dilution:** 5

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
CHROMIUM	11000		2.5	MDL	10	MRL	ug/L	J-	m, m

Method Category: METALS

Method: 7199 **Matrix: AQ**

Sample ID: TT-TP4-M2-20160420 **Collected:** 4/20/2016 11:44:00 AM **Analysis Type:** RES/DIS **Dilution:** 100

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
Chromium, hexavalent	4300	H	25	MDL	200	MRL	ug/L	J-	h

Sample ID: TT-TP4-M3-20160420 **Collected:** 4/20/2016 12:25:00 PM **Analysis Type:** RES/DIS **Dilution:** 1000

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
Chromium, hexavalent	13000		250	MDL	2000	MRL	ug/L	J-	m

* denotes a non-reportable result

Project Name and Number: 114-520225-2015-MO5 - NERT Soil Flushing

Data Qualifier Summary

Lab Reporting Batch ID: 440-145020-1

Laboratory: TA IRV

EDD Filename: Prep440-145020-1

eQAPP Name: TetraTechInc_NERT_11302016

Reason Code Legend

Reason Code	*Description*
e	Sampling to Analysis Estimation
h	Sampling to Analysis Estimation
m	Matrix Spike Lower Estimation
m	Matrix Spike Lower Rejection
m	Matrix Spike Upper Estimation

* denotes a non-reportable result

Project Name and Number: 114-520225-2015-MO5 - NERT Soil Flushing

Data Review Summary

Lab Reporting Batch ID: 440-145023-1 **Laboratory: TA IRV**

EDD Filename: Prep440-145023-1 **eQAPP Name: TetraTechInc_NERT_11302016**

Validation Area	*Note*
Technical Holding Times	A
Temperature	A
Initial Calibration	N
Continuing Calibration/Initial Calibration Verification	N
Method Blanks	A
Surrogate/Tracer Spikes	N
Matrix Spike/Matrix Spike Duplicates	N
Laboratory Duplicates	N
Laboratory Replicates	N
Laboratory Control Samples	A
Compound Quantitation	SR
Field Duplicates	N
Field Triplicates	N
Field Blanks	N

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Data Qualifier Summary

Lab Reporting Batch ID: 440-145023-1 **Laboratory: TA IRV**

EDD Filename: Prep440-145023-1 **eQAPP Name: TetraTechInc_NERT_11302016**

Method Category: METALS
Method: 6020 **Matrix:** AQ

Sample ID: TT-TP3-L2-20160420 **Collected:** 4/20/2016 1:45:00 PM **Analysis Type:** RES/DIS **Dilution:** 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
CHROMIUM	1.9	J	0.50	MDL	2.0	MRL	ug/L	J	sp

Method Category: METALS
Method: 7199 **Matrix:** AQ

Sample ID: TT-TP3-L2-20160420 **Collected:** 4/20/2016 1:45:00 PM **Analysis Type:** RES/DIS **Dilution:** 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
Chromium, hexavalent	0.78	J	0.25	MDL	2.0	MRL	ug/L	J	sp

* denotes a non-reportable result

Project Name and Number: 114-520225-2015-MO5 - NERT Soil Flushing

Data Qualifier Summary

Lab Reporting Batch ID: 440-145023-1

Laboratory: TA IRV

EDD Filename: Prep440-145023-1

eQAPP Name: TetraTechInc_NERT_11302016

Reason Code Legend

Reason Code	*Description*
sp	Reporting Limit Trace Value

* denotes a non-reportable result

Project Name and Number: 114-520225-2015-MO5 - NERT Soil Flushing

Reporting Limit Outliers

Lab Reporting Batch ID: 440-145023-1 **Laboratory: TA IRV**

EDD Filename: Prep440-145023-1 **eQAPP Name: TetraTechInc_NERT_11302016**

Method: 6020

Matrix: AQ

SampleID	Analyte	Lab Qual	Result	Reporting Limit	RL Type	Units	Flag
TT-TP3-L2-20160420	CHROMIUM	J	1.9	2.0	MRL	ug/L	J (all detects)

Method: 7199

Matrix: AQ

SampleID	Analyte	Lab Qual	Result	Reporting Limit	RL Type	Units	Flag
TT-TP3-L2-20160420	Chromium, hexavalent	J	0.78	2.0	MRL	ug/L	J (all detects)

Data Review Summary

Lab Reporting Batch ID: 440-145639-1 **Laboratory: TA IRV**

EDD Filename: Prep440-145639-1 **eQAPP Name: TetraTechInc_NERT_11302016**

Validation Area	*Note*
Technical Holding Times	A
Temperature	A
Initial Calibration	N
Continuing Calibration/Initial Calibration Verification	N
Method Blanks	A
Surrogate/Tracer Spikes	N
Matrix Spike/Matrix Spike Duplicates	SR
Laboratory Duplicates	A
Laboratory Replicates	N
Laboratory Control Samples	A
Compound Quantitation	A
Field Duplicates	A
Field Triplicates	N
Field Blanks	N

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Field Duplicate RPD Report

Lab Reporting Batch ID: 440-145639-1 **Laboratory: TA IRV**

EDD Filename: Prep440-145639-1 **eQAPP Name: TetraTechInc_NERT_11302016**

Method: 2540C
Matrix: AQ

Analyte	Concentration (mg/L)		Sample RPD	eQAPP RPD	Flag
	TT-TP4-M3-20160427	TT-TP4-M3-20160427-DUP			
TOTAL DISSOLVED SOLIDS	8600	8700	1	30.00	No Qualifiers Applied

Method: 314.0
Matrix: AQ

Analyte	Concentration (ug/L)		Sample RPD	eQAPP RPD	Flag
	TT-TP4-M3-20160427	TT-TP4-M3-20160427-DUP			
PERCHLORATE	370000	460000	22	30.00	No Qualifiers Applied

Method: 6020
Matrix: AQ

Analyte	Concentration (ug/L)		Sample RPD	eQAPP RPD	Flag
	TT-TP4-M3-20160427 (DIS)	TT-TP4-M3-20160427-DUP (DIS)			
CHROMIUM	10000	10000	0	30.00	No Qualifiers Applied

Method: 7199
Matrix: AQ

Analyte	Concentration (ug/L)		Sample RPD	eQAPP RPD	Flag
	TT-TP4-M3-20160427 (DIS)	TT-TP4-M3-20160427-DUP (DIS)			
Chromium, hexavalent	11000	11000	0	30.00	No Qualifiers Applied

Method: SM5310B
Matrix: AQ

Analyte	Concentration (mg/L)		Sample RPD	eQAPP RPD	Flag
	TT-TP4-M3-20160427	TT-TP4-M3-20160427-DUP			
Total organic carbon	1.9	1.9	0	30.00	No Qualifiers Applied

Matrix Spike/Matrix Spike Duplicate Outlier Report

Lab Reporting Batch ID: 440-145639-1 **Laboratory: TA IRV**

EDD Filename: Prep440-145639-1 **eQAPP Name: TetraTechInc_NERT_11302016**

Method: 7199
Matrix: AQ

QC Sample ID (Associated Samples)	Compound	MS %R	MSD %R	%R Limits	RPD (Limits)	Affected Compounds	Flag
TT-TP4-M3-20160427MS (DIS) TT-TP4-M3-20160427MSD (DIS) (TT-TP4-M3-20160427)	Chromium, hexavalent	62	57	85.00-115.00	-	Chromium, hexavalent	J- (all detects) UJ (all non-detects)

Method: 6020
Matrix: AQ

QC Sample ID (Associated Samples)	Compound	MS %R	MSD %R	%R Limits	RPD (Limits)	Affected Compounds	Flag
TT-TP4-M3-20160427MSD (DIS) (TT-TP4-M3-20160427)	CHROMIUM	-	-100	75.00-125.00	-	CHROMIUM	J-(all detects) R(all non-detects)

Method: 314.0
Matrix: AQ

QC Sample ID (Associated Samples)	Compound	MS %R	MSD %R	%R Limits	RPD (Limits)	Affected Compounds	Flag
TT-TP4-M3-20160427MS TT-TP4-M3-20160427MSD (TT-TP4-M3-20160427)	PERCHLORATE	-1659	3844	80.00-120.00	-	PERCHLORATE	J(all detects) R(all non-detects)

Data Qualifier Summary

Lab Reporting Batch ID: 440-145639-1 **Laboratory: TA IRV**

EDD Filename: Prep440-145639-1 **eQAPP Name: TetraTechInc_NERT_11302016**

Method Category: GENCHEM

Method: 314.0 **Matrix: AQ**

Sample ID: TT-TP4-M3-20160427 **Collected:** 4/27/2016 1:50:00 PM **Analysis Type:** RES **Dilution:** 10000

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
PERCHLORATE	370000		5000	MDL	10000	MRL	ug/L	J	m, m

Method Category: METALS

Method: 6020 **Matrix: AQ**

Sample ID: TT-TP4-M3-20160427 **Collected:** 4/27/2016 1:50:00 PM **Analysis Type:** RES/DIS **Dilution:** 20

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
CHROMIUM	10000		10	MDL	40	MRL	ug/L	J-	m

Method Category: METALS

Method: 7199 **Matrix: AQ**

Sample ID: TT-TP4-M3-20160427 **Collected:** 4/27/2016 1:50:00 PM **Analysis Type:** RES/DIS **Dilution:** 1000

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
Chromium, hexavalent	11000		250	MDL	2000	MRL	ug/L	J-	m

* denotes a non-reportable result

Project Name and Number: 114-520225-2015-MO5 - NERT Soil Flushing

Data Qualifier Summary

Lab Reporting Batch ID: 440-145639-1

Laboratory: TA IRV

EDD Filename: Prep440-145639-1

eQAPP Name: TetraTechInc_NERT_11302016

Reason Code Legend

Reason Code	*Description*
m	Matrix Spike Lower Estimation
m	Matrix Spike Lower Rejection
m	Matrix Spike Upper Estimation

* denotes a non-reportable result

Project Name and Number: 114-520225-2015-MO5 - NERT Soil Flushing

Data Review Summary

Lab Reporting Batch ID: 440-145766-1 **Laboratory: TA IRV**

EDD Filename: Prep440-145766-1 **eQAPP Name: TetraTechInc_NERT_11302016**

Validation Area	*Note*
Technical Holding Times	A
Temperature	A
Initial Calibration	N
Continuing Calibration/Initial Calibration Verification	N
Method Blanks	A
Surrogate/Tracer Spikes	N
Matrix Spike/Matrix Spike Duplicates	A
Laboratory Duplicates	N
Laboratory Replicates	N
Laboratory Control Samples	A
Compound Quantitation	SR
Field Duplicates	N
Field Triplicates	N
Field Blanks	N

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QC Outlier Report: HoldingTimes

Lab Reporting Batch ID: 440-145766-1 **Laboratory: TA IRV**

EDD Filename: Prep440-145766-1 **eQAPP Name: TetraTechInc_NERT_11302016**

Method: 7199 **Preparation Method: Gen Prep**

Matrix: AQ

Sample ID	Type	Actual	Criteria	Units	Flag
TT-TP1-L1-20160428MS (RES/DIS)	Sampling To Analysis	24.75	24.00	HOURS	J- (all detects)
TT-TP1-L1-20160428MSD (RES/DIS)		24.75	24.00	HOURS	UJ (all non-detects)

Project Name and Number: 114-520225-2015-MO5 -

Data Qualifier Summary

Lab Reporting Batch ID: 440-145766-1 **Laboratory: TA IRV**

EDD Filename: Prep440-145766-1 **eQAPP Name: TetraTechInc_NERT_11302016**

Method Category: **METALS**

Method: **7199** ***Matrix:*** **AQ**

Sample ID: **TT-TP3-L2-20160428** ***Collected:*** **4/28/2016 12:20:00 PM** ***Analysis Type:*** **RES/DIS** ***Dilution:*** **1**

Analyte	*Lab Result*	*Lab Qual*	*DL*	*DL Type*	*RL*	*RL Type*	*Units*	*Data Review Qual*	*Reason Code*
Chromium, hexavalent	0.83	J	0.25	MDL	2.0	MRL	ug/L	J	sp

* denotes a non-reportable result

Project Name and Number: 114-520225-2015-MO5 - NERT Soil Flushing

Data Qualifier Summary

Lab Reporting Batch ID: 440-145766-1

Laboratory: TA IRV

EDD Filename: Prep440-145766-1

eQAPP Name: TetraTechInc_NERT_11302016

Reason Code Legend

Reason Code	*Description*
sp	Reporting Limit Trace Value

* denotes a non-reportable result

Project Name and Number: 114-520225-2015-MO5 - NERT Soil Flushing

Reporting Limit Outliers

Lab Reporting Batch ID: 440-145766-1 **Laboratory: TA IRV**

EDD Filename: Prep440-145766-1 **eQAPP Name: TetraTechInc_NERT_11302016**

Method: **7199**

Matrix: **AQ**

SampleID	*Analyte*	*Lab Qual*	*Result*	*Reporting Limit*	*RL Type*	*Units*	*Flag*
TT-TP3-L2-20160428	Chromium, hexavalent	J	0.83	2.0	MRL	ug/L	J (all detects)

Data Review Summary

Lab Reporting Batch ID: 440-146375-1 **Laboratory: TA IRV**

EDD Filename: Prep440-146375-1 **eQAPP Name: TetraTechInc_NERT_11302016**

Validation Area	*Note*
Technical Holding Times	A
Temperature	A
Initial Calibration	N
Continuing Calibration/Initial Calibration Verification	N
Method Blanks	A
Surrogate/Tracer Spikes	A
Matrix Spike/Matrix Spike Duplicates	SR
Laboratory Duplicates	N
Laboratory Replicates	N
Laboratory Control Samples	A
Compound Quantitation	SR
Field Duplicates	N
Field Triplicates	N
Field Blanks	N

A = Acceptable, N = Not provided/applicable, SR = See report

The contents of this report reflect findings made by ADR during Automated Data Review, manual applied qualifiers are not considered. Please refer to the Overall Qualifier Summary report for manual qualifiers.

Matrix Spike/Matrix Spike Duplicate Outlier Report

Lab Reporting Batch ID: 440-146375-1 **Laboratory: TA IRV**

EDD Filename: Prep440-146375-1 **eQAPP Name: TetraTechInc_NERT_11302016**

Method: 6020
Matrix: AQ

QC Sample ID (Associated Samples)	Compound	MS %R	MSD %R	%R Limits	RPD (Limits)	Affected Compounds	Flag
TT-TP1-M1-20160504MSD (DIS) (TT-TP1-M1-20160504)	CHROMIUM	-	70	75.00-125.00	-	CHROMIUM	J- (all detects) UJ (all non-detects)

Method: 6010B
Matrix: AQ

QC Sample ID (Associated Samples)	Compound	MS %R	MSD %R	%R Limits	RPD (Limits)	Affected Compounds	Flag
TT-TP1-M2-20160504MS (DIS) TT-TP1-M2-20160504MSD (DIS) (TT-TP1-M2-20160504)	SODIUM	187	-55	75.00-125.00	-	SODIUM	J(all detects) R(all non-detects)
TT-TP1-M2-20160504MS (DIS) TT-TP1-M2-20160504MSD (DIS) (TT-TP1-M2-20160504)	CALCIUM MAGNESIUM	761 284	483 139	75.00-125.00 75.00-125.00	- -	CALCIUM MAGNESIUM	J+(all detects)

Data Qualifier Summary

Lab Reporting Batch ID: 440-146375-1 **Laboratory: TA IRV**

EDD Filename: Prep440-146375-1 **eQAPP Name: TetraTechInc_NERT_11302016**

Method Category: METALS

Method: 6010B **Matrix: AQ**

Sample ID: TT-TP1-M2-20160504 **Collected:** 5/4/2016 11:54:00 AM **Analysis Type:** RES/DIS **Dilution:** 5

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
CALCIUM	520		0.25	MDL	0.50	MRL	mg/L	J+	m
MAGNESIUM	230		0.050	MDL	0.10	MRL	mg/L	J+	m
SODIUM	1500		1.3	MDL	2.5	MRL	mg/L	J	m, m
IRON	0.058	J	0.050	MDL	0.20	MRL	mg/L	J	sp

Method Category: METALS

Method: 6020 **Matrix: AQ**

Sample ID: TT-TP1-M1-20160504 **Collected:** 5/4/2016 11:08:00 AM **Analysis Type:** RE2/DIS **Dilution:** 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
COPPER	1.4	J	0.50	MDL	2.0	MRL	ug/L	J	sp

Sample ID: TT-TP1-M1-20160504 **Collected:** 5/4/2016 11:08:00 AM **Analysis Type:** RES/DIS **Dilution:** 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
CHROMIUM	1100		0.50	MDL	2.0	MRL	ug/L	J-	m
NICKEL	1.0	J	0.50	MDL	2.0	MRL	ug/L	J	sp
SELENIUM	1.8	J	0.50	MDL	2.0	MRL	ug/L	J	sp

Sample ID: TT-TP1-M2-20160504 **Collected:** 5/4/2016 11:54:00 AM **Analysis Type:** RES/DIS **Dilution:** 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
NICKEL	0.92	J	0.50	MDL	2.0	MRL	ug/L	J	sp

Sample ID: TT-TP1-M3-20160504 **Collected:** 5/4/2016 12:27:00 PM **Analysis Type:** RES/DIS **Dilution:** 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
COBALT	0.96	J	0.50	MDL	1.0	MRL	ug/L	J	sp
NICKEL	0.73	J	0.50	MDL	2.0	MRL	ug/L	J	sp

* denotes a non-reportable result

Project Name and Number: 114-520225-2015-MO5 - NERT Soil Flushing

Data Qualifier Summary

Lab Reporting Batch ID: 440-146375-1 **Laboratory: TA IRV**

EDD Filename: Prep440-146375-1 **eQAPP Name: TetraTechInc_NERT_11302016**

Method Category: **METALS**

Method: **6020** ***Matrix:*** **AQ**

Sample ID: **TT-TP2-M1-20160504** ***Collected:*** **5/4/2016 1:00:00 PM** ***Analysis Type:*** **RES/DIS** ***Dilution:*** **1**

Analyte	*Lab Result*	*Lab Qual*	*DL*	*DL Type*	*RL*	*RL Type*	*Units*	*Data Review Qual*	*Reason Code*
COBALT	0.52	J	0.50	MDL	1.0	MRL	ug/L	J	sp
NICKEL	0.55	J	0.50	MDL	2.0	MRL	ug/L	J	sp

* denotes a non-reportable result

Project Name and Number: 114-520225-2015-MO5 - NERT Soil Flushing

Data Qualifier Summary

Lab Reporting Batch ID: 440-146375-1

Laboratory: TA IRV

EDD Filename: Prep440-146375-1

eQAPP Name: TetraTechInc_NERT_11302016

Reason Code Legend

Reason Code	*Description*
m	Matrix Spike Lower Estimation
m	Matrix Spike Lower Rejection
m	Matrix Spike Upper Estimation
sp	Reporting Limit Trace Value

* denotes a non-reportable result

Project Name and Number: 114-520225-2015-MO5 - NERT Soil Flushing

Reporting Limit Outliers

Lab Reporting Batch ID: 440-146375-1 **Laboratory: TA IRV**

EDD Filename: Prep440-146375-1 **eQAPP Name: TetraTechInc_NERT_11302016**

Method: 6010B

Matrix: AQ

SampleID	Analyte	Lab Qual	Result	Reporting Limit	RL Type	Units	Flag
TT-TP1-M2-20160504	IRON	J	0.058	0.20	MRL	mg/L	J (all detects)

Method: 6020

Matrix: AQ

SampleID	Analyte	Lab Qual	Result	Reporting Limit	RL Type	Units	Flag
TT-TP1-M1-20160504	COPPER NICKEL SELENIUM	J J J	1.4 1.0 1.8	2.0 2.0 2.0	MRL MRL MRL	ug/L ug/L ug/L	J (all detects)
TT-TP1-M2-20160504	NICKEL	J	0.92	2.0	MRL	ug/L	J (all detects)
TT-TP1-M3-20160504	COBALT NICKEL	J J	0.96 0.73	1.0 2.0	MRL MRL	ug/L ug/L	J (all detects)
TT-TP2-M1-20160504	COBALT NICKEL	J J	0.52 0.55	1.0 2.0	MRL MRL	ug/L ug/L	J (all detects)

Data Review Summary

Lab Reporting Batch ID: 440-146524-1 **Laboratory: TA IRV**

EDD Filename: Prep440-146524-1 **eQAPP Name: TetraTechInc_NERT_11302016**

Validation Area	*Note*
Technical Holding Times	SR
Temperature	A
Initial Calibration	N
Continuing Calibration/Initial Calibration Verification	N
Method Blanks	SR
Surrogate/Tracer Spikes	A
Matrix Spike/Matrix Spike Duplicates	SR
Laboratory Duplicates	A
Laboratory Replicates	N
Laboratory Control Samples	A
Compound Quantitation	SR
Field Duplicates	N
Field Triplicates	N
Field Blanks	N

A = Acceptable, N = Not provided/applicable, SR = See report

The contents of this report reflect findings made by ADR during Automated Data Review, manual applied qualifiers are not considered. Please refer to the Overall Qualifier Summary report for manual qualifiers.

QC Outlier Report: HoldingTimes

Lab Reporting Batch ID: 440-146524-1 **Laboratory: TA IRV**

EDD Filename: Prep440-146524-1 **eQAPP Name: TetraTechInc_NERT_11302016**

Method: 7199 **Preparation Method: Gen Prep**

Matrix: AQ

Sample ID	Type	Actual	Criteria	Units	Flag
TT-TP2-M2-20160505 (RES/DIS)	Sampling To Analysis	29.00	24.00	HOURS	J- (all detects)
TT-TP3-M2-20160505 (RES/DIS)		28.75	24.00	HOURS	UJ (all non-detects)
TT-TP4-M3-20160505MS (RES/DIS)		25.50	24.00	HOURS	
TT-TP4-M3-20160505MSD (RES/DIS)		25.75	24.00	HOURS	

Project Name and Number: 114-520225-2015-MO5 -

Matrix Spike/Matrix Spike Duplicate Outlier Report

Lab Reporting Batch ID: 440-146524-1 **Laboratory: TA IRV**

EDD Filename: Prep440-146524-1 **eQAPP Name: TetraTechInc_NERT_11302016**

Method: 300.0
Matrix: AQ

QC Sample ID (Associated Samples)	Compound	MS %R	MSD %R	%R Limits	RPD (Limits)	Affected Compounds	Flag
TT-TP4-M3-20160505MS (TT-TP4-M3-20160505)	Nitrate as N	42	-	80.00-120.00	-	Nitrate as N	J- (all detects) UJ (all non-detects)
TT-TP4-M3-20160505MS TT-TP4-M3-20160505MSD (TT-TP4-M3-20160505)	CHLORIDE SULFATE	1 31	28 -13	80.00-120.00 80.00-120.00	- -	CHLORIDE SULFATE	J-(all detects) R(all non-detects)

Method: 314.0
Matrix: AQ

QC Sample ID (Associated Samples)	Compound	MS %R	MSD %R	%R Limits	RPD (Limits)	Affected Compounds	Flag
TT-TP4-M3-20160505MS TT-TP4-M3-20160505MSD (TT-TP4-M3-20160505)	PERCHLORATE	-1303	-4102	80.00-120.00	-	PERCHLORATE	J-(all detects) R(all non-detects)

Method: 300.1B
Matrix: AQ

QC Sample ID (Associated Samples)	Compound	MS %R	MSD %R	%R Limits	RPD (Limits)	Affected Compounds	Flag
TT-TP4-M3-20160505MS TT-TP4-M3-20160505MSD (TT-TP4-M3-20160505)	Chlorate	1272	-2129	75.00-125.00	65 (25.00)	Chlorate	J(all detects) R(all non-detects)

Method: 6020
Matrix: AQ

QC Sample ID (Associated Samples)	Compound	MS %R	MSD %R	%R Limits	RPD (Limits)	Affected Compounds	Flag
TT-TP4-M3-20160505MS (DIS) TT-TP4-M3-20160505MSD (DIS) (TT-TP4-M3-20160505)	ARSENIC CHROMIUM	132 1449	138 498	75.00-125.00 75.00-125.00	- -	ARSENIC CHROMIUM	J+(all detects)

Method: 6010B
Matrix: AQ

QC Sample ID (Associated Samples)	Compound	MS %R	MSD %R	%R Limits	RPD (Limits)	Affected Compounds	Flag
TT-TP4-M3-20160505MS (DIS) TT-TP4-M3-20160505MSD (DIS) (TT-TP4-M3-20160505)	CALCIUM MAGNESIUM SODIUM	-85 -81 -304	-221 -37 -847	75.00-125.00 75.00-125.00 75.00-125.00	- - -	CALCIUM MAGNESIUM SODIUM	J-(all detects) R(all non-detects)

Project Name and Number: 114-520225-2015-MO5 - NERT Soil Flushing

Matrix Spike/Matrix Spike Duplicate Outlier Report

Lab Reporting Batch ID: 440-146524-1 **Laboratory: TA IRV**

EDD Filename: Prep440-146524-1 **eQAPP Name: TetraTechInc_NERT_11302016**

Method: **6010B**
Matrix: **AQ**

QC Sample ID (Associated Samples)	*Compound*	*MS %R*	*MSD %R*	*%R Limits*	*RPD (Limits)*	*Affected Compounds*	*Flag*
TT-TP4-M3-20160505MSD (DIS) (TT-TP4-M3-20160505)	BORON POTASSIUM	- -	66 67	75.00-125.00 75.00-125.00	- -	BORON POTASSIUM	J-(all detects) UJ(all non-detects)

Method Blank Outlier Report

Lab Reporting Batch ID: 440-146524-1 **Laboratory: TA IRV**

EDD Filename: Prep440-146524-1 **eQAPP Name: TetraTechInc_NERT_11302016**

Method: **6010B**
Matrix: **AQ**

Method Blank Sample ID	Analysis Date	Analyte	Result	Associated Samples
MB 440-329047/1-G	5/15/2016 2:35:00 PM	CALCIUM SODIUM	0.0777 mg/L 0.269 mg/L	TT-TP2-M2-20160505 TT-TP3-M1-20160505 TT-TP3-M2-20160505 TT-TP4-M1-20160505 TT-TP4-M2-20160505 TT-TP4-M3-20160505

Data Qualifier Summary

Lab Reporting Batch ID: 440-146524-1 **Laboratory: TA IRV**

EDD Filename: Prep440-146524-1 **eQAPP Name: TetraTechInc_NERT_11302016**

Method Category: GENCHEM

Method: 300.0 **Matrix: AQ**

Sample ID: TT-TP4-M3-20160505 **Collected:** 5/5/2016 12:24:00 PM **Analysis Type:** RES **Dilution:** 500

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
Nitrate as N	210		28	MDL	55	MRL	mg/L	J-	m

Sample ID: TT-TP4-M3-20160505 **Collected:** 5/5/2016 12:24:00 PM **Analysis Type:** RES2 **Dilution:** 500

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
CHLORIDE	670		130	MDL	250	MRL	mg/L	J-	m, m
SULFATE	1500		130	MDL	250	MRL	mg/L	J-	m, m

Method Category: GENCHEM

Method: 300.1B **Matrix: AQ**

Sample ID: TT-TP4-M3-20160505 **Collected:** 5/5/2016 12:24:00 PM **Analysis Type:** RES **Dilution:** 10000

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
Chlorate	1700000	F2 F1	100000	MDL	200000	MRL	ug/L	J	m, m, ld

Method Category: GENCHEM

Method: 314.0 **Matrix: AQ**

Sample ID: TT-TP4-M3-20160505 **Collected:** 5/5/2016 12:24:00 PM **Analysis Type:** RES **Dilution:** 10000

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
PERCHLORATE	310000		5000	MDL	10000	MRL	ug/L	J-	m

Method Category: METALS

Method: 6010B **Matrix: AQ**

Sample ID: TT-TP3-M1-20160505 **Collected:** 5/5/2016 10:29:00 AM **Analysis Type:** RE2/DIS **Dilution:** 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
IRON	0.010	J	0.010	MDL	0.040	MRL	mg/L	J	sp

* denotes a non-reportable result

Project Name and Number: 114-520225-2015-MO5 - NERT Soil Flushing

Data Qualifier Summary

Lab Reporting Batch ID: 440-146524-1 **Laboratory: TA IRV**

EDD Filename: Prep440-146524-1 **eQAPP Name: TetraTechInc_NERT_11302016**

Method Category: METALS

Method: 6010B **Matrix: AQ**

Sample ID: TT-TP3-M1-20160505 **Collected:** 5/5/2016 10:29:00 AM **Analysis Type:** RES/DIS **Dilution:** 10

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
BORON	0.29	J	0.10	MDL	0.50	MRL	mg/L	J	sp
POTASSIUM	2.8	J	2.5	MDL	5.0	MRL	mg/L	J	sp

Sample ID: TT-TP3-M2-20160505 **Collected:** 5/5/2016 9:57:00 AM **Analysis Type:** RES/DIS **Dilution:** 10

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
BORON	0.39	J	0.10	MDL	0.50	MRL	mg/L	J	sp
IRON	0.13	J	0.10	MDL	0.40	MRL	mg/L	J	sp

Sample ID: TT-TP4-M3-20160505 **Collected:** 5/5/2016 12:24:00 PM **Analysis Type:** RE2/DIS **Dilution:** 2

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
IRON	0.023	J	0.020	MDL	0.080	MRL	mg/L	J	sp
MAGNESIUM	120		0.020	MDL	0.040	MRL	mg/L	J-	m

Sample ID: TT-TP4-M3-20160505 **Collected:** 5/5/2016 12:24:00 PM **Analysis Type:** RES/DIS **Dilution:** 10

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
BORON	3.3	F1	0.10	MDL	0.50	MRL	mg/L	J-	m
CALCIUM	240	B	0.50	MDL	1.0	MRL	mg/L	J-	m
POTASSIUM	22	F1	2.5	MDL	5.0	MRL	mg/L	J-	m
SODIUM	1500	B	2.5	MDL	5.0	MRL	mg/L	J-	m

Method Category: METALS

Method: 6020 **Matrix: AQ**

Sample ID: TT-TP2-M2-20160505 **Collected:** 5/5/2016 9:23:00 AM **Analysis Type:** RE2/DIS **Dilution:** 2

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
COPPER	1.0	J	1.0	MDL	4.0	MRL	ug/L	J	sp

* denotes a non-reportable result

Project Name and Number: 114-520225-2015-MO5 - NERT Soil Flushing

Data Qualifier Summary

Lab Reporting Batch ID: 440-146524-1 **Laboratory: TA IRV**

EDD Filename: Prep440-146524-1 **eQAPP Name: TetraTechInc_NERT_11302016**

Method Category: **METALS**

Method: **6020** ***Matrix:*** **AQ**

Sample ID: **TT-TP2-M2-20160505** ***Collected:*** **5/5/2016 9:23:00 AM** ***Analysis Type:*** **RES/DIS** ***Dilution:*** **1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
NICKEL	0.54	J	0.50	MDL	2.0	MRL	ug/L	J	sp

Sample ID: **TT-TP3-M1-20160505** ***Collected:*** **5/5/2016 10:29:00 AM** ***Analysis Type:*** **RES/DIS** ***Dilution:*** **1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
SELENIUM	1.4	J	0.50	MDL	2.0	MRL	ug/L	J	sp

Sample ID: **TT-TP3-M2-20160505** ***Collected:*** **5/5/2016 9:57:00 AM** ***Analysis Type:*** **RES/DIS** ***Dilution:*** **1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
SELENIUM	1.1	J	0.50	MDL	2.0	MRL	ug/L	J	sp

Sample ID: **TT-TP4-L2-20160505** ***Collected:*** **5/5/2016 12:58:00 PM** ***Analysis Type:*** **RES/DIS** ***Dilution:*** **1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
CHROMIUM	0.83	J	0.50	MDL	2.0	MRL	ug/L	J	sp

Sample ID: **TT-TP4-M2-20160505** ***Collected:*** **5/5/2016 11:51:00 AM** ***Analysis Type:*** **RES/DIS** ***Dilution:*** **1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
COPPER	0.60	J	0.50	MDL	2.0	MRL	ug/L	J	sp

Sample ID: **TT-TP4-M3-20160505** ***Collected:*** **5/5/2016 12:24:00 PM** ***Analysis Type:*** **RES/DIS** ***Dilution:*** **5**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
ARSENIC	130	F1	2.5	MDL	5.0	MRL	ug/L	J+	m
CHROMIUM	8200		2.5	MDL	10	MRL	ug/L	J+	m
SELENIUM	7.4	J	2.5	MDL	10	MRL	ug/L	J	sp

* denotes a non-reportable result

Project Name and Number: 114-520225-2015-MO5 - NERT Soil Flushing

Data Qualifier Summary

Lab Reporting Batch ID: 440-146524-1 **Laboratory: TA IRV**

EDD Filename: Prep440-146524-1 **eQAPP Name: TetraTechInc_NERT_11302016**

Method Category: METALS

Method: 7199 **Matrix: AQ**

Sample ID: TT-TP2-M2-20160505 **Collected:** 5/5/2016 9:23:00 AM **Analysis Type:** RES/DIS **Dilution:** 100

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
Chromium, hexavalent	4500	H	25	MDL	200	MRL	ug/L	J-	h

Sample ID: TT-TP3-L1-20160505 **Collected:** 5/5/2016 1:01:00 PM **Analysis Type:** RES/DIS **Dilution:** 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
Chromium, hexavalent	1.2	J	0.25	MDL	2.0	MRL	ug/L	J	sp

Sample ID: TT-TP3-L2-20160505 **Collected:** 5/5/2016 1:03:00 PM **Analysis Type:** RES/DIS **Dilution:** 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
Chromium, hexavalent	0.65	J	0.25	MDL	2.0	MRL	ug/L	J	sp

Sample ID: TT-TP3-M2-20160505 **Collected:** 5/5/2016 9:57:00 AM **Analysis Type:** RES/DIS **Dilution:** 5

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
Chromium, hexavalent	210	H	1.3	MDL	10	MRL	ug/L	J-	h

Sample ID: TT-TP4-L2-20160505 **Collected:** 5/5/2016 12:58:00 PM **Analysis Type:** RES/DIS **Dilution:** 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
Chromium, hexavalent	0.83	J	0.25	MDL	2.0	MRL	ug/L	J	sp

Method Category: METALS

Method: 7470A **Matrix: AQ**

Sample ID: TT-TP4-M1-20160505 **Collected:** 5/5/2016 11:16:00 AM **Analysis Type:** RES/DIS **Dilution:** 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
MERCURY	0.00010	J	0.00010	MDL	0.00020	MRL	mg/L	J	sp

* denotes a non-reportable result

Project Name and Number: 114-520225-2015-MO5 - NERT Soil Flushing

Data Qualifier Summary

Lab Reporting Batch ID: 440-146524-1

Laboratory: TA IRV

EDD Filename: Prep440-146524-1

eQAPP Name: TetraTechInc_NERT_11302016

Reason Code Legend

Reason Code	*Description*
bl	Method Blank Contamination
e	Sampling to Analysis Estimation
f	Matrix Spike Precision
h	Sampling to Analysis Estimation
ld	Matrix Spike Precision
ldf	Matrix Spike Precision
m	Matrix Spike Lower Estimation
m	Matrix Spike Lower Rejection
m	Matrix Spike Upper Estimation
sp	Reporting Limit Trace Value

* denotes a non-reportable result

Project Name and Number: 114-520225-2015-MO5 - NERT Soil Flushing

Reporting Limit Outliers

Lab Reporting Batch ID: 440-146524-1 **Laboratory: TA IRV**

EDD Filename: Prep440-146524-1 **eQAPP Name: TetraTechInc_NERT_11302016**

Method: 6010B

Matrix: AQ

SampleID	Analyte	Lab Qual	Result	Reporting Limit	RL Type	Units	Flag
TT-TP3-M1-20160505	BORON IRON POTASSIUM	J J J	0.29 0.010 2.8	0.50 0.040 5.0	MRL MRL MRL	mg/L mg/L mg/L	J (all detects)
TT-TP3-M2-20160505	BORON IRON	J J	0.39 0.13	0.50 0.40	MRL MRL	mg/L mg/L	J (all detects)
TT-TP4-M3-20160505	IRON	J	0.023	0.080	MRL	mg/L	J (all detects)

Method: 6020

Matrix: AQ

SampleID	Analyte	Lab Qual	Result	Reporting Limit	RL Type	Units	Flag
TT-TP2-M2-20160505	COPPER NICKEL	J J	1.0 0.54	4.0 2.0	MRL MRL	ug/L ug/L	J (all detects)
TT-TP3-M1-20160505	SELENIUM	J	1.4	2.0	MRL	ug/L	J (all detects)
TT-TP3-M2-20160505	SELENIUM	J	1.1	2.0	MRL	ug/L	J (all detects)
TT-TP4-L2-20160505	CHROMIUM	J	0.83	2.0	MRL	ug/L	J (all detects)
TT-TP4-M2-20160505	COPPER	J	0.60	2.0	MRL	ug/L	J (all detects)
TT-TP4-M3-20160505	SELENIUM	J	7.4	10	MRL	ug/L	J (all detects)

Method: 7199

Matrix: AQ

SampleID	Analyte	Lab Qual	Result	Reporting Limit	RL Type	Units	Flag
TT-TP3-L1-20160505	Chromium, hexavalent	J	1.2	2.0	MRL	ug/L	J (all detects)
TT-TP3-L2-20160505	Chromium, hexavalent	J	0.65	2.0	MRL	ug/L	J (all detects)
TT-TP4-L2-20160505	Chromium, hexavalent	J	0.83	2.0	MRL	ug/L	J (all detects)

Method: 7470A

Matrix: AQ

SampleID	Analyte	Lab Qual	Result	Reporting Limit	RL Type	Units	Flag
TT-TP4-M1-20160505	MERCURY	J	0.00010	0.00020	MRL	mg/L	J (all detects)

Data Review Summary

Lab Reporting Batch ID: 440-147006-1 **Laboratory: TA IRV**

EDD Filename: Prep440-147006-1 **eQAPP Name: TetraTechInc_NERT_11302016**

Validation Area	*Note*
Technical Holding Times	A
Temperature	A
Initial Calibration	N
Continuing Calibration/Initial Calibration Verification	N
Method Blanks	SR
Surrogate/Tracer Spikes	N
Matrix Spike/Matrix Spike Duplicates	A
Laboratory Duplicates	N
Laboratory Replicates	N
Laboratory Control Samples	A
Compound Quantitation	A
Field Duplicates	N
Field Triplicates	N
Field Blanks	N

A = Acceptable, N = Not provided/applicable, SR = See report

The contents of this report reflect findings made by ADR during Automated Data Review, manual applied qualifiers are not considered. Please refer to the Overall Qualifier Summary report for manual qualifiers.

Method Blank Outlier Report

Lab Reporting Batch ID: 440-147006-1 **Laboratory: TA IRV**

EDD Filename: Prep440-147006-1 **eQAPP Name: TetraTechInc_NERT_11302016**

Method: **6020**
Matrix: **AQ**

Method Blank Sample ID	Analysis Date	Analyte	Result	Associated Samples
MB 440-330278/1-B	5/19/2016 7:45:00 PM	CHROMIUM	0.834 ug/L	TT-TP1-M1-20160510 TT-TP1-M2-20160510 TT-TP1-M3-20160510

Project Name and Number: 114-520225-2015-MO5 - NERT Soil Flushing

Data Qualifier Summary

Lab Reporting Batch ID: 440-147006-1

Laboratory: TA IRV

EDD Filename: Prep440-147006-1

eQAPP Name: TetraTechInc_NERT_11302016

No Data Review Qualifiers Applied.

Data Review Summary

Lab Reporting Batch ID: 440-147243-1 **Laboratory: TA IRV**

EDD Filename: Prep440-147243-1 **eQAPP Name: TetraTechInc_NERT_11302016**

Validation Area	*Note*
Technical Holding Times	A
Temperature	A
Initial Calibration	N
Continuing Calibration/Initial Calibration Verification	N
Method Blanks	A
Surrogate/Tracer Spikes	N
Matrix Spike/Matrix Spike Duplicates	SR
Laboratory Duplicates	A
Laboratory Replicates	N
Laboratory Control Samples	A
Compound Quantitation	SR
Field Duplicates	A
Field Triplicates	N
Field Blanks	N

A = Acceptable, N = Not provided/applicable, SR = See report

The contents of this report reflect findings made by ADR during Automated Data Review, manual applied qualifiers are not considered. Please refer to the Overall Qualifier Summary report for manual qualifiers.

Field Duplicate RPD Report

Lab Reporting Batch ID: 440-147243-1 **Laboratory: TA IRV**

EDD Filename: Prep440-147243-1 **eQAPP Name: TetraTechInc_NERT_11302016**

Method: 2540C
Matrix: AQ

Analyte	Concentration (mg/L)		Sample RPD	eQAPP RPD	Flag
	TT-TP4-M3-20160511	TT-TP4-M3-20160511-DUP			
TOTAL DISSOLVED SOLIDS	7100	7200	1	30.00	No Qualifiers Applied

Method: 314.0
Matrix: AQ

Analyte	Concentration (ug/L)		Sample RPD	eQAPP RPD	Flag
	TT-TP4-M3-20160511	TT-TP4-M3-20160511-DUP			
PERCHLORATE	270000	280000	4	30.00	No Qualifiers Applied

Method: 6020
Matrix: AQ

Analyte	Concentration (ug/L)		Sample RPD	eQAPP RPD	Flag
	TT-TP4-M3-20160511 (DIS)	TT-TP4-M3-20160511-DUP (DIS)			
CHROMIUM	6800	8100	17	30.00	No Qualifiers Applied

Method: 7199
Matrix: AQ

Analyte	Concentration (ug/L)		Sample RPD	eQAPP RPD	Flag
	TT-TP4-M3-20160511 (DIS)	TT-TP4-M3-20160511-DUP (DIS)			
Chromium, hexavalent	6400	6500	2	30.00	No Qualifiers Applied

Method: SM5310B
Matrix: AQ

Analyte	Concentration (mg/L)		Sample RPD	eQAPP RPD	Flag
	TT-TP4-M3-20160511	TT-TP4-M3-20160511-DUP			
Total organic carbon	2.3	2.2	4	30.00	No Qualifiers Applied

Matrix Spike/Matrix Spike Duplicate Outlier Report

Lab Reporting Batch ID: 440-147243-1 **Laboratory: TA IRV**

EDD Filename: Prep440-147243-1 **eQAPP Name: TetraTechInc_NERT_11302016**

Method: 6020
Matrix: AQ

QC Sample ID (Associated Samples)	Compound	MS %R	MSD %R	%R Limits	RPD (Limits)	Affected Compounds	Flag
TT-TP4-M3-20160511MS (DIS) TT-TP4-M3-20160511MSD (DIS) (TT-TP4-M3-20160511)	CHROMIUM	57	-256	75.00-125.00	-	CHROMIUM	J- (all detects) R (all non-detects)

Method: 314.0
Matrix: AQ

QC Sample ID (Associated Samples)	Compound	MS %R	MSD %R	%R Limits	RPD (Limits)	Affected Compounds	Flag
TT-TP4-M3-20160511MS TT-TP4-M3-20160511MSD (TT-TP4-M3-20160511)	PERCHLORATE	-1832	-1126	80.00-120.00	-	PERCHLORATE	J-(all detects) R(all non-detects)

Method: SM5310B
Matrix: AQ

QC Sample ID (Associated Samples)	Compound	MS %R	MSD %R	%R Limits	RPD (Limits)	Affected Compounds	Flag
TT-TP4-M3-20160511MSD (TT-TP4-M3-20160511)	Total organic carbon	-	121	80.00-120.00	-	Total organic carbon	J+(all detects)

Data Qualifier Summary

Lab Reporting Batch ID: 440-147243-1 **Laboratory: TA IRV**

EDD Filename: Prep440-147243-1 **eQAPP Name: TetraTechInc_NERT_11302016**

Method Category: GENCHEM

Method: 314.0 **Matrix: AQ**

Sample ID: TT-TP4-M3-20160511 **Collected:** 5/11/2016 12:54:00 PM **Analysis Type:** RES **Dilution:** 10000

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
PERCHLORATE	270000		5000	MDL	10000	MRL	ug/L	J-	m

Method Category: GENCHEM

Method: SM5310B **Matrix: AQ**

Sample ID: TT-TP4-M3-20160511 **Collected:** 5/11/2016 12:54:00 PM **Analysis Type:** RES2 **Dilution:** 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
Total organic carbon	2.3	F1	0.65	MDL	1.0	MRL	mg/L	J+	m

Method Category: METALS

Method: 6020 **Matrix: AQ**

Sample ID: TT-TP3-L2-20160511 **Collected:** 5/11/2016 1:25:00 PM **Analysis Type:** RES/DIS **Dilution:** 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
CHROMIUM	0.81	J	0.50	MDL	2.0	MRL	ug/L	J	sp

Sample ID: TT-TP4-M3-20160511 **Collected:** 5/11/2016 12:54:00 PM **Analysis Type:** RES/DIS **Dilution:** 10

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
CHROMIUM	6800	B	5.0	MDL	20	MRL	ug/L	J-	m, m

Method Category: METALS

Method: 7199 **Matrix: AQ**

Sample ID: TT-TP3-L1-20160511 **Collected:** 5/11/2016 1:20:00 PM **Analysis Type:** RES/DIS **Dilution:** 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
Chromium, hexavalent	1.2	J	0.25	MDL	2.0	MRL	ug/L	J	sp

* denotes a non-reportable result

Project Name and Number: 114-520225-2015-MO5 - NERT Soil Flushing

Data Qualifier Summary

Lab Reporting Batch ID: 440-147243-1 **Laboratory: TA IRV**

EDD Filename: Prep440-147243-1 **eQAPP Name: TetraTechInc_NERT_11302016**

Method Category: **METALS**

Method: **7199** ***Matrix:*** **AQ**

Sample ID: **TT-TP3-L2-20160511** ***Collected:*** **5/11/2016 1:25:00 PM** ***Analysis Type:*** **RES/DIS** ***Dilution:*** **1**

Analyte	*Lab Result*	*Lab Qual*	*DL*	*DL Type*	*RL*	*RL Type*	*Units*	*Data Review Qual*	*Reason Code*
Chromium, hexavalent	0.56	J	0.25	MDL	2.0	MRL	ug/L	J	sp

* denotes a non-reportable result

Project Name and Number: 114-520225-2015-MO5 - NERT Soil Flushing

Data Qualifier Summary

Lab Reporting Batch ID: 440-147243-1

Laboratory: TA IRV

EDD Filename: Prep440-147243-1

eQAPP Name: TetraTechInc_NERT_11302016

Reason Code Legend

Reason Code	*Description*
m	Matrix Spike Lower Estimation
m	Matrix Spike Lower Rejection
m	Matrix Spike Upper Estimation
sp	Reporting Limit Trace Value

* denotes a non-reportable result

Project Name and Number: 114-520225-2015-MO5 - NERT Soil Flushing

Reporting Limit Outliers

Lab Reporting Batch ID: 440-147243-1 **Laboratory: TA IRV**

EDD Filename: Prep440-147243-1 **eQAPP Name: TetraTechInc_NERT_11302016**

Method: 6020
Matrix: AQ

SampleID	Analyte	Lab Qual	Result	Reporting Limit	RL Type	Units	Flag
TT-TP3-L2-20160511	CHROMIUM	J	0.81	2.0	MRL	ug/L	J (all detects)

Method: 7199
Matrix: AQ

SampleID	Analyte	Lab Qual	Result	Reporting Limit	RL Type	Units	Flag
TT-TP3-L1-20160511	Chromium, hexavalent	J	1.2	2.0	MRL	ug/L	J (all detects)
TT-TP3-L2-20160511	Chromium, hexavalent	J	0.56	2.0	MRL	ug/L	J (all detects)

Data Review Summary

Lab Reporting Batch ID: 440-147992-1 **Laboratory: TA IRV**

EDD Filename: Prep440-147992-1 **eQAPP Name: TetraTechInc_NERT_11302016**

Validation Area	*Note*
Technical Holding Times	A
Temperature	A
Initial Calibration	N
Continuing Calibration/Initial Calibration Verification	N
Method Blanks	A
Surrogate/Tracer Spikes	N
Matrix Spike/Matrix Spike Duplicates	SR
Laboratory Duplicates	A
Laboratory Replicates	N
Laboratory Control Samples	A
Compound Quantitation	SR
Field Duplicates	A
Field Triplicates	N
Field Blanks	N

A = Acceptable, N = Not provided/applicable, SR = See report

The contents of this report reflect findings made by ADR during Automated Data Review, manual applied qualifiers are not considered. Please refer to the Overall Qualifier Summary report for manual qualifiers.

Field Duplicate RPD Report

Lab Reporting Batch ID: 440-147992-1 **Laboratory: TA IRV**

EDD Filename: Prep440-147992-1 **eQAPP Name: TetraTechInc_NERT_11302016**

Method: 2540C
Matrix: AQ

Analyte	Concentration (mg/L)		Sample RPD	eQAPP RPD	Flag
	TT-TP4-M3-20160519	TT-TP4-M3-20160519-DUP			
TOTAL DISSOLVED SOLIDS	6300	6300	0	30.00	No Qualifiers Applied

Method: 314.0
Matrix: AQ

Analyte	Concentration (ug/L)		Sample RPD	eQAPP RPD	Flag
	TT-TP4-M3-20160519	TT-TP4-M3-20160519-DUP			
PERCHLORATE	270000	290000	7	30.00	No Qualifiers Applied

Method: 6020
Matrix: AQ

Analyte	Concentration (ug/L)		Sample RPD	eQAPP RPD	Flag
	TT-TP4-M3-20160519 (DIS)	TT-TP4-M3-20160519-DUP (DIS)			
CHROMIUM	5900	5200	13	30.00	No Qualifiers Applied

Method: 7199
Matrix: AQ

Analyte	Concentration (ug/L)		Sample RPD	eQAPP RPD	Flag
	TT-TP4-M3-20160519 (DIS)	TT-TP4-M3-20160519-DUP (DIS)			
Chromium, hexavalent	6300	6500	3	30.00	No Qualifiers Applied

Method: SM5310B
Matrix: AQ

Analyte	Concentration (mg/L)		Sample RPD	eQAPP RPD	Flag
	TT-TP4-M3-20160519	TT-TP4-M3-20160519-DUP			
Total organic carbon	2.0	2.0	0	30.00	No Qualifiers Applied

Project Name and Number: 114-520225-2015-MO5 - NERT Soil Flushing

Matrix Spike/Matrix Spike Duplicate Outlier Report

Lab Reporting Batch ID: 440-147992-1 **Laboratory: TA IRV**

EDD Filename: Prep440-147992-1 **eQAPP Name: TetraTechInc_NERT_11302016**

Method: 7199
Matrix: AQ

QC Sample ID (Associated Samples)	Compound	MS %R	MSD %R	%R Limits	RPD (Limits)	Affected Compounds	Flag
TT-TP4-M3-20160519MS (DIS) TT-TP4-M3-20160519MSD (DIS) (TT-TP4-M3-20160519)	Chromium, hexavalent	-27	-64	85.00-115.00	-	Chromium, hexavalent	J- (all detects) R (all non-detects)

Method: 6020
Matrix: AQ

QC Sample ID (Associated Samples)	Compound	MS %R	MSD %R	%R Limits	RPD (Limits)	Affected Compounds	Flag
TT-TP4-M3-20160519MS (DIS) TT-TP4-M3-20160519MSD (DIS) (TT-TP4-M3-20160519)	CHROMIUM	-92	-303	75.00-125.00	-	CHROMIUM	J-(all detects) R(all non-detects)

Method: 314.0
Matrix: AQ

QC Sample ID (Associated Samples)	Compound	MS %R	MSD %R	%R Limits	RPD (Limits)	Affected Compounds	Flag
TT-TP4-M3-20160519MS TT-TP4-M3-20160519MSD (TT-TP4-M3-20160519)	PERCHLORATE	-1515	-6604	80.00-120.00	-	PERCHLORATE	J-(all detects) R(all non-detects)

Data Qualifier Summary

Lab Reporting Batch ID: 440-147992-1 **Laboratory: TA IRV**

EDD Filename: Prep440-147992-1 **eQAPP Name: TetraTechInc_NERT_11302016**

Method Category: GENCHEM

Method: 314.0 **Matrix: AQ**

Sample ID: TT-TP4-M3-20160519 **Collected:** 5/19/2016 12:52:00 PM **Analysis Type:** RES **Dilution:** 50000

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
PERCHLORATE	270000	F1	25000	MDL	50000	MRL	ug/L	J-	m

Method Category: METALS

Method: 6020 **Matrix: AQ**

Sample ID: TT-TP4-M3-20160519 **Collected:** 5/19/2016 12:52:00 PM **Analysis Type:** RES/DIS **Dilution:** 2

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
CHROMIUM	5900		1.0	MDL	4.0	MRL	ug/L	J-	m

Method Category: METALS

Method: 7199 **Matrix: AQ**

Sample ID: TT-TP3-L1-20160519 **Collected:** 5/19/2016 1:45:00 PM **Analysis Type:** RES/DIS **Dilution:** 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
Chromium, hexavalent	1.9	J	0.25	MDL	2.0	MRL	ug/L	J	sp

Sample ID: TT-TP3-L2-20160519 **Collected:** 5/19/2016 1:40:00 PM **Analysis Type:** RES/DIS **Dilution:** 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
Chromium, hexavalent	0.37	J	0.25	MDL	2.0	MRL	ug/L	J	sp

Sample ID: TT-TP4-L2-20160519 **Collected:** 5/19/2016 1:50:00 PM **Analysis Type:** RES/DIS **Dilution:** 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
Chromium, hexavalent	1.8	J	0.25	MDL	2.0	MRL	ug/L	J	sp

Sample ID: TT-TP4-M3-20160519 **Collected:** 5/19/2016 12:52:00 PM **Analysis Type:** RES/DIS **Dilution:** 100

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
Chromium, hexavalent	6300		25	MDL	200	MRL	ug/L	J-	m

* denotes a non-reportable result

Project Name and Number: 114-520225-2015-MO5 - NERT Soil Flushing

Data Qualifier Summary

Lab Reporting Batch ID: 440-147992-1

Laboratory: TA IRV

EDD Filename: Prep440-147992-1

eQAPP Name: TetraTechInc_NERT_11302016

* denotes a non-reportable result

Project Name and Number: 114-520225-2015-MO5 - NERT Soil Flushing

Data Qualifier Summary

Lab Reporting Batch ID: 440-147992-1

Laboratory: TA IRV

EDD Filename: Prep440-147992-1

eQAPP Name: TetraTechInc_NERT_11302016

Reason Code Legend

Reason Code	*Description*
m	Matrix Spike Lower Rejection
sp	Reporting Limit Trace Value

* denotes a non-reportable result

Project Name and Number: 114-520225-2015-MO5 - NERT Soil Flushing

Reporting Limit Outliers

Lab Reporting Batch ID: 440-147992-1 **Laboratory: TA IRV**

EDD Filename: Prep440-147992-1 **eQAPP Name: TetraTechInc_NERT_11302016**

Method: **7199**

Matrix: **AQ**

SampleID	*Analyte*	*Lab Qual*	*Result*	*Reporting Limit*	*RL Type*	*Units*	*Flag*
TT-TP3-L1-20160519	Chromium, hexavalent	J	1.9	2.0	MRL	ug/L	J (all detects)
TT-TP3-L2-20160519	Chromium, hexavalent	J	0.37	2.0	MRL	ug/L	J (all detects)
TT-TP4-L2-20160519	Chromium, hexavalent	J	1.8	2.0	MRL	ug/L	J (all detects)

Data Review Summary

Lab Reporting Batch ID: 440-148308-1 **Laboratory: TA IRV**

EDD Filename: Prep440-148308-1 **eQAPP Name: TetraTechInc_NERT_11302016**

Validation Area	*Note*
Technical Holding Times	SR
Temperature	A
Initial Calibration	N
Continuing Calibration/Initial Calibration Verification	N
Method Blanks	A
Surrogate/Tracer Spikes	N
Matrix Spike/Matrix Spike Duplicates	SR
Laboratory Duplicates	N
Laboratory Replicates	N
Laboratory Control Samples	A
Compound Quantitation	A
Field Duplicates	N
Field Triplicates	N
Field Blanks	N

A = Acceptable, N = Not provided/applicable, SR = See report

The contents of this report reflect findings made by ADR during Automated Data Review, manual applied qualifiers are not considered. Please refer to the Overall Qualifier Summary report for manual qualifiers.

QC Outlier Report: HoldingTimes

Lab Reporting Batch ID: 440-148308-1 **Laboratory: TA IRV**

EDD Filename: Prep440-148308-1 **eQAPP Name: TetraTechInc_NERT_11302016**

Method: 7199 **Preparation Method: Gen Prep**

Matrix: AQ

Sample ID	Type	Actual	Criteria	Units	Flag
TT-TP1-M1-20160524 (RES/DIS)	Sampling To Analysis	24.75	24.00	HOURS	J- (all detects) UJ (all non-detects)

Project Name and Number: 114-520225-2015-MO5 -

Matrix Spike/Matrix Spike Duplicate Outlier Report

Lab Reporting Batch ID: 440-148308-1 **Laboratory: TA IRV**

EDD Filename: Prep440-148308-1 **eQAPP Name: TetraTechInc_NERT_11302016**

Method: 7199
Matrix: AQ

QC Sample ID (Associated Samples)	Compound	MS %R	MSD %R	%R Limits	RPD (Limits)	Affected Compounds	Flag
TT-TP1-M1-20160524MS (DIS) TT-TP1-M1-20160524MSD (DIS) (TT-TP1-M1-20160524)	Chromium, hexavalent	79	44	85.00-115.00	-	Chromium, hexavalent	J- (all detects) UJ (all non-detects)

Method: 6020
Matrix: AQ

QC Sample ID (Associated Samples)	Compound	MS %R	MSD %R	%R Limits	RPD (Limits)	Affected Compounds	Flag
TT-TP1-M1-20160524MS (DIS) TT-TP1-M1-20160524MSD (DIS) (TT-TP1-M1-20160524)	CHROMIUM	215	-227	75.00-125.00	-	CHROMIUM	J(all detects) R(all non-detects)

Data Qualifier Summary

Lab Reporting Batch ID: 440-148308-1 **Laboratory: TA IRV**

EDD Filename: Prep440-148308-1 **eQAPP Name: TetraTechInc_NERT_11302016**

Method Category: METALS

Method: 6020 **Matrix: AQ**

Sample ID: TT-TP1-M1-20160524 **Collected:** 5/24/2016 11:19:00 AM **Analysis Type:** RES/DIS **Dilution:** 2

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
CHROMIUM	2300		1.0	MDL	4.0	MRL	ug/L	J	m, m

Method Category: METALS

Method: 7199 **Matrix: AQ**

Sample ID: TT-TP1-M1-20160524 **Collected:** 5/24/2016 11:19:00 AM **Analysis Type:** RE2/DIS **Dilution:** 100

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
Chromium, hexavalent	2200		25	MDL	200	MRL	ug/L	J-	m

* denotes a non-reportable result

Project Name and Number: 114-520225-2015-MO5 - NERT Soil Flushing

Data Qualifier Summary

Lab Reporting Batch ID: 440-148308-1

Laboratory: TA IRV

EDD Filename: Prep440-148308-1

eQAPP Name: TetraTechInc_NERT_11302016

Reason Code Legend

Reason Code	*Description*
e	Sampling to Analysis Estimation
h	Sampling to Analysis Estimation
m	Matrix Spike Lower Estimation
m	Matrix Spike Lower Rejection
m	Matrix Spike Upper Estimation

* denotes a non-reportable result

Project Name and Number: 114-520225-2015-MO5 - NERT Soil Flushing

Data Review Summary

Lab Reporting Batch ID: 440-148383-1 **Laboratory: TA IRV**

EDD Filename: Prep440-148383-1 **eQAPP Name: TetraTechInc_NERT_11302016**

Validation Area	*Note*
Technical Holding Times	A
Temperature	A
Initial Calibration	N
Continuing Calibration/Initial Calibration Verification	N
Method Blanks	A
Surrogate/Tracer Spikes	N
Matrix Spike/Matrix Spike Duplicates	A
Laboratory Duplicates	N
Laboratory Replicates	N
Laboratory Control Samples	A
Compound Quantitation	SR
Field Duplicates	N
Field Triplicates	N
Field Blanks	N

A = Acceptable, N = Not provided/applicable, SR = See report

The contents of this report reflect findings made by ADR during Automated Data Review, manual applied qualifiers are not considered. Please refer to the Overall Qualifier Summary report for manual qualifiers.

Data Qualifier Summary

Lab Reporting Batch ID: 440-148383-1 **Laboratory: TA IRV**

EDD Filename: Prep440-148383-1 **eQAPP Name: TetraTechInc_NERT_11302016**

Method Category: METALS

Method: 6020 **Matrix: AQ**

Sample ID: **TT-TP4-L2-20160525** ***Collected:*** **5/25/2016 1:45:00 PM** ***Analysis Type:*** **RES/DIS** ***Dilution:*** **1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
CHROMIUM	0.71	J	0.50	MDL	2.0	MRL	ug/L	J	sp

Method Category: METALS

Method: 7199 **Matrix: AQ**

Sample ID: **TT-TP3-L1-20160525** ***Collected:*** **5/25/2016 1:50:00 PM** ***Analysis Type:*** **RES/DIS** ***Dilution:*** **1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
Chromium, hexavalent	1.9	J	0.25	MDL	2.0	MRL	ug/L	J	sp

Sample ID: **TT-TP4-L2-20160525** ***Collected:*** **5/25/2016 1:45:00 PM** ***Analysis Type:*** **RES/DIS** ***Dilution:*** **1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
Chromium, hexavalent	0.27	J	0.25	MDL	2.0	MRL	ug/L	J	sp

* denotes a non-reportable result

Project Name and Number: 114-520225-2015-MO5 - NERT Soil Flushing

Data Qualifier Summary

Lab Reporting Batch ID: 440-148383-1

Laboratory: TA IRV

EDD Filename: Prep440-148383-1

eQAPP Name: TetraTechInc_NERT_11302016

Reason Code Legend

Reason Code	*Description*
sp	Reporting Limit Trace Value

* denotes a non-reportable result

Project Name and Number: 114-520225-2015-MO5 - NERT Soil Flushing

Reporting Limit Outliers

Lab Reporting Batch ID: 440-148383-1 **Laboratory: TA IRV**

EDD Filename: Prep440-148383-1 **eQAPP Name: TetraTechInc_NERT_11302016**

Method: 6020

Matrix: AQ

SampleID	Analyte	Lab Qual	Result	Reporting Limit	RL Type	Units	Flag
TT-TP4-L2-20160525	CHROMIUM	J	0.71	2.0	MRL	ug/L	J (all detects)

Method: 7199

Matrix: AQ

SampleID	Analyte	Lab Qual	Result	Reporting Limit	RL Type	Units	Flag
TT-TP3-L1-20160525	Chromium, hexavalent	J	1.9	2.0	MRL	ug/L	J (all detects)
TT-TP4-L2-20160525	Chromium, hexavalent	J	0.27	2.0	MRL	ug/L	J (all detects)

Data Review Summary

Lab Reporting Batch ID: 440-148500-1 **Laboratory: TA IRV**

EDD Filename: Prep440-148500-1 **eQAPP Name: TetraTechInc_NERT_11302016**

Validation Area	*Note*
Technical Holding Times	A
Temperature	A
Initial Calibration	N
Continuing Calibration/Initial Calibration Verification	N
Method Blanks	A
Surrogate/Tracer Spikes	N
Matrix Spike/Matrix Spike Duplicates	SR
Laboratory Duplicates	A
Laboratory Replicates	N
Laboratory Control Samples	A
Compound Quantitation	A
Field Duplicates	A
Field Triplicates	N
Field Blanks	N

A = Acceptable, N = Not provided/applicable, SR = See report

The contents of this report reflect findings made by ADR during Automated Data Review, manual applied qualifiers are not considered. Please refer to the Overall Qualifier Summary report for manual qualifiers.

Field Duplicate RPD Report

Lab Reporting Batch ID: 440-148500-1 **Laboratory: TA IRV**

EDD Filename: Prep440-148500-1 **eQAPP Name: TetraTechInc_NERT_11302016**

Method: 2540C
Matrix: AQ

Analyte	Concentration (mg/L)		Sample RPD	eQAPP RPD	Flag
	TT-TP4-M3-20160526	TT-TP4-M3-20160526-DUP			
TOTAL DISSOLVED SOLIDS	6200	6300	2	30.00	No Qualifiers Applied

Method: 314.0
Matrix: AQ

Analyte	Concentration (ug/L)		Sample RPD	eQAPP RPD	Flag
	TT-TP4-M3-20160526	TT-TP4-M3-20160526-DUP			
PERCHLORATE	240000	240000	0	30.00	No Qualifiers Applied

Method: 6020
Matrix: AQ

Analyte	Concentration (ug/L)		Sample RPD	eQAPP RPD	Flag
	TT-TP4-M3-20160526 (DIS)	TT-TP4-M3-20160526-DUP (DIS)			
CHROMIUM	6600	5800	13	30.00	No Qualifiers Applied

Method: 7199
Matrix: AQ

Analyte	Concentration (ug/L)		Sample RPD	eQAPP RPD	Flag
	TT-TP4-M3-20160526 (DIS)	TT-TP4-M3-20160526-DUP (DIS)			
Chromium, hexavalent	6000	5800	3	30.00	No Qualifiers Applied

Method: SM5310B
Matrix: AQ

Analyte	Concentration (mg/L)		Sample RPD	eQAPP RPD	Flag
	TT-TP4-M3-20160526	TT-TP4-M3-20160526-DUP			
Total organic carbon	2.2	2.3	4	30.00	No Qualifiers Applied

Matrix Spike/Matrix Spike Duplicate Outlier Report

Lab Reporting Batch ID: 440-148500-1 **Laboratory: TA IRV**

EDD Filename: Prep440-148500-1 **eQAPP Name: TetraTechInc_NERT_11302016**

Method: 7199
Matrix: AQ

QC Sample ID (Associated Samples)	Compound	MS %R	MSD %R	%R Limits	RPD (Limits)	Affected Compounds	Flag
TT-TP4-M3-20160526MS (DIS) TT-TP4-M3-20160526MSD (DIS) (TT-TP4-M3-20160526)	Chromium, hexavalent	80	81	85.00-115.00	-	Chromium, hexavalent	J- (all detects) UJ (all non-detects)

Method: 6020
Matrix: AQ

QC Sample ID (Associated Samples)	Compound	MS %R	MSD %R	%R Limits	RPD (Limits)	Affected Compounds	Flag
TT-TP4-M3-20160526MS (DIS) TT-TP4-M3-20160526MSD (DIS) (TT-TP4-M3-20160526)	CHROMIUM	-870	-1062	75.00-125.00	-	CHROMIUM	J-(all detects) R(all non-detects)

Method: 314.0
Matrix: AQ

QC Sample ID (Associated Samples)	Compound	MS %R	MSD %R	%R Limits	RPD (Limits)	Affected Compounds	Flag
TT-TP4-M3-20160526MS TT-TP4-M3-20160526MSD (TT-TP4-M3-20160526)	PERCHLORATE	7507	10402	80.00-120.00	-	PERCHLORATE	J+(all detects)

Data Qualifier Summary

Lab Reporting Batch ID: 440-148500-1 **Laboratory: TA IRV**

EDD Filename: Prep440-148500-1 **eQAPP Name: TetraTechInc_NERT_11302016**

Method Category: GENCHEM

Method: 314.0 **Matrix: AQ**

Sample ID: **TT-TP4-M3-20160526** ***Collected:*** **5/26/2016 1:16:00 PM** ***Analysis Type:*** **RES** ***Dilution:*** **10000**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
PERCHLORATE	240000		5000	MDL	10000	MRL	ug/L	J+	m

Method Category: METALS

Method: 6020 **Matrix: AQ**

Sample ID: **TT-TP4-M3-20160526** ***Collected:*** **5/26/2016 1:16:00 PM** ***Analysis Type:*** **RES/DIS** ***Dilution:*** **5**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
CHROMIUM	6600		2.5	MDL	10	MRL	ug/L	J-	m

Method Category: METALS

Method: 7199 **Matrix: AQ**

Sample ID: **TT-TP4-M3-20160526** ***Collected:*** **5/26/2016 1:16:00 PM** ***Analysis Type:*** **RES/DIS** ***Dilution:*** **500**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
Chromium, hexavalent	6000		130	MDL	1000	MRL	ug/L	J-	m

* denotes a non-reportable result

Project Name and Number: 114-520225-2015-MO5 - NERT Soil Flushing

Data Qualifier Summary

Lab Reporting Batch ID: 440-148500-1

Laboratory: TA IRV

EDD Filename: Prep440-148500-1

eQAPP Name: TetraTechInc_NERT_11302016

Reason Code Legend

Reason Code	*Description*
m	Matrix Spike Lower Estimation
m	Matrix Spike Lower Rejection
m	Matrix Spike Upper Estimation

* denotes a non-reportable result

Project Name and Number: 114-520225-2015-MO5 - NERT Soil Flushing

Data Review Summary

Lab Reporting Batch ID: 440-148926-1 **Laboratory: TA IRV**

EDD Filename: Prep440-148926-1 **eQAPP Name: TetraTechInc_NERT_11302016**

Validation Area	*Note*
Technical Holding Times	A
Temperature	A
Initial Calibration	N
Continuing Calibration/Initial Calibration Verification	N
Method Blanks	A
Surrogate/Tracer Spikes	A
Matrix Spike/Matrix Spike Duplicates	SR
Laboratory Duplicates	N
Laboratory Replicates	N
Laboratory Control Samples	A
Compound Quantitation	SR
Field Duplicates	N
Field Triplicates	N
Field Blanks	N

A = Acceptable, N = Not provided/applicable, SR = See report

The contents of this report reflect findings made by ADR during Automated Data Review, manual applied qualifiers are not considered. Please refer to the Overall Qualifier Summary report for manual qualifiers.

Matrix Spike/Matrix Spike Duplicate Outlier Report

Lab Reporting Batch ID: 440-148926-1 **Laboratory: TA IRV**

EDD Filename: Prep440-148926-1 **eQAPP Name: TetraTechInc_NERT_11302016**

Method: **6010B**
Matrix: **AQ**

QC Sample ID (Associated Samples)	*Compound*	*MS %R*	*MSD %R*	*%R Limits*	*RPD (Limits)*	*Affected Compounds*	*Flag*
TT-TP1-M3-20160601MS (DIS) TT-TP1-M3-20160601MSD (DIS) (TT-TP1-M3-20160601)	SODIUM	58	-5	75.00-125.00	-	SODIUM	J- (all detects) R (all non-detects)
TT-TP1-M3-20160601MS (DIS) TT-TP1-M3-20160601MSD (DIS) (TT-TP1-M3-20160601)	MAGNESIUM	53	55	75.00-125.00	-	MAGNESIUM	J-(all detects) UJ(all non-detects)
TT-TP1-M3-20160601MS (DIS) TT-TP1-M3-20160601MSD (DIS) (TT-TP1-M3-20160601)	CALCIUM	183	194	75.00-125.00	-	CALCIUM	J+(all detects)

Data Qualifier Summary

Lab Reporting Batch ID: 440-148926-1 **Laboratory: TA IRV**

EDD Filename: Prep440-148926-1 **eQAPP Name: TetraTechInc_NERT_11302016**

Method Category: METALS

Method: 6010B **Matrix: AQ**

Sample ID: **TT-TP1-M2-20160601** ***Collected:*** **6/1/2016 11:40:00 AM** ***Analysis Type:*** **RES/DIS** ***Dilution:*** **1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
MANGANESE	0.012	J	0.010	MDL	0.020	MRL	mg/L	J	sp

Sample ID: **TT-TP1-M3-20160601** ***Collected:*** **6/1/2016 10:04:00 AM** ***Analysis Type:*** **RE2/DIS** ***Dilution:*** **20**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
MAGNESIUM	180		0.20	MDL	0.40	MRL	mg/L	J-	m
SODIUM	1300		5.0	MDL	10	MRL	mg/L	J-	m, m

Sample ID: **TT-TP1-M3-20160601** ***Collected:*** **6/1/2016 10:04:00 AM** ***Analysis Type:*** **RES/DIS** ***Dilution:*** **1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
CALCIUM	340		0.050	MDL	0.10	MRL	mg/L	J+	m

Method Category: METALS

Method: 6020 **Matrix: AQ**

Sample ID: **TT-TP1-M1-20160601** ***Collected:*** **6/1/2016 10:47:00 AM** ***Analysis Type:*** **RES/DIS** ***Dilution:*** **1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
COBALT	0.98	J	0.50	MDL	1.0	MRL	ug/L	J	sp
COPPER	0.81	J	0.50	MDL	2.0	MRL	ug/L	J	sp
NICKEL	1.5	J	0.50	MDL	2.0	MRL	ug/L	J	sp

Sample ID: **TT-TP1-M2-20160601** ***Collected:*** **6/1/2016 11:40:00 AM** ***Analysis Type:*** **RES/DIS** ***Dilution:*** **1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
COPPER	1.2	J	0.50	MDL	2.0	MRL	ug/L	J	sp
ZINC	2.7	J	2.5	MDL	20	MRL	ug/L	J	sp

Sample ID: **TT-TP1-M3-20160601** ***Collected:*** **6/1/2016 10:04:00 AM** ***Analysis Type:*** **RES/DIS** ***Dilution:*** **1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
COPPER	1.2	J	0.50	MDL	2.0	MRL	ug/L	J	sp

* denotes a non-reportable result

Project Name and Number: 114-520225-2015-MO5 - NERT Soil Flushing

Data Qualifier Summary

Lab Reporting Batch ID: 440-148926-1 **Laboratory: TA IRV**

EDD Filename: Prep440-148926-1 **eQAPP Name: TetraTechInc_NERT_11302016**

Method Category: **METALS**

Method: **6020** ***Matrix:*** **AQ**

Sample ID: **TT-TP1-M3-20160601** ***Collected:*** **6/1/2016 10:04:00 AM** ***Analysis Type:*** **RES/DIS** ***Dilution:*** **1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
ZINC	2.8	J	2.5	MDL	20	MRL	ug/L	J	sp

Sample ID: **TT-TP2-M1-20160601** ***Collected:*** **6/1/2016 1:11:00 PM** ***Analysis Type:*** **RES/DIS** ***Dilution:*** **1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
COBALT	0.65	J	0.50	MDL	1.0	MRL	ug/L	J	sp
COPPER	1.0	J	0.50	MDL	2.0	MRL	ug/L	J	sp

Sample ID: **TT-TP2-M2-20160601** ***Collected:*** **6/1/2016 12:27:00 PM** ***Analysis Type:*** **RES/DIS** ***Dilution:*** **1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
COBALT	0.58	J	0.50	MDL	1.0	MRL	ug/L	J	sp
COPPER	1.2	J	0.50	MDL	2.0	MRL	ug/L	J	sp

Sample ID: **TT-TP3-M1-20160601** ***Collected:*** **6/1/2016 1:54:00 PM** ***Analysis Type:*** **RES/DIS** ***Dilution:*** **1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
NICKEL	0.93	J	0.50	MDL	2.0	MRL	ug/L	J	sp
SELENIUM	1.3	J	0.50	MDL	2.0	MRL	ug/L	J	sp

* denotes a non-reportable result

Project Name and Number: 114-520225-2015-MO5 - NERT Soil Flushing

Data Qualifier Summary

Lab Reporting Batch ID: 440-148926-1

Laboratory: TA IRV

EDD Filename: Prep440-148926-1

eQAPP Name: TetraTechInc_NERT_11302016

Reason Code Legend

Reason Code	*Description*
m	Matrix Spike Lower Estimation
m	Matrix Spike Lower Rejection
m	Matrix Spike Upper Estimation
sp	Reporting Limit Trace Value

* denotes a non-reportable result

Project Name and Number: 114-520225-2015-MO5 - NERT Soil Flushing

Reporting Limit Outliers

Lab Reporting Batch ID: 440-148926-1 **Laboratory: TA IRV**

EDD Filename: Prep440-148926-1 **eQAPP Name: TetraTechInc_NERT_11302016**

Method: 6010B

Matrix: AQ

SampleID	Analyte	Lab Qual	Result	Reporting Limit	RL Type	Units	Flag
TT-TP1-M2-20160601	MANGANESE	J	0.012	0.020	MRL	mg/L	J (all detects)

Method: 6020

Matrix: AQ

SampleID	Analyte	Lab Qual	Result	Reporting Limit	RL Type	Units	Flag
TT-TP1-M1-20160601	COBALT COPPER NICKEL	J J J	0.98 0.81 1.5	1.0 2.0 2.0	MRL MRL MRL	ug/L ug/L ug/L	J (all detects)
TT-TP1-M2-20160601	COPPER ZINC	J J	1.2 2.7	2.0 20	MRL MRL	ug/L ug/L	J (all detects)
TT-TP1-M3-20160601	COPPER ZINC	J J	1.2 2.8	2.0 20	MRL MRL	ug/L ug/L	J (all detects)
TT-TP2-M1-20160601	COBALT COPPER	J J	0.65 1.0	1.0 2.0	MRL MRL	ug/L ug/L	J (all detects)
TT-TP2-M2-20160601	COBALT COPPER	J J	0.58 1.2	1.0 2.0	MRL MRL	ug/L ug/L	J (all detects)
TT-TP3-M1-20160601	NICKEL SELENIUM	J J	0.93 1.3	2.0 2.0	MRL MRL	ug/L ug/L	J (all detects)

Data Review Summary

Lab Reporting Batch ID: 440-149036-1 **Laboratory: TA IRV**

EDD Filename: Prep440-149036-1 **eQAPP Name: TetraTechInc_NERT_11302016**

Validation Area	*Note*
Technical Holding Times	A
Temperature	A
Initial Calibration	N
Continuing Calibration/Initial Calibration Verification	N
Method Blanks	A
Surrogate/Tracer Spikes	A
Matrix Spike/Matrix Spike Duplicates	SR
Laboratory Duplicates	A
Laboratory Replicates	N
Laboratory Control Samples	A
Compound Quantitation	SR
Field Duplicates	SR
Field Triplicates	N
Field Blanks	N

A = Acceptable, N = Not provided/applicable, SR = See report

The contents of this report reflect findings made by ADR during Automated Data Review, manual applied qualifiers are not considered. Please refer to the Overall Qualifier Summary report for manual qualifiers.

Field Duplicate RPD Report

Lab Reporting Batch ID: 440-149036-1 **Laboratory: TA IRV**

EDD Filename: Prep440-149036-1 **eQAPP Name: TetraTechInc_NERT_11302016**

Method: 2320B
Matrix: AQ

Analyte	Concentration (mg/L)		Sample RPD	eQAPP RPD	Flag
	TT-TP4-M2-20160602	TT-TP4-M2-20160602-DUP			
Alkalinity as CaCO3	210	210	0	30.00	No Qualifiers Applied
Bicarbonate ion as HCO3	250	250	0		

Method: 2540C
Matrix: AQ

Analyte	Concentration (mg/L)		Sample RPD	eQAPP RPD	Flag
	TT-TP4-M2-20160602	TT-TP4-M2-20160602-DUP			
TOTAL DISSOLVED SOLIDS	2400	2300	4	30.00	No Qualifiers Applied

Method: 300.0
Matrix: AQ

Analyte	Concentration (mg/L)		Sample RPD	eQAPP RPD	Flag
	TT-TP4-M2-20160602	TT-TP4-M2-20160602-DUP			
CHLORIDE	210	210	0	30.00	No Qualifiers Applied
Nitrate as N	26	26	0	30.00	
SULFATE	820	810	1	30.00	

Method: 300.1B
Matrix: AQ

Analyte	Concentration (ug/L)		Sample RPD	eQAPP RPD	Flag
	TT-TP4-M2-20160602	TT-TP4-M2-20160602-DUP			
Chlorate	340000	330000	3	30.00	No Qualifiers Applied

Method: 314.0
Matrix: AQ

Analyte	Concentration (ug/L)		Sample RPD	eQAPP RPD	Flag
	TT-TP4-M2-20160602	TT-TP4-M2-20160602-DUP			
PERCHLORATE	79000	78000	1	30.00	No Qualifiers Applied

Method: 6010B
Matrix: AQ

Analyte	Concentration (mg/L)		Sample RPD	eQAPP RPD	Flag
	TT-TP4-M2-20160602 (DIS)	TT-TP4-M2-20160602-DUP (DIS)			
BORON	1.3	1.3	0	30.00	No Qualifiers Applied
CALCIUM	47	48	2	30.00	
MAGNESIUM	22	21	5	30.00	
POTASSIUM	8.1	8.4	4	30.00	
SODIUM	610	610	0	30.00	

Project Name and Number: 114-520225-2015-MO5 - NERT Soil Flushing

Field Duplicate RPD Report

Lab Reporting Batch ID: 440-149036-1 **Laboratory: TA IRV**

EDD Filename: Prep440-149036-1 **eQAPP Name: TetraTechInc_NERT_11302016**

Method: 6020
Matrix: AQ

Analyte	Concentration (ug/L)		Sample RPD	eQAPP RPD	Flag
	TT-TP4-M2-20160602 (DIS)	TT-TP4-M2-20160602-DUP (DIS)			
ARSENIC	230	220	4	30.00	
BARIUM	18	18	0	30.00	
CHROMIUM	1700	1600	6	30.00	No Qualifiers Applied
MOLYBDENUM	50	48	4	30.00	
SELENIUM	2.0	1.9	5	30.00	
NICKEL	0.56	0.90	47	30.00	J(all detects) UJ(all non-detects)

Method: 7199
Matrix: AQ

Analyte	Concentration (ug/L)		Sample RPD	eQAPP RPD	Flag
	TT-TP4-M2-20160602 (DIS)	TT-TP4-M2-20160602-DUP (DIS)			
Chromium, hexavalent	1700	1700	0	30.00	No Qualifiers Applied

Method: SM5310B
Matrix: AQ

Analyte	Concentration (mg/L)		Sample RPD	eQAPP RPD	Flag
	TT-TP4-M2-20160602	TT-TP4-M2-20160602-DUP			
Total organic carbon	2.0	2.0	0	30.00	No Qualifiers Applied

Project Name and Number: 114-520225-2015-MO5 - NERT Soil Flushing

Matrix Spike/Matrix Spike Duplicate Outlier Report

Lab Reporting Batch ID: 440-149036-1 **Laboratory: TA IRV**

EDD Filename: Prep440-149036-1 **eQAPP Name: TetraTechInc_NERT_11302016**

Method: 7199
Matrix: AQ

QC Sample ID (Associated Samples)	Compound	MS %R	MSD %R	%R Limits	RPD (Limits)	Affected Compounds	Flag
TT-TP4-M3-20160602MS (DIS) (TT-TP4-M3-20160602)	Chromium, hexavalent	81	-	85.00-115.00	-	Chromium, hexavalent	J- (all detects) UJ (all non-detects)

Method: 300.0
Matrix: AQ

QC Sample ID (Associated Samples)	Compound	MS %R	MSD %R	%R Limits	RPD (Limits)	Affected Compounds	Flag
TT-TP4-M3-20160602MS TT-TP4-M3-20160602MSD (TT-TP4-M3-20160602)	Nitrate as N	139	20	80.00-120.00	-	Nitrate as N	J(all detects) UJ(all non-detects)
TT-TP4-M3-20160602MS TT-TP4-M3-20160602MSD (TT-TP4-M3-20160602)	CHLORIDE SULFATE	41 -	30 24	80.00-120.00 80.00-120.00	- -	CHLORIDE SULFATE	J-(all detects) UJ(all non-detects)

Method: 300.1B
Matrix: AQ

QC Sample ID (Associated Samples)	Compound	MS %R	MSD %R	%R Limits	RPD (Limits)	Affected Compounds	Flag
TT-TP4-M3-20160602MS TT-TP4-M3-20160602MSD (TT-TP4-M3-20160602)	Chlorate	11312	18478	75.00-125.00	-	Chlorate	J+(all detects)

Method: 314.0
Matrix: AQ

QC Sample ID (Associated Samples)	Compound	MS %R	MSD %R	%R Limits	RPD (Limits)	Affected Compounds	Flag
TT-TP4-M3-20160602MS TT-TP4-M3-20160602MSD (TT-TP4-M3-20160602)	PERCHLORATE	788	3030	80.00-120.00	-	PERCHLORATE	J+(all detects)

Method: 6020
Matrix: AQ

QC Sample ID (Associated Samples)	Compound	MS %R	MSD %R	%R Limits	RPD (Limits)	Affected Compounds	Flag
TT-TP4-M3-20160602MS (DIS) TT-TP4-M3-20160602MSD (DIS) (TT-TP4-M3-20160602)	CHROMIUM	-89	744	75.00-125.00	-	CHROMIUM	J(all detects) R(all non-detects)

Project Name and Number: 114-520225-2015-MO5 - NERT Soil Flushing

Matrix Spike/Matrix Spike Duplicate Outlier Report

Lab Reporting Batch ID: 440-149036-1 **Laboratory: TA IRV**

EDD Filename: Prep440-149036-1 **eQAPP Name: TetraTechInc_NERT_11302016**

Method: **6010B**
Matrix: **AQ**

QC Sample ID (Associated Samples)	*Compound*	*MS %R*	*MSD %R*	*%R Limits*	*RPD (Limits)*	*Affected Compounds*	*Flag*
TT-TP4-M3-20160602MS (DIS) TT-TP4-M3-20160602MSD (DIS) (TT-TP4-M3-20160602)	CALCIUM SODIUM	6 -14	-52 -394	75.00-125.00 75.00-125.00	- -	CALCIUM SODIUM	J-(all detects) R(all non-detects)
TT-TP4-M3-20160602MSD (DIS) (TT-TP4-M3-20160602)	MAGNESIUM	-	34	75.00-125.00	-	MAGNESIUM	J-(all detects) UJ(all non-detects)

Data Qualifier Summary

Lab Reporting Batch ID: 440-149036-1 **Laboratory: TA IRV**

EDD Filename: Prep440-149036-1 **eQAPP Name: TetraTechInc_NERT_11302016**

Method Category: GENCHEM

Method: 300.0 **Matrix: AQ**

Sample ID: TT-TP4-M3-20160602 **Collected:** 6/2/2016 1:47:00 PM **Analysis Type:** RES **Dilution:** 200

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
Nitrate as N	150		11	MDL	22	MRL	mg/L	J	m, m

Sample ID: TT-TP4-M3-20160602 **Collected:** 6/2/2016 1:47:00 PM **Analysis Type:** RES2 **Dilution:** 200

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
CHLORIDE	410		50	MDL	100	MRL	mg/L	J-	m
SULFATE	1300		50	MDL	100	MRL	mg/L	J-	m

Method Category: GENCHEM

Method: 300.1B **Matrix: AQ**

Sample ID: TT-TP4-M3-20160602 **Collected:** 6/2/2016 1:47:00 PM **Analysis Type:** RES **Dilution:** 10000

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
Chlorate	1000000		100000	MDL	200000	MRL	ug/L	J+	m

Method Category: GENCHEM

Method: 314.0 **Matrix: AQ**

Sample ID: TT-TP4-M3-20160602 **Collected:** 6/2/2016 1:47:00 PM **Analysis Type:** RES **Dilution:** 5000

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
PERCHLORATE	200000		2500	MDL	5000	MRL	ug/L	J+	m

Method Category: METALS

Method: 6010B **Matrix: AQ**

Sample ID: TT-TP4-M3-20160602 **Collected:** 6/2/2016 1:47:00 PM **Analysis Type:** RE2/DIS **Dilution:** 20

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
MAGNESIUM	72		0.20	MDL	0.40	MRL	mg/L	J-	m
SODIUM	1100		5.0	MDL	10	MRL	mg/L	J-	m

* denotes a non-reportable result

Project Name and Number: 114-520225-2015-MO5 - NERT Soil Flushing

Data Qualifier Summary

Lab Reporting Batch ID: 440-149036-1 **Laboratory: TA IRV**

EDD Filename: Prep440-149036-1 **eQAPP Name: TetraTechInc_NERT_11302016**

Method Category: METALS

Method: 6010B **Matrix: AQ**

Sample ID: TT-TP4-M3-20160602 **Collected:** 6/2/2016 1:47:00 PM **Analysis Type:** RES/DIS **Dilution:** 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
CALCIUM	150		0.050	MDL	0.10	MRL	mg/L	J-	m
IRON	0.017	J	0.010	MDL	0.040	MRL	mg/L	J	sp

Method Category: METALS

Method: 6020 **Matrix: AQ**

Sample ID: TT-TP3-M2-20160602 **Collected:** 6/2/2016 11:15:00 AM **Analysis Type:** RES/DIS **Dilution:** 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
SELENIUM	1.6	J	0.50	MDL	2.0	MRL	ug/L	J	sp
ZINC	5.9	J	2.5	MDL	20	MRL	ug/L	J	sp

Sample ID: TT-TP4-M1-20160602 **Collected:** 6/2/2016 12:56:00 PM **Analysis Type:** RES/DIS **Dilution:** 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
NICKEL	0.55	J	0.50	MDL	2.0	MRL	ug/L	J	sp
ZINC	3.2	J	2.5	MDL	20	MRL	ug/L	J	sp

Sample ID: TT-TP4-M2-20160602 **Collected:** 6/2/2016 12:06:00 PM **Analysis Type:** RES/DIS **Dilution:** 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
NICKEL	0.56	J	0.50	MDL	2.0	MRL	ug/L	J	sp, fd

Sample ID: TT-TP4-M2-20160602-DUP **Collected:** 6/2/2016 12:06:00 PM **Analysis Type:** RES/DIS **Dilution:** 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
NICKEL	0.90	J	0.50	MDL	2.0	MRL	ug/L	J	sp, fd
SELENIUM	1.9	J	0.50	MDL	2.0	MRL	ug/L	J	sp

Sample ID: TT-TP4-M3-20160602 **Collected:** 6/2/2016 1:47:00 PM **Analysis Type:** RE2/DIS **Dilution:** 2

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
CHROMIUM	5000		1.0	MDL	4.0	MRL	ug/L	J	m, m

* denotes a non-reportable result

Project Name and Number: 114-520225-2015-MO5 - NERT Soil Flushing

Data Qualifier Summary

Lab Reporting Batch ID: 440-149036-1 **Laboratory: TA IRV**

EDD Filename: Prep440-149036-1 **eQAPP Name: TetraTechInc_NERT_11302016**

Method Category: METALS

Method: 6020 **Matrix: AQ**

Sample ID: **TT-TP4-M3-20160602** ***Collected:*** **6/2/2016 1:47:00 PM** ***Analysis Type:*** **RES/DIS** ***Dilution:*** **1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
COPPER	0.53	J	0.50	MDL	2.0	MRL	ug/L	J	sp
NICKEL	0.61	J	0.50	MDL	2.0	MRL	ug/L	J	sp

Method Category: METALS

Method: 7199 **Matrix: AQ**

Sample ID: **TT-TP3-L1-20160602** ***Collected:*** **6/2/2016 1:47:00 PM** ***Analysis Type:*** **RES/DIS** ***Dilution:*** **1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
Chromium, hexavalent	1.4	J	0.25	MDL	2.0	MRL	ug/L	J	sp

Sample ID: **TT-TP3-L2-20160602** ***Collected:*** **6/2/2016 1:43:00 PM** ***Analysis Type:*** **RES/DIS** ***Dilution:*** **1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
Chromium, hexavalent	0.37	J	0.25	MDL	2.0	MRL	ug/L	J	sp

Sample ID: **TT-TP4-L1-20160602** ***Collected:*** **6/2/2016 2:09:00 PM** ***Analysis Type:*** **RES/DIS** ***Dilution:*** **1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
Chromium, hexavalent	0.26	J	0.25	MDL	2.0	MRL	ug/L	J	sp

Sample ID: **TT-TP4-M3-20160602** ***Collected:*** **6/2/2016 1:47:00 PM** ***Analysis Type:*** **RE2/DIS** ***Dilution:*** **500**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
Chromium, hexavalent	5100		130	MDL	1000	MRL	ug/L	J-	m

* denotes a non-reportable result

Project Name and Number: 114-520225-2015-MO5 - NERT Soil Flushing

Data Qualifier Summary

Lab Reporting Batch ID: 440-149036-1

Laboratory: TA IRV

EDD Filename: Prep440-149036-1

eQAPP Name: TetraTechInc_NERT_11302016

Reason Code Legend

Reason Code	*Description*
fd	Field Duplicate Precision
m	Matrix Spike Lower Estimation
m	Matrix Spike Lower Rejection
m	Matrix Spike Upper Estimation
sp	Reporting Limit Trace Value

* denotes a non-reportable result

Project Name and Number: 114-520225-2015-MO5 - NERT Soil Flushing

Reporting Limit Outliers

Lab Reporting Batch ID: 440-149036-1 **Laboratory: TA IRV**

EDD Filename: Prep440-149036-1 **eQAPP Name: TetraTechInc_NERT_11302016**

Method: 6010B

Matrix: AQ

SampleID	Analyte	Lab Qual	Result	Reporting Limit	RL Type	Units	Flag
TT-TP4-M3-20160602	IRON	J	0.017	0.040	MRL	mg/L	J (all detects)

Method: 6020

Matrix: AQ

SampleID	Analyte	Lab Qual	Result	Reporting Limit	RL Type	Units	Flag
TT-TP3-M2-20160602	SELENIUM ZINC	J J	1.6 5.9	2.0 20	MRL MRL	ug/L ug/L	J (all detects)
TT-TP4-M1-20160602	NICKEL ZINC	J J	0.55 3.2	2.0 20	MRL MRL	ug/L ug/L	J (all detects)
TT-TP4-M2-20160602	NICKEL	J	0.56	2.0	MRL	ug/L	J (all detects)
TT-TP4-M2-20160602-DUP	NICKEL SELENIUM	J J	0.90 1.9	2.0 2.0	MRL MRL	ug/L ug/L	J (all detects)
TT-TP4-M3-20160602	COPPER NICKEL	J J	0.53 0.61	2.0 2.0	MRL MRL	ug/L ug/L	J (all detects)

Method: 7199

Matrix: AQ

SampleID	Analyte	Lab Qual	Result	Reporting Limit	RL Type	Units	Flag
TT-TP3-L1-20160602	Chromium, hexavalent	J	1.4	2.0	MRL	ug/L	J (all detects)
TT-TP3-L2-20160602	Chromium, hexavalent	J	0.37	2.0	MRL	ug/L	J (all detects)
TT-TP4-L1-20160602	Chromium, hexavalent	J	0.26	2.0	MRL	ug/L	J (all detects)

Data Review Summary

Lab Reporting Batch ID: 440-149621-1 **Laboratory: TA IRV**

EDD Filename: Prep440-149621-1 **eQAPP Name: TetraTechInc_NERT_11302016**

Validation Area	*Note*
Technical Holding Times	SR
Temperature	A
Initial Calibration	N
Continuing Calibration/Initial Calibration Verification	N
Method Blanks	SR
Surrogate/Tracer Spikes	N
Matrix Spike/Matrix Spike Duplicates	SR
Laboratory Duplicates	A
Laboratory Replicates	N
Laboratory Control Samples	A
Compound Quantitation	SR
Field Duplicates	N
Field Triplicates	N
Field Blanks	N

A = Acceptable, N = Not provided/applicable, SR = See report

The contents of this report reflect findings made by ADR during Automated Data Review, manual applied qualifiers are not considered. Please refer to the Overall Qualifier Summary report for manual qualifiers.

QC Outlier Report: HoldingTimes

Lab Reporting Batch ID: 440-149621-1 **Laboratory: TA IRV**
EDD Filename: Prep440-149621-1 **eQAPP Name: TetraTechInc_NERT_11302016**

Method: 7199 **Preparation Method: Gen Prep**
Matrix: AQ

Sample ID	Type	Actual	Criteria	Units	Flag
TT-TP3-M1-20160608 (RE2/DIS)	Sampling To Analysis	25.50	24.00	HOURS	J- (all detects) UJ (all non-detects)

Project Name and Number: 114-520225-2015-MO5 -

Matrix Spike/Matrix Spike Duplicate Outlier Report

Lab Reporting Batch ID: 440-149621-1 **Laboratory: TA IRV**

EDD Filename: Prep440-149621-1 **eQAPP Name: TetraTechInc_NERT_11302016**

Method: **6020**
Matrix: **AQ**

QC Sample ID (Associated Samples)	*Compound*	*MS %R*	*MSD %R*	*%R Limits*	*RPD (Limits)*	*Affected Compounds*	*Flag*
TT-TP1-M1-20160608MS (DIS) TT-TP1-M1-20160608MSD (DIS) (TT-TP1-M1-20160608)	CHROMIUM	573	312	75.00-125.00	-	CHROMIUM	J+ (all detects)
TT-TP2-M2-20160608MS (DIS) TT-TP2-M2-20160608MSD (DIS) (TT-TP2-M2-20160608)	CHROMIUM	22	19	75.00-125.00	-	CHROMIUM	J-(all detects) R(all non-detects)

Method Blank Outlier Report

Lab Reporting Batch ID: 440-149621-1 **Laboratory: TA IRV**

EDD Filename: Prep440-149621-1 **eQAPP Name: TetraTechInc_NERT_11302016**

Method: **6020**
Matrix: **AQ**

Method Blank Sample ID	Analysis Date	Analyte	Result	Associated Samples
MB 440-336734/1-B	6/17/2016 7:48:00 PM	CHROMIUM	0.665 ug/L	TT-TP2-M2-20160608 TT-TP3-L2-20160608 TT-TP3-M1-20160608 TT-TP3-M2-20160608 TT-TP4-M2-20160608

Data Qualifier Summary

Lab Reporting Batch ID: 440-149621-1 **Laboratory: TA IRV**

EDD Filename: Prep440-149621-1 **eQAPP Name: TetraTechInc_NERT_11302016**

Method Category: METALS

Method: 6020 **Matrix: AQ**

Sample ID: **TT-TP1-M1-20160608** ***Collected:*** **6/8/2016 9:33:00 AM** ***Analysis Type:*** **RES/DIS** ***Dilution:*** **5**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
CHROMIUM	3900		2.5	MDL	10	MRL	ug/L	J+	m

Sample ID: **TT-TP2-M2-20160608** ***Collected:*** **6/8/2016 10:43:00 AM** ***Analysis Type:*** **RES/DIS** ***Dilution:*** **1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
CHROMIUM	2700	B	0.50	MDL	2.0	MRL	ug/L	J-	m

Method Category: METALS

Method: 7199 **Matrix: AQ**

Sample ID: **TT-TP3-L1-20160608** ***Collected:*** **6/8/2016 1:15:00 PM** ***Analysis Type:*** **RES/DIS** ***Dilution:*** **1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
Chromium, hexavalent	1.2	J	0.25	MDL	2.0	MRL	ug/L	J	sp

Sample ID: **TT-TP3-L2-20160608** ***Collected:*** **6/8/2016 1:20:00 PM** ***Analysis Type:*** **RES/DIS** ***Dilution:*** **1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
Chromium, hexavalent	0.28	J	0.25	MDL	2.0	MRL	ug/L	J	sp

* denotes a non-reportable result

Project Name and Number: 114-520225-2015-MO5 - NERT Soil Flushing

Data Qualifier Summary

Lab Reporting Batch ID: 440-149621-1

Laboratory: TA IRV

EDD Filename: Prep440-149621-1

eQAPP Name: TetraTechInc_NERT_11302016

Reason Code Legend

Reason Code	*Description*
bl	Method Blank Contamination
e	Sampling to Analysis Estimation
h	Sampling to Analysis Estimation
m	Matrix Spike Lower Rejection
m	Matrix Spike Upper Estimation
sp	Reporting Limit Trace Value

* denotes a non-reportable result

Project Name and Number: 114-520225-2015-MO5 - NERT Soil Flushing

Reporting Limit Outliers

Lab Reporting Batch ID: 440-149621-1 **Laboratory: TA IRV**

EDD Filename: Prep440-149621-1 **eQAPP Name: TetraTechInc_NERT_11302016**

Method: **7199**

Matrix: **AQ**

SampleID	*Analyte*	*Lab Qual*	*Result*	*Reporting Limit*	*RL Type*	*Units*	*Flag*
TT-TP3-L1-20160608	Chromium, hexavalent	J	1.2	2.0	MRL	ug/L	J (all detects)
TT-TP3-L2-20160608	Chromium, hexavalent	J	0.28	2.0	MRL	ug/L	J (all detects)

Data Review Summary

Lab Reporting Batch ID: 440-149732-1 **Laboratory: TA IRV**

EDD Filename: Prep440-149732-1 **eQAPP Name: TetraTechInc_NERT_11302016**

Validation Area	*Note*
Technical Holding Times	SR
Temperature	A
Initial Calibration	N
Continuing Calibration/Initial Calibration Verification	N
Method Blanks	A
Surrogate/Tracer Spikes	N
Matrix Spike/Matrix Spike Duplicates	SR
Laboratory Duplicates	A
Laboratory Replicates	N
Laboratory Control Samples	A
Compound Quantitation	A
Field Duplicates	A
Field Triplicates	N
Field Blanks	N

A = Acceptable, N = Not provided/applicable, SR = See report

The contents of this report reflect findings made by ADR during Automated Data Review, manual applied qualifiers are not considered. Please refer to the Overall Qualifier Summary report for manual qualifiers.

Field Duplicate RPD Report

Lab Reporting Batch ID: 440-149732-1 **Laboratory: TA IRV**

EDD Filename: Prep440-149732-1 **eQAPP Name: TetraTechInc_NERT_11302016**

Method: 2540C
Matrix: AQ

Analyte	Concentration (mg/L)		Sample RPD	eQAPP RPD	Flag
	TT-TP4-M3-20160609	TT-TP4-M3-20160609-DUP			
TOTAL DISSOLVED SOLIDS	5000	5300	6	30.00	No Qualifiers Applied

Method: 314.0
Matrix: AQ

Analyte	Concentration (ug/L)		Sample RPD	eQAPP RPD	Flag
	TT-TP4-M3-20160609	TT-TP4-M3-20160609-DUP			
PERCHLORATE	190000	170000	11	30.00	No Qualifiers Applied

Method: 6020
Matrix: AQ

Analyte	Concentration (ug/L)		Sample RPD	eQAPP RPD	Flag
	TT-TP4-M3-20160609 (DIS)	TT-TP4-M3-20160609-DUP (DIS)			
CHROMIUM	4900	5000	2	30.00	No Qualifiers Applied

Method: 7199
Matrix: AQ

Analyte	Concentration (ug/L)		Sample RPD	eQAPP RPD	Flag
	TT-TP4-M3-20160609 (DIS)	TT-TP4-M3-20160609-DUP (DIS)			
Chromium, hexavalent	4700	4600	2	30.00	No Qualifiers Applied

Method: SM5310B
Matrix: AQ

Analyte	Concentration (mg/L)		Sample RPD	eQAPP RPD	Flag
	TT-TP4-M3-20160609	TT-TP4-M3-20160609-DUP			
Total organic carbon	2.0	2.1	5	30.00	No Qualifiers Applied

Project Name and Number: 114-520225-2015-MO5 - NERT Soil Flushing

QC Outlier Report: HoldingTimes

Lab Reporting Batch ID: 440-149732-1 **Laboratory: TA IRV**

EDD Filename: Prep440-149732-1 **eQAPP Name: TetraTechInc_NERT_11302016**

Method: 7199 **Preparation Method: Gen Prep**

Matrix: AQ

Sample ID	Type	Actual	Criteria	Units	Flag
TT-TP4-M3-20160609-DUP (RE2/DIS)	Sampling To Analysis	25.50	24.00	HOURS	J- (all detects)
TT-TP4-M3-20160609MSD (RES/DIS)		24.25	24.00	HOURS	UJ (all non-detects)

Project Name and Number: 114-520225-2015-MO5 -

Matrix Spike/Matrix Spike Duplicate Outlier Report

Lab Reporting Batch ID: 440-149732-1 **Laboratory: TA IRV**

EDD Filename: Prep440-149732-1 **eQAPP Name: TetraTechInc_NERT_11302016**

Method: 7199
Matrix: AQ

QC Sample ID (Associated Samples)	Compound	MS %R	MSD %R	%R Limits	RPD (Limits)	Affected Compounds	Flag
TT-TP4-M3-20160609MS (DIS) TT-TP4-M3-20160609MSD (DIS) (TT-TP4-M3-20160609)	Chromium, hexavalent	-46	-80	85.00-115.00	-	Chromium, hexavalent	J- (all detects) R (all non-detects)

Method: 6020
Matrix: AQ

QC Sample ID (Associated Samples)	Compound	MS %R	MSD %R	%R Limits	RPD (Limits)	Affected Compounds	Flag
TT-TP4-M3-20160609MS (DIS) TT-TP4-M3-20160609MSD (DIS) (TT-TP4-M3-20160609)	CHROMIUM	-320	185	75.00-125.00	-	CHROMIUM	J(all detects) R(all non-detects)

Data Qualifier Summary

Lab Reporting Batch ID: 440-149732-1 **Laboratory: TA IRV**

EDD Filename: Prep440-149732-1 **eQAPP Name: TetraTechInc_NERT_11302016**

Method Category: **METALS**

Method: **6020** ***Matrix:*** **AQ**

Sample ID: **TT-TP4-M3-20160609** ***Collected:*** **6/9/2016 10:20:00 AM** ***Analysis Type:*** **RES/DIS** ***Dilution:*** **5**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
CHROMIUM	4900		2.5	MDL	10	MRL	ug/L	J	m, m

Method Category: **METALS**

Method: **7199** ***Matrix:*** **AQ**

Sample ID: **TT-TP4-M3-20160609** ***Collected:*** **6/9/2016 10:20:00 AM** ***Analysis Type:*** **RES/DIS** ***Dilution:*** **100**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
Chromium, hexavalent	4700		25	MDL	200	MRL	ug/L	J-	m

* denotes a non-reportable result

Project Name and Number: 114-520225-2015-MO5 - NERT Soil Flushing

Data Qualifier Summary

Lab Reporting Batch ID: 440-149732-1

Laboratory: TA IRV

EDD Filename: Prep440-149732-1

eQAPP Name: TetraTechInc_NERT_11302016

Reason Code Legend

Reason Code	*Description*
e	Sampling to Analysis Estimation
h	Sampling to Analysis Estimation
m	Matrix Spike Lower Rejection
m	Matrix Spike Upper Estimation

* denotes a non-reportable result

Project Name and Number: 114-520225-2015-MO5 - NERT Soil Flushing

Data Review Summary

Lab Reporting Batch ID: 440-150680-1 **Laboratory: TA IRV**

EDD Filename: Prep440-150680-1 **eQAPP Name: TetraTechInc_NERT_11302016**

Validation Area	*Note*
Technical Holding Times	A
Temperature	A
Initial Calibration	N
Continuing Calibration/Initial Calibration Verification	N
Method Blanks	A
Surrogate/Tracer Spikes	N
Matrix Spike/Matrix Spike Duplicates	A
Laboratory Duplicates	A
Laboratory Replicates	N
Laboratory Control Samples	A
Compound Quantitation	A
Field Duplicates	N
Field Triplicates	N
Field Blanks	N

A = Acceptable, N = Not provided/applicable, SR = See report

The contents of this report reflect findings made by ADR during Automated Data Review, manual applied qualifiers are not considered. Please refer to the Overall Qualifier Summary report for manual qualifiers.

Data Qualifier Summary

Lab Reporting Batch ID: 440-150680-1

Laboratory: TA IRV

EDD Filename: Prep440-150680-1

eQAPP Name: TetraTechInc_NERT_11302016

No Data Review Qualifiers Applied.

Data Review Summary

Lab Reporting Batch ID: 440-150775-1 **Laboratory: TA IRV**

EDD Filename: Prep440-150775-1 **eQAPP Name: TetraTechInc_NERT_11302016**

Validation Area	*Note*
Technical Holding Times	A
Temperature	A
Initial Calibration	N
Continuing Calibration/Initial Calibration Verification	N
Method Blanks	A
Surrogate/Tracer Spikes	N
Matrix Spike/Matrix Spike Duplicates	SR
Laboratory Duplicates	A
Laboratory Replicates	N
Laboratory Control Samples	A
Compound Quantitation	SR
Field Duplicates	A
Field Triplicates	N
Field Blanks	N

A = Acceptable, N = Not provided/applicable, SR = See report

The contents of this report reflect findings made by ADR during Automated Data Review, manual applied qualifiers are not considered. Please refer to the Overall Qualifier Summary report for manual qualifiers.

Field Duplicate RPD Report

Lab Reporting Batch ID: 440-150775-1 **Laboratory: TA IRV**

EDD Filename: Prep440-150775-1 **eQAPP Name: TetraTechInc_NERT_11302016**

Method: 2540C
Matrix: AQ

Analyte	Concentration (mg/L)		Sample RPD	eQAPP RPD	Flag
	TT-TP4-M3-20160622	TT-TP4-M3-20160622-DUP			
TOTAL DISSOLVED SOLIDS	5300	5400	2	30.00	No Qualifiers Applied

Method: 314.0
Matrix: AQ

Analyte	Concentration (ug/L)		Sample RPD	eQAPP RPD	Flag
	TT-TP4-M3-20160622	TT-TP4-M3-20160622-DUP			
PERCHLORATE	170000	160000	6	30.00	No Qualifiers Applied

Method: 6020
Matrix: AQ

Analyte	Concentration (ug/L)		Sample RPD	eQAPP RPD	Flag
	TT-TP4-M3-20160622 (DIS)	TT-TP4-M3-20160622-DUP (DIS)			
CHROMIUM	4000	3900	3	30.00	No Qualifiers Applied

Method: 7199
Matrix: AQ

Analyte	Concentration (ug/L)		Sample RPD	eQAPP RPD	Flag
	TT-TP4-M3-20160622 (DIS)	TT-TP4-M3-20160622-DUP (DIS)			
Chromium, hexavalent	3900	4100	5	30.00	No Qualifiers Applied

Method: SM5310B
Matrix: AQ

Analyte	Concentration (mg/L)		Sample RPD	eQAPP RPD	Flag
	TT-TP4-M3-20160622	TT-TP4-M3-20160622-DUP			
Total organic carbon	1.6	1.6	0	30.00	No Qualifiers Applied

QC Outlier Report: HoldingTimes

Lab Reporting Batch ID: 440-150775-1 **Laboratory: TA IRV**

EDD Filename: Prep440-150775-1 **eQAPP Name: TetraTechInc_NERT_11302016**

Method: 7199 **Preparation Method: Gen Prep**

Matrix: AQ

Sample ID	Type	Actual	Criteria	Units	Flag
TT-TP4-M3-20160622MS (RES/DIS)	Sampling To Analysis	24.75	24.00	HOURS	J- (all detects)
TT-TP4-M3-20160622MSD (RES/DIS)		25.00	24.00	HOURS	UJ (all non-detects)

Project Name and Number: 114-520225-2015-MO5 -

Matrix Spike/Matrix Spike Duplicate Outlier Report

Lab Reporting Batch ID: 440-150775-1 **Laboratory: TA IRV**

EDD Filename: Prep440-150775-1 **eQAPP Name: TetraTechInc_NERT_11302016**

Method: 7199
Matrix: AQ

QC Sample ID (Associated Samples)	Compound	MS %R	MSD %R	%R Limits	RPD (Limits)	Affected Compounds	Flag
TT-TP4-M3-20160622MS (DIS) TT-TP4-M3-20160622MSD (DIS) (TT-TP4-M3-20160622)	Chromium, hexavalent	84	83	85.00-115.00	-	Chromium, hexavalent	J- (all detects) UJ (all non-detects)

Method: 6020
Matrix: AQ

QC Sample ID (Associated Samples)	Compound	MS %R	MSD %R	%R Limits	RPD (Limits)	Affected Compounds	Flag
TT-TP4-M3-20160622MS (DIS) TT-TP4-M3-20160622MSD (DIS) (TT-TP4-M3-20160622)	CHROMIUM	-198	-276	75.00-125.00	-	CHROMIUM	J-(all detects) R(all non-detects)

Data Qualifier Summary

Lab Reporting Batch ID: 440-150775-1 **Laboratory: TA IRV**

EDD Filename: Prep440-150775-1 **eQAPP Name: TetraTechInc_NERT_11302016**

Method Category: METALS

Method: 6020 **Matrix: AQ**

Sample ID: TT-TP4-M3-20160622 **Collected:** 6/22/2016 12:14:00 PM **Analysis Type:** RES/DIS **Dilution:** 10

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
CHROMIUM	4000		5.0	MDL	20	MRL	ug/L	J-	m

Method Category: METALS

Method: 7199 **Matrix: AQ**

Sample ID: TT-TP2-L2-20160622 **Collected:** 6/22/2016 1:15:00 PM **Analysis Type:** RES/DIS **Dilution:** 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
Chromium, hexavalent	1.5	J	0.25	MDL	2.0	MRL	ug/L	J	sp

Sample ID: TT-TP3-L1-20160622 **Collected:** 6/22/2016 1:20:00 PM **Analysis Type:** RES/DIS **Dilution:** 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
Chromium, hexavalent	1.7	J	0.25	MDL	2.0	MRL	ug/L	J	sp

Sample ID: TT-TP4-M3-20160622 **Collected:** 6/22/2016 12:14:00 PM **Analysis Type:** RES/DIS **Dilution:** 100

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
Chromium, hexavalent	3900	F1	25	MDL	200	MRL	ug/L	J-	m

* denotes a non-reportable result

Project Name and Number: 114-520225-2015-MO5 - NERT Soil Flushing

Data Qualifier Summary

Lab Reporting Batch ID: 440-150775-1

Laboratory: TA IRV

EDD Filename: Prep440-150775-1

eQAPP Name: TetraTechInc_NERT_11302016

Reason Code Legend

Reason Code	*Description*
m	Matrix Spike Lower Estimation
m	Matrix Spike Lower Rejection
sp	Reporting Limit Trace Value

* denotes a non-reportable result

Project Name and Number: 114-520225-2015-MO5 - NERT Soil Flushing

Reporting Limit Outliers

Lab Reporting Batch ID: 440-150775-1 **Laboratory: TA IRV**

EDD Filename: Prep440-150775-1 **eQAPP Name: TetraTechInc_NERT_11302016**

Method: **7199**

Matrix: **AQ**

SampleID	*Analyte*	*Lab Qual*	*Result*	*Reporting Limit*	*RL Type*	*Units*	*Flag*
TT-TP2-L2-20160622	Chromium, hexavalent	J	1.5	2.0	MRL	ug/L	J (all detects)
TT-TP3-L1-20160622	Chromium, hexavalent	J	1.7	2.0	MRL	ug/L	J (all detects)

Data Review Summary

Lab Reporting Batch ID: 440-151701-1 **Laboratory: TA IRV**

EDD Filename: Prep440-151701-1 **eQAPP Name: TetraTechInc_NERT_11302016**

Validation Area	*Note*
Technical Holding Times	A
Temperature	A
Initial Calibration	N
Continuing Calibration/Initial Calibration Verification	N
Method Blanks	A
Surrogate/Tracer Spikes	N
Matrix Spike/Matrix Spike Duplicates	A
Laboratory Duplicates	A
Laboratory Replicates	N
Laboratory Control Samples	A
Compound Quantitation	SR
Field Duplicates	N
Field Triplicates	N
Field Blanks	N

A = Acceptable, N = Not provided/applicable, SR = See report

The contents of this report reflect findings made by ADR during Automated Data Review, manual applied qualifiers are not considered. Please refer to the Overall Qualifier Summary report for manual qualifiers.

Data Qualifier Summary

Lab Reporting Batch ID: 440-151701-1 **Laboratory: TA IRV**

EDD Filename: Prep440-151701-1 **eQAPP Name: TetraTechInc_NERT_11302016**

Method Category: **METALS**

Method: **7199** ***Matrix:*** **AQ**

Sample ID: **TT-TP2-L1-20160705** ***Collected:*** **7/5/2016 1:30:00 PM** ***Analysis Type:*** **RES/DIS** ***Dilution:*** **1**

Analyte	*Lab Result*	*Lab Qual*	*DL*	*DL Type*	*RL*	*RL Type*	*Units*	*Data Review Qual*	*Reason Code*
Chromium, hexavalent	0.50	J	0.25	MDL	2.0	MRL	ug/L	J	sp

Sample ID: **TT-TP3-L2-20160705** ***Collected:*** **7/5/2016 1:25:00 PM** ***Analysis Type:*** **RES/DIS** ***Dilution:*** **1**

Analyte	*Lab Result*	*Lab Qual*	*DL*	*DL Type*	*RL*	*RL Type*	*Units*	*Data Review Qual*	*Reason Code*
Chromium, hexavalent	0.46	J	0.25	MDL	2.0	MRL	ug/L	J	sp

* denotes a non-reportable result

Project Name and Number: 114-520225-2015-MO5 - NERT Soil Flushing

Data Qualifier Summary

Lab Reporting Batch ID: 440-151701-1

Laboratory: TA IRV

EDD Filename: Prep440-151701-1

eQAPP Name: TetraTechInc_NERT_11302016

Reason Code Legend

Reason Code	*Description*
sp	Reporting Limit Trace Value

* denotes a non-reportable result

Project Name and Number: 114-520225-2015-MO5 - NERT Soil Flushing

Reporting Limit Outliers

Lab Reporting Batch ID: 440-151701-1 **Laboratory: TA IRV**

EDD Filename: Prep440-151701-1 **eQAPP Name: TetraTechInc_NERT_11302016**

Method: **7199**

Matrix: **AQ**

SampleID	*Analyte*	*Lab Qual*	*Result*	*Reporting Limit*	*RL Type*	*Units*	*Flag*
TT-TP2-L1-20160705	Chromium, hexavalent	J	0.50	2.0	MRL	ug/L	J (all detects)
TT-TP3-L2-20160705	Chromium, hexavalent	J	0.46	2.0	MRL	ug/L	J (all detects)

Data Review Summary

Lab Reporting Batch ID: 440-151885-1 **Laboratory: TA IRV**

EDD Filename: Prep440-151885-1 **eQAPP Name: TetraTechInc_NERT_11302016**

Validation Area	*Note*
Technical Holding Times	A
Temperature	A
Initial Calibration	N
Continuing Calibration/Initial Calibration Verification	N
Method Blanks	A
Surrogate/Tracer Spikes	N
Matrix Spike/Matrix Spike Duplicates	SR
Laboratory Duplicates	A
Laboratory Replicates	N
Laboratory Control Samples	A
Compound Quantitation	A
Field Duplicates	A
Field Triplicates	N
Field Blanks	N

A = Acceptable, N = Not provided/applicable, SR = See report

The contents of this report reflect findings made by ADR during Automated Data Review, manual applied qualifiers are not considered. Please refer to the Overall Qualifier Summary report for manual qualifiers.

Field Duplicate RPD Report

Lab Reporting Batch ID: 440-151885-1 **Laboratory: TA IRV**

EDD Filename: Prep440-151885-1 **eQAPP Name: TetraTechInc_NERT_11302016**

Method: 2540C
Matrix: AQ

Analyte	Concentration (mg/L)		Sample RPD	eQAPP RPD	Flag
	TT-TP4-M3-20160706	TT-TP4-M3-20160706-DUP			
TOTAL DISSOLVED SOLIDS	6400	6400	0	30.00	No Qualifiers Applied

Method: 314.0
Matrix: AQ

Analyte	Concentration (ug/L)		Sample RPD	eQAPP RPD	Flag
	TT-TP4-M3-20160706	TT-TP4-M3-20160706-DUP			
PERCHLORATE	250000	270000	8	30.00	No Qualifiers Applied

Method: 6020
Matrix: AQ

Analyte	Concentration (ug/L)		Sample RPD	eQAPP RPD	Flag
	TT-TP4-M3-20160706 (DIS)	TT-TP4-M3-20160706-DUP (DIS)			
CHROMIUM	5300	5400	2	30.00	No Qualifiers Applied

Method: 7199
Matrix: AQ

Analyte	Concentration (ug/L)		Sample RPD	eQAPP RPD	Flag
	TT-TP4-M3-20160706 (DIS)	TT-TP4-M3-20160706-DUP (DIS)			
Chromium, hexavalent	5600	5900	5	30.00	No Qualifiers Applied

Method: SM5310B
Matrix: AQ

Analyte	Concentration (mg/L)		Sample RPD	eQAPP RPD	Flag
	TT-TP4-M3-20160706	TT-TP4-M3-20160706-DUP			
Total organic carbon	1.9	1.8	5	30.00	No Qualifiers Applied

Project Name and Number: 114-520225-2015-MO5 - NERT Soil Flushing

Matrix Spike/Matrix Spike Duplicate Outlier Report

Lab Reporting Batch ID: 440-151885-1 **Laboratory: TA IRV**

EDD Filename: Prep440-151885-1 **eQAPP Name: TetraTechInc_NERT_11302016**

Method: 314.0
Matrix: AQ

QC Sample ID (Associated Samples)	Compound	MS %R	MSD %R	%R Limits	RPD (Limits)	Affected Compounds	Flag
TT-TP4-M3-20160706MS TT-TP4-M3-20160706MSD (TT-TP4-M3-20160706)	PERCHLORATE	39	51	80.00-120.00	-	PERCHLORATE	J- (all detects) UJ (all non-detects)

Method: 6020
Matrix: AQ

QC Sample ID (Associated Samples)	Compound	MS %R	MSD %R	%R Limits	RPD (Limits)	Affected Compounds	Flag
TT-TP4-M3-20160706MS (DIS) TT-TP4-M3-20160706MSD (DIS) (TT-TP4-M3-20160706)	CHROMIUM	264	313	75.00-125.00	-	CHROMIUM	J+(all detects)

Data Qualifier Summary

Lab Reporting Batch ID: 440-151885-1 **Laboratory: TA IRV**

EDD Filename: Prep440-151885-1 **eQAPP Name: TetraTechInc_NERT_11302016**

Method Category: GENCHEM

Method: 314.0 **Matrix: AQ**

Sample ID: TT-TP4-M3-20160706 **Collected:** 7/6/2016 9:33:00 AM **Analysis Type:** RES **Dilution:** 10000

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
PERCHLORATE	250000		5000	MDL	10000	MRL	ug/L	J-	m

Method Category: METALS

Method: 6020 **Matrix: AQ**

Sample ID: TT-TP4-M3-20160706 **Collected:** 7/6/2016 9:33:00 AM **Analysis Type:** RES/DIS **Dilution:** 5

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
CHROMIUM	5300		2.5	MDL	10	MRL	ug/L	J+	m

* denotes a non-reportable result

Project Name and Number: 114-520225-2015-MO5 - NERT Soil Flushing

Data Qualifier Summary

Lab Reporting Batch ID: 440-151885-1

Laboratory: TA IRV

EDD Filename: Prep440-151885-1

eQAPP Name: TetraTechInc_NERT_11302016

Reason Code Legend

Reason Code	*Description*
m	Matrix Spike Lower Estimation
m	Matrix Spike Upper Estimation

* denotes a non-reportable result

Project Name and Number: 114-520225-2015-MO5 - NERT Soil Flushing

Data Review Summary

Lab Reporting Batch ID: 440-152222-1 **Laboratory: TA IRV**

EDD Filename: Prep440-152222-1 **eQAPP Name: TetraTechInc_NERT_11302016**

Validation Area	*Note*
Technical Holding Times	A
Temperature	A
Initial Calibration	N
Continuing Calibration/Initial Calibration Verification	N
Method Blanks	A
Surrogate/Tracer Spikes	A
Matrix Spike/Matrix Spike Duplicates	SR
Laboratory Duplicates	N
Laboratory Replicates	N
Laboratory Control Samples	A
Compound Quantitation	A
Field Duplicates	SR
Field Triplicates	N
Field Blanks	A

A = Acceptable, N = Not provided/applicable, SR = See report

The contents of this report reflect findings made by ADR during Automated Data Review, manual applied qualifiers are not considered. Please refer to the Overall Qualifier Summary report for manual qualifiers.

Field Duplicate RPD Report

Lab Reporting Batch ID: 440-152222-1 **Laboratory: TA IRV**

EDD Filename: Prep440-152222-1 **eQAPP Name: TetraTechInc_NERT_11302016**

Method: 314.0
Matrix: SO

Analyte	Concentration (mg/Kg)		Sample RPD	eQAPP RPD	Flag
	DFSB-09-15'	DFSB-09-15'-DUP			
PERCHLORATE	150	19	155	30.00	J (all detects) UJ (all non-detects)

Project Name and Number: 114-520225-2015-MO5 - NERT Soil Flushing

Matrix Spike/Matrix Spike Duplicate Outlier Report

Lab Reporting Batch ID: 440-152222-1 **Laboratory: TA IRV**

EDD Filename: Prep440-152222-1 **eQAPP Name: TetraTechInc_NERT_11302016**

Method: **314.0**
Matrix: **SO**

QC Sample ID (Associated Samples)	*Compound*	*MS %R*	*MSD %R*	*%R Limits*	*RPD (Limits)*	*Affected Compounds*	*Flag*
DFSB-09-15'-DUPMS DFSB-09-15'-DUPMSD (DFSB-09-15'-DUP)	PERCHLORATE	-618	-377	80.00-120.00	-	PERCHLORATE	J- (all detects) R (all non-detects)

Project Name and Number: 114-520225-2015-MO5 - NERT Soil Flushing

Data Qualifier Summary

Lab Reporting Batch ID: 440-152222-1 **Laboratory: TA IRV**

EDD Filename: Prep440-152222-1 **eQAPP Name: TetraTechInc_NERT_11302016**

Method Category: **GENCHEM**

Method: **314.0** ***Matrix:*** **SO**

Sample ID: **DFSB-09-15'** ***Collected:*** **7/8/2016 2:00:00 PM** ***Analysis Type:*** **RES/DIS** ***Dilution:*** **1000**

Analyte	*Lab Result*	*Lab Qual*	*DL*	*DL Type*	*RL*	*RL Type*	*Units*	*Data Review Qual*	*Reason Code*
PERCHLORATE	150		11	MDL	47	MRL	mg/Kg	J	fd

Sample ID: **DFSB-09-15'-DUP** ***Collected:*** **7/8/2016 2:05:00 PM** ***Analysis Type:*** **RES/DIS** ***Dilution:*** **100**

Analyte	*Lab Result*	*Lab Qual*	*DL*	*DL Type*	*RL*	*RL Type*	*Units*	*Data Review Qual*	*Reason Code*
PERCHLORATE	19		1.3	MDL	5.4	MRL	mg/Kg	J-	m, fd

* denotes a non-reportable result

Project Name and Number: 114-520225-2015-MO5 - NERT Soil Flushing

Data Qualifier Summary

Lab Reporting Batch ID: 440-152222-1

Laboratory: TA IRV

EDD Filename: Prep440-152222-1

eQAPP Name: TetraTechInc_NERT_11302016

Reason Code Legend

Reason Code	*Description*
fd	Field Duplicate Precision
m	Matrix Spike Lower Rejection

* denotes a non-reportable result

Project Name and Number: 114-520225-2015-MO5 - NERT Soil Flushing

Data Review Summary

Lab Reporting Batch ID: 440-153790-1 **Laboratory: TA IRV**

EDD Filename: Prep440-153790-1 **eQAPP Name: TetraTechInc_NERT_11302016**

Validation Area	*Note*
Technical Holding Times	A
Temperature	A
Initial Calibration	N
Continuing Calibration/Initial Calibration Verification	N
Method Blanks	SR
Surrogate/Tracer Spikes	A
Matrix Spike/Matrix Spike Duplicates	SR
Laboratory Duplicates	A
Laboratory Replicates	N
Laboratory Control Samples	A
Compound Quantitation	SR
Field Duplicates	N
Field Triplicates	N
Field Blanks	N

A = Acceptable, N = Not provided/applicable, SR = See report

The contents of this report reflect findings made by ADR during Automated Data Review, manual applied qualifiers are not considered. Please refer to the Overall Qualifier Summary report for manual qualifiers.

QC Outlier Report: HoldingTimes

Lab Reporting Batch ID: 440-153790-1 **Laboratory: TA IRV**

EDD Filename: Prep440-153790-1 **eQAPP Name: TetraTechInc_NERT_11302016**

Method: 7199 **Preparation Method: Gen Prep**

Matrix: AQ

Sample ID	Type	Actual	Criteria	Units	Flag
TT-TP1-L2-20160727MS (RES/DIS)	Sampling To Analysis	26.00	24.00	HOURS	J- (all detects)
TT-TP1-L2-20160727MSD (RES/DIS)		26.00	24.00	HOURS	UJ (all non-detects)

Project Name and Number: 114-520225-2015-MO5 -

Matrix Spike/Matrix Spike Duplicate Outlier Report

Lab Reporting Batch ID: 440-153790-1 **Laboratory: TA IRV**

EDD Filename: Prep440-153790-1 **eQAPP Name: TetraTechInc_NERT_11302016**

Method: 300.0
Matrix: AQ

QC Sample ID (Associated Samples)	Compound	MS %R	MSD %R	%R Limits	RPD (Limits)	Affected Compounds	Flag
TT-TP1-M1-20160727MS TT-TP1-M1-20160727MSD (TT-TP1-M1-20160727)	Nitrate as N	-94	44	80.00-120.00	-	Nitrate as N	J- (all detects) R (all non-detects)
TT-TP1-M1-20160727MS TT-TP1-M1-20160727MSD (TT-TP1-M1-20160727)	SULFATE	-44	20	80.00-120.00	-	SULFATE	J-(all detects) R(all non-detects)
TT-TP1-M1-20160727MS TT-TP1-M1-20160727MSD (TT-TP1-M1-20160727)	CHLORIDE	44	51	80.00-120.00	-	CHLORIDE	J-(all detects) UJ(all non-detects)

Method: 6010B
Matrix: AQ

QC Sample ID (Associated Samples)	Compound	MS %R	MSD %R	%R Limits	RPD (Limits)	Affected Compounds	Flag
TT-TP1-M2-20160727MS (DIS) TT-TP1-M2-20160727MSD (DIS) (TT-TP1-M2-20160727)	SODIUM	165	-526	75.00-125.00	-	SODIUM	J(all detects) R(all non-detects)
TT-TP1-M2-20160727MS (DIS) TT-TP1-M2-20160727MSD (DIS) (TT-TP1-M2-20160727)	CALCIUM MAGNESIUM	-96 -12	-329 -44	75.00-125.00 75.00-125.00	- -	CALCIUM MAGNESIUM	J-(all detects) R(all non-detects)

Method Blank Outlier Report

Lab Reporting Batch ID: 440-153790-1 **Laboratory: TA IRV**

EDD Filename: Prep440-153790-1 **eQAPP Name: TetraTechInc_NERT_11302016**

Method: **6020**
Matrix: **AQ**

Method Blank Sample ID	Analysis Date	Analyte	Result	Associated Samples
MB 440-346974/1-B	8/5/2016 10:08:00 PM	CHROMIUM	0.515 ug/L	TT-TP1-M1-20160727 TT-TP1-M2-20160727 TT-TP1-M3-20160727 TT-TP2-M1-20160727

Project Name and Number: 114-520225-2015-MO5 - NERT Soil Flushing

Data Qualifier Summary

Lab Reporting Batch ID: 440-153790-1 **Laboratory: TA IRV**

EDD Filename: Prep440-153790-1 **eQAPP Name: TetraTechInc_NERT_11302016**

Method Category: GENCHEM

Method: 300.0 **Matrix: AQ**

Sample ID: TT-TP1-M1-20160727 **Collected:** 7/27/2016 11:21:00 AM **Analysis Type:** RES **Dilution:** 200

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
Nitrate as N	140		11	MDL	22	MRL	mg/L	J-	m, m

Sample ID: TT-TP1-M1-20160727 **Collected:** 7/27/2016 11:21:00 AM **Analysis Type:** RES2 **Dilution:** 200

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
CHLORIDE	510		50	MDL	100	MRL	mg/L	J-	m
SULFATE	750		50	MDL	100	MRL	mg/L	J-	m, m

Method Category: METALS

Method: 6010B **Matrix: AQ**

Sample ID: TT-TP1-M2-20160727 **Collected:** 7/27/2016 10:35:00 AM **Analysis Type:** RE2/DIS **Dilution:** 10

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
SODIUM	1500		2.5	MDL	5.0	MRL	mg/L	J	m, m

Sample ID: TT-TP1-M2-20160727 **Collected:** 7/27/2016 10:35:00 AM **Analysis Type:** RES/DIS **Dilution:** 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
CALCIUM	510		0.050	MDL	0.10	MRL	mg/L	J-	m
MAGNESIUM	230		0.010	MDL	0.020	MRL	mg/L	J-	m
MANGANESE	0.010	J	0.010	MDL	0.020	MRL	mg/L	J	sp

Method Category: METALS

Method: 6020 **Matrix: AQ**

Sample ID: TT-TP1-M1-20160727 **Collected:** 7/27/2016 11:21:00 AM **Analysis Type:** RES/DIS **Dilution:** 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
COBALT	0.78	J	0.50	MDL	1.0	MRL	ug/L	J	sp
NICKEL	0.75	J	0.50	MDL	2.0	MRL	ug/L	J	sp
SELENIUM	1.8	J	0.50	MDL	2.0	MRL	ug/L	J	sp

* denotes a non-reportable result

Project Name and Number: 114-520225-2015-MO5 - NERT Soil Flushing

Data Qualifier Summary

Lab Reporting Batch ID: 440-153790-1 **Laboratory: TA IRV**

EDD Filename: Prep440-153790-1 **eQAPP Name: TetraTechInc_NERT_11302016**

Method Category: METALS

Method: 6020 **Matrix: AQ**

Sample ID: TT-TP1-M2-20160727 **Collected:** 7/27/2016 10:35:00 AM **Analysis Type:** RES/DIS **Dilution:** 5

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
SELENIUM	2.7	J	2.5	MDL	10	MRL	ug/L	J	sp

Sample ID: TT-TP2-M1-20160727 **Collected:** 7/27/2016 12:31:00 PM **Analysis Type:** RES/DIS **Dilution:** 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
NICKEL	0.55	J	0.50	MDL	2.0	MRL	ug/L	J	sp

Method Category: METALS

Method: 7199 **Matrix: AQ**

Sample ID: TT-TP2-L2-20160727 **Collected:** 7/27/2016 1:10:00 PM **Analysis Type:** RES/DIS **Dilution:** 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
Chromium, hexavalent	0.58	J	0.25	MDL	2.0	MRL	ug/L	J	sp

* denotes a non-reportable result

Project Name and Number: 114-520225-2015-MO5 - NERT Soil Flushing

Data Qualifier Summary

Lab Reporting Batch ID: 440-153790-1

Laboratory: TA IRV

EDD Filename: Prep440-153790-1

eQAPP Name: TetraTechInc_NERT_11302016

Reason Code Legend

Reason Code	*Description*
bl	Method Blank Contamination
m	Matrix Spike Lower Estimation
m	Matrix Spike Lower Rejection
m	Matrix Spike Upper Estimation
sp	Reporting Limit Trace Value

* denotes a non-reportable result

Project Name and Number: 114-520225-2015-MO5 - NERT Soil Flushing

Reporting Limit Outliers

Lab Reporting Batch ID: 440-153790-1 **Laboratory: TA IRV**

EDD Filename: Prep440-153790-1 **eQAPP Name: TetraTechInc_NERT_11302016**

Method: 6010B

Matrix: AQ

SampleID	Analyte	Lab Qual	Result	Reporting Limit	RL Type	Units	Flag
TT-TP1-M2-20160727	MANGANESE	J	0.010	0.020	MRL	mg/L	J (all detects)

Method: 6020

Matrix: AQ

SampleID	Analyte	Lab Qual	Result	Reporting Limit	RL Type	Units	Flag
TT-TP1-M1-20160727	COBALT NICKEL SELENIUM	J J J	0.78 0.75 1.8	1.0 2.0 2.0	MRL MRL MRL	ug/L ug/L ug/L	J (all detects)
TT-TP1-M2-20160727	SELENIUM	J	2.7	10	MRL	ug/L	J (all detects)
TT-TP2-M1-20160727	NICKEL	J	0.55	2.0	MRL	ug/L	J (all detects)

Method: 7199

Matrix: AQ

SampleID	Analyte	Lab Qual	Result	Reporting Limit	RL Type	Units	Flag
TT-TP2-L2-20160727	Chromium, hexavalent	J	0.58	2.0	MRL	ug/L	J (all detects)

Data Review Summary

Lab Reporting Batch ID: 440-153948-1 **Laboratory: TA IRV**

EDD Filename: Prep440-153948-1 **eQAPP Name: TetraTechInc_NERT_11302016**

Validation Area	*Note*
Technical Holding Times	A
Temperature	A
Initial Calibration	N
Continuing Calibration/Initial Calibration Verification	N
Method Blanks	SR
Surrogate/Tracer Spikes	A
Matrix Spike/Matrix Spike Duplicates	SR
Laboratory Duplicates	A
Laboratory Replicates	N
Laboratory Control Samples	A
Compound Quantitation	SR
Field Duplicates	A
Field Triplicates	N
Field Blanks	N

A = Acceptable, N = Not provided/applicable, SR = See report

The contents of this report reflect findings made by ADR during Automated Data Review, manual applied qualifiers are not considered. Please refer to the Overall Qualifier Summary report for manual qualifiers.

Field Duplicate RPD Report

Lab Reporting Batch ID: 440-153948-1 **Laboratory: TA IRV**

EDD Filename: Prep440-153948-1 **eQAPP Name: TetraTechInc_NERT_11302016**

Method: 2320B
Matrix: AQ

Analyte	Concentration (mg/L)		Sample RPD	eQAPP RPD	Flag
	TT-TP4-M3-20160728	TT-TP4-M3-20160728-DUP			
Alkalinity as CaCO3	190	190	0	30.00	No Qualifiers Applied
Bicarbonate ion as HCO3	230	230	0		

Method: 2540C
Matrix: AQ

Analyte	Concentration (mg/L)		Sample RPD	eQAPP RPD	Flag
	TT-TP4-M3-20160728	TT-TP4-M3-20160728-DUP			
TOTAL DISSOLVED SOLIDS	8400	8500	1	30.00	No Qualifiers Applied

Method: 300.0
Matrix: AQ

Analyte	Concentration (mg/L)		Sample RPD	eQAPP RPD	Flag
	TT-TP4-M3-20160728	TT-TP4-M3-20160728-DUP			
CHLORIDE	830	870	5	30.00	No Qualifiers Applied
Nitrate as N	180	190	5	30.00	
SULFATE	1300	1400	7	30.00	

Method: 300.1B
Matrix: AQ

Analyte	Concentration (ug/L)		Sample RPD	eQAPP RPD	Flag
	TT-TP4-M3-20160728	TT-TP4-M3-20160728-DUP			
Chlorate	2300000	2300000	0	30.00	No Qualifiers Applied

Method: 314.0
Matrix: AQ

Analyte	Concentration (ug/L)		Sample RPD	eQAPP RPD	Flag
	TT-TP4-M3-20160728	TT-TP4-M3-20160728-DUP			
PERCHLORATE	370000	390000	5	30.00	No Qualifiers Applied

Method: 6010B
Matrix: AQ

Analyte	Concentration (mg/L)		Sample RPD	eQAPP RPD	Flag
	TT-TP4-M3-20160728 (DIS)	TT-TP4-M3-20160728-DUP (DIS)			
BORON	3.0	3.0	0	30.00	No Qualifiers Applied
CALCIUM	260	270	4	30.00	
MAGNESIUM	130	120	8	30.00	
POTASSIUM	21	23	9	30.00	
SODIUM	1600	1500	6	30.00	

Project Name and Number: 114-520225-2015-MO5 - NERT Soil Flushing

Field Duplicate RPD Report

Lab Reporting Batch ID: 440-153948-1 **Laboratory: TA IRV**

EDD Filename: Prep440-153948-1 **eQAPP Name: TetraTechInc_NERT_11302016**

Method: 6020
Matrix: AQ

Analyte	Concentration (ug/L)		Sample RPD	eQAPP RPD	Flag
	TT-TP4-M3-20160728 (DIS)	TT-TP4-M3-20160728-DUP (DIS)			
ARSENIC	130	130	0	30.00	No Qualifiers Applied
BARIUM	42	40	5	30.00	
CHROMIUM	10000	9700	3	30.00	
MOLYBDENUM	48	42	13	30.00	

Method: 7199
Matrix: AQ

Analyte	Concentration (ug/L)		Sample RPD	eQAPP RPD	Flag
	TT-TP4-M3-20160728 (DIS)	TT-TP4-M3-20160728-DUP (DIS)			
Chromium, hexavalent	10000	10000	0	30.00	No Qualifiers Applied

Method: SM5310B
Matrix: AQ

Analyte	Concentration (mg/L)		Sample RPD	eQAPP RPD	Flag
	TT-TP4-M3-20160728	TT-TP4-M3-20160728-DUP			
Total organic carbon	1.6	1.6	0	30.00	No Qualifiers Applied

Project Name and Number: 114-520225-2015-MO5 - NERT Soil Flushing

Matrix Spike/Matrix Spike Duplicate Outlier Report

Lab Reporting Batch ID: 440-153948-1 **Laboratory: TA IRV**

EDD Filename: Prep440-153948-1 **eQAPP Name: TetraTechInc_NERT_11302016**

Method: 7199
Matrix: AQ

QC Sample ID (Associated Samples)	Compound	MS %R	MSD %R	%R Limits	RPD (Limits)	Affected Compounds	Flag
TT-TP4-M3-20160728MS (DIS) TT-TP4-M3-20160728MSD (DIS) (TT-TP4-M3-20160728)	Chromium, hexavalent	62	72	85.00-115.00	-	Chromium, hexavalent	J- (all detects) UJ (all non-detects)

Method: 300.0
Matrix: AQ

QC Sample ID (Associated Samples)	Compound	MS %R	MSD %R	%R Limits	RPD (Limits)	Affected Compounds	Flag
TT-TP4-M3-20160728MS TT-TP4-M3-20160728MSD (TT-TP4-M3-20160728)	Nitrate as N	27	-15	80.00-120.00	-	Nitrate as N	J-(all detects) R(all non-detects)
TT-TP4-M3-20160728MS TT-TP4-M3-20160728MSD (TT-TP4-M3-20160728)	CHLORIDE SULFATE	148 648	- 436	80.00-120.00 80.00-120.00	- -	CHLORIDE SULFATE	J+(all detects)

Method: 300.1B
Matrix: AQ

QC Sample ID (Associated Samples)	Compound	MS %R	MSD %R	%R Limits	RPD (Limits)	Affected Compounds	Flag
TT-TP4-M3-20160728MS TT-TP4-M3-20160728MSD (TT-TP4-M3-20160728)	Chlorate	13582	39979	75.00-125.00	-	Chlorate	J+(all detects)

Method: 6010B
Matrix: AQ

QC Sample ID (Associated Samples)	Compound	MS %R	MSD %R	%R Limits	RPD (Limits)	Affected Compounds	Flag
TT-TP4-M3-20160728MS (DIS) TT-TP4-M3-20160728MSD (DIS) (TT-TP4-M3-20160728)	CALCIUM MAGNESIUM SODIUM	-58 -18 -621	-11 -27 -529	75.00-125.00 75.00-125.00 75.00-125.00	- - -	CALCIUM MAGNESIUM SODIUM	J-(all detects) R(all non-detects)

Matrix Spike/Matrix Spike Duplicate Outlier Report

Lab Reporting Batch ID: 440-153948-1 **Laboratory: TA IRV**

EDD Filename: Prep440-153948-1 **eQAPP Name: TetraTechInc_NERT_11302016**

Method: 6020
Matrix: AQ

QC Sample ID (Associated Samples)	Compound	MS %R	MSD %R	%R Limits	RPD (Limits)	Affected Compounds	Flag
TT-TP4-M3-20160728MS (DIS) TT-TP4-M3-20160728MSD (DIS) (TT-TP4-M3-20160728)	CHROMIUM	-532	-838	75.00-125.00	-	CHROMIUM	J-(all detects) R(all non-detects)

Method: 314.0
Matrix: AQ

QC Sample ID (Associated Samples)	Compound	MS %R	MSD %R	%R Limits	RPD (Limits)	Affected Compounds	Flag
TT-TP4-M3-20160728MS (TT-TP4-M3-20160728)	PERCHLORATE	135	-	80.00-120.00	-	PERCHLORATE	J+(all detects)

Method Blank Outlier Report

Lab Reporting Batch ID: 440-153948-1 **Laboratory: TA IRV**

EDD Filename: Prep440-153948-1 **eQAPP Name: TetraTechInc_NERT_11302016**

Method: **6020**
Matrix: **AQ**

Method Blank Sample ID	Analysis Date	Analyte	Result	Associated Samples
MB 440-347558/1-C	8/9/2016 11:25:00 PM	ZINC	2.58 ug/L	TT-TP2-M2-20160728 TT-TP3-M1-20160728 TT-TP3-M2-20160728 TT-TP4-M1-20160728 TT-TP4-M2-20160728 TT-TP4-M3-20160728 TT-TP4-M3-20160728-DUP

Data Qualifier Summary

Lab Reporting Batch ID: 440-153948-1 **Laboratory: TA IRV**

EDD Filename: Prep440-153948-1 **eQAPP Name: TetraTechInc_NERT_11302016**

Method Category: GENCHEM

Method: 300.0 **Matrix: AQ**

Sample ID: TT-TP4-M3-20160728 **Collected:** 7/28/2016 1:36:00 PM **Analysis Type:** RES **Dilution:** 500

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
Nitrate as N	180		28	MDL	55	MRL	mg/L	J-	m, m

Sample ID: TT-TP4-M3-20160728 **Collected:** 7/28/2016 1:36:00 PM **Analysis Type:** RES2 **Dilution:** 500

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
SULFATE	1300		130	MDL	250	MRL	mg/L	J+	m

Sample ID: TT-TP4-M3-20160728 **Collected:** 7/28/2016 1:36:00 PM **Analysis Type:** RES3 **Dilution:** 500

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
CHLORIDE	830	F1	130	MDL	250	MRL	mg/L	J+	m

Method Category: GENCHEM

Method: 300.1B **Matrix: AQ**

Sample ID: TT-TP4-M3-20160728 **Collected:** 7/28/2016 1:36:00 PM **Analysis Type:** RES **Dilution:** 10000

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
Chlorate	2300000		100000	MDL	200000	MRL	ug/L	J+	m

Method Category: GENCHEM

Method: 314.0 **Matrix: AQ**

Sample ID: TT-TP4-M3-20160728 **Collected:** 7/28/2016 1:36:00 PM **Analysis Type:** RES **Dilution:** 10000

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
PERCHLORATE	370000		5000	MDL	10000	MRL	ug/L	J+	m

* denotes a non-reportable result

Project Name and Number: 114-520225-2015-MO5 - NERT Soil Flushing

Data Qualifier Summary

Lab Reporting Batch ID: 440-153948-1 **Laboratory: TA IRV**

EDD Filename: Prep440-153948-1 **eQAPP Name: TetraTechInc_NERT_11302016**

Method Category: METALS

Method: 6010B **Matrix: AQ**

Sample ID: TT-TP4-M3-20160728 **Collected:** 7/28/2016 1:36:00 PM **Analysis Type:** RES/DIS **Dilution:** 10

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
CALCIUM	260		0.50	MDL	1.0	MRL	mg/L	J-	m
MAGNESIUM	130		0.10	MDL	0.20	MRL	mg/L	J-	m
SODIUM	1600		2.5	MDL	5.0	MRL	mg/L	J-	m

Method Category: METALS

Method: 6020 **Matrix: AQ**

Sample ID: TT-TP3-M2-20160728 **Collected:** 7/28/2016 10:59:00 AM **Analysis Type:** RES/DIS **Dilution:** 10

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
MOLYBDENUM	16	J	5.0	MDL	20	MRL	ug/L	J	sp

Sample ID: TT-TP4-M3-20160728 **Collected:** 7/28/2016 1:36:00 PM **Analysis Type:** RES/DIS **Dilution:** 10

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
CHROMIUM	10000		5.0	MDL	20	MRL	ug/L	J-	m

Method Category: METALS

Method: 7199 **Matrix: AQ**

Sample ID: TT-TP4-M3-20160728 **Collected:** 7/28/2016 1:36:00 PM **Analysis Type:** RES/DIS **Dilution:** 500

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
Chromium, hexavalent	10000		130	MDL	1000	MRL	ug/L	J-	m

* denotes a non-reportable result

Project Name and Number: 114-520225-2015-MO5 - NERT Soil Flushing

Data Qualifier Summary

Lab Reporting Batch ID: 440-153948-1

Laboratory: TA IRV

EDD Filename: Prep440-153948-1

eQAPP Name: TetraTechInc_NERT_11302016

Reason Code Legend

Reason Code	*Description*
bl	Method Blank Contamination
m	Matrix Spike Lower Estimation
m	Matrix Spike Lower Rejection
m	Matrix Spike Upper Estimation
sp	Reporting Limit Trace Value

* denotes a non-reportable result

Project Name and Number: 114-520225-2015-MO5 - NERT Soil Flushing

Reporting Limit Outliers

Lab Reporting Batch ID: 440-153948-1 **Laboratory: TA IRV**

EDD Filename: Prep440-153948-1 **eQAPP Name: TetraTechInc_NERT_11302016**

Method: **6020**

Matrix: **AQ**

SampleID	*Analyte*	*Lab Qual*	*Result*	*Reporting Limit*	*RL Type*	*Units*	*Flag*
TT-TP3-M2-20160728	MOLYBDENUM	J	16	20	MRL	ug/L	J (all detects)

Data Review Summary

Lab Reporting Batch ID: 440-155501-1 **Laboratory: TA IRV**

EDD Filename: Prep440-155501-1 **eQAPP Name: TetraTechInc_NERT_11302016**

Validation Area	*Note*
Technical Holding Times	A
Temperature	A
Initial Calibration	N
Continuing Calibration/Initial Calibration Verification	N
Method Blanks	SR
Surrogate/Tracer Spikes	A
Matrix Spike/Matrix Spike Duplicates	SR
Laboratory Duplicates	A
Laboratory Replicates	N
Laboratory Control Samples	A
Compound Quantitation	SR
Field Duplicates	SR
Field Triplicates	N
Field Blanks	N

A = Acceptable, N = Not provided/applicable, SR = See report

The contents of this report reflect findings made by ADR during Automated Data Review, manual applied qualifiers are not considered. Please refer to the Overall Qualifier Summary report for manual qualifiers.

Field Duplicate RPD Report

Lab Reporting Batch ID: 440-155501-1 **Laboratory: TA IRV**

EDD Filename: Prep440-155501-1 **eQAPP Name: TetraTechInc_NERT_11302016**

Method: 2540C_Leach
Matrix: AQ

Analyte	Concentration (mg/L)		Sample RPD	eQAPP RPD	Flag
	Tt-TP1-B4A-6	Tt-TP1-B4A-6-dup			
TOTAL DISSOLVED SOLIDS	72	140	64	30.00	J (all detects) UJ (all non-detects)

Method: 314.0
Matrix: SO

Analyte	Concentration (mg/Kg)		Sample RPD	eQAPP RPD	Flag
	Tt-TP1-B4A-6	Tt-TP1-B4A-6-dup			
PERCHLORATE	0.12	0.18	40	30.00	J(all detects) UJ(all non-detects)

Project Name and Number: 114-520225-2015-MO5 - NERT Soil Flushing

Matrix Spike/Matrix Spike Duplicate Outlier Report

Lab Reporting Batch ID: 440-155501-1 **Laboratory: TA IRV**

EDD Filename: Prep440-155501-1 **eQAPP Name: TetraTechInc_NERT_11302016**

Method: **300.1B_Leach**
Matrix: **AQ**

QC Sample ID (Associated Samples)	Compound	MS %R	MSD %R	%R Limits	RPD (Limits)	Affected Compounds	Flag
Tt-TP1-B4A-2MSD (Tt-TP1-B4A-2)	Chlorate	-	137	75.00-125.00	-	Chlorate	J+ (all detects)

Method: **314.0**
Matrix: **SO**

QC Sample ID (Associated Samples)	Compound	MS %R	MSD %R	%R Limits	RPD (Limits)	Affected Compounds	Flag
Tt-TP1-B4A-10MS Tt-TP1-B4A-10MSD (Tt-TP1-B4A-10)	PERCHLORATE	72	71	80.00-120.00	-	PERCHLORATE	J-(all detects) UJ(all non-detects)

Method Blank Outlier Report

Lab Reporting Batch ID: 440-155501-1 **Laboratory: TA IRV**

EDD Filename: Prep440-155501-1 **eQAPP Name: TetraTechInc_NERT_11302016**

Method: **6020**
Matrix: **SO**

Method Blank Sample ID	Analysis Date	Analyte	Result	Associated Samples
MB 440-349824/1-A ^20	8/22/2016 11:14:00 PM	COPPER	0.620 mg/Kg	Tt-TP1-B1A-10 Tt-TP1-B1A-18 Tt-TP1-B3A-18 Tt-TP1-B3A-6 Tt-TP1-B4A-2 Tt-TP1-B4A-26

Data Qualifier Summary

Lab Reporting Batch ID: 440-155501-1 **Laboratory: TA IRV**

EDD Filename: Prep440-155501-1 **eQAPP Name: TetraTechInc_NERT_11302016**

Method Category: GENCHEM

Method: 2540C_Leach **Matrix: AQ**

Sample ID: Tt-TP1-B4A-6 **Collected:** 8/11/2016 9:44:00 AM **Analysis Type:** RES/DIS **Dilution:** 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
TOTAL DISSOLVED SOLIDS	72		5.0	MDL	10	MRL	mg/L	J	fd

Sample ID: Tt-TP1-B4A-6-dup **Collected:** 8/11/2016 9:46:00 AM **Analysis Type:** RES/DIS **Dilution:** 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
TOTAL DISSOLVED SOLIDS	140		5.0	MDL	10	MRL	mg/L	J	fd

Method Category: GENCHEM

Method: 300.0_Leach **Matrix: AQ**

Sample ID: Tt-TP1-B1A-10 **Collected:** 8/11/2016 3:02:00 PM **Analysis Type:** RES/DIS **Dilution:** 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
Nitrate as NO3	0.42	J	0.25	MDL	0.50	MRL	mg/L	J	sp

Sample ID: Tt-TP1-B3A-6 **Collected:** 8/11/2016 12:40:00 PM **Analysis Type:** RES/DIS **Dilution:** 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
Nitrate as NO3	0.27	J	0.25	MDL	0.50	MRL	mg/L	J	sp

Sample ID: Tt-TP1-B4A-2 **Collected:** 8/11/2016 9:40:00 AM **Analysis Type:** RES/DIS **Dilution:** 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
Nitrate as NO3	0.44	J	0.25	MDL	0.50	MRL	mg/L	J	sp

Method Category: GENCHEM

Method: 300.1B_Leach **Matrix: AQ**

Sample ID: Tt-TP1-B3A-18 **Collected:** 8/11/2016 12:58:00 PM **Analysis Type:** RES/DIS **Dilution:** 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
Chlorate	11	J	10	MDL	20	MRL	ug/L	J	sp

* denotes a non-reportable result

Project Name and Number: 114-520225-2015-MO5 - NERT Soil Flushing

Data Qualifier Summary

Lab Reporting Batch ID: 440-155501-1 **Laboratory: TA IRV**

EDD Filename: Prep440-155501-1 **eQAPP Name: TetraTechInc_NERT_11302016**

Method Category: GENCHEM

Method: 314.0 **Matrix: SO**

Sample ID: Tt-TP1-B4A-10 **Collected:** 8/11/2016 9:50:00 AM **Analysis Type:** RES/DIS **Dilution:** 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
PERCHLORATE	0.16	F1	0.011	MDL	0.045	MRL	mg/Kg	J-	m

Sample ID: Tt-TP1-B4A-6 **Collected:** 8/11/2016 9:44:00 AM **Analysis Type:** RES/DIS **Dilution:** 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
PERCHLORATE	0.12		0.011	MDL	0.046	MRL	mg/Kg	J	fd

Sample ID: Tt-TP1-B4A-6-dup **Collected:** 8/11/2016 9:46:00 AM **Analysis Type:** RES/DIS **Dilution:** 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
PERCHLORATE	0.18		0.011	MDL	0.045	MRL	mg/Kg	J	fd

Method Category: METALS

Method: 6010B_Leach **Matrix: AQ**

Sample ID: Tt-TP1-B1A-10 **Collected:** 8/11/2016 3:02:00 PM **Analysis Type:** RES/DIS **Dilution:** 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
MAGNESIUM	1.3	J	0.12	MDL	4.0	MRL	mg/L	J	sp

Sample ID: Tt-TP1-B1A-18 **Collected:** 8/11/2016 3:11:00 PM **Analysis Type:** RES/DIS **Dilution:** 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
MAGNESIUM	1.3	J	0.12	MDL	4.0	MRL	mg/L	J	sp

Sample ID: Tt-TP1-B3A-18 **Collected:** 8/11/2016 12:58:00 PM **Analysis Type:** RES/DIS **Dilution:** 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
MAGNESIUM	1.9	J	0.12	MDL	4.0	MRL	mg/L	J	sp

* denotes a non-reportable result

Project Name and Number: 114-520225-2015-MO5 - NERT Soil Flushing

Data Qualifier Summary

Lab Reporting Batch ID: 440-155501-1 **Laboratory: TA IRV**

EDD Filename: Prep440-155501-1 **eQAPP Name: TetraTechInc_NERT_11302016**

Method Category: **METALS**

Method: **6010B_Leach** ***Matrix:*** **AQ**

Sample ID: **Tt-TP1-B4A-2** ***Collected:*** **8/11/2016 9:40:00 AM** ***Analysis Type:*** **RES/DIS** ***Dilution:*** **1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
MAGNESIUM	1.0	J	0.12	MDL	4.0	MRL	mg/L	J	sp

Method Category: **METALS**

Method: **6020** ***Matrix:*** **SO**

Sample ID: **Tt-TP1-B1A-10** ***Collected:*** **8/11/2016 3:02:00 PM** ***Analysis Type:*** **RES/TOT** ***Dilution:*** **100**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
SELENIUM	1.3	J	1.0	MDL	5.0	MRL	mg/Kg	J	sp
ZINC	27	J	25	MDL	50	MRL	mg/Kg	J	sp

Sample ID: **Tt-TP1-B1A-18** ***Collected:*** **8/11/2016 3:11:00 PM** ***Analysis Type:*** **RES/TOT** ***Dilution:*** **100**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
SELENIUM	1.5	J	1.0	MDL	5.0	MRL	mg/Kg	J	sp
ZINC	26	J	25	MDL	50	MRL	mg/Kg	J	sp

Sample ID: **Tt-TP1-B3A-18** ***Collected:*** **8/11/2016 12:58:00 PM** ***Analysis Type:*** **RES/TOT** ***Dilution:*** **100**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
SELENIUM	1.0	J	1.0	MDL	5.0	MRL	mg/Kg	J	sp

Sample ID: **Tt-TP1-B3A-6** ***Collected:*** **8/11/2016 12:40:00 PM** ***Analysis Type:*** **RES/TOT** ***Dilution:*** **100**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
SELENIUM	1.5	J	0.99	MDL	5.0	MRL	mg/Kg	J	sp
ZINC	36	J	25	MDL	50	MRL	mg/Kg	J	sp

Sample ID: **Tt-TP1-B4A-2** ***Collected:*** **8/11/2016 9:40:00 AM** ***Analysis Type:*** **RES/TOT** ***Dilution:*** **100**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
SELENIUM	1.5	J	1.0	MDL	5.0	MRL	mg/Kg	J	sp
ZINC	35	J	25	MDL	50	MRL	mg/Kg	J	sp

* denotes a non-reportable result

Project Name and Number: 114-520225-2015-MO5 - NERT Soil Flushing

Data Qualifier Summary

Lab Reporting Batch ID: 440-155501-1 **Laboratory: TA IRV**

EDD Filename: Prep440-155501-1 **eQAPP Name: TetraTechInc_NERT_11302016**

Method Category: METALS

Method: 6020 **Matrix: SO**

Sample ID: Tt-TP1-B4A-26 **Collected:** 8/11/2016 10:23:00 AM **Analysis Type:** RES/TOT **Dilution:** 100

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
ZINC	37	J	25	MDL	49	MRL	mg/Kg	J	sp

Method Category: METALS

Method: 7471A **Matrix: SO**

Sample ID: Tt-TP1-B4A-2 **Collected:** 8/11/2016 9:40:00 AM **Analysis Type:** RES/TOT **Dilution:** 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
MERCURY	0.014	J	0.013	MDL	0.022	MRL	mg/Kg	J	sp

* denotes a non-reportable result

Project Name and Number: 114-520225-2015-MO5 - NERT Soil Flushing

Data Qualifier Summary

Lab Reporting Batch ID: 440-155501-1

Laboratory: TA IRV

EDD Filename: Prep440-155501-1

eQAPP Name: TetraTechInc_NERT_11302016

Reason Code Legend

Reason Code	*Description*
bl	Method Blank Contamination
fd	Field Duplicate Precision
m	Matrix Spike Lower Estimation
m	Matrix Spike Upper Estimation
sp	Reporting Limit Trace Value

* denotes a non-reportable result

Project Name and Number: 114-520225-2015-MO5 - NERT Soil Flushing

Reporting Limit Outliers

Lab Reporting Batch ID: 440-155501-1 **Laboratory: TA IRV**

EDD Filename: Prep440-155501-1 **eQAPP Name: TetraTechInc_NERT_11302016**

Method: 300.0_Leach
Matrix: AQ

SampleID	Analyte	Lab Qual	Result	Reporting Limit	RL Type	Units	Flag
Tt-TP1-B1A-10	Nitrate as NO3	J	0.42	0.50	MRL	mg/L	J (all detects)
Tt-TP1-B3A-6	Nitrate as NO3	J	0.27	0.50	MRL	mg/L	J (all detects)
Tt-TP1-B4A-2	Nitrate as NO3	J	0.44	0.50	MRL	mg/L	J (all detects)

Method: 300.1B_Leach
Matrix: AQ

SampleID	Analyte	Lab Qual	Result	Reporting Limit	RL Type	Units	Flag
Tt-TP1-B3A-18	Chlorate	J	11	20	MRL	ug/L	J (all detects)

Method: 6010B_Leach
Matrix: AQ

SampleID	Analyte	Lab Qual	Result	Reporting Limit	RL Type	Units	Flag
Tt-TP1-B1A-10	MAGNESIUM	J	1.3	4.0	MRL	mg/L	J (all detects)
Tt-TP1-B1A-18	MAGNESIUM	J	1.3	4.0	MRL	mg/L	J (all detects)
Tt-TP1-B3A-18	MAGNESIUM	J	1.9	4.0	MRL	mg/L	J (all detects)
Tt-TP1-B4A-2	MAGNESIUM	J	1.0	4.0	MRL	mg/L	J (all detects)

Method: 6020
Matrix: SO

SampleID	Analyte	Lab Qual	Result	Reporting Limit	RL Type	Units	Flag
Tt-TP1-B1A-10	SELENIUM ZINC	J J	1.3 27	5.0 50	MRL MRL	mg/Kg mg/Kg	J (all detects)
Tt-TP1-B1A-18	SELENIUM ZINC	J J	1.5 26	5.0 50	MRL MRL	mg/Kg mg/Kg	J (all detects)
Tt-TP1-B3A-18	SELENIUM	J	1.0	5.0	MRL	mg/Kg	J (all detects)
Tt-TP1-B3A-6	SELENIUM ZINC	J J	1.5 36	5.0 50	MRL MRL	mg/Kg mg/Kg	J (all detects)
Tt-TP1-B4A-2	SELENIUM ZINC	J J	1.5 35	5.0 50	MRL MRL	mg/Kg mg/Kg	J (all detects)
Tt-TP1-B4A-26	ZINC	J	37	49	MRL	mg/Kg	J (all detects)

Reporting Limit Outliers

Lab Reporting Batch ID: 440-155501-1 **Laboratory: TA IRV**

EDD Filename: Prep440-155501-1 **eQAPP Name: TetraTechInc_NERT_11302016**

Method: **7471A**

Matrix: **SO**

SampleID	*Analyte*	*Lab Qual*	*Result*	*Reporting Limit*	*RL Type*	*Units*	*Flag*
Tt-TP1-B4A-2	MERCURY	J	0.014	0.022	MRL	mg/Kg	J (all detects)

Data Review Summary

Lab Reporting Batch ID: 440-155570-1 **Laboratory: TA IRV**

EDD Filename: Prep440-155570-1 **eQAPP Name: TetraTechInc_NERT_11302016**

Validation Area	*Note*
Technical Holding Times	A
Temperature	A
Initial Calibration	N
Continuing Calibration/Initial Calibration Verification	N
Method Blanks	SR
Surrogate/Tracer Spikes	A
Matrix Spike/Matrix Spike Duplicates	SR
Laboratory Duplicates	A
Laboratory Replicates	N
Laboratory Control Samples	A
Compound Quantitation	SR
Field Duplicates	SR
Field Triplicates	N
Field Blanks	N

A = Acceptable, N = Not provided/applicable, SR = See report

The contents of this report reflect findings made by ADR during Automated Data Review, manual applied qualifiers are not considered. Please refer to the Overall Qualifier Summary report for manual qualifiers.

Field Duplicate RPD Report

Lab Reporting Batch ID: 440-155570-1 **Laboratory: TA IRV**

EDD Filename: Prep440-155570-1 **eQAPP Name: TetraTechInc_NERT_11302016**

Method: 2320B_Leach
Matrix: AQ

Analyte	Concentration (mg/L)		Sample RPD	eQAPP RPD	Flag
	Tt-TP2-B3A-14	Tt-TP2-B3A-14-dup			
Alkalinity as CaCO3	8.3	8.1	2	30.00	No Qualifiers Applied

Method: 2540C_Leach
Matrix: AQ

Analyte	Concentration (mg/L)		Sample RPD	eQAPP RPD	Flag
	Tt-TP2-B3A-14	Tt-TP2-B3A-14-dup			
TOTAL DISSOLVED SOLIDS	1800	1700	6	30.00	No Qualifiers Applied

Method: 300.0_Leach
Matrix: AQ

Analyte	Concentration (mg/L)		Sample RPD	eQAPP RPD	Flag
	Tt-TP2-B3A-14	Tt-TP2-B3A-14-dup			
Nitrate as NO3	0.29	0.25	15	30.00	No Qualifiers Applied
CHLORIDE	0.91	1.7	61	30.00	J(all detects)
SULFATE	830	310	91	30.00	UJ(all non-detects)

Method: 300.1B_Leach
Matrix: AQ

Analyte	Concentration (ug/L)		Sample RPD	eQAPP RPD	Flag
	Tt-TP2-B3A-14	Tt-TP2-B3A-14-dup			
Chlorate	18	20	11	30.00	No Qualifiers Applied

Method: 6010B_Leach
Matrix: AQ

Analyte	Concentration (mg/L)		Sample RPD	eQAPP RPD	Flag
	Tt-TP2-B3A-14 (DIS)	Tt-TP2-B3A-14-dup (DIS)			
SODIUM	110	140	24	30.00	No Qualifiers Applied
CALCIUM	430	81	137	30.00	J(all detects)
MAGNESIUM	5.6	3.6	43	30.00	UJ(all non-detects)

Method: 314.0
Matrix: SO

Analyte	Concentration (mg/Kg)		Sample RPD	eQAPP RPD	Flag
	Tt-TP2-B3A-14	Tt-TP2-B3A-14-dup			
PERCHLORATE	4.1	12	98	30.00	J(all detects) UJ(all non-detects)

Project Name and Number: 114-520225-2015-MO5 - NERT Soil Flushing

Field Duplicate RPD Report

Lab Reporting Batch ID: 440-155570-1 **Laboratory: TA IRV**

EDD Filename: Prep440-155570-1 **eQAPP Name: TetraTechInc_NERT_11302016**

Method: 6010B
Matrix: SO

Analyte	Concentration (mg/Kg)		Sample RPD	eQAPP RPD	Flag
	Tt-TP2-B3A-14 (TOT)	Tt-TP2-B3A-14-dup (TOT)			
BORON	18	18	0	30.00	No Qualifiers Applied
IRON	14000	16000	13	30.00	
MANGANESE	200	190	5	30.00	
TITANIUM	780	790	1	30.00	

Method: 6020
Matrix: SO

Analyte	Concentration (mg/Kg)		Sample RPD	eQAPP RPD	Flag
	Tt-TP2-B3A-14 (TOT)	Tt-TP2-B3A-14-dup (TOT)			
ARSENIC	16	14	13	30.00	No Qualifiers Applied
BARIUM	120	130	8	30.00	
BERYLLIUM	0.41	0.45	9	30.00	
COBALT	3.4	4.2	21	30.00	
COPPER	7.7	10	26	30.00	
LEAD	5.0	5.6	11	30.00	
MOLYBDENUM	0.65	0.55	17	30.00	
NICKEL	9.5	12	23	30.00	
ZINC	22	25	13	30.00	
CHROMIUM	16	23	36	30.00	J(all detects) UJ(all non-detects)

Method: 7199
Matrix: SO

Analyte	Concentration (mg/Kg)		Sample RPD	eQAPP RPD	Flag
	Tt-TP2-B3A-14 (DRY)	Tt-TP2-B3A-14-dup (DRY)			
Chromium, hexavalent	0.20	0.28	33	30.00	J(all detects) UJ(all non-detects)

Method: 9045C
Matrix: SO

Analyte	Concentration (SU)		Sample RPD	eQAPP RPD	Flag
	Tt-TP2-B3A-14	Tt-TP2-B3A-14-dup			
PH	7.9	7.8	1	30.00	No Qualifiers Applied

Method: 9060
Matrix: SO

Analyte	Concentration (mg/Kg)		Sample RPD	eQAPP RPD	Flag
	Tt-TP2-B3A-14	Tt-TP2-B3A-14-dup			
TOTAL ORGANIC CARBON (TOC)	3700	3600	3	30.00	No Qualifiers Applied

Project Name and Number: 114-520225-2015-MO5 - NERT Soil Flushing

Matrix Spike/Matrix Spike Duplicate Outlier Report

Lab Reporting Batch ID: 440-155570-1 **Laboratory: TA IRV**

EDD Filename: Prep440-155570-1 **eQAPP Name: TetraTechInc_NERT_11302016**

Method: 300.0_Leach
Matrix: AQ

QC Sample ID (Associated Samples)	Compound	MS %R	MSD %R	%R Limits	RPD (Limits)	Affected Compounds	Flag
Tt-TP2-B3A-14MS Tt-TP2-B3A-14MSD (Tt-TP2-B3A-14)	Nitrate as NO3	132	133	80.00-120.00	-	Nitrate as NO3	J+(all detects)
Tt-TP2-B3A-14MS Tt-TP2-B3A-14MSD (Tt-TP2-B3A-14)	SULFATE	446	54	80.00-120.00	21 (20.00)	SULFATE	J(all detects) UJ(all non-detects)
Tt-TP2-B3A-14MS Tt-TP2-B3A-14MSD (Tt-TP2-B3A-14)	CHLORIDE	149	150	80.00-120.00	-	CHLORIDE	J+(all detects)

Method: 6010B_Leach
Matrix: AQ

QC Sample ID (Associated Samples)	Compound	MS %R	MSD %R	%R Limits	RPD (Limits)	Affected Compounds	Flag
Tt-TP2-B3A-14MS (DIS) Tt-TP2-B3A-14MSD (DIS) (Tt-TP2-B3A-14)	SODIUM	-171	-102	75.00-125.00	-	SODIUM	J-(all detects) R(all non-detects)
Tt-TP2-B3A-14MS (DIS) Tt-TP2-B3A-14MSD (DIS) (Tt-TP2-B3A-14)	CALCIUM	1766	3330	75.00-125.00	23 (20.00)	CALCIUM	J+(all detects) UJ(all non-detects)

Method: 6010B
Matrix: SO

QC Sample ID (Associated Samples)	Compound	MS %R	MSD %R	%R Limits	RPD (Limits)	Affected Compounds	Flag
Tt-TP2-B3A-14MS (TOT) Tt-TP2-B3A-14MSD (TOT) (Tt-TP2-B3A-14)	IRON MANGANESE TITANIUM	7698 259 608	8772 253 665	75.00-125.00 75.00-125.00 75.00-125.00	- - -	IRON MANGANESE TITANIUM	J+ (all detects)

Method: 6020
Matrix: SO

QC Sample ID (Associated Samples)	Compound	MS %R	MSD %R	%R Limits	RPD (Limits)	Affected Compounds	Flag
Tt-TP2-B3A-14MS (TOT) Tt-TP2-B3A-14MSD (TOT) (Tt-TP2-B3A-14)	ANTIMONY ARSENIC BERYLLIUM	71 77 72	68 73 70	80.00-120.00 80.00-120.00 80.00-120.00	- - -	ANTIMONY ARSENIC BERYLLIUM	J-(all detects) UJ(all non-detects)
Tt-TP2-B3A-14MS (TOT) Tt-TP2-B3A-14MSD (TOT) (Tt-TP2-B3A-14)	BARIUM	219	207	80.00-120.00	-	BARIUM	J+(all detects)

Method Blank Outlier Report

Lab Reporting Batch ID: 440-155570-1 **Laboratory: TA IRV**

EDD Filename: Prep440-155570-1 **eQAPP Name: TetraTechInc_NERT_11302016**

Method: **6010B**
Matrix: **SO**

Method Blank Sample ID	Analysis Date	Analyte	Result	Associated Samples
MB 440-350212/1-A ^5	8/20/2016 12:17:00 PM	IRON	5.23 mg/Kg	Tt-TP2-B3A-14 Tt-TP2-B3A-14-dup Tt-TP2-B3A-2

Data Qualifier Summary

Lab Reporting Batch ID: 440-155570-1 **Laboratory: TA IRV**

EDD Filename: Prep440-155570-1 **eQAPP Name: TetraTechInc_NERT_11302016**

Method Category: **GENCHEM**

Method: **300.0_Leach** ***Matrix:*** **AQ**

Sample ID: **Tt-TP2-B3A-14** ***Collected:*** **8/12/2016 1:35:00 PM** ***Analysis Type:*** **DL/DIS2** ***Dilution:*** **100**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
SULFATE	830	F2	25	MDL	50	MRL	mg/L	J	m, m, ld, fd

Sample ID: **Tt-TP2-B3A-14** ***Collected:*** **8/12/2016 1:35:00 PM** ***Analysis Type:*** **RES/DIS** ***Dilution:*** **1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
Nitrate as NO3	0.29	J	0.25	MDL	0.50	MRL	mg/L	J+	sp, m

Sample ID: **Tt-TP2-B3A-14** ***Collected:*** **8/12/2016 1:35:00 PM** ***Analysis Type:*** **RES/DIS2** ***Dilution:*** **1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
CHLORIDE	0.91		0.25	MDL	0.50	MRL	mg/L	J+	m, fd

Sample ID: **Tt-TP2-B3A-14-dup** ***Collected:*** **8/12/2016 1:40:00 PM** ***Analysis Type:*** **RE2/DIS2** ***Dilution:*** **100**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
SULFATE	310		25	MDL	50	MRL	mg/L	J	fd

Sample ID: **Tt-TP2-B3A-14-dup** ***Collected:*** **8/12/2016 1:40:00 PM** ***Analysis Type:*** **RES/DIS** ***Dilution:*** **1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
Nitrate as NO3	0.25	J	0.25	MDL	0.50	MRL	mg/L	J	sp

Sample ID: **Tt-TP2-B3A-14-dup** ***Collected:*** **8/12/2016 1:40:00 PM** ***Analysis Type:*** **RES/DIS2** ***Dilution:*** **1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
CHLORIDE	1.7		0.25	MDL	0.50	MRL	mg/L	J	fd

Sample ID: **Tt-TP2-B3A-2** ***Collected:*** **8/12/2016 1:11:00 PM** ***Analysis Type:*** **RES/DIS** ***Dilution:*** **1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
Nitrate as NO3	0.42	J	0.25	MDL	0.50	MRL	mg/L	J	sp

* denotes a non-reportable result

Project Name and Number: 114-520225-2015-MO5 - NERT Soil Flushing

Data Qualifier Summary

Lab Reporting Batch ID: 440-155570-1 **Laboratory: TA IRV**

EDD Filename: Prep440-155570-1 **eQAPP Name: TetraTechInc_NERT_11302016**

Method Category: GENCHEM

Method: 300.1B_Leach **Matrix: AQ**

Sample ID: Tt-TP2-B3A-14 **Collected:** 8/12/2016 1:35:00 PM **Analysis Type:** RES/DIS **Dilution:** 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
Chlorate	18	J	10	MDL	20	MRL	ug/L	J	sp

Sample ID: Tt-TP2-B3A-2 **Collected:** 8/12/2016 1:11:00 PM **Analysis Type:** RES/DIS **Dilution:** 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
Chlorate	15	J	10	MDL	20	MRL	ug/L	J	sp

Method Category: GENCHEM

Method: 314.0 **Matrix: SO**

Sample ID: Tt-TP2-B3A-14 **Collected:** 8/12/2016 1:35:00 PM **Analysis Type:** RES/DIS **Dilution:** 5

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
PERCHLORATE	4.1		0.059	MDL	0.25	MRL	mg/Kg	J	fd

Sample ID: Tt-TP2-B3A-14-dup **Collected:** 8/12/2016 1:40:00 PM **Analysis Type:** RES/DIS **Dilution:** 50

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
PERCHLORATE	12		0.59	MDL	2.5	MRL	mg/Kg	J	fd

Method Category: METALS

Method: 6010B **Matrix: SO**

Sample ID: Tt-TP2-B3A-14 **Collected:** 8/12/2016 1:35:00 PM **Analysis Type:** RES/TOT **Dilution:** 5

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
IRON	14000	B	6.1	MDL	12	MRL	mg/Kg	J+	m
MANGANESE	200	F1	1.2	MDL	2.5	MRL	mg/Kg	J+	m
TITANIUM	780		1.2	MDL	2.5	MRL	mg/Kg	J+	m

* denotes a non-reportable result

Project Name and Number: 114-520225-2015-MO5 - NERT Soil Flushing

Data Qualifier Summary

Lab Reporting Batch ID: 440-155570-1 **Laboratory: TA IRV**

EDD Filename: Prep440-155570-1 **eQAPP Name: TetraTechInc_NERT_11302016**

Method Category: **METALS**

Method: **6010B_Leach** ***Matrix:*** **AQ**

Sample ID: **Tt-TP2-B3A-14** ***Collected:*** **8/12/2016 1:35:00 PM** ***Analysis Type:*** **RES/DIS** ***Dilution:*** **1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
CALCIUM	430	F2	0.50	MDL	1.0	MRL	mg/L	J+	m, ld, fd
MAGNESIUM	5.6		0.12	MDL	4.0	MRL	mg/L	J	fd
SODIUM	110		1.9	MDL	5.0	MRL	mg/L	J-	m

Sample ID: **Tt-TP2-B3A-14-dup** ***Collected:*** **8/12/2016 1:40:00 PM** ***Analysis Type:*** **RES/DIS** ***Dilution:*** **1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
CALCIUM	81		0.50	MDL	1.0	MRL	mg/L	J	fd
MAGNESIUM	3.6	J	0.12	MDL	4.0	MRL	mg/L	J	sp, fd

Sample ID: **Tt-TP2-B3A-2** ***Collected:*** **8/12/2016 1:11:00 PM** ***Analysis Type:*** **RES/DIS** ***Dilution:*** **1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
MAGNESIUM	2.9	J	0.12	MDL	4.0	MRL	mg/L	J	sp

Method Category: **METALS**

Method: **6020** ***Matrix:*** **SO**

Sample ID: **Tt-TP2-B3A-14** ***Collected:*** **8/12/2016 1:35:00 PM** ***Analysis Type:*** **RES/TOT** ***Dilution:*** **20**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
ANTIMONY	0.27	U F1	0.27	MDL	0.99	MRL	mg/Kg	UJ	m
ARSENIC	16	F1	0.25	MDL	0.49	MRL	mg/Kg	J-	m
BARIUM	120	F1	0.25	MDL	0.49	MRL	mg/Kg	J+	m
BERYLLIUM	0.41	F1	0.15	MDL	0.30	MRL	mg/Kg	J-	m
CHROMIUM	16		0.49	MDL	0.99	MRL	mg/Kg	J	fd
MOLYBDENUM	0.65	J	0.49	MDL	0.99	MRL	mg/Kg	J	sp

Sample ID: **Tt-TP2-B3A-14-dup** ***Collected:*** **8/12/2016 1:40:00 PM** ***Analysis Type:*** **RES/TOT** ***Dilution:*** **20**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
CHROMIUM	23		0.50	MDL	1.0	MRL	mg/Kg	J	fd

* denotes a non-reportable result

Project Name and Number: 114-520225-2015-MO5 - NERT Soil Flushing

Data Qualifier Summary

Lab Reporting Batch ID: 440-155570-1 **Laboratory: TA IRV**

EDD Filename: Prep440-155570-1 **eQAPP Name: TetraTechInc_NERT_11302016**

Method Category: METALS

Method: 6020 **Matrix: SO**

Sample ID: **Tt-TP2-B3A-14-dup** ***Collected:*** **8/12/2016 1:40:00 PM** ***Analysis Type:*** **RES/TOT** ***Dilution:*** **20**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
MOLYBDENUM	0.55	J	0.50	MDL	1.0	MRL	mg/Kg	J	sp

Sample ID: **Tt-TP2-B3A-2** ***Collected:*** **8/12/2016 1:11:00 PM** ***Analysis Type:*** **RES/TOT** ***Dilution:*** **20**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
MOLYBDENUM	0.59	J	0.50	MDL	0.99	MRL	mg/Kg	J	sp
SELENIUM	0.22	J	0.20	MDL	0.99	MRL	mg/Kg	J	sp

Method Category: METALS

Method: 7199 **Matrix: SO**

Sample ID: **Tt-TP2-B3A-14** ***Collected:*** **8/12/2016 1:35:00 PM** ***Analysis Type:*** **RES** ***Dilution:*** **3**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
Chromium, hexavalent	0.20	J	0.19	MDL	0.38	MRL	mg/Kg	J	sp, fd

Sample ID: **Tt-TP2-B3A-14-dup** ***Collected:*** **8/12/2016 1:40:00 PM** ***Analysis Type:*** **RES** ***Dilution:*** **3**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
Chromium, hexavalent	0.28	J	0.19	MDL	0.38	MRL	mg/Kg	J	sp, fd

Sample ID: **Tt-TP2-B3A-2** ***Collected:*** **8/12/2016 1:11:00 PM** ***Analysis Type:*** **RES** ***Dilution:*** **3**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
Chromium, hexavalent	0.25	J	0.18	MDL	0.36	MRL	mg/Kg	J	sp

* denotes a non-reportable result

Project Name and Number: 114-520225-2015-MO5 - NERT Soil Flushing

Data Qualifier Summary

Lab Reporting Batch ID: 440-155570-1

Laboratory: TA IRV

EDD Filename: Prep440-155570-1

eQAPP Name: TetraTechInc_NERT_11302016

Reason Code Legend

Reason Code	*Description*
bl	Method Blank Contamination
f	Matrix Spike Precision
fd	Field Duplicate Precision
ld	Matrix Spike Precision
ldf	Matrix Spike Precision
m	Matrix Spike Lower Estimation
m	Matrix Spike Lower Rejection
m	Matrix Spike Upper Estimation
sp	Reporting Limit Trace Value

* denotes a non-reportable result

Project Name and Number: 114-520225-2015-MO5 - NERT Soil Flushing

Reporting Limit Outliers

Lab Reporting Batch ID: 440-155570-1 **Laboratory: TA IRV**

EDD Filename: Prep440-155570-1 **eQAPP Name: TetraTechInc_NERT_11302016**

Method: 300.0_Leach
Matrix: AQ

SampleID	Analyte	Lab Qual	Result	Reporting Limit	RL Type	Units	Flag
Tt-TP2-B3A-14	Nitrate as NO3	J	0.29	0.50	MRL	mg/L	J (all detects)
Tt-TP2-B3A-14-dup	Nitrate as NO3	J	0.25	0.50	MRL	mg/L	J (all detects)
Tt-TP2-B3A-2	Nitrate as NO3	J	0.42	0.50	MRL	mg/L	J (all detects)

Method: 300.1B_Leach
Matrix: AQ

SampleID	Analyte	Lab Qual	Result	Reporting Limit	RL Type	Units	Flag
Tt-TP2-B3A-14	Chlorate	J	18	20	MRL	ug/L	J (all detects)
Tt-TP2-B3A-2	Chlorate	J	15	20	MRL	ug/L	J (all detects)

Method: 6010B_Leach
Matrix: AQ

SampleID	Analyte	Lab Qual	Result	Reporting Limit	RL Type	Units	Flag
Tt-TP2-B3A-14-dup	MAGNESIUM	J	3.6	4.0	MRL	mg/L	J (all detects)
Tt-TP2-B3A-2	MAGNESIUM	J	2.9	4.0	MRL	mg/L	J (all detects)

Method: 6020
Matrix: SO

SampleID	Analyte	Lab Qual	Result	Reporting Limit	RL Type	Units	Flag
Tt-TP2-B3A-14	MOLYBDENUM	J	0.65	0.99	MRL	mg/Kg	J (all detects)
Tt-TP2-B3A-14-dup	MOLYBDENUM	J	0.55	1.0	MRL	mg/Kg	J (all detects)
Tt-TP2-B3A-2	MOLYBDENUM SELENIUM	J J	0.59 0.22	0.99 0.99	MRL MRL	mg/Kg mg/Kg	J (all detects)

Method: 7199
Matrix: SO

SampleID	Analyte	Lab Qual	Result	Reporting Limit	RL Type	Units	Flag
Tt-TP2-B3A-14	Chromium, hexavalent	J	0.20	0.38	MRL	mg/Kg	J (all detects)
Tt-TP2-B3A-14-dup	Chromium, hexavalent	J	0.28	0.38	MRL	mg/Kg	J (all detects)
Tt-TP2-B3A-2	Chromium, hexavalent	J	0.25	0.36	MRL	mg/Kg	J (all detects)

Data Review Summary

Lab Reporting Batch ID: 440-155575-1 **Laboratory: TA IRV**

EDD Filename: Prep440-155575-1 **eQAPP Name: TetraTechInc_NERT_11302016**

Validation Area	*Note*
Technical Holding Times	A
Temperature	A
Initial Calibration	N
Continuing Calibration/Initial Calibration Verification	N
Method Blanks	SR
Surrogate/Tracer Spikes	A
Matrix Spike/Matrix Spike Duplicates	SR
Laboratory Duplicates	A
Laboratory Replicates	N
Laboratory Control Samples	A
Compound Quantitation	SR
Field Duplicates	SR
Field Triplicates	N
Field Blanks	N

A = Acceptable, N = Not provided/applicable, SR = See report

The contents of this report reflect findings made by ADR during Automated Data Review, manual applied qualifiers are not considered. Please refer to the Overall Qualifier Summary report for manual qualifiers.

Field Duplicate RPD Report

Lab Reporting Batch ID: 440-155575-1 **Laboratory: TA IRV**

EDD Filename: Prep440-155575-1 **eQAPP Name: TetraTechInc_NERT_11302016**

Method: 2540C_Leach
Matrix: AQ

Analyte	Concentration (mg/L)		Sample RPD	eQAPP RPD	Flag
	Tt-TP1-L2A-14	Tt-TP1-L2A-14-dup			
TOTAL DISSOLVED SOLIDS	330	96	110	30.00	J (all detects) UJ (all non-detects)

Analyte	Concentration (mg/L)		Sample RPD	eQAPP RPD	Flag
	Tt-TP1-B2A-14	Tt-TP1-B2A-14-dup			
TOTAL DISSOLVED SOLIDS	220	280	24	30.00	No Qualifiers Applied

Method: 314.0
Matrix: SO

Analyte	Concentration (mg/Kg)		Sample RPD	eQAPP RPD	Flag
	Tt-TP1-L2A-14	Tt-TP1-L2A-14-dup			
PERCHLORATE	0.90	0.22	121	30.00	J(all detects) UJ(all non-detects)

Analyte	Concentration (mg/Kg)		Sample RPD	eQAPP RPD	Flag
	Tt-TP1-B2A-14	Tt-TP1-B2A-14-dup			
PERCHLORATE	0.22	0.16	32	30.00	J(all detects) UJ(all non-detects)

Project Name and Number: 114-520225-2015-MO5 - NERT Soil Flushing

Matrix Spike/Matrix Spike Duplicate Outlier Report

Lab Reporting Batch ID: 440-155575-1 **Laboratory: TA IRV**

EDD Filename: Prep440-155575-1 **eQAPP Name: TetraTechInc_NERT_11302016**

Method: **314.0**
Matrix: **SO**

QC Sample ID (Associated Samples)	*Compound*	*MS %R*	*MSD %R*	*%R Limits*	*RPD (Limits)*	*Affected Compounds*	*Flag*
Tt-TP1-L2A-14MS (Tt-TP1-L2A-14)	PERCHLORATE	129	-	80.00-120.00	-	PERCHLORATE	J+ (all detects)

Method Blank Outlier Report

Lab Reporting Batch ID: 440-155575-1 **Laboratory: TA IRV**

EDD Filename: Prep440-155575-1 **eQAPP Name: TetraTechInc_NERT_11302016**

Method: **6010B**
Matrix: **SO**

Method Blank Sample ID	Analysis Date	Analyte	Result	Associated Samples
MB 440-350212/1-A ^5	8/20/2016 12:17:00 PM	IRON	5.23 mg/Kg	Tt-TP1-B2A-22 Tt-TP1-B2A-6 Tt-TP2-B4A-22 Tt-TP2-B4A-6

Data Qualifier Summary

Lab Reporting Batch ID: 440-155575-1 **Laboratory: TA IRV**

EDD Filename: Prep440-155575-1 **eQAPP Name: TetraTechInc_NERT_11302016**

Method Category: GENCHEM

Method: 2540C_Leach **Matrix: AQ**

Sample ID: Tt-TP1-L2A-14 **Collected:** 8/12/2016 7:12:00 AM **Analysis Type:** RES/DIS **Dilution:** 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
TOTAL DISSOLVED SOLIDS	330		5.0	MDL	10	MRL	mg/L	J	fd

Sample ID: Tt-TP1-L2A-14-dup **Collected:** 8/12/2016 7:17:00 AM **Analysis Type:** RES/DIS **Dilution:** 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
TOTAL DISSOLVED SOLIDS	96		5.0	MDL	10	MRL	mg/L	J	fd

Method Category: GENCHEM

Method: 300.0_Leach **Matrix: AQ**

Sample ID: Tt-TP1-B2A-6 **Collected:** 8/12/2016 7:59:00 AM **Analysis Type:** RES/DIS **Dilution:** 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
Nitrate as NO3	0.31	J	0.25	MDL	0.50	MRL	mg/L	J	sp

Sample ID: Tt-TP1-L2A-6 **Collected:** 8/12/2016 6:55:00 AM **Analysis Type:** RES/DIS **Dilution:** 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
Nitrate as NO3	0.39	J	0.25	MDL	0.50	MRL	mg/L	J	sp

Sample ID: Tt-TP2-B4A-22 **Collected:** 8/12/2016 11:12:00 AM **Analysis Type:** RES/DIS **Dilution:** 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
Nitrate as NO3	0.31	J	0.25	MDL	0.50	MRL	mg/L	J	sp

Method Category: GENCHEM

Method: 314.0 **Matrix: SO**

Sample ID: Tt-TP1-B2A-14 **Collected:** 8/12/2016 8:10:00 AM **Analysis Type:** RES/DIS **Dilution:** 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
PERCHLORATE	0.22		0.011	MDL	0.048	MRL	mg/Kg	J	fd

* denotes a non-reportable result

Project Name and Number: 114-520225-2015-MO5 - NERT Soil Flushing

Data Qualifier Summary

Lab Reporting Batch ID: 440-155575-1 **Laboratory: TA IRV**

EDD Filename: Prep440-155575-1 **eQAPP Name: TetraTechInc_NERT_11302016**

Method Category: GENCHEM

Method: 314.0 **Matrix: SO**

Sample ID: Tt-TP1-B2A-14-dup **Collected:** 8/12/2016 8:15:00 AM **Analysis Type:** RES/DIS **Dilution:** 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
PERCHLORATE	0.16		0.011	MDL	0.047	MRL	mg/Kg	J	fd

Sample ID: Tt-TP1-L2A-14 **Collected:** 8/12/2016 7:12:00 AM **Analysis Type:** RES/DIS **Dilution:** 10

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
PERCHLORATE	0.90	F1	0.12	MDL	0.50	MRL	mg/Kg	J+	m, fd

Sample ID: Tt-TP1-L2A-14-dup **Collected:** 8/12/2016 7:17:00 AM **Analysis Type:** RES/DIS **Dilution:** 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
PERCHLORATE	0.22		0.012	MDL	0.049	MRL	mg/Kg	J	fd

Method Category: METALS

Method: 6010B **Matrix: SO**

Sample ID: Tt-TP1-B2A-22 **Collected:** 8/12/2016 8:32:00 AM **Analysis Type:** RES/TOT **Dilution:** 10

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
BORON	7.1	J	5.6	MDL	11	MRL	mg/Kg	J	sp

Sample ID: Tt-TP1-L2A-6 **Collected:** 8/12/2016 6:55:00 AM **Analysis Type:** RES/TOT **Dilution:** 5

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
BORON	5.8	J	2.9	MDL	5.9	MRL	mg/Kg	J	sp

Sample ID: Tt-TP2-B4A-6 **Collected:** 8/12/2016 9:43:00 AM **Analysis Type:** RE2/TOT **Dilution:** 5

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
BORON	5.0	J	2.7	MDL	5.5	MRL	mg/Kg	J	sp

* denotes a non-reportable result

Project Name and Number: 114-520225-2015-MO5 - NERT Soil Flushing

Data Qualifier Summary

Lab Reporting Batch ID: 440-155575-1 **Laboratory: TA IRV**

EDD Filename: Prep440-155575-1 **eQAPP Name: TetraTechInc_NERT_11302016**

Method Category: METALS

Method: 6010B_Leach **Matrix: AQ**

Sample ID: Tt-TP1-B2A-22 **Collected:** 8/12/2016 8:32:00 AM **Analysis Type:** RES/DIS **Dilution:** 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
MAGNESIUM	2.2	J	0.12	MDL	4.0	MRL	mg/L	J	sp

Sample ID: Tt-TP1-B2A-6 **Collected:** 8/12/2016 7:59:00 AM **Analysis Type:** RES/DIS **Dilution:** 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
MAGNESIUM	2.6	J	0.12	MDL	4.0	MRL	mg/L	J	sp

Sample ID: Tt-TP1-L2A-6 **Collected:** 8/12/2016 6:55:00 AM **Analysis Type:** RES/DIS **Dilution:** 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
MAGNESIUM	1.3	J	0.12	MDL	4.0	MRL	mg/L	J	sp

Sample ID: Tt-TP2-B4A-22 **Collected:** 8/12/2016 11:12:00 AM **Analysis Type:** RES/DIS **Dilution:** 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
MAGNESIUM	2.5	J	0.12	MDL	4.0	MRL	mg/L	J	sp

Method Category: METALS

Method: 6020 **Matrix: SO**

Sample ID: Tt-TP1-L2A-18 **Collected:** 8/12/2016 7:22:00 AM **Analysis Type:** RES/TOT **Dilution:** 20

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
MOLYBDENUM	0.68	J	0.50	MDL	1.0	MRL	mg/Kg	J	sp

Sample ID: Tt-TP2-B4A-22 **Collected:** 8/12/2016 11:12:00 AM **Analysis Type:** RES/TOT **Dilution:** 20

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
BERYLLIUM	0.27	J	0.15	MDL	0.30	MRL	mg/Kg	J	sp

* denotes a non-reportable result

Project Name and Number: 114-520225-2015-MO5 - NERT Soil Flushing

Data Qualifier Summary

Lab Reporting Batch ID: 440-155575-1 **Laboratory: TA IRV**

EDD Filename: Prep440-155575-1 **eQAPP Name: TetraTechInc_NERT_11302016**

Method Category: METALS

Method: 7199 **Matrix: SO**

Sample ID: Tt-TP1-L2A-18 **Collected:** 8/12/2016 7:22:00 AM **Analysis Type:** RES **Dilution:** 3

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
Chromium, hexavalent	0.27	J	0.16	MDL	0.33	MRL	mg/Kg	J	sp

Method Category: METALS

Method: 7471A **Matrix: SO**

Sample ID: Tt-TP1-B2A-6 **Collected:** 8/12/2016 7:59:00 AM **Analysis Type:** RES/TOT **Dilution:** 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
MERCURY	0.015	J	0.014	MDL	0.024	MRL	mg/Kg	J	sp

* denotes a non-reportable result

Project Name and Number: 114-520225-2015-MO5 - NERT Soil Flushing

Data Qualifier Summary

Lab Reporting Batch ID: 440-155575-1

Laboratory: TA IRV

EDD Filename: Prep440-155575-1

eQAPP Name: TetraTechInc_NERT_11302016

Reason Code Legend

Reason Code	*Description*
bl	Method Blank Contamination
fd	Field Duplicate Precision
m	Matrix Spike Upper Estimation
sp	Reporting Limit Trace Value

* denotes a non-reportable result

Project Name and Number: 114-520225-2015-MO5 - NERT Soil Flushing

Reporting Limit Outliers

Lab Reporting Batch ID: 440-155575-1 **Laboratory: TA IRV**

EDD Filename: Prep440-155575-1 **eQAPP Name: TetraTechInc_NERT_11302016**

Method: 300.0_Leach
Matrix: AQ

SampleID	Analyte	Lab Qual	Result	Reporting Limit	RL Type	Units	Flag
Tt-TP1-B2A-6	Nitrate as NO3	J	0.31	0.50	MRL	mg/L	J (all detects)
Tt-TP1-L2A-6	Nitrate as NO3	J	0.39	0.50	MRL	mg/L	J (all detects)
Tt-TP2-B4A-22	Nitrate as NO3	J	0.31	0.50	MRL	mg/L	J (all detects)

Method: 6010B_Leach
Matrix: AQ

SampleID	Analyte	Lab Qual	Result	Reporting Limit	RL Type	Units	Flag
Tt-TP1-B2A-22	MAGNESIUM	J	2.2	4.0	MRL	mg/L	J (all detects)
Tt-TP1-B2A-6	MAGNESIUM	J	2.6	4.0	MRL	mg/L	J (all detects)
Tt-TP1-L2A-6	MAGNESIUM	J	1.3	4.0	MRL	mg/L	J (all detects)
Tt-TP2-B4A-22	MAGNESIUM	J	2.5	4.0	MRL	mg/L	J (all detects)

Method: 6010B
Matrix: SO

SampleID	Analyte	Lab Qual	Result	Reporting Limit	RL Type	Units	Flag
Tt-TP1-B2A-22	BORON	J	7.1	11	MRL	mg/Kg	J (all detects)
Tt-TP1-L2A-6	BORON	J	5.8	5.9	MRL	mg/Kg	J (all detects)
Tt-TP2-B4A-6	BORON	J	5.0	5.5	MRL	mg/Kg	J (all detects)

Method: 6020
Matrix: SO

SampleID	Analyte	Lab Qual	Result	Reporting Limit	RL Type	Units	Flag
Tt-TP1-L2A-18	MOLYBDENUM	J	0.68	1.0	MRL	mg/Kg	J (all detects)
Tt-TP2-B4A-22	BERYLLIUM	J	0.27	0.30	MRL	mg/Kg	J (all detects)

Method: 7199
Matrix: SO

SampleID	Analyte	Lab Qual	Result	Reporting Limit	RL Type	Units	Flag
Tt-TP1-L2A-18	Chromium, hexavalent	J	0.27	0.33	MRL	mg/Kg	J (all detects)

Reporting Limit Outliers

Lab Reporting Batch ID: 440-155575-1 **Laboratory: TA IRV**

EDD Filename: Prep440-155575-1 **eQAPP Name: TetraTechInc_NERT_11302016**

Method: **7471A**

Matrix: **SO**

SampleID	*Analyte*	*Lab Qual*	*Result*	*Reporting Limit*	*RL Type*	*Units*	*Flag*
Tt-TP1-B2A-6	MERCURY	J	0.015	0.024	MRL	mg/Kg	J (all detects)

Data Review Summary

Lab Reporting Batch ID: 440-155631-1 **Laboratory: TA IRV**

EDD Filename: Prep440-155631-1 **eQAPP Name: TetraTechInc_NERT_11302016**

Validation Area	*Note*
Technical Holding Times	A
Temperature	A
Initial Calibration	N
Continuing Calibration/Initial Calibration Verification	N
Method Blanks	SR
Surrogate/Tracer Spikes	A
Matrix Spike/Matrix Spike Duplicates	SR
Laboratory Duplicates	A
Laboratory Replicates	N
Laboratory Control Samples	A
Compound Quantitation	SR
Field Duplicates	SR
Field Triplicates	N
Field Blanks	N

A = Acceptable, N = Not provided/applicable, SR = See report

The contents of this report reflect findings made by ADR during Automated Data Review, manual applied qualifiers are not considered. Please refer to the Overall Qualifier Summary report for manual qualifiers.

Field Duplicate RPD Report

Lab Reporting Batch ID: 440-155631-1 **Laboratory: TA IRV**

EDD Filename: Prep440-155631-1 **eQAPP Name: TetraTechInc_NERT_11302016**

Method: 2320B_Leach
Matrix: AQ

Analyte	Concentration (mg/L)		Sample RPD	eQAPP RPD	Flag
	Tt-TP3-L2A-6	Tt-TP3-L2A-6-DUP			
Alkalinity as CaCO3	27	25	8	30.00	No Qualifiers Applied

Analyte	Concentration (mg/L)		Sample RPD	eQAPP RPD	Flag
	Tt-TP4-B3A-22	Tt-TP4-B3A-22-DUP			
Alkalinity as CaCO3	25	28	11	30.00	No Qualifiers Applied

Method: 2540C_Leach
Matrix: AQ

Analyte	Concentration (mg/L)		Sample RPD	eQAPP RPD	Flag
	Tt-TP3-B1A-6	Tt-TP3-B1A-6-DUP			
TOTAL DISSOLVED SOLIDS	93	110	17	30.00	No Qualifiers Applied

Analyte	Concentration (mg/L)		Sample RPD	eQAPP RPD	Flag
	Tt-TP3-B2A-22	Tt-TP3-B2A-22-DUP			
TOTAL DISSOLVED SOLIDS	190	190	0	30.00	No Qualifiers Applied

Analyte	Concentration (mg/L)		Sample RPD	eQAPP RPD	Flag
	Tt-TP2-B1A-22	Tt-TP2-B1A-22-DUP			
TOTAL DISSOLVED SOLIDS	1700	560	101	30.00	J(all detects) UJ(all non-detects)

Analyte	Concentration (mg/L)		Sample RPD	eQAPP RPD	Flag
	Tt-TP3-B4A-14	Tt-TP3-B4A-14-DUP			
TOTAL DISSOLVED SOLIDS	110	100	10	30.00	No Qualifiers Applied

Analyte	Concentration (mg/L)		Sample RPD	eQAPP RPD	Flag
	Tt-TP3-L2A-6	Tt-TP3-L2A-6-DUP			
TOTAL DISSOLVED SOLIDS	170	88	64	30.00	J(all detects) UJ(all non-detects)

Analyte	Concentration (mg/L)		Sample RPD	eQAPP RPD	Flag
	Tt-TP4-B3A-22	Tt-TP4-B3A-22-DUP			
TOTAL DISSOLVED SOLIDS	730	680	7	30.00	No Qualifiers Applied

Project Name and Number: 114-520225-2015-MO5 - NERT Soil Flushing

Field Duplicate RPD Report

Lab Reporting Batch ID: 440-155631-1 **Laboratory: TA IRV**

EDD Filename: Prep440-155631-1 **eQAPP Name: TetraTechInc_NERT_11302016**

Method: 300.0_Leach
Matrix: AQ

Analyte	Concentration (mg/L)		Sample RPD	eQAPP RPD	Flag
	Tt-TP3-L2A-6	Tt-TP3-L2A-6-DUP			
CHLORIDE	12	1.1	166	30.00	J(all detects) UJ(all non-detects)
Nitrate as NO3	14	3.3	124	30.00	
SULFATE	17	4.3	119	30.00	

Analyte	Concentration (mg/L)		Sample RPD	eQAPP RPD	Flag
	Tt-TP4-B3A-22	Tt-TP4-B3A-22-DUP			
Nitrate as NO3	19	23	19	30.00	No Qualifiers Applied
SULFATE	30	40	29	30.00	
CHLORIDE	16	24	40	30.00	J(all detects) UJ(all non-detects)

Method: 300.1B_Leach
Matrix: AQ

Analyte	Concentration (ug/L)		Sample RPD	eQAPP RPD	Flag
	Tt-TP3-L2A-6	Tt-TP3-L2A-6-DUP			
Chlorate	8800	10000	13	30.00	No Qualifiers Applied

Analyte	Concentration (ug/L)		Sample RPD	eQAPP RPD	Flag
	Tt-TP4-B3A-22	Tt-TP4-B3A-22-DUP			
Chlorate	46000	45000	2	30.00	No Qualifiers Applied

Method: 6010B_Leach
Matrix: AQ

Analyte	Concentration (mg/L)		Sample RPD	eQAPP RPD	Flag
	Tt-TP3-L2A-6 (DIS)	Tt-TP3-L2A-6-DUP (DIS)			
CALCIUM	6.8	6.2	9	30.00	No Qualifiers Applied
SODIUM	92	110	18	30.00	
MAGNESIUM	3.3	2.1	44	30.00	J(all detects) UJ(all non-detects)

Analyte	Concentration (mg/L)		Sample RPD	eQAPP RPD	Flag
	Tt-TP4-B3A-22 (DIS)	Tt-TP4-B3A-22-DUP (DIS)			
SODIUM	220	210	5	30.00	No Qualifiers Applied
CALCIUM	6.3	4.2	40	30.00	J(all detects) UJ(all non-detects)
MAGNESIUM	3.4	2.3	39	30.00	

Method: 314.0
Matrix: SO

Analyte	Concentration (mg/Kg)		Sample RPD	eQAPP RPD	Flag
	Tt-TP3-B1A-6	Tt-TP3-B1A-6-DUP			
PERCHLORATE	1.5	9.4	145	30.00	J(all detects) UJ(all non-detects)

Project Name and Number: 114-520225-2015-MO5 - NERT Soil Flushing

Field Duplicate RPD Report

Lab Reporting Batch ID: 440-155631-1 **Laboratory: TA IRV**

EDD Filename: Prep440-155631-1 **eQAPP Name: TetraTechInc_NERT_11302016**

Method: 314.0
Matrix: SO

Analyte	Concentration (mg/Kg)		Sample RPD	eQAPP RPD	Flag
	Tt-TP3-B2A-22	Tt-TP3-B2A-22-DUP			
PERCHLORATE	3.6	0.18	181	30.00	J(all detects) UJ(all non-detects)

Analyte	Concentration (mg/Kg)		Sample RPD	eQAPP RPD	Flag
	Tt-TP2-B1A-22	Tt-TP2-B1A-22-DUP			
PERCHLORATE	22	210	162	30.00	J(all detects) UJ(all non-detects)

Analyte	Concentration (mg/Kg)		Sample RPD	eQAPP RPD	Flag
	Tt-TP3-B4A-14	Tt-TP3-B4A-14-DUP			
PERCHLORATE	0.12	4.4	189	30.00	J(all detects) UJ(all non-detects)

Analyte	Concentration (mg/Kg)		Sample RPD	eQAPP RPD	Flag
	Tt-TP3-L2A-6	Tt-TP3-L2A-6-DUP			
PERCHLORATE	88	1.9	192	30.00	J(all detects) UJ(all non-detects)

Analyte	Concentration (mg/Kg)		Sample RPD	eQAPP RPD	Flag
	Tt-TP4-B3A-22	Tt-TP4-B3A-22-DUP			
PERCHLORATE	120	170	34	30.00	J(all detects) UJ(all non-detects)

Method: 6010B
Matrix: SO

Analyte	Concentration (mg/Kg)		Sample RPD	eQAPP RPD	Flag
	Tt-TP3-L2A-6 (TOT)	Tt-TP3-L2A-6-DUP (TOT)			
IRON	15000	20000	29	30.00	No Qualifiers Applied
TITANIUM	880	970	10	30.00	
BORON	7.9	5.3	39	30.00	J(all detects)
MANGANESE	240	330	32	30.00	UJ(all non-detects)

Analyte	Concentration (mg/Kg)		Sample RPD	eQAPP RPD	Flag
	Tt-TP4-B3A-22 (TOT)	Tt-TP4-B3A-22-DUP (TOT)			
BORON	25	20	22	30.00	No Qualifiers Applied
IRON	8200	10000	20	30.00	
MANGANESE	130	140	7	30.00	
TITANIUM	400	460	14	30.00	

Field Duplicate RPD Report

Lab Reporting Batch ID: 440-155631-1 **Laboratory: TA IRV**

EDD Filename: Prep440-155631-1 **eQAPP Name: TetraTechInc_NERT_11302016**

Method: 6020
Matrix: SO

Analyte	Concentration (mg/Kg)		Sample RPD	eQAPP RPD	Flag
	Tt-TP3-L2A-6 (TOT)	Tt-TP3-L2A-6-DUP (TOT)			
BARIUM	160	150	6	30.00	No Qualifiers Applied
BERYLLIUM	0.43	0.47	9	30.00	
LEAD	6.4	6.6	3	30.00	
MOLYBDENUM	0.58	0.63	8	30.00	
NICKEL	11	14	24	30.00	
ARSENIC	5.4	3.7	37	30.00	J(all detects) UJ(all non-detects)
CHROMIUM	20	14	35	30.00	
COBALT	5.0	7.0	33	30.00	
COPPER	40	16	86	30.00	
SELENIUM	0.99 U	0.21	200	30.00	
ZINC	190	32	142	30.00	

Analyte	Concentration (mg/Kg)		Sample RPD	eQAPP RPD	Flag
	Tt-TP4-B3A-22 (TOT)	Tt-TP4-B3A-22-DUP (TOT)			
ARSENIC	17	15	12	30.00	No Qualifiers Applied
BARIUM	28	38	30	30.00	
CHROMIUM	24	31	25	30.00	
BERYLLIUM	0.42	0.59	34	30.00	J(all detects) UJ(all non-detects)
COBALT	2.5	3.4	31	30.00	
COPPER	6.0	150	185	30.00	
LEAD	4.0	11	93	30.00	
MOLYBDENUM	0.98 U	0.52	200	30.00	
NICKEL	6.3	8.6	31	30.00	
ZINC	19	130	149	30.00	

Method: 7199
Matrix: SO

Analyte	Concentration (mg/Kg)		Sample RPD	eQAPP RPD	Flag
	Tt-TP4-B3A-22 (DRY)	Tt-TP4-B3A-22-DUP (DRY)			
Chromium, hexavalent	2.4	3.4	34	30.00	J(all detects) UJ(all non-detects)

Method: 9045C
Matrix: SO

Analyte	Concentration (SU)		Sample RPD	eQAPP RPD	Flag
	Tt-TP3-L2A-6	Tt-TP3-L2A-6-DUP			
PH	8.5	9.1	7	30.00	No Qualifiers Applied

Analyte	Concentration (SU)		Sample RPD	eQAPP RPD	Flag
	Tt-TP4-B3A-22	Tt-TP4-B3A-22-DUP			
PH	8.8	8.2	7	30.00	No Qualifiers Applied

Field Duplicate RPD Report

Lab Reporting Batch ID: 440-155631-1 **Laboratory: TA IRV**

EDD Filename: Prep440-155631-1 **eQAPP Name: TetraTechInc_NERT_11302016**

Method: 9060
Matrix: SO

Analyte	Concentration (mg/Kg)		Sample RPD	eQAPP RPD	Flag
	Tt-TP3-L2A-6	Tt-TP3-L2A-6-DUP			
TOTAL ORGANIC CARBON (TOC)	5100	5000	2	30.00	No Qualifiers Applied

Analyte	Concentration (mg/Kg)		Sample RPD	eQAPP RPD	Flag
	Tt-TP4-B3A-22	Tt-TP4-B3A-22-DUP			
TOTAL ORGANIC CARBON (TOC)	7600	8100	6	30.00	No Qualifiers Applied

Matrix Spike/Matrix Spike Duplicate Outlier Report

Lab Reporting Batch ID: 440-155631-1 **Laboratory: TA IRV**

EDD Filename: Prep440-155631-1 **eQAPP Name: TetraTechInc_NERT_11302016**

Method: 6010B
Matrix: SO

QC Sample ID (Associated Samples)	Compound	MS %R	MSD %R	%R Limits	RPD (Limits)	Affected Compounds	Flag
Tt-TP3-L2A-6-DUPMS (TOT) Tt-TP3-L2A-6-DUPMSD (TOT) (Tt-TP3-L2A-6-DUP)	IRON MANGANESE	-1240 -28	-814 -	75.00-125.00 75.00-125.00	- -	IRON MANGANESE	J- (all detects) R (all non-detects)
Tt-TP3-L2A-6-DUPMS (TOT) Tt-TP3-L2A-6-DUPMSD (TOT) (Tt-TP3-L2A-6-DUP)	TITANIUM	249	484	75.00-125.00	-	TITANIUM	J+(all detects)

Method: 6020
Matrix: SO

QC Sample ID (Associated Samples)	Compound	MS %R	MSD %R	%R Limits	RPD (Limits)	Affected Compounds	Flag
Tt-TP3-L2A-6-DUPMS (TOT) Tt-TP3-L2A-6-DUPMSD (TOT) (Tt-TP3-L2A-6-DUP)	ANTIMONY BERYLLIUM CHROMIUM COBALT COPPER NICKEL SELENIUM	- 74 77 76 72 76 78	78 74 77 76 73 78 78	80.00-120.00 80.00-120.00 80.00-120.00 80.00-120.00 80.00-120.00 80.00-120.00 80.00-120.00	- - - - - - -	ANTIMONY BERYLLIUM CHROMIUM COBALT COPPER NICKEL SELENIUM	J-(all detects) UJ(all non-detects)
Tt-TP3-L2A-6-DUPMSD (TOT) (Tt-TP3-L2A-6-DUP)	BARIUM	-	140	80.00-120.00	-	BARIUM	J+(all detects)

Method: 6010B
Matrix: SO

QC Sample ID (Associated Samples)	Compound	MS %R	MSD %R	%R Limits	RPD (Limits)	Affected Compounds	Flag
Tt-TP4-B3A-22MS (TOT) Tt-TP4-B3A-22MSD (TOT) (Tt-TP4-B3A-22)	IRON	-878	-473	75.00-125.00	-	IRON	J-(all detects) R(all non-detects)
Tt-TP4-B3A-22MS (TOT) (Tt-TP4-B3A-22)	MANGANESE	70	-	75.00-125.00	-	MANGANESE	J-(all detects) UJ(all non-detects)
Tt-TP4-B3A-22MS (TOT) Tt-TP4-B3A-22MSD (TOT) (Tt-TP4-B3A-22)	TITANIUM	203	257	75.00-125.00	-	TITANIUM	J+(all detects)

Method: 314.0
Matrix: SO

QC Sample ID (Associated Samples)	Compound	MS %R	MSD %R	%R Limits	RPD (Limits)	Affected Compounds	Flag
Tt-TP2-L2A-2MS Tt-TP2-L2A-2MSD (Tt-TP2-L2A-2)	PERCHLORATE	-269	-611	80.00-120.00	-	PERCHLORATE	J-(all detects) R(all non-detects)
Tt-TP3-B3A-26MS Tt-TP3-B3A-26MSD (Tt-TP3-B3A-26)	PERCHLORATE	498	-850	80.00-120.00	-	PERCHLORATE	J(all detects) R(all non-detects)

Project Name and Number: 114-520225-2015-MO5 - NERT Soil Flushing

Matrix Spike/Matrix Spike Duplicate Outlier Report

Lab Reporting Batch ID: 440-155631-1 **Laboratory: TA IRV**

EDD Filename: Prep440-155631-1 **eQAPP Name: TetraTechInc_NERT_11302016**

Method: **314.0**
Matrix: **SO**

QC Sample ID (Associated Samples)	*Compound*	*MS %R*	*MSD %R*	*%R Limits*	*RPD (Limits)*	*Affected Compounds*	*Flag*
Tt-TP3-B2A-22MS Tt-TP3-B2A-22MSD (Tt-TP3-B2A-22)	PERCHLORATE	221	45	80.00-120.00	23 (20.00)	PERCHLORATE	J(all detects) UJ(all non-detects)
Tt-TP2-B1A-6MSD (Tt-TP2-B1A-6)	PERCHLORATE	-	260	80.00-120.00	-	PERCHLORATE	J+(all detects)

Method Blank Outlier Report

Lab Reporting Batch ID: 440-155631-1 **Laboratory: TA IRV**

EDD Filename: Prep440-155631-1 **eQAPP Name: TetraTechInc_NERT_11302016**

Method: **6010B**
Matrix: **SO**

Method Blank Sample ID	Analysis Date	Analyte	Result	Associated Samples
MB 440-350212/1-A ^5	8/20/2016 12:17:00 PM	IRON	5.23 mg/Kg	Tt-TP2-B2A-10 Tt-TP2-B2A-26 Tt-TP2-L2A-2 Tt-TP2-L2A-26 Tt-TP3-B1A-10 Tt-TP3-B1A-18 Tt-TP3-B3A-10 Tt-TP3-B3A-26 Tt-TP3-B4A-18 Tt-TP3-B4A-2 Tt-TP3-L2A-6
MB 440-351070/1-A ^5	8/24/2016 1:35:00 PM	IRON TITANIUM	24.0 mg/Kg 1.21 mg/Kg	Tt-TP4-B3A-22 Tt-TP4-B3A-22-DUP

Method: **6010B_Leach**
Matrix: **AQ**

Method Blank Sample ID	Analysis Date	Analyte	Result	Associated Samples
MB 440-350014/1-B	8/22/2016 3:17:00 PM	CALCIUM	0.781 mg/L	Tt-TP2-B1A-14 Tt-TP2-B1A-2 Tt-TP2-B2A-10 Tt-TP2-B2A-26 Tt-TP2-L2A-2 Tt-TP2-L2A-26 Tt-TP3-B1A-10 Tt-TP3-B1A-18 Tt-TP3-B2A-14 Tt-TP3-B2A-6 Tt-TP3-B3A-10 Tt-TP3-B3A-26 Tt-TP3-B4A-18 Tt-TP3-B4A-2 Tt-TP3-L2A-14 Tt-TP3-L2A-6 Tt-TP3-L2A-6-DUP Tt-TP4-B3A-2 Tt-TP4-B3A-22 Tt-TP4-B3A-22-DUP

Data Qualifier Summary

Lab Reporting Batch ID: 440-155631-1 **Laboratory: TA IRV**

EDD Filename: Prep440-155631-1 **eQAPP Name: TetraTechInc_NERT_11302016**

Method Category: GENCHEM

Method: 2540C_Leach **Matrix: AQ**

Sample ID: Tt-TP2-B1A-22 **Collected:** 8/13/2016 7:27:00 AM **Analysis Type:** RES/DIS **Dilution:** 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
TOTAL DISSOLVED SOLIDS	1700		5.0	MDL	10	MRL	mg/L	J	fd

Sample ID: Tt-TP2-B1A-22-DUP **Collected:** 8/13/2016 7:32:00 AM **Analysis Type:** RES/DIS **Dilution:** 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
TOTAL DISSOLVED SOLIDS	560		5.0	MDL	10	MRL	mg/L	J	fd

Sample ID: Tt-TP3-L2A-6 **Collected:** 8/14/2016 9:13:00 AM **Analysis Type:** RES/DIS **Dilution:** 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
TOTAL DISSOLVED SOLIDS	170		5.0	MDL	10	MRL	mg/L	J	fd

Sample ID: Tt-TP3-L2A-6-DUP **Collected:** 8/14/2016 9:17:00 AM **Analysis Type:** RES/DIS **Dilution:** 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
TOTAL DISSOLVED SOLIDS	88		5.0	MDL	10	MRL	mg/L	J	fd

Method Category: GENCHEM

Method: 300.0_Leach **Matrix: AQ**

Sample ID: Tt-TP3-B1A-18 **Collected:** 8/14/2016 8:11:00 AM **Analysis Type:** RES/DIS **Dilution:** 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
Nitrate as NO3	0.28	J	0.25	MDL	0.50	MRL	mg/L	J	sp

Sample ID: Tt-TP3-B2A-14 **Collected:** 8/14/2016 12:33:00 PM **Analysis Type:** RES/DIS **Dilution:** 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
Nitrate as NO3	0.32	J	0.25	MDL	0.50	MRL	mg/L	J	sp

* denotes a non-reportable result

Project Name and Number: 114-520225-2015-MO5 - NERT Soil Flushing

Data Qualifier Summary

Lab Reporting Batch ID: 440-155631-1 **Laboratory: TA IRV**

EDD Filename: Prep440-155631-1 **eQAPP Name: TetraTechInc_NERT_11302016**

Method Category: **GENCHEM**

Method: **300.0_Leach** ***Matrix:*** **AQ**

Sample ID: **Tt-TP3-L2A-6** ***Collected:*** **8/14/2016 9:13:00 AM** ***Analysis Type:*** **RE2/DIS** ***Dilution:*** **1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
CHLORIDE	12		0.25	MDL	0.50	MRL	mg/L	J	fd
SULFATE	17		0.25	MDL	0.50	MRL	mg/L	J	fd

Sample ID: **Tt-TP3-L2A-6** ***Collected:*** **8/14/2016 9:13:00 AM** ***Analysis Type:*** **RES/DIS** ***Dilution:*** **1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
Nitrate as NO3	14		0.25	MDL	0.50	MRL	mg/L	J	fd

Sample ID: **Tt-TP3-L2A-6-DUP** ***Collected:*** **8/14/2016 9:17:00 AM** ***Analysis Type:*** **RE2/DIS** ***Dilution:*** **1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
CHLORIDE	1.1		0.25	MDL	0.50	MRL	mg/L	J	fd
SULFATE	4.3		0.25	MDL	0.50	MRL	mg/L	J	fd

Sample ID: **Tt-TP3-L2A-6-DUP** ***Collected:*** **8/14/2016 9:17:00 AM** ***Analysis Type:*** **RES/DIS** ***Dilution:*** **1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
Nitrate as NO3	3.3		0.25	MDL	0.50	MRL	mg/L	J	fd

Sample ID: **Tt-TP4-B3A-22** ***Collected:*** **8/15/2016 7:29:00 AM** ***Analysis Type:*** **RE2/DIS** ***Dilution:*** **1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
CHLORIDE	16		0.25	MDL	0.50	MRL	mg/L	J	fd

Sample ID: **Tt-TP4-B3A-22-DUP** ***Collected:*** **8/15/2016 7:34:00 AM** ***Analysis Type:*** **RE2/DIS** ***Dilution:*** **10**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
CHLORIDE	24		2.5	MDL	5.0	MRL	mg/L	J	fd

* denotes a non-reportable result

Project Name and Number: 114-520225-2015-MO5 - NERT Soil Flushing

Data Qualifier Summary

Lab Reporting Batch ID: 440-155631-1 **Laboratory: TA IRV**

EDD Filename: Prep440-155631-1 **eQAPP Name: TetraTechInc_NERT_11302016**

Method Category: **GENCHEM**

Method: **314.0** ***Matrix:*** **SO**

Sample ID: **Tt-TP2-B1A-22** ***Collected:*** **8/13/2016 7:27:00 AM** ***Analysis Type:*** **RES/DIS** ***Dilution:*** **50**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
PERCHLORATE	22		0.64	MDL	2.7	MRL	mg/Kg	J	fd

Sample ID: **Tt-TP2-B1A-22-DUP** ***Collected:*** **8/13/2016 7:32:00 AM** ***Analysis Type:*** **RES/DIS** ***Dilution:*** **500**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
PERCHLORATE	210		6.5	MDL	28	MRL	mg/Kg	J	fd

Sample ID: **Tt-TP2-B1A-6** ***Collected:*** **8/13/2016 7:05:00 AM** ***Analysis Type:*** **RES/DIS** ***Dilution:*** **50**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
PERCHLORATE	12		0.61	MDL	2.6	MRL	mg/Kg	J+	m

Sample ID: **Tt-TP2-L2A-2** ***Collected:*** **8/13/2016 8:05:00 AM** ***Analysis Type:*** **RES/DIS** ***Dilution:*** **50**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
PERCHLORATE	23		0.52	MDL	2.2	MRL	mg/Kg	J-	m

Sample ID: **Tt-TP3-B1A-14** ***Collected:*** **8/14/2016 8:06:00 AM** ***Analysis Type:*** **RES/DIS** ***Dilution:*** **1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
PERCHLORATE	0.017	J	0.010	MDL	0.044	MRL	mg/Kg	J	sp

Sample ID: **Tt-TP3-B1A-6** ***Collected:*** **8/14/2016 7:53:00 AM** ***Analysis Type:*** **RES/DIS** ***Dilution:*** **5**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
PERCHLORATE	1.5		0.060	MDL	0.25	MRL	mg/Kg	J	fd

Sample ID: **Tt-TP3-B1A-6-DUP** ***Collected:*** **8/14/2016 7:56:00 AM** ***Analysis Type:*** **RES/DIS** ***Dilution:*** **50**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
PERCHLORATE	9.4		0.57	MDL	2.4	MRL	mg/Kg	J	fd

* denotes a non-reportable result

Project Name and Number: 114-520225-2015-MO5 - NERT Soil Flushing

Data Qualifier Summary

Lab Reporting Batch ID: 440-155631-1 **Laboratory: TA IRV**

EDD Filename: Prep440-155631-1 **eQAPP Name: TetraTechInc_NERT_11302016**

Method Category: **GENCHEM**

Method: **314.0** ***Matrix:*** **SO**

Sample ID: **Tt-TP3-B2A-10** ***Collected:*** **8/14/2016 12:17:00 PM** ***Analysis Type:*** **RES/DIS** ***Dilution:*** **1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
PERCHLORATE	0.018	J	0.011	MDL	0.047	MRL	mg/Kg	J	sp

Sample ID: **Tt-TP3-B2A-22** ***Collected:*** **8/14/2016 12:54:00 PM** ***Analysis Type:*** **RES/DIS** ***Dilution:*** **50**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
PERCHLORATE	3.6	F2	0.54	MDL	2.3	MRL	mg/Kg	J	m, m, ld, fd

Sample ID: **Tt-TP3-B2A-22-DUP** ***Collected:*** **8/14/2016 12:59:00 PM** ***Analysis Type:*** **RES/DIS** ***Dilution:*** **1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
PERCHLORATE	0.18		0.011	MDL	0.045	MRL	mg/Kg	J	fd

Sample ID: **Tt-TP3-B3A-26** ***Collected:*** **8/13/2016 1:16:00 PM** ***Analysis Type:*** **RES/DIS** ***Dilution:*** **500**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
PERCHLORATE	230		8.6	MDL	36	MRL	mg/Kg	J	m, m

Sample ID: **Tt-TP3-B4A-14** ***Collected:*** **8/14/2016 6:46:00 AM** ***Analysis Type:*** **RES/DIS** ***Dilution:*** **1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
PERCHLORATE	0.12		0.011	MDL	0.046	MRL	mg/Kg	J	fd

Sample ID: **Tt-TP3-B4A-14-DUP** ***Collected:*** **8/14/2016 6:50:00 AM** ***Analysis Type:*** **RES/DIS** ***Dilution:*** **50**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
PERCHLORATE	4.4		0.53	MDL	2.2	MRL	mg/Kg	J	fd

Sample ID: **Tt-TP3-B4A-18** ***Collected:*** **8/14/2016 6:54:00 AM** ***Analysis Type:*** **RES/DIS** ***Dilution:*** **1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
PERCHLORATE	0.028	J	0.012	MDL	0.050	MRL	mg/Kg	J	sp

* denotes a non-reportable result

Project Name and Number: 114-520225-2015-MO5 - NERT Soil Flushing

Data Qualifier Summary

Lab Reporting Batch ID: 440-155631-1 **Laboratory: TA IRV**

EDD Filename: Prep440-155631-1 **eQAPP Name: TetraTechInc_NERT_11302016**

Method Category: **GENCHEM**

Method: **314.0** ***Matrix:*** **SO**

Sample ID: **Tt-TP3-L2A-18** ***Collected:*** **8/14/2016 9:33:00 AM** ***Analysis Type:*** **RES/DIS** ***Dilution:*** **1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
PERCHLORATE	0.045	J	0.013	MDL	0.053	MRL	mg/Kg	J	sp

Sample ID: **Tt-TP3-L2A-6** ***Collected:*** **8/14/2016 9:13:00 AM** ***Analysis Type:*** **RES/DIS** ***Dilution:*** **200**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
PERCHLORATE	88		2.2	MDL	9.3	MRL	mg/Kg	J	fd

Sample ID: **Tt-TP3-L2A-6-DUP** ***Collected:*** **8/14/2016 9:17:00 AM** ***Analysis Type:*** **RES/DIS** ***Dilution:*** **5**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
PERCHLORATE	1.9		0.054	MDL	0.23	MRL	mg/Kg	J	fd

Sample ID: **Tt-TP4-B3A-18** ***Collected:*** **8/15/2016 7:24:00 AM** ***Analysis Type:*** **RES/DIS** ***Dilution:*** **1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
PERCHLORATE	0.032	J	0.012	MDL	0.052	MRL	mg/Kg	J	sp

Sample ID: **Tt-TP4-B3A-22** ***Collected:*** **8/15/2016 7:29:00 AM** ***Analysis Type:*** **RES/DIS** ***Dilution:*** **200**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
PERCHLORATE	120		3.1	MDL	13	MRL	mg/Kg	J	fd

Sample ID: **Tt-TP4-B3A-22-DUP** ***Collected:*** **8/15/2016 7:34:00 AM** ***Analysis Type:*** **RES/DIS** ***Dilution:*** **200**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
PERCHLORATE	170		3.4	MDL	14	MRL	mg/Kg	J	fd

* denotes a non-reportable result

Project Name and Number: 114-520225-2015-MO5 - NERT Soil Flushing

Data Qualifier Summary

Lab Reporting Batch ID: 440-155631-1 **Laboratory: TA IRV**

EDD Filename: Prep440-155631-1 **eQAPP Name: TetraTechInc_NERT_11302016**

Method Category: **METALS**

Method: **6010B** ***Matrix:*** **SO**

Sample ID: **Tt-TP3-B3A-10** ***Collected:*** **8/13/2016 12:44:00 PM** ***Analysis Type:*** **RE2/TOT** ***Dilution:*** **5**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
BORON	4.4	J	2.5	MDL	5.0	MRL	mg/Kg	J	sp

Sample ID: **Tt-TP3-L2A-6** ***Collected:*** **8/14/2016 9:13:00 AM** ***Analysis Type:*** **RE2/TOT** ***Dilution:*** **5**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
BORON	7.9		2.5	MDL	5.0	MRL	mg/Kg	J	fd

Sample ID: **Tt-TP3-L2A-6** ***Collected:*** **8/14/2016 9:13:00 AM** ***Analysis Type:*** **RES/TOT** ***Dilution:*** **5**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
MANGANESE	240		0.99	MDL	2.0	MRL	mg/Kg	J	fd

Sample ID: **Tt-TP3-L2A-6-DUP** ***Collected:*** **8/14/2016 9:17:00 AM** ***Analysis Type:*** **RES/TOT** ***Dilution:*** **5**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
BORON	5.3		2.5	MDL	4.9	MRL	mg/Kg	J	fd
IRON	20000		4.9	MDL	9.8	MRL	mg/Kg	J-	m
MANGANESE	330		0.98	MDL	2.0	MRL	mg/Kg	J-	m, fd
TITANIUM	970		0.98	MDL	2.0	MRL	mg/Kg	J+	m

Sample ID: **Tt-TP4-B3A-22** ***Collected:*** **8/15/2016 7:29:00 AM** ***Analysis Type:*** **RES/TOT** ***Dilution:*** **25**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
IRON	8200	B	25	MDL	50	MRL	mg/Kg	J-	m
MANGANESE	130	F1	5.0	MDL	9.9	MRL	mg/Kg	J-	m
TITANIUM	400	B	5.0	MDL	9.9	MRL	mg/Kg	J+	m

* denotes a non-reportable result

Project Name and Number: 114-520225-2015-MO5 - NERT Soil Flushing

Data Qualifier Summary

Lab Reporting Batch ID: 440-155631-1 **Laboratory: TA IRV**

EDD Filename: Prep440-155631-1 **eQAPP Name: TetraTechInc_NERT_11302016**

Method Category: **METALS**

Method: **6010B_Leach** ***Matrix:*** **AQ**

Sample ID: **Tt-TP2-B1A-14** ***Collected:*** **8/13/2016 7:13:00 AM** ***Analysis Type:*** **RES/DIS** ***Dilution:*** **1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
MAGNESIUM	1.9	J	0.12	MDL	4.0	MRL	mg/L	J	sp

Sample ID: **Tt-TP2-B2A-10** ***Collected:*** **8/13/2016 9:55:00 AM** ***Analysis Type:*** **RES/DIS** ***Dilution:*** **1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
MAGNESIUM	3.0	J	0.12	MDL	4.0	MRL	mg/L	J	sp

Sample ID: **Tt-TP2-B2A-26** ***Collected:*** **8/13/2016 10:20:00 AM** ***Analysis Type:*** **RES/DIS** ***Dilution:*** **1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
MAGNESIUM	2.1	J	0.12	MDL	4.0	MRL	mg/L	J	sp

Sample ID: **Tt-TP2-L2A-2** ***Collected:*** **8/13/2016 8:05:00 AM** ***Analysis Type:*** **RES/DIS** ***Dilution:*** **1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
MAGNESIUM	2.3	J	0.12	MDL	4.0	MRL	mg/L	J	sp

Sample ID: **Tt-TP3-B1A-10** ***Collected:*** **8/14/2016 8:02:00 AM** ***Analysis Type:*** **RES/DIS** ***Dilution:*** **1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
MAGNESIUM	2.9	J	0.12	MDL	4.0	MRL	mg/L	J	sp

Sample ID: **Tt-TP3-B1A-18** ***Collected:*** **8/14/2016 8:11:00 AM** ***Analysis Type:*** **RES/DIS** ***Dilution:*** **1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
MAGNESIUM	3.7	J	0.12	MDL	4.0	MRL	mg/L	J	sp

Sample ID: **Tt-TP3-B2A-14** ***Collected:*** **8/14/2016 12:33:00 PM** ***Analysis Type:*** **RES/DIS** ***Dilution:*** **1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
MAGNESIUM	2.5	J	0.12	MDL	4.0	MRL	mg/L	J	sp

* denotes a non-reportable result

Project Name and Number: 114-520225-2015-MO5 - NERT Soil Flushing

Data Qualifier Summary

Lab Reporting Batch ID: 440-155631-1 **Laboratory: TA IRV**

EDD Filename: Prep440-155631-1 **eQAPP Name: TetraTechInc_NERT_11302016**

Method Category: **METALS**

Method: **6010B_Leach** ***Matrix:*** **AQ**

Sample ID: **Tt-TP3-B2A-6** ***Collected:*** **8/14/2016 12:11:00 PM** ***Analysis Type:*** **RES/DIS** ***Dilution:*** **1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
MAGNESIUM	2.6	J	0.12	MDL	4.0	MRL	mg/L	J	sp

Sample ID: **Tt-TP3-B3A-10** ***Collected:*** **8/13/2016 12:44:00 PM** ***Analysis Type:*** **RES/DIS** ***Dilution:*** **1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
MAGNESIUM	3.1	J	0.12	MDL	4.0	MRL	mg/L	J	sp

Sample ID: **Tt-TP3-B3A-26** ***Collected:*** **8/13/2016 1:16:00 PM** ***Analysis Type:*** **RES/DIS** ***Dilution:*** **1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
MAGNESIUM	3.6	J	0.12	MDL	4.0	MRL	mg/L	J	sp

Sample ID: **Tt-TP3-B4A-18** ***Collected:*** **8/14/2016 6:54:00 AM** ***Analysis Type:*** **RES/DIS** ***Dilution:*** **1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
MAGNESIUM	2.5	J	0.12	MDL	4.0	MRL	mg/L	J	sp

Sample ID: **Tt-TP3-B4A-2** ***Collected:*** **8/14/2016 6:32:00 AM** ***Analysis Type:*** **RES/DIS** ***Dilution:*** **1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
MAGNESIUM	2.1	J	0.12	MDL	4.0	MRL	mg/L	J	sp

Sample ID: **Tt-TP3-L2A-6** ***Collected:*** **8/14/2016 9:13:00 AM** ***Analysis Type:*** **RES/DIS** ***Dilution:*** **1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
MAGNESIUM	3.3	J	0.12	MDL	4.0	MRL	mg/L	J	sp, fd

Sample ID: **Tt-TP3-L2A-6-DUP** ***Collected:*** **8/14/2016 9:17:00 AM** ***Analysis Type:*** **RES/DIS** ***Dilution:*** **1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
MAGNESIUM	2.1	J	0.12	MDL	4.0	MRL	mg/L	J	sp, fd

* denotes a non-reportable result

Project Name and Number: 114-520225-2015-MO5 - NERT Soil Flushing

Data Qualifier Summary

Lab Reporting Batch ID: 440-155631-1 **Laboratory: TA IRV**

EDD Filename: Prep440-155631-1 **eQAPP Name: TetraTechInc_NERT_11302016**

Method Category: METALS

Method: 6010B_Leach **Matrix: AQ**

Sample ID: Tt-TP4-B3A-22 **Collected:** 8/15/2016 7:29:00 AM **Analysis Type:** RES/DIS **Dilution:** 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
CALCIUM	6.3	B	0.50	MDL	1.0	MRL	mg/L	J	fd
MAGNESIUM	3.4	J	0.12	MDL	4.0	MRL	mg/L	J	sp, fd

Sample ID: Tt-TP4-B3A-22-DUP **Collected:** 8/15/2016 7:34:00 AM **Analysis Type:** RES/DIS **Dilution:** 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
CALCIUM	4.2	B	0.50	MDL	1.0	MRL	mg/L	J	fd
MAGNESIUM	2.3	J	0.12	MDL	4.0	MRL	mg/L	J	sp, fd

Method Category: METALS

Method: 6020 **Matrix: SO**

Sample ID: Tt-TP2-B1A-14 **Collected:** 8/13/2016 7:13:00 AM **Analysis Type:** RES/TOT **Dilution:** 20

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
MOLYBDENUM	0.59	J	0.50	MDL	1.0	MRL	mg/Kg	J	sp

Sample ID: Tt-TP2-B1A-2 **Collected:** 8/13/2016 6:55:00 AM **Analysis Type:** RES/TOT **Dilution:** 20

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
MOLYBDENUM	0.51	J	0.50	MDL	0.99	MRL	mg/Kg	J	sp

Sample ID: Tt-TP2-B2A-10 **Collected:** 8/13/2016 9:55:00 AM **Analysis Type:** RES/TOT **Dilution:** 20

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
MOLYBDENUM	0.60	J	0.50	MDL	1.0	MRL	mg/Kg	J	sp

Sample ID: Tt-TP2-L2A-2 **Collected:** 8/13/2016 8:05:00 AM **Analysis Type:** RES/TOT **Dilution:** 20

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
MOLYBDENUM	0.52	J	0.50	MDL	1.0	MRL	mg/Kg	J	sp

* denotes a non-reportable result

Project Name and Number: 114-520225-2015-MO5 - NERT Soil Flushing

Data Qualifier Summary

Lab Reporting Batch ID: 440-155631-1 **Laboratory: TA IRV**

EDD Filename: Prep440-155631-1 **eQAPP Name: TetraTechInc_NERT_11302016**

Method Category: **METALS**

Method: **6020** ***Matrix:*** **SO**

Sample ID: **Tt-TP2-L2A-26** ***Collected:*** **8/13/2016 8:34:00 AM** ***Analysis Type:*** **RES/TOT** ***Dilution:*** **20**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
BERYLLIUM	0.29	J	0.15	MDL	0.30	MRL	mg/Kg	J	sp

Sample ID: **Tt-TP3-B2A-14** ***Collected:*** **8/14/2016 12:33:00 PM** ***Analysis Type:*** **RES/TOT** ***Dilution:*** **20**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
MOLYBDENUM	0.54	J	0.50	MDL	0.99	MRL	mg/Kg	J	sp
SILVER	0.27	J	0.099	MDL	0.50	MRL	mg/Kg	J	sp

Sample ID: **Tt-TP3-B3A-26** ***Collected:*** **8/13/2016 1:16:00 PM** ***Analysis Type:*** **RES/TOT** ***Dilution:*** **20**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
MOLYBDENUM	0.61	J	0.49	MDL	0.99	MRL	mg/Kg	J	sp

Sample ID: **Tt-TP3-L2A-14** ***Collected:*** **8/14/2016 9:28:00 AM** ***Analysis Type:*** **RES/TOT** ***Dilution:*** **20**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
MOLYBDENUM	0.83	J	0.50	MDL	1.0	MRL	mg/Kg	J	sp
SELENIUM	0.20	J	0.20	MDL	1.0	MRL	mg/Kg	J	sp

Sample ID: **Tt-TP3-L2A-6** ***Collected:*** **8/14/2016 9:13:00 AM** ***Analysis Type:*** **RES/TOT** ***Dilution:*** **20**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
ARSENIC	5.4		0.25	MDL	0.50	MRL	mg/Kg	J	fd
CHROMIUM	20		0.50	MDL	0.99	MRL	mg/Kg	J	fd
COBALT	5.0		0.21	MDL	0.50	MRL	mg/Kg	J	fd
COPPER	40		0.50	MDL	0.99	MRL	mg/Kg	J	fd
MOLYBDENUM	0.58	J	0.50	MDL	0.99	MRL	mg/Kg	J	sp
SELENIUM	0.20	U	0.20	MDL	0.99	MRL	mg/Kg	UJ	fd
ZINC	190		5.0	MDL	9.9	MRL	mg/Kg	J	fd

* denotes a non-reportable result

Project Name and Number: 114-520225-2015-MO5 - NERT Soil Flushing

Data Qualifier Summary

Lab Reporting Batch ID: 440-155631-1 **Laboratory: TA IRV**

EDD Filename: Prep440-155631-1 **eQAPP Name: TetraTechInc_NERT_11302016**

Method Category: **METALS**

Method: **6020** ***Matrix:*** **SO**

Sample ID: **Tt-TP3-L2A-6-DUP** ***Collected:*** **8/14/2016 9:17:00 AM** ***Analysis Type:*** **RE2/TOT** ***Dilution:*** **20**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
BERYLLIUM	0.47	F1	0.15	MDL	0.29	MRL	mg/Kg	J-	m

Sample ID: **Tt-TP3-L2A-6-DUP** ***Collected:*** **8/14/2016 9:17:00 AM** ***Analysis Type:*** **RES/TOT** ***Dilution:*** **20**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
ANTIMONY	0.26	U F1	0.26	MDL	0.98	MRL	mg/Kg	UJ	m
ARSENIC	3.7		0.25	MDL	0.49	MRL	mg/Kg	J	fd
BARIUM	150	F1	0.25	MDL	0.49	MRL	mg/Kg	J+	m
CHROMIUM	14	F1	0.49	MDL	0.98	MRL	mg/Kg	J-	m, fd
COBALT	7.0	F1	0.21	MDL	0.49	MRL	mg/Kg	J-	m, fd
COPPER	16	F1	0.49	MDL	0.98	MRL	mg/Kg	J-	m, fd
MOLYBDENUM	0.63	J	0.49	MDL	0.98	MRL	mg/Kg	J	sp
NICKEL	14	F1	0.49	MDL	0.98	MRL	mg/Kg	J-	m
SELENIUM	0.21	J F1	0.20	MDL	0.98	MRL	mg/Kg	J-	sp, m, fd
ZINC	32		4.9	MDL	9.8	MRL	mg/Kg	J	fd

Sample ID: **Tt-TP4-B3A-2** ***Collected:*** **8/15/2016 6:56:00 AM** ***Analysis Type:*** **RES/TOT** ***Dilution:*** **20**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
MOLYBDENUM	0.69	J	0.50	MDL	1.0	MRL	mg/Kg	J	sp

Sample ID: **Tt-TP4-B3A-22** ***Collected:*** **8/15/2016 7:29:00 AM** ***Analysis Type:*** **RE2/TOT** ***Dilution:*** **20**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
BERYLLIUM	0.42		0.15	MDL	0.29	MRL	mg/Kg	J	fd

Sample ID: **Tt-TP4-B3A-22** ***Collected:*** **8/15/2016 7:29:00 AM** ***Analysis Type:*** **RES/TOT** ***Dilution:*** **20**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
COBALT	2.5		0.21	MDL	0.49	MRL	mg/Kg	J	fd
COPPER	6.0		0.49	MDL	0.98	MRL	mg/Kg	J	fd
LEAD	4.0		0.25	MDL	0.49	MRL	mg/Kg	J	fd
MOLYBDENUM	0.49	U	0.49	MDL	0.98	MRL	mg/Kg	UJ	fd

* denotes a non-reportable result

Project Name and Number: 114-520225-2015-MO5 - NERT Soil Flushing

Data Qualifier Summary

Lab Reporting Batch ID: 440-155631-1 **Laboratory: TA IRV**

EDD Filename: Prep440-155631-1 **eQAPP Name: TetraTechInc_NERT_11302016**

Method Category: METALS

Method: 6020 **Matrix: SO**

Sample ID: Tt-TP4-B3A-22 **Collected:** 8/15/2016 7:29:00 AM **Analysis Type:** RES/TOT **Dilution:** 20

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
NICKEL	6.3		0.49	MDL	0.98	MRL	mg/Kg	J	fd
ZINC	19		4.9	MDL	9.8	MRL	mg/Kg	J	fd

Sample ID: Tt-TP4-B3A-22-DUP **Collected:** 8/15/2016 7:34:00 AM **Analysis Type:** RE2/TOT **Dilution:** 20

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
BERYLLIUM	0.59		0.15	MDL	0.31	MRL	mg/Kg	J	fd

Sample ID: Tt-TP4-B3A-22-DUP **Collected:** 8/15/2016 7:34:00 AM **Analysis Type:** RES/TOT **Dilution:** 20

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
COBALT	3.4		0.21	MDL	0.51	MRL	mg/Kg	J	fd
COPPER	150		0.51	MDL	1.0	MRL	mg/Kg	J	fd
LEAD	11		0.26	MDL	0.51	MRL	mg/Kg	J	fd
MOLYBDENUM	0.52	J	0.51	MDL	1.0	MRL	mg/Kg	J	sp, fd
NICKEL	8.6		0.51	MDL	1.0	MRL	mg/Kg	J	fd
ZINC	130		5.1	MDL	10	MRL	mg/Kg	J	fd

Method Category: METALS

Method: 7199 **Matrix: SO**

Sample ID: Tt-TP4-B3A-22 **Collected:** 8/15/2016 7:29:00 AM **Analysis Type:** RES **Dilution:** 3

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
Chromium, hexavalent	2.4		0.25	MDL	0.49	MRL	mg/Kg	J	fd

Sample ID: Tt-TP4-B3A-22-DUP **Collected:** 8/15/2016 7:34:00 AM **Analysis Type:** RES **Dilution:** 3

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
Chromium, hexavalent	3.4		0.27	MDL	0.54	MRL	mg/Kg	J	fd

* denotes a non-reportable result

Project Name and Number: 114-520225-2015-MO5 - NERT Soil Flushing

Data Qualifier Summary

Lab Reporting Batch ID: 440-155631-1 **Laboratory: TA IRV**

EDD Filename: Prep440-155631-1 **eQAPP Name: TetraTechInc_NERT_11302016**

Method Category: **METALS**

Method: **7471A** ***Matrix:*** **SO**

Sample ID: **Tt-TP2-L2A-2** ***Collected:*** **8/13/2016 8:05:00 AM** ***Analysis Type:*** **RES/TOT** ***Dilution:*** **1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
MERCURY	0.016	J	0.013	MDL	0.022	MRL	mg/Kg	J	sp

Sample ID: **Tt-TP3-B1A-10** ***Collected:*** **8/14/2016 8:02:00 AM** ***Analysis Type:*** **RES/TOT** ***Dilution:*** **1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
MERCURY	0.015	J	0.014	MDL	0.023	MRL	mg/Kg	J	sp

Sample ID: **Tt-TP3-B1A-18** ***Collected:*** **8/14/2016 8:11:00 AM** ***Analysis Type:*** **RES/TOT** ***Dilution:*** **1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
MERCURY	0.014	J	0.014	MDL	0.023	MRL	mg/Kg	J	sp

* denotes a non-reportable result

Project Name and Number: 114-520225-2015-MO5 - NERT Soil Flushing

Data Qualifier Summary

Lab Reporting Batch ID: 440-155631-1

Laboratory: TA IRV

EDD Filename: Prep440-155631-1

eQAPP Name: TetraTechInc_NERT_11302016

Reason Code Legend

Reason Code	*Description*
bl	Method Blank Contamination
f	Matrix Spike Precision
fd	Field Duplicate Precision
ld	Matrix Spike Precision
ldf	Matrix Spike Precision
m	Matrix Spike Lower Estimation
m	Matrix Spike Lower Rejection
m	Matrix Spike Upper Estimation
sp	Reporting Limit Trace Value

* denotes a non-reportable result

Project Name and Number: 114-520225-2015-MO5 - NERT Soil Flushing

Reporting Limit Outliers

Lab Reporting Batch ID: 440-155631-1 **Laboratory: TA IRV**

EDD Filename: Prep440-155631-1 **eQAPP Name: TetraTechInc_NERT_11302016**

Method: 300.0_Leach

Matrix: AQ

SampleID	Analyte	Lab Qual	Result	Reporting Limit	RL Type	Units	Flag
Tt-TP3-B1A-18	Nitrate as NO3	J	0.28	0.50	MRL	mg/L	J (all detects)
Tt-TP3-B2A-14	Nitrate as NO3	J	0.32	0.50	MRL	mg/L	J (all detects)

Method: 6010B_Leach

Matrix: AQ

SampleID	Analyte	Lab Qual	Result	Reporting Limit	RL Type	Units	Flag
Tt-TP2-B1A-14	MAGNESIUM	J	1.9	4.0	MRL	mg/L	J (all detects)
Tt-TP2-B2A-10	MAGNESIUM	J	3.0	4.0	MRL	mg/L	J (all detects)
Tt-TP2-B2A-26	MAGNESIUM	J	2.1	4.0	MRL	mg/L	J (all detects)
Tt-TP2-L2A-2	MAGNESIUM	J	2.3	4.0	MRL	mg/L	J (all detects)
Tt-TP3-B1A-10	MAGNESIUM	J	2.9	4.0	MRL	mg/L	J (all detects)
Tt-TP3-B1A-18	MAGNESIUM	J	3.7	4.0	MRL	mg/L	J (all detects)
Tt-TP3-B2A-14	MAGNESIUM	J	2.5	4.0	MRL	mg/L	J (all detects)
Tt-TP3-B2A-6	MAGNESIUM	J	2.6	4.0	MRL	mg/L	J (all detects)
Tt-TP3-B3A-10	MAGNESIUM	J	3.1	4.0	MRL	mg/L	J (all detects)
Tt-TP3-B3A-26	MAGNESIUM	J	3.6	4.0	MRL	mg/L	J (all detects)
Tt-TP3-B4A-18	MAGNESIUM	J	2.5	4.0	MRL	mg/L	J (all detects)
Tt-TP3-B4A-2	MAGNESIUM	J	2.1	4.0	MRL	mg/L	J (all detects)
Tt-TP3-L2A-6	MAGNESIUM	J	3.3	4.0	MRL	mg/L	J (all detects)
Tt-TP3-L2A-6-DUP	MAGNESIUM	J	2.1	4.0	MRL	mg/L	J (all detects)
Tt-TP4-B3A-22	MAGNESIUM	J	3.4	4.0	MRL	mg/L	J (all detects)
Tt-TP4-B3A-22-DUP	MAGNESIUM	J	2.3	4.0	MRL	mg/L	J (all detects)

Method: 314.0

Matrix: SO

SampleID	Analyte	Lab Qual	Result	Reporting Limit	RL Type	Units	Flag
Tt-TP3-B1A-14	PERCHLORATE	J	0.017	0.044	MRL	mg/Kg	J (all detects)
Tt-TP3-B2A-10	PERCHLORATE	J	0.018	0.047	MRL	mg/Kg	J (all detects)
Tt-TP3-B4A-18	PERCHLORATE	J	0.028	0.050	MRL	mg/Kg	J (all detects)
Tt-TP3-L2A-18	PERCHLORATE	J	0.045	0.053	MRL	mg/Kg	J (all detects)
Tt-TP4-B3A-18	PERCHLORATE	J	0.032	0.052	MRL	mg/Kg	J (all detects)

Reporting Limit Outliers

Lab Reporting Batch ID: 440-155631-1 **Laboratory: TA IRV**

EDD Filename: Prep440-155631-1 **eQAPP Name: TetraTechInc_NERT_11302016**

Method: 6010B

Matrix: SO

SampleID	Analyte	Lab Qual	Result	Reporting Limit	RL Type	Units	Flag
Tt-TP3-B3A-10	BORON	J	4.4	5.0	MRL	mg/Kg	J (all detects)

Method: 6020

Matrix: SO

SampleID	Analyte	Lab Qual	Result	Reporting Limit	RL Type	Units	Flag
Tt-TP2-B1A-14	MOLYBDENUM	J	0.59	1.0	MRL	mg/Kg	J (all detects)
Tt-TP2-B1A-2	MOLYBDENUM	J	0.51	0.99	MRL	mg/Kg	J (all detects)
Tt-TP2-B2A-10	MOLYBDENUM	J	0.60	1.0	MRL	mg/Kg	J (all detects)
Tt-TP2-L2A-2	MOLYBDENUM	J	0.52	1.0	MRL	mg/Kg	J (all detects)
Tt-TP2-L2A-26	BERYLLIUM	J	0.29	0.30	MRL	mg/Kg	J (all detects)
Tt-TP3-B2A-14	MOLYBDENUM SILVER	J J	0.54 0.27	0.99 0.50	MRL MRL	mg/Kg mg/Kg	J (all detects)
Tt-TP3-B3A-26	MOLYBDENUM	J	0.61	0.99	MRL	mg/Kg	J (all detects)
Tt-TP3-L2A-14	MOLYBDENUM SELENIUM	J J	0.83 0.20	1.0 1.0	MRL MRL	mg/Kg mg/Kg	J (all detects)
Tt-TP3-L2A-6	MOLYBDENUM	J	0.58	0.99	MRL	mg/Kg	J (all detects)
Tt-TP3-L2A-6-DUP	MOLYBDENUM SELENIUM	J J F1	0.63 0.21	0.98 0.98	MRL MRL	mg/Kg mg/Kg	J (all detects)
Tt-TP4-B3A-2	MOLYBDENUM	J	0.69	1.0	MRL	mg/Kg	J (all detects)
Tt-TP4-B3A-22-DUP	MOLYBDENUM	J	0.52	1.0	MRL	mg/Kg	J (all detects)

Method: 7471A

Matrix: SO

SampleID	Analyte	Lab Qual	Result	Reporting Limit	RL Type	Units	Flag
Tt-TP2-L2A-2	MERCURY	J	0.016	0.022	MRL	mg/Kg	J (all detects)
Tt-TP3-B1A-10	MERCURY	J	0.015	0.023	MRL	mg/Kg	J (all detects)
Tt-TP3-B1A-18	MERCURY	J	0.014	0.023	MRL	mg/Kg	J (all detects)

Data Review Summary

Lab Reporting Batch ID: 440-155720-1 **Laboratory: TA IRV**

EDD Filename: Prep440-155720-1 **eQAPP Name: TetraTechInc_NERT_11302016**

Validation Area	*Note*
Technical Holding Times	A
Temperature	A
Initial Calibration	N
Continuing Calibration/Initial Calibration Verification	N
Method Blanks	SR
Surrogate/Tracer Spikes	A
Matrix Spike/Matrix Spike Duplicates	SR
Laboratory Duplicates	A
Laboratory Replicates	N
Laboratory Control Samples	A
Compound Quantitation	SR
Field Duplicates	SR
Field Triplicates	N
Field Blanks	N

A = Acceptable, N = Not provided/applicable, SR = See report

The contents of this report reflect findings made by ADR during Automated Data Review, manual applied qualifiers are not considered. Please refer to the Overall Qualifier Summary report for manual qualifiers.

Field Duplicate RPD Report

Lab Reporting Batch ID: 440-155720-1 **Laboratory: TA IRV**

EDD Filename: Prep440-155720-1 **eQAPP Name: TetraTechInc_NERT_11302016**

Method: 2540C_Leach
Matrix: AQ

Analyte	Concentration (mg/L)		Sample RPD	eQAPP RPD	Flag
	Tt-TP4-L2A-26	Tt-TP4-L2A-26-dup			
TOTAL DISSOLVED SOLIDS	1400	730	63	30.00	J (all detects) UJ (all non-detects)

Analyte	Concentration (mg/L)		Sample RPD	eQAPP RPD	Flag
	Tt-TP4-B1A-26	Tt-TP4-B1A-26-dup			
TOTAL DISSOLVED SOLIDS	1000	1200	18	30.00	No Qualifiers Applied

Method: 314.0
Matrix: SO

Analyte	Concentration (mg/Kg)		Sample RPD	eQAPP RPD	Flag
	Tt-TP4-L2A-26	Tt-TP4-L2A-26-dup			
PERCHLORATE	170	62	93	30.00	J(all detects) UJ(all non-detects)

Analyte	Concentration (mg/Kg)		Sample RPD	eQAPP RPD	Flag
	Tt-TP4-B1A-26	Tt-TP4-B1A-26-dup			
PERCHLORATE	110	130	17	30.00	No Qualifiers Applied

Project Name and Number: 114-520225-2015-MO5 - NERT Soil Flushing

Matrix Spike/Matrix Spike Duplicate Outlier Report

Lab Reporting Batch ID: 440-155720-1 **Laboratory: TA IRV**

EDD Filename: Prep440-155720-1 **eQAPP Name: TetraTechInc_NERT_11302016**

Method: 6010B_Leach
Matrix: AQ

QC Sample ID (Associated Samples)	Compound	MS %R	MSD %R	%R Limits	RPD (Limits)	Affected Compounds	Flag
Tt-TP4-L2A-22MS (DIS) Tt-TP4-L2A-22MSD (DIS) (Tt-TP4-L2A-22)	SODIUM	130	173	75.00-125.00	-	SODIUM	J+(all detects)

Method: 300.1B_Leach
Matrix: AQ

QC Sample ID (Associated Samples)	Compound	MS %R	MSD %R	%R Limits	RPD (Limits)	Affected Compounds	Flag
Tt-TP4-L2A-22MS Tt-TP4-L2A-22MSD (Tt-TP4-L2A-22)	Chlorate	-191	-305	75.00-125.00	-	Chlorate	J-(all detects) R(all non-detects)

Method: 6010B
Matrix: SO

QC Sample ID (Associated Samples)	Compound	MS %R	MSD %R	%R Limits	RPD (Limits)	Affected Compounds	Flag
Tt-TP4-L2A-22MS (TOT) Tt-TP4-L2A-22MSD (TOT) (Tt-TP4-L2A-22)	IRON	-302	-450	75.00-125.00	-	IRON	J- (all detects) R (all non-detects)
Tt-TP4-L2A-22MS (TOT) Tt-TP4-L2A-22MSD (TOT) (Tt-TP4-L2A-22)	TITANIUM	134	139	75.00-125.00	-	TITANIUM	J+(all detects)

Method: 6020
Matrix: SO

QC Sample ID (Associated Samples)	Compound	MS %R	MSD %R	%R Limits	RPD (Limits)	Affected Compounds	Flag
Tt-TP4-L2A-22MS (TOT) Tt-TP4-L2A-22MSD (TOT) (Tt-TP4-L2A-22)	ANTIMONY BERYLLIUM CHROMIUM COPPER NICKEL ZINC	- 75 78 76 - 73	78 75 - - 77 75	80.00-120.00 80.00-120.00 80.00-120.00 80.00-120.00 80.00-120.00 80.00-120.00	- - - - - -	ANTIMONY BERYLLIUM CHROMIUM COPPER NICKEL ZINC	J-(all detects) UJ(all non-detects)
Tt-TP4-L2A-22MS (TOT) Tt-TP4-L2A-22MSD (TOT) (Tt-TP4-L2A-22)	BARIUM	199	160	80.00-120.00	-	BARIUM	J+(all detects)

Matrix Spike/Matrix Spike Duplicate Outlier Report

Lab Reporting Batch ID: 440-155720-1 **Laboratory: TA IRV**

EDD Filename: Prep440-155720-1 **eQAPP Name: TetraTechInc_NERT_11302016**

Method: **314.0**
Matrix: **SO**

QC Sample ID (Associated Samples)	*Compound*	*MS %R*	*MSD %R*	*%R Limits*	*RPD (Limits)*	*Affected Compounds*	*Flag*
Tt-TP4-L2A-22MS Tt-TP4-L2A-22MSD (Tt-TP4-L2A-22)	PERCHLORATE	378	596	80.00-120.00	-	PERCHLORATE	J+(all detects)
Tt-TP4-L2A-26MS Tt-TP4-L2A-26MSD (Tt-TP4-L2A-26)	PERCHLORATE	-1589	-1427	80.00-120.00	-	PERCHLORATE	J-(all detects) R(all non-detects)

Method Blank Outlier Report

Lab Reporting Batch ID: 440-155720-1 **Laboratory: TA IRV**

EDD Filename: Prep440-155720-1 **eQAPP Name: TetraTechInc_NERT_11302016**

Method: **6010B_Leach**
Matrix: **AQ**

Method Blank Sample ID	Analysis Date	Analyte	Result	Associated Samples
MB 440-351095/1-B	8/25/2016 1:06:00 PM	SODIUM	1.96 mg/L	Tt-TP4-B1A-14 Tt-TP4-B1A-6 Tt-TP4-B4A-10 Tt-TP4-B4A-26 Tt-TP4-L2A-10 Tt-TP4-L2A-22

Data Qualifier Summary

Lab Reporting Batch ID: 440-155720-1 **Laboratory: TA IRV**

EDD Filename: Prep440-155720-1 **eQAPP Name: TetraTechInc_NERT_11302016**

Method Category: GENCHEM

Method: 2540C_Leach **Matrix: AQ**

Sample ID: Tt-TP4-L2A-26 **Collected:** 8/16/2016 9:42:00 AM **Analysis Type:** RES/DIS **Dilution:** 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
TOTAL DISSOLVED SOLIDS	1400		5.0	MDL	10	MRL	mg/L	J	fd

Sample ID: Tt-TP4-L2A-26-dup **Collected:** 8/16/2016 9:47:00 AM **Analysis Type:** RES/DIS **Dilution:** 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
TOTAL DISSOLVED SOLIDS	730		5.0	MDL	10	MRL	mg/L	J	fd

Method Category: GENCHEM

Method: 300.1B_Leach **Matrix: AQ**

Sample ID: Tt-TP4-L2A-22 **Collected:** 8/16/2016 9:34:00 AM **Analysis Type:** RES/DIS **Dilution:** 100

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
Chlorate	14000		1000	MDL	2000	MRL	ug/L	J-	m

Method Category: GENCHEM

Method: 314.0 **Matrix: SO**

Sample ID: Tt-TP4-L2A-22 **Collected:** 8/16/2016 9:34:00 AM **Analysis Type:** RES/DIS **Dilution:** 50

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
PERCHLORATE	25		0.59	MDL	2.5	MRL	mg/Kg	J+	m

Sample ID: Tt-TP4-L2A-26 **Collected:** 8/16/2016 9:42:00 AM **Analysis Type:** RES/DIS **Dilution:** 500

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
PERCHLORATE	170		7.2	MDL	30	MRL	mg/Kg	J-	m, fd

Sample ID: Tt-TP4-L2A-26-dup **Collected:** 8/16/2016 9:47:00 AM **Analysis Type:** RES/DIS **Dilution:** 50

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
PERCHLORATE	62		0.74	MDL	3.1	MRL	mg/Kg	J	fd

* denotes a non-reportable result

Project Name and Number: 114-520225-2015-MO5 - NERT Soil Flushing

Data Qualifier Summary

Lab Reporting Batch ID: 440-155720-1 **Laboratory: TA IRV**

EDD Filename: Prep440-155720-1 **eQAPP Name: TetraTechInc_NERT_11302016**

Method Category: METALS

Method: 6010B **Matrix: SO**

Sample ID: Tt-TP4-L2A-22 **Collected:** 8/16/2016 9:34:00 AM **Analysis Type:** RES/TOT **Dilution:** 5

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
IRON	9100		4.9	MDL	9.9	MRL	mg/Kg	J-	m
TITANIUM	540		0.99	MDL	2.0	MRL	mg/Kg	J+	m

Method Category: METALS

Method: 6010B_Leach **Matrix: AQ**

Sample ID: Tt-TP4-B1A-14 **Collected:** 8/16/2016 7:54:00 AM **Analysis Type:** RES/DIS **Dilution:** 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
POTASSIUM	3.9	J	3.7	MDL	5.0	MRL	mg/L	J	sp

Sample ID: Tt-TP4-B1A-6 **Collected:** 8/16/2016 7:45:00 AM **Analysis Type:** RES/DIS **Dilution:** 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
MAGNESIUM	1.4	J	0.12	MDL	4.0	MRL	mg/L	J	sp

Sample ID: Tt-TP4-B4A-26 **Collected:** 8/16/2016 7:06:00 AM **Analysis Type:** RES/DIS **Dilution:** 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
MAGNESIUM	3.8	J	0.12	MDL	4.0	MRL	mg/L	J	sp

Sample ID: Tt-TP4-L2A-22 **Collected:** 8/16/2016 9:34:00 AM **Analysis Type:** RES/DIS **Dilution:** 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
MAGNESIUM	1.3	J	0.12	MDL	4.0	MRL	mg/L	J	sp
SODIUM	93	B	1.9	MDL	5.0	MRL	mg/L	J+	m

* denotes a non-reportable result

Project Name and Number: 114-520225-2015-MO5 - NERT Soil Flushing

Data Qualifier Summary

Lab Reporting Batch ID: 440-155720-1 **Laboratory: TA IRV**

EDD Filename: Prep440-155720-1 **eQAPP Name: TetraTechInc_NERT_11302016**

Method Category: **METALS**

Method: **6020** ***Matrix:*** **SO**

Sample ID: **Tt-TP4-B1A-14** ***Collected:*** **8/16/2016 7:54:00 AM** ***Analysis Type:*** **RES/TOT** ***Dilution:*** **20**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
MOLYBDENUM	0.66	J	0.50	MDL	0.99	MRL	mg/Kg	J	sp

Sample ID: **Tt-TP4-B1A-6** ***Collected:*** **8/16/2016 7:45:00 AM** ***Analysis Type:*** **RES/TOT** ***Dilution:*** **20**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
MOLYBDENUM	0.52	J	0.49	MDL	0.99	MRL	mg/Kg	J	sp

Sample ID: **Tt-TP4-B4A-10** ***Collected:*** **8/16/2016 6:48:00 AM** ***Analysis Type:*** **RES/TOT** ***Dilution:*** **20**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
MOLYBDENUM	0.77	J	0.50	MDL	0.99	MRL	mg/Kg	J	sp
SELENIUM	0.21	J	0.20	MDL	0.99	MRL	mg/Kg	J	sp
SILVER	0.11	J	0.099	MDL	0.50	MRL	mg/Kg	J	sp

Sample ID: **Tt-TP4-B4A-26** ***Collected:*** **8/16/2016 7:06:00 AM** ***Analysis Type:*** **RES/TOT** ***Dilution:*** **20**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
MOLYBDENUM	0.75	J	0.50	MDL	0.99	MRL	mg/Kg	J	sp

Sample ID: **Tt-TP4-L2A-22** ***Collected:*** **8/16/2016 9:34:00 AM** ***Analysis Type:*** **RE2/TOT** ***Dilution:*** **20**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
COPPER	8.3	F1	0.49	MDL	0.99	MRL	mg/Kg	J-	m

Sample ID: **Tt-TP4-L2A-22** ***Collected:*** **8/16/2016 9:34:00 AM** ***Analysis Type:*** **RES/TOT** ***Dilution:*** **20**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
ANTIMONY	0.27	U F1	0.27	MDL	0.99	MRL	mg/Kg	UJ	m
BARIUM	130	F1	0.25	MDL	0.49	MRL	mg/Kg	J+	m
BERYLLIUM	0.30	F1	0.15	MDL	0.30	MRL	mg/Kg	J-	m
CHROMIUM	15	F1	0.49	MDL	0.99	MRL	mg/Kg	J-	m
MOLYBDENUM	0.55	J	0.49	MDL	0.99	MRL	mg/Kg	J	sp
NICKEL	9.4	F1	0.49	MDL	0.99	MRL	mg/Kg	J-	m

* denotes a non-reportable result

Project Name and Number: 114-520225-2015-MO5 - NERT Soil Flushing

Data Qualifier Summary

Lab Reporting Batch ID: 440-155720-1 **Laboratory: TA IRV**

EDD Filename: Prep440-155720-1 **eQAPP Name: TetraTechInc_NERT_11302016**

Method Category: **METALS**

Method: **6020** ***Matrix:*** **SO**

Sample ID: **Tt-TP4-L2A-22** ***Collected:*** **8/16/2016 9:34:00 AM** ***Analysis Type:*** **RES/TOT** ***Dilution:*** **20**

Analyte	*Lab Result*	*Lab Qual*	*DL*	*DL Type*	*RL*	*RL Type*	*Units*	*Data Review Qual*	*Reason Code*
ZINC	22	F1	4.9	MDL	9.9	MRL	mg/Kg	J-	m

* denotes a non-reportable result

Project Name and Number: 114-520225-2015-MO5 - NERT Soil Flushing

Data Qualifier Summary

Lab Reporting Batch ID: 440-155720-1

Laboratory: TA IRV

EDD Filename: Prep440-155720-1

eQAPP Name: TetraTechInc_NERT_11302016

Reason Code Legend

Reason Code	*Description*
bl	Method Blank Contamination
fd	Field Duplicate Precision
m	Matrix Spike Lower Estimation
m	Matrix Spike Lower Rejection
m	Matrix Spike Upper Estimation
sp	Reporting Limit Trace Value

* denotes a non-reportable result

Project Name and Number: 114-520225-2015-MO5 - NERT Soil Flushing

Reporting Limit Outliers

Lab Reporting Batch ID: 440-155720-1 **Laboratory: TA IRV**

EDD Filename: Prep440-155720-1 **eQAPP Name: TetraTechInc_NERT_11302016**

Method: 6010B_Leach

Matrix: AQ

SampleID	Analyte	Lab Qual	Result	Reporting Limit	RL Type	Units	Flag
Tt-TP4-B1A-14	POTASSIUM	J	3.9	5.0	MRL	mg/L	J (all detects)
Tt-TP4-B1A-6	MAGNESIUM	J	1.4	4.0	MRL	mg/L	J (all detects)
Tt-TP4-B4A-26	MAGNESIUM	J	3.8	4.0	MRL	mg/L	J (all detects)
Tt-TP4-L2A-22	MAGNESIUM	J	1.3	4.0	MRL	mg/L	J (all detects)

Method: 6020

Matrix: SO

SampleID	Analyte	Lab Qual	Result	Reporting Limit	RL Type	Units	Flag
Tt-TP4-B1A-14	MOLYBDENUM	J	0.66	0.99	MRL	mg/Kg	J (all detects)
Tt-TP4-B1A-6	MOLYBDENUM	J	0.52	0.99	MRL	mg/Kg	J (all detects)
Tt-TP4-B4A-10	MOLYBDENUM SELENIUM SILVER	J J J	0.77 0.21 0.11	0.99 0.99 0.50	MRL MRL MRL	mg/Kg mg/Kg mg/Kg	J (all detects)
Tt-TP4-B4A-26	MOLYBDENUM	J	0.75	0.99	MRL	mg/Kg	J (all detects)
Tt-TP4-L2A-22	MOLYBDENUM	J	0.55	0.99	MRL	mg/Kg	J (all detects)

Data Review Summary

Lab Reporting Batch ID: 440-155767-1 **Laboratory: TA IRV**

EDD Filename: Prep440-155767-1 **eQAPP Name: TetraTechInc_NERT_11302016**

Validation Area	*Note*
Technical Holding Times	A
Temperature	A
Initial Calibration	N
Continuing Calibration/Initial Calibration Verification	N
Method Blanks	A
Surrogate/Tracer Spikes	A
Matrix Spike/Matrix Spike Duplicates	SR
Laboratory Duplicates	SR
Laboratory Replicates	N
Laboratory Control Samples	A
Compound Quantitation	SR
Field Duplicates	SR
Field Triplicates	N
Field Blanks	N

A = Acceptable, N = Not provided/applicable, SR = See report

The contents of this report reflect findings made by ADR during Automated Data Review, manual applied qualifiers are not considered. Please refer to the Overall Qualifier Summary report for manual qualifiers.

Field Duplicate RPD Report

Lab Reporting Batch ID: 440-155767-1 **Laboratory: TA IRV**

EDD Filename: Prep440-155767-1 **eQAPP Name: TetraTechInc_NERT_11302016**

Method: 2320B_Leach
Matrix: AQ

Analyte	Concentration (mg/L)		Sample RPD	eQAPP RPD	Flag
	Tt-TP4-B2A-22	Tt-TP4-B2A-22-dup			
Alkalinity as CaCO3	9.3	22	81	30.00	J (all detects) UJ (all non-detects)

Method: 2540C_Leach
Matrix: AQ

Analyte	Concentration (mg/L)		Sample RPD	eQAPP RPD	Flag
	Tt-TP4-B2A-6	Tt-TP4-B2A-6-dup			
TOTAL DISSOLVED SOLIDS	240	460	63	30.00	J(all detects) UJ(all non-detects)

Analyte	Concentration (mg/L)		Sample RPD	eQAPP RPD	Flag
	Tt-TP4-B2A-22	Tt-TP4-B2A-22-dup			
TOTAL DISSOLVED SOLIDS	770	210	114	30.00	J(all detects) UJ(all non-detects)

Method: 300.0_Leach
Matrix: AQ

Analyte	Concentration (mg/L)		Sample RPD	eQAPP RPD	Flag
	Tt-TP4-B2A-22	Tt-TP4-B2A-22-dup			
CHLORIDE	1.5	5.0	108	30.00	J(all detects) UJ(all non-detects)
Nitrate as NO3	2.2	7.4	108	30.00	
SULFATE	280	45	145	30.00	

Method: 300.1B_Leach
Matrix: AQ

Analyte	Concentration (ug/L)		Sample RPD	eQAPP RPD	Flag
	Tt-TP4-B2A-22	Tt-TP4-B2A-22-dup			
Chlorate	1100	14000	171	30.00	J(all detects) UJ(all non-detects)

Method: 6010B_Leach
Matrix: AQ

Analyte	Concentration (mg/L)		Sample RPD	eQAPP RPD	Flag
	Tt-TP4-B2A-22 (DIS)	Tt-TP4-B2A-22-dup (DIS)			
CALCIUM	180	26	150	30.00	J(all detects) UJ(all non-detects)
MAGNESIUM	6.3	4.0	45	30.00	
SODIUM	39	150	117	30.00	

Project Name and Number: 114-520225-2015-MO5 - NERT Soil Flushing

Field Duplicate RPD Report

Lab Reporting Batch ID: 440-155767-1 **Laboratory: TA IRV**

EDD Filename: Prep440-155767-1 **eQAPP Name: TetraTechInc_NERT_11302016**

Method: 314.0
Matrix: SO

Analyte	Concentration (mg/Kg)		Sample RPD	eQAPP RPD	Flag
	Tt-TP4-B2A-6	Tt-TP4-B2A-6-dup			
PERCHLORATE	0.077	9.0	197	30.00	J(all detects) UJ(all non-detects)

Analyte	Concentration (mg/Kg)		Sample RPD	eQAPP RPD	Flag
	Tt-TP4-B2A-22	Tt-TP4-B2A-22-dup			
PERCHLORATE	3.8	18	130	30.00	J(all detects) UJ(all non-detects)

Method: 6010B
Matrix: SO

Analyte	Concentration (mg/Kg)		Sample RPD	eQAPP RPD	Flag
	Tt-TP4-B2A-22 (TOT)	Tt-TP4-B2A-22-dup (TOT)			
TITANIUM	520	400	26	30.00	No Qualifiers Applied
BORON	7.9	4.4	57	30.00	J(all detects) UJ(all non-detects)
IRON	9900	6600	40	30.00	
MANGANESE	150	91	49	30.00	

Method: 6020
Matrix: SO

Analyte	Concentration (mg/Kg)		Sample RPD	eQAPP RPD	Flag
	Tt-TP4-B2A-22 (TOT)	Tt-TP4-B2A-22-dup (TOT)			
ARSENIC	8.2	6.5	23	30.00	No Qualifiers Applied
BERYLLIUM	0.44	0.50	13	30.00	
CHROMIUM	12	9.7	21	30.00	
LEAD	4.9	4.1	18	30.00	
SELENIUM	0.58	0.54	7	30.00	
ZINC	22	17	26	30.00	
BARIUM	130	91	35	30.00	J(all detects) UJ(all non-detects)
COBALT	3.6	2.6	32	30.00	
COPPER	9.0	6.0	40	30.00	
MOLYBDENUM	0.72	0.99 U	200	30.00	
NICKEL	8.8	6.1	36	30.00	

Method: 7199
Matrix: SO

Analyte	Concentration (mg/Kg)		Sample RPD	eQAPP RPD	Flag
	Tt-TP4-B2A-22 (DRY)	Tt-TP4-B2A-22-dup (DRY)			
Chromium, hexavalent	0.37 U	0.23	200	30.00	J(all detects) UJ(all non-detects)

Project Name and Number: 114-520225-2015-MO5 - NERT Soil Flushing

Field Duplicate RPD Report

Lab Reporting Batch ID: 440-155767-1 **Laboratory: TA IRV**

EDD Filename: Prep440-155767-1 **eQAPP Name: TetraTechInc_NERT_11302016**

Method: 9045C
Matrix: SO

Analyte	Concentration (SU)		Sample RPD	eQAPP RPD	Flag
	Tt-TP4-B2A-22	Tt-TP4-B2A-22-dup			
PH	8.5	8.4	1	30.00	No Qualifiers Applied

Method: 9060
Matrix: SO

Analyte	Concentration (mg/Kg)		Sample RPD	eQAPP RPD	Flag
	Tt-TP4-B2A-22	Tt-TP4-B2A-22-dup			
TOTAL ORGANIC CARBON (TOC)	840	9100	166	30.00	J(all detects) UJ(all non-detects)

Lab Duplicate Outlier Report

Lab Reporting Batch ID: 440-155767-1 **Laboratory: TA IRV**

EDD Filename: Prep440-155767-1 **eQAPP Name: TetraTechInc_NERT_11302016**

Method: 314.0
Matrix: SO

QC Sample ID (Associated Sample ID)	Analyte	Sample RPD	eQAPP RPD	Flag
Tt-TP4-B2A-6DUP (Tt-TP4-B2A-6)	PERCHLORATE	72	20.00	J (all detects) UJ (all non-detects)

Project Name and Number: 114-520225-2015-MO5 - NERT Soil Flushing

Matrix Spike/Matrix Spike Duplicate Outlier Report

Lab Reporting Batch ID: 440-155767-1 **Laboratory: TA IRV**

EDD Filename: Prep440-155767-1 **eQAPP Name: TetraTechInc_NERT_11302016**

Method: 6010B
Matrix: SO

QC Sample ID (Associated Samples)	Compound	MS %R	MSD %R	%R Limits	RPD (Limits)	Affected Compounds	Flag
Tt-TP4-B2A-10MS (TOT) Tt-TP4-B2A-10MSD (TOT) (Tt-TP4-B2A-10)	IRON	-192	2865	75.00-125.00	-	IRON	J (all detects) R (all non-detects)
Tt-TP4-B2A-10MS (TOT) Tt-TP4-B2A-10MSD (TOT) (Tt-TP4-B2A-10)	MANGANESE TITANIUM	161 320	182 556	75.00-125.00 75.00-125.00	- -	MANGANESE TITANIUM	J+(all detects)

Method: 6020
Matrix: SO

QC Sample ID (Associated Samples)	Compound	MS %R	MSD %R	%R Limits	RPD (Limits)	Affected Compounds	Flag
Tt-TP4-B2A-10MS (TOT) Tt-TP4-B2A-10MSD (TOT) (Tt-TP4-B2A-10)	ANTIMONY CHROMIUM COBALT COPPER NICKEL SELENIUM	76 - 76 73 70 79	- 76 76 75 70 79	80.00-120.00 80.00-120.00 80.00-120.00 80.00-120.00 80.00-120.00 80.00-120.00	- - - - - -	ANTIMONY CHROMIUM COBALT COPPER NICKEL SELENIUM	J-(all detects) UJ(all non-detects)
Tt-TP4-B2A-10MS (TOT) Tt-TP4-B2A-10MSD (TOT) (Tt-TP4-B2A-10)	BARIUM	136	145	80.00-120.00	-	BARIUM	J+(all detects)

Method: 314.0
Matrix: SO

QC Sample ID (Associated Samples)	Compound	MS %R	MSD %R	%R Limits	RPD (Limits)	Affected Compounds	Flag
Tt-TP4-B2A-6MS Tt-TP4-B2A-6MSD (Tt-TP4-B2A-6)	PERCHLORATE	71	75	80.00-120.00	-	PERCHLORATE	J-(all detects) UJ(all non-detects)

Data Qualifier Summary

Lab Reporting Batch ID: 440-155767-1 **Laboratory: TA IRV**

EDD Filename: Prep440-155767-1 **eQAPP Name: TetraTechInc_NERT_11302016**

Method Category: ALK

Method: 2320B_Leach **Matrix: AQ**

Sample ID: Tt-TP4-B2A-22 **Collected:** 8/16/2016 1:03:00 PM **Analysis Type:** RES/DIS **Dilution:** 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
Alkalinity as CaCO3	9.3		4.0	MDL	4.0	MRL	mg/L	J	fd

Sample ID: Tt-TP4-B2A-22-dup **Collected:** 8/16/2016 1:08:00 PM **Analysis Type:** RES/DIS **Dilution:** 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
Alkalinity as CaCO3	22		4.0	MDL	4.0	MRL	mg/L	J	fd

Method Category: GENCHEM

Method: 2540C_Leach **Matrix: AQ**

Sample ID: Tt-TP4-B2A-22 **Collected:** 8/16/2016 1:03:00 PM **Analysis Type:** RES/DIS **Dilution:** 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
TOTAL DISSOLVED SOLIDS	770		5.0	MDL	10	MRL	mg/L	J	fd

Sample ID: Tt-TP4-B2A-22-dup **Collected:** 8/16/2016 1:08:00 PM **Analysis Type:** RES/DIS **Dilution:** 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
TOTAL DISSOLVED SOLIDS	210		5.0	MDL	10	MRL	mg/L	J	fd

Sample ID: Tt-TP4-B2A-6 **Collected:** 8/16/2016 12:30:00 PM **Analysis Type:** RES/DIS **Dilution:** 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
TOTAL DISSOLVED SOLIDS	240		5.0	MDL	10	MRL	mg/L	J	fd

Sample ID: Tt-TP4-B2A-6-dup **Collected:** 8/16/2016 12:35:00 PM **Analysis Type:** RES/DIS **Dilution:** 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
TOTAL DISSOLVED SOLIDS	460		5.0	MDL	10	MRL	mg/L	J	fd

* denotes a non-reportable result

Project Name and Number: 114-520225-2015-MO5 - NERT Soil Flushing

Data Qualifier Summary

Lab Reporting Batch ID: 440-155767-1 **Laboratory: TA IRV**

EDD Filename: Prep440-155767-1 **eQAPP Name: TetraTechInc_NERT_11302016**

Method Category: **GENCHEM**

Method: **300.0_Leach** ***Matrix:*** **AQ**

Sample ID: **Tt-TP4-B2A-10** ***Collected:*** **8/16/2016 12:40:00 PM** ***Analysis Type:*** **RE2/DIS** ***Dilution:*** **1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
CHLORIDE	0.38	J	0.25	MDL	0.50	MRL	mg/L	J	sp

Sample ID: **Tt-TP4-B2A-10** ***Collected:*** **8/16/2016 12:40:00 PM** ***Analysis Type:*** **RES/DIS** ***Dilution:*** **1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
Nitrate as NO3	0.47	J	0.25	MDL	0.50	MRL	mg/L	J	sp

Sample ID: **Tt-TP4-B2A-22** ***Collected:*** **8/16/2016 1:03:00 PM** ***Analysis Type:*** **RE2/DIS** ***Dilution:*** **1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
CHLORIDE	1.5		0.25	MDL	0.50	MRL	mg/L	J	fd

Sample ID: **Tt-TP4-B2A-22** ***Collected:*** **8/16/2016 1:03:00 PM** ***Analysis Type:*** **RE3/DIS** ***Dilution:*** **100**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
SULFATE	280		25	MDL	50	MRL	mg/L	J	fd

Sample ID: **Tt-TP4-B2A-22** ***Collected:*** **8/16/2016 1:03:00 PM** ***Analysis Type:*** **RES/DIS** ***Dilution:*** **1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
Nitrate as NO3	2.2		0.25	MDL	0.50	MRL	mg/L	J	fd

Sample ID: **Tt-TP4-B2A-22-dup** ***Collected:*** **8/16/2016 1:08:00 PM** ***Analysis Type:*** **DL2/DIS** ***Dilution:*** **10**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
SULFATE	45		2.5	MDL	5.0	MRL	mg/L	J	fd

Sample ID: **Tt-TP4-B2A-22-dup** ***Collected:*** **8/16/2016 1:08:00 PM** ***Analysis Type:*** **RE2/DIS** ***Dilution:*** **1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
CHLORIDE	5.0		0.25	MDL	0.50	MRL	mg/L	J	fd

* denotes a non-reportable result

Project Name and Number: 114-520225-2015-MO5 - NERT Soil Flushing

Data Qualifier Summary

Lab Reporting Batch ID: 440-155767-1 **Laboratory: TA IRV**

EDD Filename: Prep440-155767-1 **eQAPP Name: TetraTechInc_NERT_11302016**

Method Category: GENCHEM

Method: 300.0_Leach **Matrix: AQ**

Sample ID: Tt-TP4-B2A-22-dup **Collected:** 8/16/2016 1:08:00 PM **Analysis Type:** RES/DIS **Dilution:** 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
Nitrate as NO3	7.4		0.25	MDL	0.50	MRL	mg/L	J	fd

Method Category: GENCHEM

Method: 300.1B_Leach **Matrix: AQ**

Sample ID: Tt-TP4-B2A-22 **Collected:** 8/16/2016 1:03:00 PM **Analysis Type:** RES/DIS **Dilution:** 5

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
Chlorate	1100		50	MDL	100	MRL	ug/L	J	fd

Sample ID: Tt-TP4-B2A-22-dup **Collected:** 8/16/2016 1:08:00 PM **Analysis Type:** RES/DIS **Dilution:** 100

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
Chlorate	14000		1000	MDL	2000	MRL	ug/L	J	fd

Method Category: GENCHEM

Method: 314.0 **Matrix: SO**

Sample ID: Tt-TP4-B2A-22 **Collected:** 8/16/2016 1:03:00 PM **Analysis Type:** RES/DIS **Dilution:** 5

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
PERCHLORATE	3.8		0.058	MDL	0.25	MRL	mg/Kg	J	fd

Sample ID: Tt-TP4-B2A-22-dup **Collected:** 8/16/2016 1:08:00 PM **Analysis Type:** RES/DIS **Dilution:** 50

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
PERCHLORATE	18		0.50	MDL	2.1	MRL	mg/Kg	J	fd

Sample ID: Tt-TP4-B2A-6 **Collected:** 8/16/2016 12:30:00 PM **Analysis Type:** RES/DIS **Dilution:** 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
PERCHLORATE	0.077	F1	0.011	MDL	0.048	MRL	mg/Kg	J-	m, ld, fd

* denotes a non-reportable result

Project Name and Number: 114-520225-2015-MO5 - NERT Soil Flushing

Data Qualifier Summary

Lab Reporting Batch ID: 440-155767-1 **Laboratory: TA IRV**

EDD Filename: Prep440-155767-1 **eQAPP Name: TetraTechInc_NERT_11302016**

Method Category: GENCHEM

Method: 314.0 **Matrix: SO**

Sample ID: Tt-TP4-B2A-6-dup **Collected:** 8/16/2016 12:35:00 PM **Analysis Type:** RES/DIS **Dilution:** 50

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
PERCHLORATE	9.0		0.55	MDL	2.3	MRL	mg/Kg	J	fd

Method Category: GENCHEM

Method: 9060 **Matrix: SO**

Sample ID: Tt-TP4-B2A-22 **Collected:** 8/16/2016 1:03:00 PM **Analysis Type:** RES/WET **Dilution:** 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
TOTAL ORGANIC CARBON (TOC)	840		50	MDL	100	MRL	mg/Kg	J	fd

Sample ID: Tt-TP4-B2A-22-dup **Collected:** 8/16/2016 1:08:00 PM **Analysis Type:** RES/WET **Dilution:** 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
TOTAL ORGANIC CARBON (TOC)	9100		50	MDL	100	MRL	mg/Kg	J	fd

Method Category: METALS

Method: 6010B **Matrix: SO**

Sample ID: Tt-TP4-B2A-10 **Collected:** 8/16/2016 12:40:00 PM **Analysis Type:** RES/TOT **Dilution:** 5

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
IRON	17000		5.0	MDL	9.9	MRL	mg/Kg	J	m, m
MANGANESE	220		0.99	MDL	2.0	MRL	mg/Kg	J+	m
TITANIUM	770		0.99	MDL	2.0	MRL	mg/Kg	J+	m

Sample ID: Tt-TP4-B2A-22 **Collected:** 8/16/2016 1:03:00 PM **Analysis Type:** RES/TOT **Dilution:** 5

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
BORON	7.9		2.5	MDL	5.0	MRL	mg/Kg	J	fd
IRON	9900		5.0	MDL	10	MRL	mg/Kg	J	fd
MANGANESE	150		1.0	MDL	2.0	MRL	mg/Kg	J	fd

* denotes a non-reportable result

Project Name and Number: 114-520225-2015-MO5 - NERT Soil Flushing

Data Qualifier Summary

Lab Reporting Batch ID: 440-155767-1 **Laboratory: TA IRV**

EDD Filename: Prep440-155767-1 **eQAPP Name: TetraTechInc_NERT_11302016**

Method Category: METALS

Method: 6010B **Matrix: SO**

Sample ID: Tt-TP4-B2A-22-dup **Collected:** 8/16/2016 1:08:00 PM **Analysis Type:** RES/TOT **Dilution:** 5

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
BORON	4.4	J	2.5	MDL	4.9	MRL	mg/Kg	J	sp, fd
IRON	6600		4.9	MDL	9.9	MRL	mg/Kg	J	fd
MANGANESE	91		0.99	MDL	2.0	MRL	mg/Kg	J	fd

Method Category: METALS

Method: 6010B_Leach **Matrix: AQ**

Sample ID: Tt-TP4-B2A-22 **Collected:** 8/16/2016 1:03:00 PM **Analysis Type:** RES/DIS **Dilution:** 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
CALCIUM	180		0.50	MDL	1.0	MRL	mg/L	J	fd
MAGNESIUM	6.3		0.12	MDL	4.0	MRL	mg/L	J	fd
SODIUM	39		1.9	MDL	5.0	MRL	mg/L	J	fd

Sample ID: Tt-TP4-B2A-22-dup **Collected:** 8/16/2016 1:08:00 PM **Analysis Type:** RES/DIS **Dilution:** 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
CALCIUM	26		0.50	MDL	1.0	MRL	mg/L	J	fd
MAGNESIUM	4.0		0.12	MDL	4.0	MRL	mg/L	J	fd
SODIUM	150		1.9	MDL	5.0	MRL	mg/L	J	fd

Method Category: METALS

Method: 6020 **Matrix: SO**

Sample ID: Tt-TP4-B2A-10 **Collected:** 8/16/2016 12:40:00 PM **Analysis Type:** RES/TOT **Dilution:** 40

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
ANTIMONY	0.53	U F1	0.53	MDL	2.0	MRL	mg/Kg	UJ	m
BARIUM	94	F1	0.50	MDL	0.99	MRL	mg/Kg	J+	m
CHROMIUM	13	F1	0.99	MDL	2.0	MRL	mg/Kg	J-	m
COBALT	5.9	F1	0.42	MDL	0.99	MRL	mg/Kg	J-	m
COPPER	15	F1	0.99	MDL	2.0	MRL	mg/Kg	J-	m

* denotes a non-reportable result

Project Name and Number: 114-520225-2015-MO5 - NERT Soil Flushing

Data Qualifier Summary

Lab Reporting Batch ID: 440-155767-1 **Laboratory: TA IRV**

EDD Filename: Prep440-155767-1 **eQAPP Name: TetraTechInc_NERT_11302016**

Method Category: METALS

Method: 6020 **Matrix: SO**

Sample ID: Tt-TP4-B2A-10 **Collected:** 8/16/2016 12:40:00 PM **Analysis Type:** RES/TOT **Dilution:** 40

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
NICKEL	15	F1	0.99	MDL	2.0	MRL	mg/Kg	J-	m
SELENIUM	0.74	J F1	0.40	MDL	2.0	MRL	mg/Kg	J-	sp, m

Sample ID: Tt-TP4-B2A-22 **Collected:** 8/16/2016 1:03:00 PM **Analysis Type:** RES/TOT **Dilution:** 20

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
BARIUM	130		0.25	MDL	0.50	MRL	mg/Kg	J	fd
COBALT	3.6		0.21	MDL	0.50	MRL	mg/Kg	J	fd
COPPER	9.0		0.50	MDL	1.0	MRL	mg/Kg	J	fd
MOLYBDENUM	0.72	J	0.50	MDL	1.0	MRL	mg/Kg	J	sp, fd
NICKEL	8.8		0.50	MDL	1.0	MRL	mg/Kg	J	fd
SELENIUM	0.58	J	0.20	MDL	1.0	MRL	mg/Kg	J	sp

Sample ID: Tt-TP4-B2A-22-dup **Collected:** 8/16/2016 1:08:00 PM **Analysis Type:** RES/TOT **Dilution:** 20

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
BARIUM	91		0.25	MDL	0.49	MRL	mg/Kg	J	fd
COBALT	2.6		0.21	MDL	0.49	MRL	mg/Kg	J	fd
COPPER	6.0		0.49	MDL	0.99	MRL	mg/Kg	J	fd
MOLYBDENUM	0.49	U	0.49	MDL	0.99	MRL	mg/Kg	UJ	fd
NICKEL	6.1		0.49	MDL	0.99	MRL	mg/Kg	J	fd
SELENIUM	0.54	J	0.20	MDL	0.99	MRL	mg/Kg	J	sp

Method Category: METALS

Method: 7199 **Matrix: SO**

Sample ID: Tt-TP4-B2A-22 **Collected:** 8/16/2016 1:03:00 PM **Analysis Type:** RES **Dilution:** 3

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
Chromium, hexavalent	0.18	U	0.18	MDL	0.37	MRL	mg/Kg	UJ	fd

* denotes a non-reportable result

Project Name and Number: 114-520225-2015-MO5 - NERT Soil Flushing

Data Qualifier Summary

Lab Reporting Batch ID: 440-155767-1 **Laboratory: TA IRV**

EDD Filename: Prep440-155767-1 **eQAPP Name: TetraTechInc_NERT_11302016**

Method Category: **METALS**

Method: **7199** ***Matrix:*** **SO**

Sample ID: **Tt-TP4-B2A-22-dup** ***Collected:*** **8/16/2016 1:08:00 PM** ***Analysis Type:*** **RES** ***Dilution:*** **3**

Analyte	*Lab Result*	*Lab Qual*	*DL*	*DL Type*	*RL*	*RL Type*	*Units*	*Data Review Qual*	*Reason Code*
Chromium, hexavalent	0.23	J	0.16	MDL	0.32	MRL	mg/Kg	J	sp, fd

* denotes a non-reportable result

Project Name and Number: 114-520225-2015-MO5 - NERT Soil Flushing

Data Qualifier Summary

Lab Reporting Batch ID: 440-155767-1

Laboratory: TA IRV

EDD Filename: Prep440-155767-1

eQAPP Name: TetraTechInc_NERT_11302016

Reason Code Legend

Reason Code	*Description*
fd	Field Duplicate Precision
ld	Laboratory Duplicate Precision
m	Matrix Spike Lower Estimation
m	Matrix Spike Lower Rejection
m	Matrix Spike Upper Estimation
sp	Reporting Limit Trace Value

* denotes a non-reportable result

Project Name and Number: 114-520225-2015-MO5 - NERT Soil Flushing

Reporting Limit Outliers

Lab Reporting Batch ID: 440-155767-1 **Laboratory: TA IRV**

EDD Filename: Prep440-155767-1 **eQAPP Name: TetraTechInc_NERT_11302016**

Method: 300.0_Leach
Matrix: AQ

SampleID	Analyte	Lab Qual	Result	Reporting Limit	RL Type	Units	Flag
Tt-TP4-B2A-10	CHLORIDE Nitrate as NO3	J J	0.38 0.47	0.50 0.50	MRL MRL	mg/L mg/L	J (all detects)

Method: 6010B
Matrix: SO

SampleID	Analyte	Lab Qual	Result	Reporting Limit	RL Type	Units	Flag
Tt-TP4-B2A-22-dup	BORON	J	4.4	4.9	MRL	mg/Kg	J (all detects)

Method: 6020
Matrix: SO

SampleID	Analyte	Lab Qual	Result	Reporting Limit	RL Type	Units	Flag
Tt-TP4-B2A-10	SELENIUM	J F1	0.74	2.0	MRL	mg/Kg	J (all detects)
Tt-TP4-B2A-22	MOLYBDENUM SELENIUM	J J	0.72 0.58	1.0 1.0	MRL MRL	mg/Kg mg/Kg	J (all detects)
Tt-TP4-B2A-22-dup	SELENIUM	J	0.54	0.99	MRL	mg/Kg	J (all detects)

Method: 7199
Matrix: SO

SampleID	Analyte	Lab Qual	Result	Reporting Limit	RL Type	Units	Flag
Tt-TP4-B2A-22-dup	Chromium, hexavalent	J	0.23	0.32	MRL	mg/Kg	J (all detects)

Appendix E.2
Stage 2A Validation Checklists

Data Verification and Validation Summary
Data Validation Stage 2A

Project Name:	Soil Flushing Treatability Study	SDG/Report No.:	440-104698-1
Project No.:	100-SBO-T35000-2016-M05	Lab ID:	Test America Irvine
No. of Samples:	8	Matrix:	Soil and Water

Area Reviewed	Anomalies		Qualification Required	Action Required
	Yes	No	Yes or No	
1. Sample Preservation, Handling, and Transport		X	No	
2. Chain-of-Custody		X	No	
3. Holding Times		X	No	
4. Blanks		X	No	
5. Surrogates/Monitoring Compounds		X	No	
6. Matrix Spike/Matrix Spike Duplicate	X		Yes	The parent sample Tt-TP1-B1-10 data associated with the matrix spike and/or matrix spike duplicate was "J" qualified.
7. Laboratory Control Samples		X	No	
8. Interference Check Samples		X	No	
9. Compound Quantitation and Reporting Limits	X		Yes	All sample results below the reporting limit are "J" qualified.
10. Duplicates		X	No	

Verification and Validation Label	Stage_2A_Validation_Manual
Verification and Validation Label Code	S2AVM

Overall Assessment: Acceptable as qualified.
Field QC samples checked for completeness only.
Usability: Sample results qualified "J", estimated, are useable for limited purposes only. All other results are considered valid and useable for all purposes.

Sample Information:
Cooler Temperature: 3.8º C

Field Sample Number	Lab Sample ID	Date Collected
Tt-TP1-B1-2	440-104698-1	03/17/15 10:30
Tt-TP1-B1-6	440-104698-2	03/17/15 10:47
Tt-TP1-B1-10	440-104698-3	03/17/15 11:08
Tt-TP1-B1-14	440-104698-4	03/17/15 11:17
Tt-TP1-B1-18	440-104698-5	03/17/15 11:25
Tt-TP1-B1-22	440-104698-6	03/17/15 11:32
Tt-TP1-B1-26	440-104698-7	03/17/15 11:58
EB-03/17/15	440-104698-8	03/17/15 12:33

Data Verification and Validation Summary
Data Validation Stage 2A

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 4°C (+ or – 2°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/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 correctly on data forms? Were recoveries/RPDs within laboratory established limits?	Yes/Yes/No
Methods 6010B: Parent sample Tt-TP1-B1-10 was qualified as estimated for Iron (J-), Manganese (J-), and Titanium (J+).	
Method 6020: Parent sample Tt-TP1-B1-10 were qualified as estimated for Barium (J+) and Copper (J-).	

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. Interference Check Sample (ICS)	
Were interference check samples (ICS) analyzed at appropriate intervals? Were ICS recoveries within acceptable limits of the true value?	Yes

9. 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? Were there detections below the reporting limit?	Yes/Yes/Yes
All: Results detected above the MDL but below the reporting limit are estimated and qualified "J". Please see Qualifier Summary Report and the Reporting Limit Outlier Report in the ADR Output Appendix G1 for a complete list of "J" qualified samples due to being detected below the reporting limit.	

10. Duplicates	
Were any duplicate pairs analyzed in this SDG? Were RPDs between parent sample and duplicates ≤ lab limits or ≤ 30% for field duplicates?	No/NA

Validated by: Michael Wilson 04/21/2015

Data Verification and Validation Summary
Data Validation Stage 2A

Project Name:	Soil Flushing Treatability Study	SDG/Report No.:	440-104832-1
Project No.:	100-SBO-T35000-2016-M05	Lab ID:	Test America Irvine
No. of Samples:	40	Matrix:	Soil and Water

Area Reviewed	Anomalies		Qualification Required	Action Required
	Yes	No	Yes or No	
1. Sample Preservation, Handling, and Transport		X	No	
2. Chain-of-Custody		X	No	
3. Holding Times		X	No	
4. Blanks		X	No	
5. Surrogates/Monitoring Compounds		X	No	
6. Matrix Spike/Matrix Spike Duplicate	X		Yes	The parent samples Tt-TP1-B2-6, Tt-TP1-B4-6, Tt-TP1-B3-6, and Tt-TP2-B1-22 data associated with the matrix spikes and/or matrix spike duplicates were "J" qualified.
7. Laboratory Control Samples		X	No	
8. Interference Check Samples		X	No	
9. Compound Quantitation and Reporting Limits	X		Yes	All sample results below the reporting limit are "J" qualified.
10. Duplicates	X		Yes	Parent samples Tt-TP1-B4-6, Tt-TP2-B1-22 and Tt-TP1-B2-14 and their respective duplicate samples were outside the control limits. Therefore, the data was "J+" qualified

Verification and Validation Label	Stage_2A_Validation_Manual
Verification and Validation Label Code	S2AVM

Overall Assessment: Acceptable as qualified.
Field QC samples checked for completeness only.
Usability: Sample results qualified "J", estimated, are useable for limited purposes only. All other results are considered valid and useable for all purposes.

Sample Information:
Cooler Temperatures: Two coolers at 2.4º C and 5.1º C

Field Sample Number	Lab Sample ID	Date Collected
Tt-TP1-B2-2	440-104832-1	3/17/2015
Tt-TP1-B2-6	440-104832-2	3/17/2015
Tt-TP1-B2-10	440-104832-3	3/17/2015
Tt-TP1-B2-14	440-104832-4	3/17/2015
Tt-TP1-B2-14-dup	440-104832-5	3/17/2015
Tt-TP1-B2-18	440-104832-6	3/17/2015
Tt-TP1-B2-22	440-104832-7	3/17/2015
Tt-TP1-B2-26	440-104832-8	3/17/2015
Tt-TP1-B3-2	440-104832-9	3/18/2015

Field Sample Number	Lab Sample ID	Date Collected
Tt-TP1-B3-6	440-104832-10	3/18/2015
Tt-TP1-B3-10	440-104832-11	3/18/2015
Tt-TP1-B3-14	440-104832-12	3/18/2015
Tt-TP1-B3-18	440-104832-13	3/18/2015
Tt-TP1-B3-22	440-104832-14	3/18/2015
Tt-TP1-B3-26	440-104832-15	3/18/2015
Tt-TP1-B4-2	440-104832-16	3/18/2015
Tt-TP1-B4-6	440-104832-17	3/18/2015
Tt-TP1-B4-6-dup	440-104832-18	3/18/2015
Tt-TP1-B4-10	440-104832-19	3/18/2015
Tt-TP1-B4-14	440-104832-20	3/18/2015
Tt-TP1-B4-18	440-104832-21	3/18/2015
Tt-TP1-B4-22	440-104832-22	3/18/2015
Tt-TP1-B4-26	440-104832-23	3/18/2015
Tt-TP2-B1-2	440-104832-24	3/18/2015
Tt-TP2-B1-6	440-104832-25	3/18/2015
Tt-TP2-B2-10	440-104832-26	3/18/2015
Tt-TP2-B1-14	440-104832-27	3/18/2015
Tt-TP2-B1-18	440-104832-28	3/18/2015
Tt-TP2-B1-22	440-104832-29	3/18/2015
Tt-TP2-B1-22-dup	440-104832-30	3/18/2015
Tt-TP2-B1-26	440-104832-31	3/18/2015
EB-03/18/15	440-104832-32	3/18/2015
EB-03/18/15-2	440-104832-33	3/18/2015
Tt-TP2-B2-2	440-104832-34	3/18/2015
Tt-TP2-B2-6	440-104832-35	3/18/2015
Tt-TP2-B2-10	440-104832-36	3/18/2015
Tt-TP2-B2-14	440-104832-37	3/18/2015
Tt-TP2-B2-18	440-104832-38	3/18/2015
Tt-TP2-B2-22	440-104832-39	3/18/2015
Tt-TP2-B2-26	440-104832-40	3/18/2015

Data Verification and Validation Summary
Data Validation Stage 2A

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 4°C (+ or – 2°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/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 correctly on data forms? Were recoveries/RPDs within laboratory established limits?	Yes/Yes/No
Method 314.0: The Perchlorate results from parent samples Tt-TP1-B3-6, Tt-TP1-B4-6, and Tt-TP2B1-22 were qualified as estimated. Tt-TP1-B3-6 (J-), Tt-TP1-B4-6 (J+), and Tt-TP2B1-22 (J+).	
Method 6010B: Parent sample Tt-TP1-B2-6 was qualified as estimated for Boron (J-), Iron (J-), Manganese (J-) and Titanium (J+).	
Method 6010B_Leach: The Calcium result from parent sample Tt-TP1-B3-6 was qualified as estimated and assigned a "J-" qualifier.	
Method 6020: The Antimony, Arsenic, Copper, Nickel, and Zinc results from parent sample Tt-TP1-B2-6 were qualified as estimated and assigned "J-" qualifiers.	

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. Interference Check Sample (ICS)	
Were interference check samples (ICS) analyzed at appropriate intervals? Were ICS recoveries within acceptable limits of the true value?	Yes

9. 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? Were there detections below the reporting limit?	Yes/Yes/Yes
All: Results detected above the MDL but below the reporting limit are estimated and qualified "J". For a complete list of "J" qualified samples due to being detected below the reporting limit please see the Qualifier Summary Report and the Reporting Limit Outlier Report in the ADR Output in Appendix G1.	

10. Duplicates	
Were any duplicate pairs analyzed in this SDG? Were RPDs between parent sample and duplicates ≤ lab limits or ≤ 30% for field duplicates?	Yes/No
Method 2540C Leach: Parent sample Tt-TP2-B1-22 was qualified as estimated for Total Dissolved Solids (J).	
Method 314.0: Parent samples Tt-TP2-B2-14, Tt-TP1-B4-6, and Tt-TP2-B1-22 were qualified as estimated for Perchlorate (J).	

Validated by: Michael Wilson 04/21/2015

Data Verification and Validation Summary
Data Validation Stage 2A

Project Name:	Soil Flushing Treatability Study	SDG/Report No.:	440-104925-1
Project No.:	100-SBO-T35000-2016-M05	Lab ID:	Test America Irvine
No. of Samples:	49	Matrix:	Soil and Water

Area Reviewed	Anomalies		Qualification Required	Action Required
	Yes	No	Yes or No	
1. Sample Preservation, Handling, and Transport		X	No	
2. Chain-of-Custody		X	No	
3. Holding Times		X	No	
4. Blanks		X	No	
5. Surrogates/Monitoring Compounds		X	No	
6. Matrix Spike/Matrix Spike Duplicate	X		Yes	The parent samples Tt-TP2-B3-14, Tt-TP3-B3-6, and Tt-TP2-B3-2 data associated with the matrix spikes and/or matrix spike duplicates were "J" or "UJ" qualified.
7. Laboratory Control Samples		X	No	
8. Interference Check Samples		X	No	
9. Compound Quantitation and Reporting Limits	X		Yes	All sample results below the reporting limit are "J" qualified.
10. Duplicates	X		Yes	Parent samples Tt-TP2-B3-14, Tt-TP3-B4-18, Tt-TP3-B1-6, and their respective duplicate samples were outside the control limits. Therefore, the data was "J+" qualified.

Verification and Validation Label	Stage_2A_Validation_Manual
Verification and Validation Label Code	S2AVM

Overall Assessment: Acceptable as qualified.
Field QC samples checked for completeness only.
Usability: Sample results qualified "J", estimated, are useable for limited purposes only. All other results are considered valid and useable for all purposes.

Sample Information:
Cooler Temperature: Three coolers 1.8º C, 2.2º C and 4.6º C

Field Sample Number	Lab Sample ID	Date Collected
Tt-TP2-B3-2	440-104925-1	3/18/2015
Tt-TP2-B3-6	440-104925-2	3/18/2015
Tt-TP2-B3-10	440-104925-3	3/18/2015
Tt-TP2-B3-14	440-104925-4	3/18/2015
Tt-TP2-B3-14-dup	440-104925-5	3/18/2015
Tt-TP2-B3-18	440-104925-6	3/18/2015

Field Sample Number	Lab Sample ID	Date Collected
Tt-TP2-B3-22	440-104925-7	3/18/2015
Tt-TP2-B3-26	440-104925-8	3/18/2015
Tt-TP2-B4-2	440-104925-9	3/19/2015
Tt-TP2-B4-6	440-104925-10	3/19/2015
Tt-TP2-B4-10	440-104925-11	3/19/2015
Tt-TP2-B4-14	440-104925-12	3/19/2015
Tt-TP2-B4-18	440-104925-13	3/19/2015
Tt-TP2-B4-22	440-104925-14	3/19/2015
Tt-TP2-B4-26	440-104925-15	3/19/2015
Tt-TP3-B1-2	440-104925-16	3/19/2015
Tt-TP3-B1-6	440-104925-17	3/19/2015
Tt-TP3-B1-6-dup	440-104925-18	3/19/2015
Tt-TP3-B1-10	440-104925-19	3/19/2015
Tt-TP3-B1-14	440-104925-20	3/19/2015
Tt-TP3-B1-18	440-104925-21	3/19/2015
Tt-TP3-B1-22	440-104925-22	3/19/2015
Tt-TP3-B1-26	440-104925-23	3/19/2015
Tt-TP3-B2-2	440-104925-24	3/19/2015
Tt-TP3-B2-6	440-104925-25	3/19/2015
Tt-TP3-B2-10	440-104925-26	3/19/2015
Tt-TP3-B2-14	440-104925-27	3/19/2015
Tt-TP3-B2-18	440-104925-28	3/19/2015
Tt-TP3-B2-22	440-104925-29	3/19/2015
Tt-TP3-B2-22-dup	440-104925-30	3/19/2015
Tt-TP3-B2-26	440-104925-31	3/19/2015
Tt-TP3-B2-26-dup	440-104925-32	3/19/2015
EB-03/19/15	440-104925-33	3/19/2015
Tt-TP3-B3-2	440-104925-34	3/19/2015
Tt-TP3-B3-6	440-104925-35	3/19/2015
Tt-TP3-B3-10	440-104925-36	3/19/2015
Tt-TP3-B3-14	440-104925-37	3/19/2015
Tt-TP3-B3-18	440-104925-38	3/19/2015
Tt-TP3-B3-22	440-104925-39	3/19/2015
Tt-TP3-B3-26	440-104925-40	3/19/2015
EB-03/19/15-2	440-104925-41	3/19/2015
Tt-TP3-B4-2	440-104925-42	3/19/2015
Tt-TP3-B4-6	440-104925-43	3/19/2015
Tt-TP3-B4-10	440-104925-44	3/19/2015
Tt-TP3-B4-14	440-104925-45	3/19/2015
Tt-TP3-B4-14-dup	440-104925-46	3/19/2015
Tt-TP3-B4-18	440-104925-47	3/19/2015
Tt-TP3-B4-22	440-104925-48	3/19/2015
Tt-TP3-B4-26	440-104925-49	3/19/2015

Data Verification and Validation Summary
Data Validation Stage 2A

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 4°C (+ or – 2°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
Method 6020: Zinc was detected in the equipment blank (Sample name: EB-03/19/15). No qualification was needed.	

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 correctly on data forms? Were recoveries/RPDs within laboratory established limits?	Yes/Yes/No
Method 300.0_Leach: Parent sample Tt-TP2-B3-14 were qualified as estimated for Chloride (J-) and Sulfate (J).	
Method 300.1B_Leach: The Chloride results from parent samples Tt-TP2-B3-14 and Tt-TP2-B3-2 were qualified as estimated and assigned a "J" qualifier. Tt-TP2-B3-14 (J) and Tt-TP2-B3-2 (J-)	
Method 314.0: The Perchlorate results from parent samples Tt-TP2-B3-14 and Tt-TP2-B3-6 were qualified as estimated and assigned "J-" qualifiers.	
Method 6010B: Parent sample Tt-TP2-B3-14 was qualified as estimated for Iron (J+), Manganese (J-), and Titanium (J+).	
Method 6010B_Leach: The Calcium result from parent sample Tt-TP2-B3-14 was qualified as estimated and assigned a "J" qualifier.	
Method 6020: The results from parent sample Tt-TP2-B3-14 was qualified as estimated for Antimony (UJ) and Barium (J+).	

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. Interference Check Sample (ICS)	
Were interference check samples (ICS) analyzed at appropriate intervals? Were ICS recoveries within acceptable limits of the true value?	Yes

9. 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? Were there detections below the reporting limit?	Yes/Yes/Yes
All: Results detected above the MDL but below the reporting limit are estimated and qualified "J". For a complete list of "J" qualified samples due to being detected below the reporting limit please see the Qualifier Summary Report and the Reporting Limit Outlier Report in the ADR Output in Appendix G1.	

10. Duplicates	
Were any duplicate pairs analyzed in this SDG? Were RPDs between parent sample and duplicates ≤ lab limits or ≤ 30% for field duplicates?	Yes/No
Method 2320B Leach: Parent sample Tt-TP2-B3-14 was qualified as estimated for Alkalinity as CaCO3 (J).	
Method 2540C Leach: Parent samples Tt-TP2-B3-14 and Tt-TP3-B4-18 were qualified as estimated for Total dissolved solids (J+).	
Method 300.0 Leach: Parent sample Tt-TP2-B3-14 was qualified as estimated for Nitrate as N (J+) and Sulfate (J).	
Method 300.1B_Leach: Parent sample Tt-TP2-B3-14 was qualified as estimated for Chlorate (J).	
Method 314.0: The Perchlorate results from parent samples Tt-TP3-B1-6 and Tt-TP3-B4-18 were qualified as estimated and assigned "J+" qualifiers.	
Method 6010B: Parent sample Tt-TP2-B3-14 was qualified as estimated for Boron (J) and Manganese (J-).	
Method 6010B Leach: Parent sample Tt-TP2-B3-14 was qualified as estimated for Potassium (J), Magnesium (J), and Sodium (J).	
Method 6020: Parent sample Tt-TP2-B3-14 was qualified as estimated for Arsenic (J), Barium (J+), Beryllium (J), Chromium (J), and Molybdenum (J).	
Method 7199: Parent sample Tt-TP2-B3-14 was qualified as estimated for Chromium, Hexavalent (J).	
Method 7471A: Parent sample Tt-TP2-B3-14 was qualified as estimated for Mercury (J).	

Validated by: Michael Wilson 04/23/2015

Data Verification and Validation Summary
Data Validation Stage 2A

Project Name:	Soil Flushing Treatability Study	SDG/Report No.:	440-105015-1
Project No.:	100-SBO-T35000-2016-M05	Lab ID:	Test America Irvine
No. of Samples:	31	Matrix:	Soil and Water

Area Reviewed	Anomalies		Qualification Required	Action Required
	Yes	No	Yes or No	
1. Sample Preservation, Handling, and Transport		X	No	
2. Chain-of-Custody		X	No	
3. Holding Times		X	No	
4. Blanks		X	No	
5. Surrogates/Monitoring Compounds		X	No	
6. Matrix Spike/Matrix Spike Duplicate	X		Yes	The parent samples Tt-TP4-B1-6 and Tt-TP4-B4-22 data associated with the matrix spikes and/or matrix spike duplicates were "J" or "UJ" qualified.
7. Laboratory Control Samples		X	No	
8. Interference Check Samples		X	No	
9. Compound Quantitation and Reporting Limits	X		Yes	All sample results below the reporting limit are "J" qualified.
10. Duplicates	X		Yes	Parent sample Tt-TP4-B3-22 relative percent difference to its respective duplicate sample was outside the control limit and was "J" or "UJ" qualified.

Verification and Validation Label	Stage_2A_Validation_Manual
Verification and Validation Label Code	S2AVM

Overall Assessment: Acceptable as qualified.
Field QC samples checked for completeness only.
Usability: Sample results qualified "J", estimated, are useable for limited purposes only. All other results are considered valid and useable for all purposes.

Sample Information:
Cooler Temperature: Two coolers 2.7º C and 4.0º C.

Field Sample Number	Lab Sample ID	Date Collected
Tt-TP4-B1-2	440-105015-1	03/19/15
Tt-TP4-B1-6	440-105015-2	03/19/15
Tt-TP4-B1-10	440-105015-3	03/19/15
Tt-TP4-B1-14	440-105015-4	03/19/15
Tt-TP4-B1-18	440-105015-5	03/19/15
Tt-TP4-B1-22	440-105015-6	03/19/15
Tt-TP4-B1-26	440-105015-7	03/20/15
Tt-TP4-B2-2	440-105015-8	03/20/15
Tt-TP4-B2-6	440-105015-9	03/20/15
Tt-TP4-B2-6-dup	440-105015-10	03/20/15

Data Verification and Validation Summary
Data Validation Stage 2A

Field Sample Number	Lab Sample ID	Date Collected
Tt-TP4-B2-10	440-105015-11	03/20/15
Tt-TP4-B2-14	440-105015-12	03/20/15
Tt-TP4-B2-18	440-105015-13	03/20/15
Tt-TP4-B2-22	440-105015-14	03/20/15
Tt-TP4-B2-26	440-105015-15	03/20/15
Tt-TP4-B3-2	440-105015-16	03/20/15
Tt-TP4-B3-6	440-105015-17	03/20/15
Tt-TP4-B3-10	440-105015-18	03/20/15
Tt-TP4-B3-14	440-105015-19	03/20/15
Tt-TP4-B3-18	440-105015-20	03/20/15
Tt-TP4-B3-22	440-105015-21	03/20/15
Tt-TP4-B3-22-dup	440-105015-22	03/20/15
Tt-TP4-B3-26	440-105015-23	03/20/15
Tt-TP4-B4-2	440-105015-24	03/20/15
Tt-TP4-B4-6	440-105015-25	03/20/15
Tt-TP4-B4-10	440-105015-26	03/20/15
Tt-TP4-B4-14	440-105015-27	03/20/15
Tt-TP4-B4-18	440-105015-28	03/20/15
Tt-TP4-B4-22	440-105015-29	03/20/15
Tt-TP4-B4-26	440-105015-30	03/20/15
EB-03/20/15	440-105015-31	03/20/15

Data Verification and Validation Summary
Data Validation Stage 2A

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 4°C (+ or – 2°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/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 correctly on data forms? Were recoveries/RPDs within laboratory established limits?	Yes/Yes/No
Method 300.0_Leach: The Nitrate as NO3 result from parent sample Tt-TP4-B1-6 was qualified as estimated and assigned a "J+" qualifier.	
Method 314.0: The Perchlorate result from parent sample Tt-TP4-B1-22 was qualified as estimated and assigned a "J+" qualifier.	
Methods 6010B: The Boron, Iron, Manganese, and Titanium results from parent sample Tt-TP4-B1-6 were qualified as estimated and assigned "J+" qualifiers.	
Method 6020: Parent sample Tt-TP4-B1-6 was qualified as estimated for Antimony (UJ) and Boron (J+).	

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. Interference Check Sample (ICS)	
Were interference check samples (ICS) analyzed at appropriate intervals? Were ICS recoveries within acceptable limits of the true value?	Yes

9. 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? Were there detections below the reporting limit?	Yes/Yes/Yes

All: Results detected above the MDL but below the reporting limit are estimated and qualified "J". For a complete list of "J" qualified samples due to being detected below the reporting limit please see the Qualifier Summary Report and the Reporting Limit Outlier Report in the ADR Output in Appendix G1.

10. Duplicates	
Were any duplicate pairs analyzed in this SDG? Were RPDs between parent sample and duplicates ≤ lab limits or ≤ 30% for field duplicates?	Yes/No
Method 2320B_Leach: The Alkalinity as CaCO3 result from parent sample Tt-TP4-B3-22 was qualified as estimated and assigned a "J" qualifier.	
Method 300.1B: The Nitrate as NO3 result from parent sample Tt-TP4-B3-22 was qualified as estimated and assigned a "J+" qualifier.	
Method 300.1B_Leach: The Chlorate result from parent sample Tt-TP4-B3-22 was qualified as estimated and assigned a "J+" qualifier.	
Method 314.0: The perchlorate result from parent sample Tt-TP4-B3-22 was qualified as estimated and assigned a "J+" qualifier.	
Method 6010B: The Manganese result from parent sample Tt-TP4-B3-22 was qualified as estimated and assigned a "J" qualifier.	
Method 6010B_Leach: The sodium and calcium results from parent sample Tt-TP4-B3-22 were qualified as estimated and assigned "J" qualifiers.	
Method 6020: The Chromium, Arsenic, Lead, and Nickel results from parent sample Tt-TP4-B3-22 were qualified as estimated and assigned "J" qualifiers.	
Method 7471A: The Mercury result from parent sample Tt-TP4-B3-22 was qualified as estimated and assigned a "UJ" qualifier.	

Validated by: Michael Wilson 04/23/2015

Data Verification and Validation Summary
Data Validation Stage 2A

Project Name:	Soil Flushing Treatability Study	SDG/Report No.:	440-105330-1
Project No.:	100-SBO-T35000-2016-M05	Lab ID:	Test America Irvine
No. of Samples:	10	Matrix:	Soil and Water

Area Reviewed	Anomalies		Qualification Required	Action Required
	Yes	No	Yes or No	
1. Sample Preservation, Handling, and Transport		X	No	
2. Chain-of-Custody		X	No	
3. Holding Times		X	No	
4. Blanks		X	No	
5. Surrogates/Monitoring Compounds		X	No	
6. Matrix Spike/Matrix Spike Duplicate	X		Yes	The parent sample Tt-TP4-L2-22 data associated with the matrix spikes and/or matrix spike duplicates were "J" qualified.
7. Laboratory Control Samples		X	No	
8. Interference Check Samples		X	No	
9. Compound Quantitation and Reporting Limits	X		Yes	All sample results below the reporting limit are "J" qualified.
10. Duplicates	X		Yes	Parent sample Tt-TP4-L2-22 relative percent difference to its respective duplicate sample was outside the control limit and was "J" qualified.

Verification and Validation Label	Stage_2A_Validation_Manual
Verification and Validation Label Code	S2AVM

Overall Assessment: Acceptable as qualified.
Field QC samples checked for completeness only.
Usability: Sample results qualified "J", estimated, are useable for limited purposes only. All other results are considered valid and useable for all purposes.

Sample Information:
Cooler Temperature: 2.2º C

Field Sample Number	Lab Sample ID	Date Collected
Tt-TP4-L2-2	440-105330-1	3/25/2015
Tt-TP4-L2-6	440-105330-2	3/25/2015
Tt-TP4-L2-10	440-105330-3	3/25/2015
Tt-TP4-L2-14	440-105330-4	3/25/2015
Tt-TP4-L2-18	440-105330-5	3/25/2015
Tt-TP4-L2-22	440-105330-6	3/25/2015
Tt-TP4-L2-22-dup	440-105330-7	3/25/2015
Tt-TP4-L2-26	440-105330-8	3/25/2015
Tt-TP4-L2-26-dup	440-105330-9	3/25/2015
EB-03/25/15	440-105330-10	3/25/2015

Data Verification and Validation Summary
Data Validation Stage 2A

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 4°C (+ or – 2°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

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 correctly on data forms? Were recoveries/RPDs within laboratory established limits?	Yes/Yes/No
Method 300.1B_Leach: The Chlorate result from parent sample Tt-TP4-L2-22 was qualified as estimated and assigned a "J" qualifier.	
Method 314.0: The Perchlorate result from parent sample Tt-TP4-L2-22 was qualified as estimated and assigned a "J" qualifier.	
Method 6010B: The Iron, Manganese, and Titanium results from parent sample Tt-TP4-L2-22 were qualified as estimated and assigned a "J+" qualifier.	
Method 6010B_Leach: The Sodium result from parent sample Tt-TP4-L2-22 was qualified as estimated and assigned a "J-" qualifier.	
Method 6020: The Barium result from parent sample Tt-TP4-L2-22 was qualified as estimated and assigned a "J+" qualifier.	

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. Interference Check Sample (ICS)	
Were interference check samples (ICS) analyzed at appropriate intervals? Were ICS recoveries within acceptable limits of the true value?	Yes

9. 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? Were detection below the reporting limit?	Yes/Yes/Yes
All: Results detected above the MDL but below the reporting limit are estimated and qualified "J". For a complete list of "J" qualified samples due to being detected below the reporting limit please see the Qualifier Summary Report and the Reporting Limit Outlier Report in the ADR Output in Appendix G1.	

10. Duplicates	
Were any duplicate pairs analyzed in this SDG? Were RPDs between parent sample and duplicates ≤ lab limits or ≤ 30% for field duplicates?	Yes/No
Method 300.0_Leach: The Chloride and Nitrate as NO3 results from parent sample Tt-TP4-L2-22 were qualified as estimated and assigned a "J+" qualifier.	
Method 300.1B_Leach: The Chlorate result from parent sample Tt-TP4-L2-22 was qualified as estimated and assigned a "J" qualifier.	
Method 314.0: The Perchlorate result from parent sample Tt-TP4-L2-22 was qualified as estimated and assigned a "J+" qualifier.	
Method 6010B: The Boron result from parent sample Tt-TP4-L2-22 were qualified as estimated and assigned a "J" qualifier.	
Method 6010B_Leach: The Calcium result from parent sample Tt-TP4-L2-22 was qualified as estimated and assigned a "J" qualifier.	
Method 6020: The Arsenic and Chromium results from parent sample Tt-TP4-L2-22 were qualified as estimated and assigned a "J" qualifier.	
Method 7199: The Hexavalent Chromium result from parent sample Tt-TP4-L2-22 was qualified as estimated and assigned a "J" qualifier.	
Method 7471A: The Mercury result from parent sample Tt-TP4-L2-22 was qualified as estimated and assigned a "J" qualifier.	

Validated by: Michael Wilson 4/23/2015

Data Verification and Validation Summary
Data Validation Stage 2A

Project Name:	Soil Flushing Treatability Study	SDG/Report No.:	440-105406-1
Project No.:	100-SBO-T35000-2016-M05	Lab ID:	Test America Irvine
No. of Samples:	24	Matrix:	Soil and Water

Area Reviewed	Anomalies		Qualification Required	Action Required
	Yes	No	Yes or No	
1. Sample Preservation, Handling, and Transport		X	No	
2. Chain-of-Custody		X	No	
3. Holding Times		X	No	
4. Blanks		X	No	
5. Surrogates/Monitoring Compounds		X	No	
6. Matrix Spike/Matrix Spike Duplicate	X		Yes	The parent sample Tt-TP3-L2-6 data associated with the matrix spikes and/or matrix spike duplicates were "J" or "UJ" qualified.
7. Laboratory Control Samples		X	No	
8. Interference Check Samples		X	No	
9. Compound Quantitation and Reporting Limits	X		Yes	All sample results below the reporting limit are "J" qualified.
10. Duplicates	X		Yes	Parent sample Tt-TP1-L2-14 relative percent difference to its duplicate sample was outside the control limit and was "J+" qualified.

Verification and Validation Label	Stage_2A_Validation_Manual
Verification and Validation Label Code	S2AVM

Overall Assessment: Acceptable as qualified.
Field QC samples checked for completeness only.
Usability: Sample results qualified "J", estimated, are useable for limited purposes only. All other results are considered valid and useable for all purposes.

Sample Information:
Cooler Temperature: 3.9º C

Field Sample Number	Lab Sample ID	Date Collected
Tt-TP3-L2-2	440-105406-1	3/26/2015
Tt-TP3-L2-6	440-105406-2	3/26/2015
Tt-TP3-L2-6-dup	440-105406-3	3/26/2015
Tt-TP3-L2-10	440-105406-4	3/26/2015
Tt-TP3-L2-14	440-105406-5	3/26/2015
Tt-TP3-L2-18	440-105406-6	3/26/2015
Tt-TP3-L2-22	440-105406-7	3/26/2015
Tt-TP3-L2-26	440-105406-8	3/26/2015
Tt-TP2-L2-2	440-105406-9	3/26/2015
Tt-TP2-L2-6	440-105406-10	3/26/2015

Field Sample Number	Lab Sample ID	Date Collected
Tt-TP2-L2-10	440-105406-11	3/26/2015
Tt-TP2-L2-14	440-105406-12	3/26/2015
Tt-TP2-L2-18	440-105406-13	3/26/2015
Tt-TP2-L2-22	440-105406-14	3/26/2015
Tt-TP2-L2-26	440-105406-15	3/26/2015
Tt-TP1-L2-2	440-105406-16	3/26/2015
Tt-TP1-L2-6	440-105406-17	3/26/2015
Tt-TP1-L2-10	440-105406-18	3/26/2015
Tt-TP1-L2-14	440-105406-19	3/26/2015
Tt-TP1-L2-14-dup	440-105406-20	3/26/2015
Tt-TP1-L2-18	440-105406-21	3/26/2015
Tt-TP1-L2-22	440-105406-22	3/26/2015
Tt-TP1-L2-26	440-105406-23	3/26/2015
EB-03/26/15	440-105406-24	3/26/2015

Data Verification and Validation Summary
Data Validation Stage 2A

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 4°C (+ or – 2°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/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 correctly on data forms? Were recoveries/RPDs within laboratory established limits?	Yes/Yes/No
Method 6010B: Parent sample Tt-TP3-L2-6 was qualified as estimated for Iron (J), Manganese (J+), and Titanium (J+).	
Method 6020: Parent sample Tt-TP3-L2-6 was qualified as estimated for Barium (UJ) and Antimony (J+).	

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. Interference Check Sample (ICS)	
Were interference check samples (ICS) analyzed at appropriate intervals? Were ICS recoveries within acceptable limits of the true value?	Yes

9. 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? Were there detections below the reporting limit?	Yes/Yes/Yes
All: Results detected above the MDL but below the reporting limit are estimated and qualified "J". For a complete list of "J" qualified samples due to being detected below the reporting limit please see the Qualifier Summary Report and the Reporting Limit Outlier Report in the ADR Output in Appendix G1.	

10. Duplicates	
Were any duplicate pairs analyzed in this SDG? Were RPDs between parent sample and duplicates ≤ lab limits or ≤ 30% for field duplicates?	Yes/No
Method 314.0: The Perchlorate result from parent sample Tt-TP1-L2-14 was qualified as estimated and assigned a "J+" qualifier.	

Validated by: Michael Wilson 04/23/2016

Data Verification and Validation Summary
Data Validation Stage 2A

Project Name:	Soil Flushing Treatability Study	SDG/Report No.:	440-130543-1
Project No.:	100-SBO-T35000-2016-M05	Lab ID:	Test America Irvine
No. of Samples:	1	Matrix:	Water

Area Reviewed	Anomalies		Qualification Required	Action Required
	Yes	No	Yes or No	
1. Sample Preservation, Handling, and Transport		X	No	
2. Chain-of-Custody		X	No	
3. Holding Times	X		Yes	A holding time violation occurred for sample TT-TP4-M3-20151209. The sample data was "J-" qualified.
4. Blanks		X	No	
5. Surrogates/Monitoring Compounds		X	No	
6. Matrix Spike/Matrix Spike Duplicate		X	No	
7. Laboratory Control Samples		X	No	
8. Interference Check Samples		X	No	
9. Compound Quantitation and Reporting Limits	X		Yes	All sample results below the reporting limit are "J" qualified.
10. Duplicates		X	No	

Verification and Validation Label	Stage_2A_Validation_Manual
Verification and Validation Label Code	S2AVM

Overall Assessment: Acceptable as qualified.
Field QC samples checked for completeness only.
Usability: Sample results qualified "J", estimated, are useable for limited purposes only. All other results are considered valid and useable for all purposes.

Sample Information:
Cooler Temperature: 2.4º C

Field Sample Number	Lab Sample ID	Date Collected
TT-TP4-M3-20151209	440-130543-1	12/09/15

Data Verification and Validation Summary
Data Validation Stage 2A

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 4°C (+ or – 2°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?	No
Method 7199: Sample TT-TP4-M3-20151209 was analyzed pass its acceptable holding time for Hexavalent Chromium. Therefore, the sample result was qualified as estimated and assigned a "J-" qualifier.	

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 correctly on data forms? Were recoveries/RPDs 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. Interference Check Sample (ICS)	
Were interference check samples (ICS) analyzed at appropriate intervals? Were ICS recoveries within acceptable limits of the true value?	Yes

9. 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? Were there detections below the reporting limit?	Yes/Yes/Yes

All: Results detected above the MDL but below the reporting limit are estimated and qualified "J". For a complete list of "J" qualified samples due to being detected below the reporting limit please see the Qualifier Summary Report and the Reporting Limit Outlier Report in the ADR Output in Appendix G1.

10. Duplicates	
Were any duplicate pairs analyzed in this SDG? Were RPDs between parent sample and duplicates ≤ lab limits or ≤ 30% for field duplicates?	No/NA

Validated by: Michael Wilson 01/08/2016

Data Verification and Validation Summary
Data Validation Stage 2A

Project Name:	Soil Flushing Treatability Study	SDG/Report No.:	440-130588-1
Project No.:	100-SBO-T35000-2016-M05	Lab ID:	Test America Irvine
No. of Samples:	18	Matrix:	Water

Area Reviewed	Anomalies		Qualification Required	Action Required
	Yes	No	Yes or No	
1. Sample Preservation, Handling, and Transport		X	No	
2. Chain-of-Custody		X	No	
3. Holding Times	X		Yes	All of the Hexavalent Chromium results were qualified as estimated and assigned a "J" qualifier because of holding time violations.
4. Blanks		X	No	
5. Surrogates/Monitoring Compounds		X	No	
6. Matrix Spike/Matrix Spike Duplicate	X		Yes	Parent samples Tt-TP1-M3-20151210 and Tt-TP2-L1-20151210 data associated with the matrix spikes and/or matrix spike duplicates were "J" or "UJ" qualified.
7. Laboratory Control Samples		X	No	
8. Interference Check Samples		X	No	
9. Compound Quantitation and Reporting Limits		X	No	
10. Duplicates	X		Yes	Parent sample Tt-TP3-M1-20151210 was outside the duplicate control limits and the data was "J" qualified.

Verification and Validation Label	Stage_2A_Validation_Manual
Verification and Validation Label Code	S2AVM

Overall Assessment: Acceptable as qualified.
Field QC samples checked for completeness only.
Usability: Sample results qualified "J", estimated, are useable for limited purposes only. All other results are considered valid and useable for all purposes.

Sample Information:
Cooler Temperature: Three coolers at 1.0º C, 1.6º C and 1.7º C

Field Sample Number	Lab Sample ID	Date Collected
Tt-TP4-M1-20151210	440-130588-1	12/10/2015
Tt-TP4-M2-20151210	440-130588-2	12/10/2015
Tt-TP3-M1-20151210	440-130588-3	12/10/2015
Tt-TP3-M2-20151210	440-130588-4	12/10/2015
Tt-TP2-M1-20151210	440-130588-5	12/10/2015
Tt-TP2-M2-20151210	440-130588-6	12/10/2015
Tt-TP1-M1-20151210	440-130588-7	12/10/2015
Tt-TP1-M2-20151210	440-130588-8	12/10/2015

Data Verification and Validation Summary
Data Validation Stage 2A

Field Sample Number	Lab Sample ID	Date Collected
Tt-TP1-M3-20151210	440-130588-9	12/10/2015
Tt-TP3-M1-20151210-DUP	440-130588-10	12/10/2015
Tt-TP4-L1-20151210	440-130588-11	12/10/2015
Tt-TP4-L2-20151210	440-130588-12	12/10/2015
Tt-TP3-L1-20151210	440-130588-13	12/10/2015
Tt-TP3-L2-20151210	440-130588-14	12/10/2015
Tt-TP2-L1-20151210	440-130588-15	12/10/2015
Tt-TP2-L2-20151210	440-130588-16	12/10/2015
Tt-TP1-L1-20151210	440-130588-17	12/10/2015
Tt-TP1-L2-20151210	440-130588-18	12/10/2015

Data Verification and Validation Summary
Data Validation Stage 2A

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 4°C (+ or – 2°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?	No
Method 7199: All the Hexavalent Chromium results were qualified as estimated and assigned a "J" qualifier because of holding time failures. The sample listed in the "Sample Information" section of this report are the affected samples.	

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 correctly on data forms? Were recoveries/RPDs within laboratory established limits?	Yes/Yes/No
Method 300.0: The Nitrate as N, Sulfate and Chloride results from parent samples Tt-TP1-M3-20151210 and Tt-TP2-L1-20151210 were qualified as estimated and assigned "J-" qualifiers.	
Method 300.1B: The Chlorate result from parent sample Tt-TP1-M3-20151210 was qualified as estimated and assigned a "J-" qualifier.	
Method 6010B: The Calcium, Magnesium, Potassium, and Sodium results from parent sample Tt-TP1-M3-20151210 were qualified as estimated and assigned "J-" qualifiers.	
Method 6020: The Chromium result from parent sample Tt-TP1-M3-20151210 was qualified as estimated and assigned a "J-" qualifier.	
Method 7199: The Hexavalent Chromium result from parent sample Tt-TP1-M3-20151210 was qualified as estimated and assigned a "J" qualifier.	

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. Interference Check Sample (ICS)	
Were interference check samples (ICS) analyzed at appropriate intervals? Were ICS recoveries within acceptable limits of the true value?	Yes

9. 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? Were there detections below the reporting limit?	Yes/Yes/Yes
All: Results detected above the MDL but below the reporting limit are estimated and qualified "J". Please see the Qualifier Summary Report and the Reporting Limit Outlier Report in the ADR Output Appendix G1 for a complete list of "J" qualified samples due to being detected below the reporting limit.	

10. Duplicates	
Were any duplicate pairs analyzed in this SDG? Were RPDs between parent sample and duplicates ≤ lab limits or ≤ 30% for field duplicates?	Yes/No
Method 6020: The Selenium result from parent sample Tt-TP3-M1-20151210 was qualified as estimated and assigned a "J" qualifier.	

Validated by: Michael Wilson 01/08/2016

Data Verification and Validation Summary
Data Validation Stage 2A

Project Name:	Soil Flushing Treatability Study	SDG/Report No.:	440-132876-1
Project No.:	100-SBO-T35000-2016-M05	Lab ID:	Test America Irvine
No. of Samples:	5	Matrix:	Water

Area Reviewed	Anomalies		Qualification Required	Action Required
	Yes	No	Yes or No	
1. Sample Preservation, Handling, and Transport		X	No	
2. Chain-of-Custody		X	No	
3. Holding Times		X	No	
4. Blanks		X	No	
5. Surrogates/Monitoring Compounds		X	No	
6. Matrix Spike/Matrix Spike Duplicate	X		Yes	The parent sample TT-TP2-M2-20160103 data associated with the matrix spikes and/or matrix spike duplicates were "J" qualified.
7. Laboratory Control Samples		X	No	
8. Interference Check Samples		X	No	
9. Compound Quantitation and Reporting Limits		X	No	
10. Duplicates		X	No	

Verification and Validation Label	Stage_2A_Validation_Manual
Verification and Validation Label Code	S2AVM

Overall Assessment: Acceptable as qualified.
Field QC samples checked for completeness only.
Usability: Sample results qualified "J", estimated, are useable for limited purposes only. All other results are considered valid and useable for all purposes.

Sample Information:
Cooler Temperature: 1 cooler at 5.2º C.

Field Sample Number	Lab Sample ID	Date Collected
TT-TP2-M1-20160103	440-132876-1	01/03/16
TT-TP2-M2-20160103	440-132876-2	01/03/16
TT-TP2-L2-20160103	440-132876-3	01/03/16
TT-TP2-L1-20160103	440-132876-4	01/03/16
TT-TP2-M2-20160103-Dup	440-132876-5	01/03/16

Data Verification and Validation Summary
Data Validation Stage 2A

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 4°C (+ or – 2°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/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 correctly on data forms? Were recoveries/RPDs within laboratory established limits?	Yes/Yes/No
Method 314.0: The Perchlorate result from parent sample TT-TP2-M2-20160103 was qualified as estimated and assigned a "J" qualifier.	
Method 6020: The Chromium result from parent sample TT-TP2-M2-20160103 were qualified as estimated and assigned a "J-" qualifier.	

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. Interference Check Sample (ICS)	
Were interference check samples (ICS) analyzed at appropriate intervals? Were ICS recoveries within acceptable limits of the true value?	Yes

9. 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? Were there detections below the reporting limit?	Yes/Yes/No

All: Results detected above the MDL but below the reporting limit are estimated and qualified "J". For a complete list of "J" qualified samples due to being detected below the reporting limit please see the Qualifier Summary Report and the Reporting Limit Outlier Report in the ADR Output in Appendix G1.

10. Duplicates	
Were any duplicate pairs analyzed in this SDG? Were RPDs between parent sample and duplicates ≤ lab limits or ≤ 30% for field duplicates?	Yes/Yes

Validated by: Michael Wilson 02/05/2016

Data Verification and Validation Summary
Data Validation Stage 2A

Project Name:	Soil Flushing Treatability Study	SDG/Report No.:	440-135664-1
Project No.:	100-SBO-T35000-2016-M05	Lab ID:	Test America Irvine
No. of Samples:	9	Matrix:	Water

Area Reviewed	Anomalies		Qualification Required	Action Required
	Yes	No	Yes or No	
1. Sample Preservation, Handling, and Transport		X	No	
2. Chain-of-Custody		X	No	
3. Holding Times		X	No	
4. Blanks		X	No	
5. Surrogates/Monitoring Compounds		X	No	
6. Matrix Spike/Matrix Spike Duplicate	X		Yes	The parent sample TT-TP2-M2-20160120 data associated with the matrix spikes and/or matrix spike duplicates were "J" qualified.
7. Laboratory Control Samples		X	No	
8. Interference Check Samples		X	No	
9. Compound Quantitation and Reporting Limits		X	No	
10. Duplicates		X	No	

Verification and Validation Label	Stage_2A_Validation_Manual
Verification and Validation Label Code	S2AVM

Overall Assessment: Acceptable as qualified.
Field QC samples checked for completeness only.
Usability: Sample results qualified "J", estimated, are useable for limited purposes only. All other results are considered valid and useable for all purposes.

Sample Information:
Cooler Temperature: 2 coolers at 3.1º C and 4.0º C.

Field Sample Number	Lab Sample ID	Date Collected
TT-TP2-M2-20160120	440-135664-1	01/20/16
TT-TP2-M2-20160120-DUP	440-135664-2	01/20/16
TT-TP2-M1-20160120	440-135664-3	01/20/16
TT-TP1-M1-20160120	440-135664-4	01/20/16
TT-TP1-M2-20160120	440-135664-5	01/20/16
TT-TP2-L1-20160120	440-135664-6	01/20/16
TT-TP2-L2-20160120	440-135664-7	01/20/16
TT-TP1-L1-20160120	440-135664-8	01/20/16
TT-TP1-L2-20160120	440-135664-9	01/20/16

Data Verification and Validation Summary
Data Validation Stage 2A

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 4°C (+ or – 2°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/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 correctly on data forms? Were recoveries/RPDs within laboratory established limits?	Yes/Yes/No
Method 314.0: The Perchlorate result from parent sample TT-TP2-M2-20160120 was qualified as estimated and assigned a "J+" qualifier.	
Method 6020: The Chromium result from parent sample TT-TP2-M2-20160120 was qualified as estimated and assigned a "J" qualifier.	
Method 7199: The Hexavalent Chromium result from parent sample TT-TP2-M2-20160120 was qualified as estimated and assigned a "J-" qualifier.	

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. Interference Check Sample (ICS)	
Were interference check samples (ICS) analyzed at appropriate intervals? Were ICS recoveries within acceptable limits of the true value?	Yes

9. 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? Were there detections below the reporting limit?	Yes/Yes/No

All: Results detected above the MDL but below the reporting limit are estimated and qualified "J". For a complete list of "J" qualified samples due to being detected below the reporting limit please see the Qualifier Summary Report and the Reporting Limit Outlier Report in the ADR Output in Appendix G1.

10. Duplicates	
Were any duplicate pairs analyzed in this SDG? Were RPDs between parent sample and duplicates ≤ lab limits or ≤ 30% for field duplicates?	Yes/Yes

Validated by: Michael Wilson 02/05/2016

Data Verification and Validation Summary
Data Validation Stage 2A

Project Name:	Soil Flushing Treatability Study	SDG/Report No.:	440-137164-1
Project No.:	100-SBO-T35000-2016-M05	Lab ID:	Test America Irvine
No. of Samples:	6	Matrix:	Water

Area Reviewed	Anomalies		Qualification Required	Action Required
	Yes	No	Yes or No	
1. Sample Preservation, Handling, and Transport		X	No	
2. Chain-of-Custody		X	No	
3. Holding Times		X	No	
4. Blanks		X	No	
5. Surrogates/Monitoring Compounds		X	No	
6. Matrix Spike/Matrix Spike Duplicate	X		Yes	The parent samples TT-TP2-M1-20160203 and TT-TP1-M1-20160203 data associated with the matrix spikes and/or matrix spike duplicates were "J" qualified.
7. Laboratory Control Samples		X	No	
8. Interference Check Samples		X	No	
9. Compound Quantitation and Reporting Limits		X	No	
10. Duplicates		X	No	

Verification and Validation Label	Stage_2A_Validation_Manual
Verification and Validation Label Code	S2AVM

Overall Assessment: Acceptable as qualified.
Field QC samples checked for completeness only.
Usability: Sample results qualified "J", estimated, are useable for limited purposes only. All other results are considered valid and useable for all purposes.

Sample Information:
Cooler Temperature: 2 coolers at 3.4º C and 3.9º C.

Field Sample Number	Lab Sample ID	Date Collected
TT-TP1-M1-20160203	440-137164-1	02/03/16
TT-TP1-M2-20160203	440-137164-2	02/03/16
TT-TP1-M3-20160203	440-137164-3	02/03/16
TT-TP2-M2-20160203	440-137164-4	02/03/16
TT-TP2-M1-20160203	440-137164-5	02/03/16
TT-TP3-M1-20160203	440-137164-6	02/03/16

Data Verification and Validation Summary
Data Validation Stage 2A

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 4°C (+ or – 2°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/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 correctly on data forms? Were recoveries/RPDs within laboratory established limits?	Yes/Yes/No
Method 7199: The Hexavalent Chromium result from parent sample TT-TP2-M1-20160203 was qualified as estimated and assigned a "J-" qualifier.	
Method 6020: The Chromium result from parent sample TT-TP1-M1-20160203 was qualified as estimated and assigned a "J" qualifier.	

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. Interference Check Sample (ICS)	
Were interference check samples (ICS) analyzed at appropriate intervals? Were ICS recoveries within acceptable limits of the true value?	Yes

9. 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? Were there detections below the reporting limit?	Yes/Yes/No

All: Results detected above the MDL but below the reporting limit are estimated and qualified "J". Please see Qualifier Summary Report and the Reporting Limit Outlier Report in the ADR Output Appendix G1 for a complete list of "J" qualified samples due to being detected below the reporting limit.

10. Duplicates	
Were any duplicate pairs analyzed in this SDG? Were RPDs between parent sample and duplicates ≤ lab limits or ≤ 30% for field duplicates?	No/NA

Validated by: Michael Wilson 02/29/2016

Data Verification and Validation Summary
Data Validation Stage 2A

Project Name:	Soil Flushing Treatability Study	SDG/Report No.:	440-137358-1
Project No.:	100-SBO-T35000-2016-M05	Lab ID:	Test America Irvine
No. of Samples:	13	Matrix:	Water

Area Reviewed	Anomalies		Qualification Required	Action Required
	Yes	No	Yes or No	
1. Sample Preservation, Handling, and Transport		X	No	
2. Chain-of-Custody		X	No	
3. Holding Times		X	No	
4. Blanks		X	No	
5. Surrogates/Monitoring Compounds		X	No	
6. Matrix Spike/Matrix Spike Duplicate	X		Yes	The parent sample TT-TP4-M3-20160204 data associated with the matrix spikes and/or matrix spike duplicates were "J" qualified.
7. Laboratory Control Samples		X	No	
8. Interference Check Samples		X	No	
9. Compound Quantitation and Reporting Limits	X		Yes	The sample analyte was quantified below the reporting limit. Therefore, it was "J" qualified.
10. Duplicates		X	No	

Verification and Validation Label	Stage_2A_Validation_Manual
Verification and Validation Label Code	S2AVM

Overall Assessment: Acceptable as qualified.
Field QC samples checked for completeness only.
Usability: Sample results qualified "J", estimated, are useable for limited purposes only. All other results are considered valid and useable for all purposes.

Sample Information:
Cooler Temperature: 2 coolers at 2.5º C and 4.0º C.

Field Sample Number	Lab Sample ID	Date Collected
TT-TP3-M2-20160204	440-137358-1	02/04/16
TT-TP4-M3-20160204	440-137358-2	02/04/16
TT-TP4-M2-20160204	440-137358-3	02/04/16
TT-TP4-M1-20160204	440-137358-4	02/04/16
TT-TP4-M3-20160204-DUP	440-137358-5	02/04/16
TT-TP4-L1-20160204	440-137358-6	02/04/16
TT-TP4-L2-20160204	440-137358-7	02/04/16
TT-TP3-L1-20160204	440-137358-8	02/04/16
TT-TP3-L2-20160204	440-137358-9	02/04/16
TT-TP2-L1-20160204	440-137358-10	02/04/16
TT-TP2-L2-20160204	440-137358-11	02/04/16

Field Sample Number	Lab Sample ID	Date Collected
TT-TP1-L1-20160204	440-137358-12	02/04/16
TT-TP1-L2-20160204	440-137358-13	02/04/16

Data Verification and Validation Summary
Data Validation Stage 2A

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 4°C (+ or – 2°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/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 correctly on data forms? Were recoveries/RPDs within laboratory established limits?	Yes/Yes/Yes
Method 314.0: The Perchlorate result from parent sample TT-TP4-M3-20160204 was qualified as estimated and assigned a "J-" qualifier.	
Method 6020: The Chromium result from parent sample TT-TP4-M3-20160204 was qualified as estimated and assigned a "J+" qualifier.	
Method 7199: The Hexavalent Chromium result from parent sample TT-TP4-M3-20160204 was qualified as estimated and assigned a "J-" qualifier.	

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. Interference Check Sample (ICS)	
Were interference check samples (ICS) analyzed at appropriate intervals? Were ICS recoveries within acceptable limits of the true value?	Yes

9. 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? Were there detections below the reporting limit?	Yes/Yes/Yes

All: Results detected above the MDL but below the reporting limit are estimated and qualified "J". Please see Qualifier Summary Report and the Reporting Limit Outlier Report in the ADR Output Appendix G1 for a complete list of "J" qualified samples due to being detected below the reporting limit.

10. Duplicates	
Were any duplicate pairs analyzed in this SDG? Were RPDs between parent sample and duplicates ≤ lab limits or ≤ 30% for field duplicates?	Yes/Yes

Validated by: Michael Wilson 02/29/2016

Data Verification and Validation Summary
Data Validation Stage 2A

Project Name:	Soil Flushing Treatability Study	SDG/Report No.:	440-137910-1
Project No.:	100-SBO-T35000-2016-M05	Lab ID:	Test America Irvine
No. of Samples:	6	Matrix:	Water

Area Reviewed	Anomalies		Qualification Required	Action Required
	Yes	No	Yes or No	
1. Sample Preservation, Handling, and Transport		X	No	
2. Chain-of-Custody		X	No	
3. Holding Times		X	No	
4. Blanks	X		Yes	The analyte was found in the method blank. Therefore, detections in samples TT-TP1-M1-20160210, TT-TP1-M2-20160210, TT-TP3-M2-20160210, and TT-TP2-M2-20160210 of that analyte were "J+" qualified.
5. Surrogates/Monitoring Compounds		X	No	
6. Matrix Spike/Matrix Spike Duplicate		X	No	
7. Laboratory Control Samples		X	No	
8. Interference Check Samples		X	No	
9. Compound Quantitation and Reporting Limits	X		Yes	All sample results below the reporting limit are "J" qualified.
10. Duplicates		X	No	

Verification and Validation Label	Stage_2A_Validation_Manual
Verification and Validation Label Code	S2AVM

Overall Assessment: Acceptable as qualified.
Field QC samples checked for completeness only.
Usability: Sample results qualified "J", estimated, are useable for limited purposes only. All other results are considered valid and useable for all purposes.

Sample Information:
Cooler Temperature: Cooler at receipt was 1.8º C

Field Sample Number	Lab Sample ID	Date Collected
TT-TP1-M2-20160210	440-137910-1	02/10/16
TT-TP1-M1-20160210	440-137910-2	02/10/16
TT-TP1-M3-20160210	440-137910-3	02/10/16
TT-TP2-M1-20160210	440-137910-4	02/10/16
TT-TP2-M2-20160210	440-137910-5	02/10/16
TT-TP3-M2-20160210	440-137910-6	02/10/16

Data Verification and Validation Summary
Data Validation Stage 2A

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 4°C (+ or – 2°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
Method 6020: Copper was detected in the lab method blank. Therefore, the detections of copper in samples TT-TP1-M1-20160210, TT-TP1-M2-20160210, TT-TP3-M2-20160210, and TT-TP2-M2-20160210 were designated as estimated greater than the quantified result and assigned "J+" qualifiers.	

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 correctly on data forms? Were recoveries/RPDs 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. Interference Check Sample (ICS)	
Were interference check samples (ICS) analyzed at appropriate intervals? Were ICS recoveries within acceptable limits of the true value?	Yes

9. 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? Were there detections below the reporting limit?	Yes/Yes/Yes

All: Results detected above the MDL but below the reporting limit are estimated and qualified "J". Please see Qualifier Summary Report and the Reporting Limit Outlier Report in the ADR Output Appendix G1 for a complete list of "J" qualified samples due to being detected below the reporting limit.

10. Duplicates	
Were any duplicate pairs analyzed in this SDG? Were RPDs between parent sample and duplicates ≤ lab limits or ≤ 30% for field duplicates?	No/NA

Validated by: Michael Wilson 04/11/2016

Data Verification and Validation Summary
Data Validation Stage 2A

Project Name:	Soil Flushing Treatability Study	SDG/Report No.:	440-138059-1
Project No.:	100-SBO-T35000-2016-M05	Lab ID:	Test America Irvine
No. of Samples:	13	Matrix:	Water

Area Reviewed	Anomalies		Qualification Required	Action Required
	Yes	No	Yes or No	
1. Sample Preservation, Handling, and Transport		X	No	
2. Chain-of-Custody		X	No	
3. Holding Times	X		Yes	A holding time violation occurred for the majority of the samples. Therefore, the samples data associated with a holding time violation were "J" qualified.
4. Blanks	X		Yes	The analyte was found in the method blank. Therefore, detections in samples TT-TP4-M2-20160211 and TT-TP3-M1-20160211 of that analyte were "J+" qualified.
5. Surrogates/Monitoring Compounds		X	No	
6. Matrix Spike/Matrix Spike Duplicate	X		Yes	The matrix spikes and/or matrix spike duplicate was outside the control limits for parent sample TT-TP4-M3-20160211. Therefore, the data was "J" qualified.
7. Laboratory Control Samples		X	No	
8. Interference Check Samples		X	No	
9. Compound Quantitation and Reporting Limits	X		Yes	All sample results below the reporting limit are "J" qualified.
10. Duplicates	X		Yes	Parent sample TT-TP4-M2-20160211 was qualified as estimated and assigned a J qualifier.

Verification and Validation Label	Stage_2A_Validation_Manual
Verification and Validation Label Code	S2AVM

Overall Assessment: Acceptable as qualified.
Field QC samples checked for completeness only.
Usability: Sample results qualified "J", estimated, are useable for limited purposes only. All other results are considered valid and useable for all purposes.

Sample Information:
Cooler Temperature: Three coolers at receipt time were 0.8º C, 1.2º C and 1.4º C

Field Sample Number	Lab Sample ID	Date Collected
TT-TP3-M1-20160211	440-138059-1	02/11/16
TT-TP4-M1-20160211	440-138059-2	02/11/16
TT-TP4-L1-20160211	440-138059-3	02/11/16
TT-TP4-L2-20160211	440-138059-4	02/11/16
TT-TP3-L1-20160211	440-138059-5	02/11/16

Data Verification and Validation Summary
Data Validation Stage 2A

Field Sample Number	Lab Sample ID	Date Collected
TT-TP3-L2-20160211	440-138059-6	02/11/16
TT-TP2-L1-20160211	440-138059-7	02/11/16
TT-TP2-L2-20160211	440-138059-8	02/11/16
TT-TP1-L1-20160211	440-138059-9	02/11/16
TT-TP1-L2-20160211	440-138059-10	02/11/16
TT-TP4-M2-20160211	440-138059-11	02/11/16
TT-TP4-M2-20160211-DUP	440-138059-12	02/11/16
TT-TP4-M3-20160211	440-138059-13	02/11/16

Data Verification and Validation Summary
Data Validation Stage 2A

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 4°C (+ or – 2°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?	No
Method 218.6_SUB: Samples TT-TP3-M1-20160211, TT-TP4-M1-20160211, TT-TP4-L1-20160211, TT-TP4-L2-20160211, TT-TP3-L1-20160211, TT-TP2-L1-20160211, TT-TP2-L2-20160211, TT-TP1-L2-20160211, TT-TP4-M2-20160211, and TT-TP4-M3-20160211 were analyzed pass the acceptable holding time for Hexavalent Chromium. Therefore, the samples results were qualified as estimated and assigned a "J-" qualifier.	

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
Method 6020: Copper was detected in the lab method blank. Therefore, the detections of copper in samples TT-TP4-M2-20160211 and TT-TP3-M1-20160211 were designated as estimated greater than the quantified result and assigned a "J+" qualifier.	

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 correctly on data forms? Were recoveries/RPDs within laboratory established limits?	Yes/Yes/No
Method 300.1B: The Chlorate result from parent sample TT-TP4-M3-20160211 was qualified as estimated and assigned a "J-" qualifier.	
Method 314.0: The Perchlorate result from parent sample TT-TP4-M3-20160211 was qualified as estimated and assigned a "J-" qualifier.	
Method 6010B: The Calcium, Magnesium, and Sodium results from parent sample TT-TP4-M3-20160211 were qualified as estimated and assigned "J+" qualifiers.	
Method 6020: The Chromium result from parent sample TT-TP4-M3-20160211 was qualified as estimated and assigned a "J+" qualifier.	

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. Interference Check Sample (ICS)	
Were interference check samples (ICS) analyzed at appropriate intervals? Were ICS recoveries within acceptable limits of the true value?	Yes

9. 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? Were there detections below the reporting limit?	Yes/Yes/Yes
All: Results detected above the MDL but below the reporting limit are estimated and qualified "J". Please see Qualifier Summary Report and the Reporting Limit Outlier Report in the ADR Output Appendix G1 for a complete list of "J" qualified samples due to being detected below the reporting limit.	

10. Duplicates	
Were any duplicate pairs analyzed in this SDG? Were RPDs between parent sample and duplicates ≤ lab limits or ≤ 30% for field duplicates?	Yes/No
Method 6020: Parent sample TT-TP4-M2-20160211 was qualified as estimated for Barium (J)	
Method 2320B: Parent sample TT-TP4-M2-20160211 was qualified as estimated for Alkalinity as CaCO3 (J)	

Validated by: Michael Wilson 04/11/2016

Data Verification and Validation Summary
Data Validation Stage 2A

Project Name:	Soil Flushing Treatability Study	SDG/Report No.:	440-138539-1
Project No.:	100-SBO-T35000-2016-M05	Lab ID:	Test America Irvine
No. of Samples:	5	Matrix:	Water

Area Reviewed	Anomalies		Qualification Required	Action Required
	Yes	No	Yes or No	
1. Sample Preservation, Handling, and Transport		X	No	
2. Chain-of-Custody		X	No	
3. Holding Times		X	No	
4. Blanks		X	No	
5. Surrogates/Monitoring Compounds		X	No	
6. Matrix Spike/Matrix Spike Duplicate	X		Yes	The matrix spikes and/or matrix spike duplicate was outside the control limits for parent sample TT-TP1-M1-20160217. Therefore, the data was "J" qualified.
7. Laboratory Control Samples		X	No	
8. Interference Check Samples		X	No	
9. Compound Quantitation and Reporting Limits		X	No	
10. Duplicates		X	No	

Verification and Validation Label	Stage_2A_Validation_Manual
Verification and Validation Label Code	S2AVM

Overall Assessment: Acceptable as qualified.
Field QC samples checked for completeness only.
Usability: Sample results qualified "J", estimated, are useable for limited purposes only. All other results are considered valid and useable for all purposes.

Sample Information:
Cooler Temperature: Cooler at receipt was 3.5º C

Field Sample Number	Lab Sample ID	Date Collected
TT-TP1-M1-20160217	440-138539-1	02/17/16
TT-TP1-M2-20160217	440-138539-2	02/17/16
TT-TP1-M3-20160217	440-138539-3	02/17/16
TT-TP2-M1-20160217	440-138539-4	02/17/16
TT-TP2-M2-20160217	440-138539-5	02/17/16

Data Verification and Validation Summary
Data Validation Stage 2A

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 4°C (+ or – 2°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/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 correctly on data forms? Were recoveries/RPDs within laboratory established limits?	Yes/Yes/No
Method 6020: The Chromium results from parent sample TT-TP1-M1-20160217 were qualified as estimated and assigned a "-J" qualifier.	

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. Interference Check Sample (ICS)	
Were interference check samples (ICS) analyzed at appropriate intervals? Were ICS recoveries within acceptable limits of the true value?	Yes

9. 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? Were there detections below the reporting limit?	Yes/Yes/No

All: Results detected above the MDL but below the reporting limit are estimated and qualified "J". Please see the Qualifier Summary Report and the Reporting Limit Outlier Report in the ADR Output Appendix G1 for a complete list of "J" qualified samples due to being detected below the reporting limit.

10. Duplicates	
Were any duplicate pairs analyzed in this SDG? Were RPDs between parent sample and duplicates ≤ lab limits or ≤ 30% for field duplicates?	No/NA

Validated by: Michael Wilson 04/11/2016

Data Verification and Validation Summary
Data Validation Stage 2A

Project Name:	Soil Flushing Treatability Study	SDG/Report No.:	440-138657-1
Project No.:	100-SBO-T35000-2016-M05	Lab ID:	Test America Irvine
No. of Samples:	14	Matrix:	Water

Area Reviewed	Anomalies		Qualification Required	Action Required
	Yes	No	Yes or No	
1. Sample Preservation, Handling, and Transport		X	No	
2. Chain-of-Custody		X	No	
3. Holding Times	X		Yes	13 of 14 samples exceeded the holding time. Therefore, the samples data associated with a holding time violation were "J" qualified.
4. Blanks		X	No	
5. Surrogates/Monitoring Compounds		X	No	
6. Matrix Spike/Matrix Spike Duplicate	X		Yes	The matrix spikes and/or matrix spike duplicate was outside the control limits for parent sample TT-TP4-M3-20160218. Therefore, the data was "J" qualified.
7. Laboratory Control Samples		X	No	
8. Interference Check Samples		X	No	
9. Compound Quantitation and Reporting Limits	X		Yes	All sample results below the reporting limit are "J" qualified.
10. Duplicates		X	No	

Verification and Validation Label	Stage_2A_Validation_Manual
Verification and Validation Label Code	S2AVM

Overall Assessment: Acceptable as qualified.
Field QC samples checked for completeness only.
Usability: Sample results qualified "J", estimated, are useable for limited purposes only. All other results are considered valid and useable for all purposes.

Sample Information:
Cooler Temperature: Two coolers at receipt time were 2.5º C and 3.1º C

Field Sample Number	Lab Sample ID	Date Collected
TT-TP3-M1-20160218	440-138657-1	02/18/16
TT-TP3-M2-20160218	440-138657-2	02/18/16
TT-TP4-M1-20160218	440-138657-3	02/18/16
TT-TP4-M2-20160218	440-138657-4	02/18/16
TT-TP4-M3-20160218	440-138657-5	02/18/16
TT-TP4-M3-20160218-DUP	440-138657-6	02/18/16
TT-TP4-L1-20160218	440-138657-7	02/18/16
TT-TP4-L2-20160218	440-138657-8	02/18/16
TT-TP3-L1-20160218	440-138657-9	02/18/16
TT-TP3-L2-20160218	440-138657-10	02/18/16

Field Sample Number	Lab Sample ID	Date Collected
TT-TP2-L1-20160218	440-138657-11	02/18/16
TT-TP2-L2-20160218	440-138657-12	02/18/16
TT-TP1-L1-20160218	440-138657-13	02/18/16
TT-TP1-L2-20160218	440-138657-14	02/18/16

Data Verification and Validation Summary
Data Validation Stage 2A

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 4°C (+ or – 2°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?	No
Method 7199: Sample TT-TP3-L2-20160218 did not exceed the holding time. However, all other samples were analyzed pass the acceptable holding time for Hexavalent Chromium. Therefore, the samples results were qualified as estimated and assigned "J-" qualifiers.	

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 correctly on data forms? Were recoveries/RPDs within laboratory established limits?	Yes/Yes/No
Method 314.0: The Perchlorate result from parent sample TT-TP4-M3-20160218 was qualified as estimated and assigned a "J" qualifier.	
Method 6020: The Chromium result from parent sample TT-TP4-M3-20160218 was qualified as estimated and assigned a "J" qualifier.	

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. Interference Check Sample (ICS)	
Were interference check samples (ICS) analyzed at appropriate intervals? Were ICS recoveries within acceptable limits of the true value?	Yes

9. 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? Were there detections below the reporting limit?	Yes/Yes/Yes
All: Results detected above the MDL but below the reporting limit are estimated and qualified "J". Please see the Qualifier Summary Report and the Reporting Limit Outlier Report in the ADR Output Appendix G1 for a complete list of "J" qualified samples due to being detected below the reporting limit.	

10. Duplicates	
Were any duplicate pairs analyzed in this SDG? Were RPDs between parent sample and duplicates ≤ lab limits or ≤ 30% for field duplicates?	Yes/Yes

Validated by: Michael Wilson 04/11/2016

Data Verification and Validation Summary
Data Validation Stage 2A

Project Name:	Soil Flushing Treatability Study	SDG/Report No.:	440-139185-1
Project No.:	100-SBO-T35000-2016-M05	Lab ID:	Test America Irvine
No. of Samples:	5	Matrix:	Water

Area Reviewed	Anomalies		Qualification Required	Action Required
	Yes	No	Yes or No	
1. Sample Preservation, Handling, and Transport		X	No	
2. Chain-of-Custody		X	No	
3. Holding Times		X	No	
4. Blanks		X	No	
5. Surrogates/Monitoring Compounds		X	No	
6. Matrix Spike/Matrix Spike Duplicate		X	No	
7. Laboratory Control Samples		X	No	
8. Interference Check Samples		X	No	
9. Compound Quantitation and Reporting Limits		X	No	
10. Duplicates		X	No	

Verification and Validation Label	Stage_2A_Validation_Manual
Verification and Validation Label Code	S2AVM

Overall Assessment: Acceptable as qualified.
Field QC samples checked for completeness only.
Usability: Sample results qualified "J", estimated, are useable for limited purposes only. All other results are considered valid and useable for all purposes.

Sample Information:
Cooler Temperature:

Field Sample Number	Lab Sample ID	Date Collected
TT-TP1-M1	440-139185-1	02/24/16
TT-TP1-M2	440-139185-2	02/24/16
TT-TP1-M3	440-139185-3	02/24/16
TT-TP2-M2	440-139185-4	02/24/16
TT-TP2-M1	440-139185-5	02/24/16

Data Verification and Validation Summary
Data Validation Stage 2A

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 4°C (+ or – 2°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/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 correctly on data forms? Were recoveries/RPDs 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. Interference Check Sample (ICS)	
Were interference check samples (ICS) analyzed at appropriate intervals? Were ICS recoveries within acceptable limits of the true value?	Yes

9. 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? Were there detections below the reporting limit?	Yes/Yes/No
All: Results detected above the MDL but below the reporting limit are estimated and qualified "J". Please see the Qualifier Summary Report and the Reporting Limit Outlier Report in the ADR Output Appendix G1 for a complete list of "J" qualified samples due to being detected below the reporting limit.	

10. Duplicates	
Were any duplicate pairs analyzed in this SDG? Were RPDs between parent sample and duplicates ≤ lab limits or ≤ 30% for field duplicates?	No/NA

Validated by: Michael Wilson 04/11/2016

Data Verification and Validation Summary
Data Validation Stage 2A

Project Name:	Soil Flushing Treatability Study	SDG/Report No.:	440-139326-1
Project No.:	100-SBO-T35000-2016-M05	Lab ID:	Test America Irvine
No. of Samples:	14	Matrix:	Water

Area Reviewed	Anomalies		Qualification Required	Action Required
	Yes	No	Yes or No	
1. Sample Preservation, Handling, and Transport		X	No	
2. Chain-of-Custody		X	No	
3. Holding Times		X	No	
4. Blanks		X	No	
5. Surrogates/Monitoring Compounds		X	No	
6. Matrix Spike/Matrix Spike Duplicate	X		Yes	The matrix spikes and/or matrix spike duplicate was outside the control limits for parent sample TT-TP4-M3-20160225. Therefore, the data was "J" qualified.
7. Laboratory Control Samples		X	No	
8. Interference Check Samples		X	No	
9. Compound Quantitation and Reporting Limits	X		Yes	All sample results below the reporting limit are "J" qualified.
10. Duplicates		X	No	

Verification and Validation Label	Stage_2A_Validation_Manual
Verification and Validation Label Code	S2AVM

Overall Assessment: Acceptable as qualified.
Field QC samples checked for completeness only.
Usability: Sample results qualified "J", estimated, are useable for limited purposes only. All other results are considered valid and useable for all purposes.

Sample Information:
Cooler Temperature: Three coolers at receipt time were 2.7º C, 4.2º C and 5.2º C.

Field Sample Number	Lab Sample ID	Date Collected
TT-TP3-M1-20160225	440-139326-1	02/25/16
TT-TP3-M2-20160225	440-139326-2	02/25/16
TT-TP4-M1-20160225	440-139326-3	02/25/16
TT-TP4-M2-20160225	440-139326-4	02/25/16
TT-TP4-M3-20160225	440-139326-5	02/25/16
TT-TP4-M3-20160225-DUP	440-139326-6	02/25/16
TT-TP4-L1-20160225	440-139326-7	02/25/16
TT-TP4-L2-20160225	440-139326-8	02/25/16
TT-TP3-L1-20160225	440-139326-9	02/25/16
TT-TP3-L2-20160225	440-139326-10	02/25/16
TT-TP2-L1-20160225	440-139326-11	02/25/16
TT-TP2-L2-20160225	440-139326-12	02/25/16

Field Sample Number	Lab Sample ID	Date Collected
TT-TP1-L1-20160225	440-139326-13	02/25/16
TT-TP1-L2-20160225	440-139326-14	02/25/16

Data Verification and Validation Summary
Data Validation Stage 2A

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 4°C (+ or – 2°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/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 correctly on data forms? Were recoveries/RPDs within laboratory established limits?	Yes/Yes/No
Method 6020: The Chromium result from parent sample TT-TP4-M3-20160225 was qualified as estimated and assigned a "J-" qualifier	

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. Interference Check Sample (ICS)	
Were interference check samples (ICS) analyzed at appropriate intervals? Were ICS recoveries within acceptable limits of the true value?	Yes

9. 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? Were there detections below the reporting limit?	Yes/Yes/Yes

All: Results detected above the MDL but below the reporting limit are estimated and qualified "J". Please see the Qualifier Summary Report and the Reporting Limit Outlier Report in the ADR Output Appendix G1 for a complete list of "J" qualified samples due to being detected below the reporting limit.

10. Duplicates	
Were any duplicate pairs analyzed in this SDG? Were RPDs between parent sample and duplicates ≤ lab limits or ≤ 30% for field duplicates?	Yes/Yes

Validated by: Michael Wilson 4/11/2016

Data Verification and Validation Summary
Data Validation Stage 2A

Project Name:	Soil Flushing Treatability Study	SDG/Report No.:	440-139843-1
Project No.:	100-SBO-T35000-2016-M05	Lab ID:	Test America Irvine
No. of Samples:	5	Matrix:	Water

Area Reviewed	Anomalies		Qualification Required	Action Required
	Yes	No	Yes or No	
1. Sample Preservation, Handling, and Transport		X	No	
2. Chain-of-Custody		X	No	
3. Holding Times		X	No	
4. Blanks		X	No	
5. Surrogates/Monitoring Compounds		X	No	
6. Matrix Spike/Matrix Spike Duplicate	X		Yes	The matrix spikes and/or matrix spike duplicate was outside the control limits for parent sample TT-TP1-M1-20160302. Therefore, the data was "J" qualified.
7. Laboratory Control Samples		X	No	
8. Interference Check Samples		X	No	
9. Compound Quantitation and Reporting Limits		X	No	
10. Duplicates		X	No	

Verification and Validation Label	Stage_2A_Validation_Manual
Verification and Validation Label Code	S2AVM

Overall Assessment: Acceptable as qualified.
Field QC samples checked for completeness only.
Usability: Sample results qualified "J", estimated, are useable for limited purposes only. All other results are considered valid and useable for all purposes.

Sample Information:
Cooler Temperature: Two coolers at receipt time were 2.9º C and 4.1º C.

Field Sample Number	Lab Sample ID	Date Collected
TT-TP1-M3-20160302	440-139843-1	3/2/16
TT-TP1-M2-20160302	440-139843-2	3/2/16
TT-TP1-M1-20160302	440-139843-3	3/2/16
TT-TP2-M2-20160302	440-139843-4	3/2/16
TT-TP2-M1-20160302	440-139843-5	3/2/16

Data Verification and Validation Summary
Data Validation Stage 2A

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 4ºC (+ or – 2ºC)? 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/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 correctly on data forms? Were recoveries/RPDs within laboratory established limits?	Yes/Yes/No
Method 7199: The Chromium, hexavalent result from parent sample TT-TP1-M1-20160302 was qualified as estimated and assigned a "J-" qualifier.	

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. Interference Check Sample (ICS)	
Were interference check samples (ICS) analyzed at appropriate intervals? Were ICS recoveries within acceptable limits of the true value?	Yes

9. 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? Were there detections below the reporting limit?	Yes/Yes/No

All: Results detected above the MDL but below the reporting limit are estimated and qualified "J". Please see the Qualifier Summary Report and the Reporting Limit Outlier Report in the ADR Output Appendix G1 for a complete list of "J" qualified samples due to being detected below the reporting limit.

10. Duplicates	
Were any duplicate pairs analyzed in this SDG? Were RPDs between parent sample and duplicates ≤ lab limits or ≤ 30% for field duplicates?	No/NA

Validated by: Michael Wilson 4/11/2016

Data Verification and Validation Summary
Data Validation Stage 2A

Project Name:	Soil Flushing Treatability Study	SDG/Report No.:	440-139965-1
Project No.:	100-SBO-T35000-2016-M05	Lab ID:	Test America Irvine
No. of Samples:	14	Matrix:	Water

Area Reviewed	Anomalies		Qualification Required	Action Required
	Yes	No	Yes or No	
1. Sample Preservation, Handling, and Transport		X	No	
2. Chain-of-Custody		X	No	
3. Holding Times	X		Yes	A holding time violation occurred for samples TT-TP3-L2-20160303 and TT-TP3-M2-20160303. Therefore, the samples data associated with a holding time violation were "J" qualified.
4. Blanks		X	No	
5. Surrogates/Monitoring Compounds		X	No	
6. Matrix Spike/Matrix Spike Duplicate	X		Yes	The matrix spikes and/or matrix spike duplicate were outside the control limits for parent sample TT-TP4-M3-20160303. Therefore, the data was "J" qualified.
7. Laboratory Control Samples		X	No	
8. Interference Check Samples		X	No	
9. Compound Quantitation and Reporting Limits	X		Yes	All sample results below the reporting limit are "J" qualified.
10. Duplicates		X	No	

Verification and Validation Label	Stage_2A_Validation_Manual
Verification and Validation Label Code	S2AVM

Overall Assessment: Acceptable as qualified.
Field QC samples checked for completeness only.
Usability: Sample results qualified "J", estimated, are useable for limited purposes only. All other results are considered valid and useable for all purposes.

Sample Information:
Cooler Temperature: Two coolers at receipt time were 1.3º C and 3.7º C.

Field Sample Number	Lab Sample ID	Date Collected
TT-TP3-M1-20160303	440-139965-1	3/3/16
TT-TP3-M2-20160303	440-139965-2	3/3/16
TT-TP4-M1-20160303	440-139965-3	3/3/16
TT-TP4-M2-20160303	440-139965-4	3/3/16
TT-TP4-M3-20160303	440-139965-5	3/3/16
TT-TP4-M3-20160303-DUP	440-139965-6	3/3/16
TT-TP4-L1-20160303	440-139965-7	3/3/16

Data Verification and Validation Summary
Data Validation Stage 2A

Field Sample Number	Lab Sample ID	Date Collected
TT-TP4-L2-20160303	440-139965-8	3/3/16
TT-TP3-L1-20160303	440-139965-9	3/3/16
TT-TP3-L2-20160303	440-139965-10	3/3/16
TT-TP2-L1-20160303	440-139965-11	3/3/16
TT-TP2-L2-20160303	440-139965-12	3/3/16
TT-TP1-L1-20160303	440-139965-13	3/3/16
TT-TP1-L2-20160303	440-139965-14	3/3/16

Data Verification and Validation Summary
Data Validation Stage 2A

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 4°C (+ or – 2°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?	No
Method 7199: Samples TT-TP3-L2-20160303 and TT-TP3-M2-20160303 were analyzed pass the acceptable holding time for Hexavalent Chromium. Therefore, the samples results were qualified as estimated and assigned a "J-" qualifier.	

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 correctly on data forms? Were recoveries/RPDs within laboratory established limits?	Yes/Yes/No
Method 6020: The Chromium result from parent sample TT-TP4-M3-20160303 was qualified as estimated and assigned a "J+" qualifier.	
Method 7199: The Chromium, hexavalent result from parent sample TT-TP4-M3-20160303 was qualified as estimated and assigned a "J-" qualifier.	

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. Interference Check Sample (ICS)	
Were interference check samples (ICS) analyzed at appropriate intervals? Were ICS recoveries within acceptable limits of the true value?	Yes

9. 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? Were there detections below the reporting limit?	Yes/Yes/Yes
All: Results detected above the MDL but below the reporting limit are estimated and qualified "J". Please see the Qualifier Summary Report and the Reporting Limit Outlier Report in the ADR Output Appendix G1 for a complete list of "J" qualified samples due to being detected below the reporting limit.	

10. Duplicates	
Were any duplicate pairs analyzed in this SDG? Were RPDs between parent sample and duplicates ≤ lab limits or ≤ 30% for field duplicates?	Yes/Yes

Validated by: Michael Wilson 4/11/2016

Data Verification and Validation Summary
Data Validation Stage 2A

Project Name:	Soil Flushing Treatability Study	SDG/Report No.:	440-140696-1
Project No.:	100-SBO-T35000-2016-M05	Lab ID:	Test America Irvine
No. of Samples:	5	Matrix:	Water

Area Reviewed	Anomalies		Qualification Required	Action Required
	Yes	No	Yes or No	
1. Sample Preservation, Handling, and Transport		X	No	
2. Chain-of-Custody		X	No	
3. Holding Times	X		Yes	A holding time violation occurred for sample TT-TP1-M3-20160309. Therefore, the samples data was "J" qualified.
4. Blanks		X	No	
5. Surrogates/Monitoring Compounds		X	No	
6. Matrix Spike/Matrix Spike Duplicate	X		Yes	The matrix spikes and/or matrix spike duplicate was outside the control limits for parent samples TT-TP1-M1-20160309 and TT-TP2-M2-20160309. Therefore, the data was"J" qualified.
7. Laboratory Control Samples		X	No	
8. Interference Check Samples		X	No	
9. Compound Quantitation and Reporting Limits	X		Yes	All sample results below the reporting limit are "J" qualified.
10. Duplicates		X	No	

Verification and Validation Label	Stage_2A_Validation_Manual
Verification and Validation Label Code	S2AVM

Overall Assessment: Acceptable as qualified.
Field QC samples checked for completeness only.
Usability: Sample results qualified "J", estimated, are useable for limited purposes only. All other results are considered valid and useable for all purposes.

Sample Information:
Cooler Temperature: Two coolers at receipt time were 2.1º C and 3.1º C.

Field Sample Number	Lab Sample ID	Date Collected
TT-TP1-M3-20160309	440-140696-1	3/09/16
TT-TP1-M2-20160309	440-140696-2	3/09/16
TT-TP1-M1-20160309	440-140696-3	3/09/16
TT-TP2-M2-20160309	440-140696-4	3/09/16
TT-TP2-M1-20160309	440-140696-5	3/09/16

Data Verification and Validation Summary
Data Validation Stage 2A

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 4°C (+ or – 2°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?	No
Method 7199: Sample TT-TP1-M3-20160309 was analyzed pass the acceptable holding time for Hexavalent Chromium. Therefore, the sample results were qualified as estimated and assigned a "J" qualifier.	

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 correctly on data forms? Were recoveries/RPDs within laboratory established limits?	Yes/Yes/Yes
Method 300: The Nitrate as N result from parent sample TT-TP2-M2-20160309 was qualified as estimated and assigned a "J-" qualifier.	
Method 7199: The Chromium, hexavalent result from parent sample TT-TP1-M1-20160309 was qualified as estimated and assigned a "J-" qualifier	

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. Interference Check Sample (ICS)	
Were interference check samples (ICS) analyzed at appropriate intervals? Were ICS recoveries within acceptable limits of the true value?	Yes

9. 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? Were there detections below the reporting limit?	Yes/Yes/Yes

All: Results detected above the MDL but below the reporting limit are estimated and qualified "J". Please see the Qualifier Summary Report and the Reporting Limit Outlier Report in the ADR Output Appendix G1 for a complete list of "J" qualified samples due to being detected below the reporting limit.

10. Duplicates	
Were any duplicate pairs analyzed in this SDG? Were RPDs between parent sample and duplicates ≤ lab limits or ≤ 30% for field duplicates?	No/NA

Validated by: Michael Wilson 4/11/2016

Data Verification and Validation Summary
Data Validation Stage 2A

Project Name:	Soil Flushing Treatability Study	SDG/Report No.:	440-140826-1
Project No.:	100-SBO-T35000-2016-M05	Lab ID:	Test America Irvine
No. of Samples:	19	Matrix:	Water

Area Reviewed	Anomalies		Qualification Required	Action Required
	Yes	No	Yes or No	
1. Sample Preservation, Handling, and Transport		X	No	
2. Chain-of-Custody		X	No	
3. Holding Times	X		Yes	Samples TT-TP4-M3-20160310, TT-TP2-L1-20160310, TT-TP2-L2-20160310, TT-TP3-M1-20160310, TT-TP3-M2-20160310 had holding time violation. Therefore, the samples were "J" qualified.
4. Blanks		X	No	
5. Surrogates/Monitoring Compounds		X	No	
6. Matrix Spike/Matrix Spike Duplicate	X		Yes	The parent samples TT-TP4-M3-20160310 data associated with the matrix spikes and/or matrix spike duplicates were "J" qualified.
7. Laboratory Control Samples		X	No	
8. Interference Check Samples		X	No	
9. Compound Quantitation and Reporting Limits	X		Yes	All sample results below the reporting limit are "J" qualified.
10. Duplicates	X		Yes	Parent sample TT-TP4-M3-20160310 was qualified as estimated and assigned a "J" qualifier.

Verification and Validation Label	Stage_2A_Validation_Manual
Verification and Validation Label Code	S2AVM

Overall Assessment: Acceptable as qualified.
Field QC samples checked for completeness only.
Usability: Sample results qualified "J", estimated, are useable for limited purposes only. All other results are considered valid and useable for all purposes.

Sample Information:
Cooler Temperature: Three coolers 1.3º C, 1.6º C and 3.1º C.

Field Sample Number	Lab Sample ID	Date Collected
TT-TP3-M2-20160310	440-140826-1	3/09/2016
TT-TP3-M1-20160310	440-140826-2	3/09/2016
TT-TP4-M1-20160310	440-140826-3	3/09/2016
TT-TP4-M2-20160310	440-140826-4	3/09/2016
TT-TP4-M3-20160310	440-140826-5	3/09/2016
TT-TP1-M3-20160310	440-140826-6	3/09/2016
TT-TP1-M2-20160310	440-140826-7	3/09/2016
TT-TP1-M1-20160310	440-140826-8	3/09/2016
TT-TP2-M2-20160310	440-140826-9	3/09/2016

Field Sample Number	Lab Sample ID	Date Collected
TT-TP2-M1-20160310	440-140826-10	3/09/2016
TT-TP4-M3-20160310-DUP	440-140826-11	3/10/2016
TT-TP1-L2-20160310	440-140826-12	3/10/2016
TT-TP3-L2-20160310	440-140826-13	3/10/2016
TT-TP3-L1-20160310	440-140826-14	3/10/2016
TT-TP4-L2-20160310	440-140826-15	3/10/2016
TT-TP4-L1-20160310	440-140826-16	3/10/2016
TT-TP1-L1-20160310	440-140826-17	3/10/2016
TT-TP2-L1-20160310	440-140826-18	3/10/2016
TT-TP2-L2-20160310	440-140826-19	3/10/2016

Data Verification and Validation Summary
Data Validation Stage 2A

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 4°C (+ or – 2°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?	No
Method 7199: Hexavalent Chromium results from samples TT-TP2-L1-20160310, TT-TP2-L2-20160310, TT-TP3-M1-20160310, and TT-TP3-M2-20160310 exceeded there holding times. Therefore they were qualified as estimated and assigned "J-" qualifiers.	
Method 300.0: Nitrate as N for sample TT-TP4-M3-20160310. Therefore, the sample result was qualified as estimated and assigned a "J" qualifier.	

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 correctly on data forms? Were recoveries/RPDs within laboratory established limits?	Yes/Yes/No
Method 300.0: The Nitrat as N result from parent sample TT-TP4-M3-20160310 was qualified as estimated and assigned a "J-" qualifier.	
Method 300.1B: The Chlorate result from parent sample TT-TP4-M3-20160310 was qualified as estimated and assigned a "J-" qualifier.	
Method 314.0: The Perchlorate result from parent sample TT-TP4-M3-20160310 was qualified as estimated and assigned a "J-" qualifier.	
Method 6010B: The results from parent sample TT-TP4-M3-20160310 were qualified as estimated for Boron (J+), Calcium (J), Magnesium(J+), Potassium (J+), and Sodium (J+)	
Method 6020: The Zinc result from parent sample TT-TP4-M3-20160310 was rejected and assigned a "R" qualifier. The Chromium result from parent sample TT-TP4-M3-20160310 was qualified as estimated and assigned a "J-" qualifier.	
Method 7199: The Hexavalent Chromium result from parent sample TT-TP4-M3-20160310 was qualified as estimated and assigned a "J+" qualifier.	

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. Interference Check Sample (ICS)	
Were interference check samples (ICS) analyzed at appropriate intervals? Were ICS recoveries within acceptable limits of the true value?	Yes

9. 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? Were there detections below the reporting limit?	Yes/Yes/Yes
All: Results detected above the MDL but below the reporting limit are estimated and qualified "J". Please see the Qualifier Summary Report and the Reporting Limit Outlier Report in the ADR Output Appendix G1 for a complete list of "J" qualified samples due to being detected below the reporting limit.	

10. Duplicates	
Were any duplicate pairs analyzed in this SDG? Were RPDs between parent sample and duplicates ≤ lab limits or ≤ 30% for field duplicates?	Yes/No
Method 6020: Parent sample TT-TP4-M3-20160310 was qualified as estimated for copper (J)	
Method 7470A: Parent sample TT-TP4-M3-20160310 was qualified as estimated for mercury (J)	

Validated by: Michael Wilson 04/20/2016

Data Verification and Validation Summary
Data Validation Stage 2A

Project Name:	Soil Flushing Treatability Study	SDG/Report No.:	440-141586-1
Project No.:	100-SBO-T35000-2016-M05	Lab ID:	Test America Irvine
No. of Samples:	7	Matrix:	Water

Area Reviewed	Anomalies		Qualification Required	Action Required
	Yes	No	Yes or No	
1. Sample Preservation, Handling, and Transport		X	No	
2. Chain-of-Custody		X	No	
3. Holding Times		X	No	
4. Blanks		X	No	
5. Surrogates/Monitoring Compounds		X	No	
6. Matrix Spike/Matrix Spike Duplicate		X	No	
7. Laboratory Control Samples		X	No	
8. Interference Check Samples		X	No	
9. Compound Quantitation and Reporting Limits	X		Yes	All sample results below the reporting limit are "J" qualified.
10. Duplicates		X	No	

Verification and Validation Label	Stage_2A_Validation_Manual
Verification and Validation Label Code	S2AVM

Overall Assessment: Acceptable as qualified.
Field QC samples checked for completeness only.
Usability: Sample results qualified "J", estimated, are useable for limited purposes only. All other results are considered valid and useable for all purposes.

Sample Information:
Cooler Temperature: Two coolers at receipt time were 1.7º C and 3.8º C.

Field Sample Number	Lab Sample ID	Date Collected
TT-TP1-M1-20160316	440-141586-1	3/16/16
TT-TP1-M2-20160316	440-141586-2	3/16/16
TT-TP1-M3-20160316	440-141586-3	3/16/16
TT-TP2-M1-20160316	440-141586-4	3/16/16
TT-TP2-M2-20160316	440-141586-5	3/16/16
TT-TP3-M1-20160316	440-141586-6	3/16/16
TT-TP3-M2-20160316	440-141586-7	3/16/16

Data Verification and Validation Summary
Data Validation Stage 2A

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 4°C (+ or – 2°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/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 correctly on data forms? Were recoveries/RPDs 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. Interference Check Sample (ICS)	
Were interference check samples (ICS) analyzed at appropriate intervals? Were ICS recoveries within acceptable limits of the true value?	Yes

9. 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? Were there detections below the reporting limit?	Yes/Yes/Yes
All: Results detected above the MDL but below the reporting limit are estimated and qualified "J". Please see the Qualifier Summary Report and the Reporting Limit Outlier Report in the ADR Output Appendix G1 for a complete list of "J" qualified samples due to being detected below the reporting limit.	

10. Duplicates	
Were any duplicate pairs analyzed in this SDG? Were RPDs between parent sample and duplicates ≤ lab limits or ≤ 30% for field duplicates?	No/NA

Validated by: Michael Wilson 4/11/2016

Data Verification and Validation Summary
Data Validation Stage 2A

Project Name:	Soil Flushing Treatability Study	SDG/Report No.:	440-141827-1
Project No.:	100-SBO-T35000-2016-M05	Lab ID:	Test America Irvine
No. of Samples:	12	Matrix:	Water

Area Reviewed	Anomalies		Qualification Required	Action Required
	Yes	No	Yes or No	
1. Sample Preservation, Handling, and Transport		X	No	
2. Chain-of-Custody		X	No	
3. Holding Times		X	No	
4. Blanks		X	No	
5. Surrogates/Monitoring Compounds		X	No	
6. Matrix Spike/Matrix Spike Duplicate	X		Yes	The matrix spikes and/or matrix spike duplicate were outside the control limits for parent sample TT-TP4-M3-20160317. Therefore, the data was "J" qualified.
7. Laboratory Control Samples		X	No	
8. Interference Check Samples		X	No	
9. Compound Quantitation and Reporting Limits		X	No	
10. Duplicates		X	No	

Verification and Validation Label	Stage_2A_Validation_Manual
Verification and Validation Label Code	S2AVM

Overall Assessment: Acceptable as qualified.
Field QC samples checked for completeness only.
Usability: Sample results qualified "J", estimated, are useable for limited purposes only. All other results are considered valid and useable for all purposes.

Sample Information:
Cooler Temperature: Two coolers at receipt time were 0.3º C and 1.4º C.

Lab Sample ID	Field Sample Number	Date Collected
440-141827-1	TT-TP4-M1-20160317	3/17/16
440-141827-2	TT-TP4-M2-20160317	3/17/16
440-141827-3	TT-TP4-M3-20160317	3/17/16
440-141827-4	TT-TP4-M3-20160317-DUP	3/17/16
440-141827-5	TT-TP4-L1-20160317	3/17/16
440-141827-6	TT-TP4-L2-20160317	3/17/16
440-141827-7	TT-TP3-L1-20160317	3/17/16
440-141827-8	TT-TP3-L2-20160317	3/17/16
440-141827-9	TT-TP2-L1-20160317	3/17/16
440-141827-10	TT-TP2-L2-20160317	3/17/16

Data Verification and Validation Summary
Data Validation Stage 2A

Lab Sample ID	Field Sample Number	Date Collected
440-141827-11	TT-TP1-L1-20160317	3/17/16
440-141827-12	TT-TP1-L2-20160317	3/17/16

Data Verification and Validation Summary
Data Validation Stage 2A

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 4°C (+ or – 2°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/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 correctly on data forms? Were recoveries/RPDs within laboratory established limits?	Yes/Yes/No
Method 314.0: The Perchlorate result from parent sample TT-TP4-M3-20160317 was qualified as estimated and assigned a "J-" qualifier.	
Method 6020: The Chromium result from parent sample TT-TP4-M3-20160317 was qualified as estimated and assigned a "J-" qualifier.	
Method 7199: The Chromium, hexavalent result from parent sample TT-TP4-M3-20160317 was qualified as estimated and assigned a "J-" qualifier.	

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. Interference Check Sample (ICS)	
Were interference check samples (ICS) analyzed at appropriate intervals? Were ICS recoveries within acceptable limits of the true value?	Yes

9. 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? Were there detections below the reporting limit?	Yes/Yes/ No

All: Results detected above the MDL but below the reporting limit are estimated and qualified "J". Please see the Qualifier Summary Report and the Reporting Limit Outlier Report in the ADR Output Appendix G1 for a complete list of "J" qualified samples due to being detected below the reporting limit.

10. Duplicates	
Were any duplicate pairs analyzed in this SDG? Were RPDs between parent sample and duplicates ≤ lab limits or ≤ 30% for field duplicates?	Yes/Yes

Validated by: Michael Wilson 4/11/2016

Data Verification and Validation Summary
Data Validation Stage 2A

Project Name:	Soil Flushing Treatability Study	SDG/Report No.:	440-142439-1
Project No.:	100-SBO-T35000-2016-M05	Lab ID:	Test America Irvine
No. of Samples:	15	Matrix:	Water

Area Reviewed	Anomalies		Qualification Required	Action Required
	Yes	No	Yes or No	
1. Sample Preservation, Handling, and Transport		X	No	
2. Chain-of-Custody		X	No	
3. Holding Times	X		Yes	Sample TT-TP2-L2-20160323 had a holding time violation for Hexavalent Chromium. Therefore, sample data was assigned a "J" qualifier.
4. Blanks		X	No	
5. Surrogates/Monitoring Compounds		X	No	
6. Matrix Spike/Matrix Spike Duplicate		X	No	
7. Laboratory Control Samples		X	No	
8. Interference Check Samples		X	No	
9. Compound Quantitation and Reporting Limits	X		Yes	All sample results below the reporting limit are "J" qualified.
10. Duplicates		X	No	

Verification and Validation Label	Stage_2A_Validation_Manual
Verification and Validation Label Code	S2AVM

Overall Assessment: Acceptable as qualified.
Field QC samples checked for completeness only.
Usability: Sample results qualified "J", estimated, are useable for limited purposes only. All other results are considered valid and useable for all purposes.

Sample Information:
Cooler Temperature: Four coolers 2.2º C, 3.8º C, 4.1º C, 4.2º C and 4.5º C

Field Sample Number	Lab Sample ID	Date Collected
TT-TP1-M1-20160323	440-142439-1	3/23/2016
TT-TP1-M2-20160323	440-142439-2	3/23/2016
TT-TP1-M3-20160323	440-142439-3	3/23/2016
TT-TP2-M1-20160323	440-142439-4	3/23/2016
TT-TP2-M2-20160323	440-142439-5	3/23/2016
TT-TP3-M1-20160323	440-142439-6	3/23/2016
TT-TP3-M2-20160323	440-142439-7	3/23/2016
TT-TP4-L1-20160323	440-142439-8	3/23/2016
TT-TP4-L2-20160323	440-142439-9	3/23/2016
TT-TP3-L1-20160323	440-142439-10	3/23/2016
TT-TP3-L2-20160323	440-142439-11	3/23/2016

Field Sample Number	Lab Sample ID	Date Collected
TT-TP2-L1-20160323	440-142439-12	3/23/2016
TT-TP2-L2-20160323	440-142439-13	3/23/2016
TT-TP1-L1-20160323	440-142439-14	3/23/2016
TT-TP1-L2-20160323	440-142439-15	3/23/2016

Data Verification and Validation Summary
Data Validation Stage 2A

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 4°C (+ or – 2°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?	No
Method 7199: The Hexavalent Chromium result for sample TT-TP2-L2-20160323 was qualified as estimated and assigned a "J-" qualifier because of holding time failures.	

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 correctly on data forms? Were recoveries/RPDs 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. Interference Check Sample (ICS)	
Were interference check samples (ICS) analyzed at appropriate intervals? Were ICS recoveries within acceptable limits of the true value?	Yes

9. 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? Were there detections below the reporting limit?	Yes/Yes/Yes

All: Results detected above the MDL but below the reporting limit are estimated and qualified "J". Please see the Qualifier Summary Report and the Reporting Limit Outlier Report in the ADR Output Appendix G1 for a complete list of "J" qualified samples due to being detected below the reporting limit.

10. Duplicates	
Were any duplicate pairs analyzed in this SDG? Were RPDs between parent sample and duplicates ≤ lab limits or ≤ 30% for field duplicates?	Yes/Yes

Validated by: Michael Wilson 04/20/2016

Data Verification and Validation Summary
Data Validation Stage 2A

Project Name:	Soil Flushing Treatability Study	SDG/Report No.:	440-142556-1
Project No.:	100-SBO-T35000-2016-M05	Lab ID:	Test America Irvine
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	
2. Chain-of-Custody		X	No	
3. Holding Times		X	No	
4. Blanks		X	No	
5. Surrogates/Monitoring Compounds		X	No	
6. Matrix Spike/Matrix Spike Duplicate	X		Yes	The matrix spikes and/or matrix spike duplicate was outside the control limits for parent sample TT-TP4-M3-20160324. Therefore, the data was "J" qualified.
7. Laboratory Control Samples		X	No	
8. Interference Check Samples		X	No	
9. Compound Quantitation and Reporting Limits		X	No	
10. Duplicates		X	No	

Verification and Validation Label	Stage_2A_Validation_Manual
Verification and Validation Label Code	S2AVM

Overall Assessment: Acceptable as qualified.
Field QC samples checked for completeness only.
Usability: Sample results qualified "J", estimated, are useable for limited purposes only. All other results are considered valid and useable for all purposes.

Sample Information:
Cooler Temperature: 2.9º C

Field Sample Number	Lab Sample ID	Date Collected
TT-TP4-M1-20160324	440-142556-1	03/24/2016
TT-TP4-M2-20160324	440-142556-2	03/24/2016
TT-TP4-M3-20160324	440-142556-3	03/24/2016
TT-TP4-M3-20160324-DUP	440-142556-4	03/24/2016

Data Verification and Validation Summary
Data Validation Stage 2A

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 4°C (+ or – 2°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/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 correctly on data forms? Were recoveries/RPDs within laboratory established limits?	Yes/Yes/No
Method 314.0: The Perchlorate result from parent sample TT-TP4-M3-20160324 was qualified as estimated and assigned a "J-" qualifier.	
Method 6020: The Chromium result from parent sample TT-TP4-M3-20160324 was qualified as estimated and assigned a "J-" qualifier.	
Method 7199: The Hexavalent Chromium result from parent sample TT-TP4-M3-20160324 was qualified as estimated and assigned a "J-" qualifier.	

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. Interference Check Sample (ICS)	
Were interference check samples (ICS) analyzed at appropriate intervals? Were ICS recoveries within acceptable limits of the true value?	Yes

9. 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? Were there detections below the reporting limit?	Yes/Yes/ No

All: Results detected above the MDL but below the reporting limit are estimated and qualified "J". Please see the Qualifier Summary Report and the Reporting Limit Outlier Report in the ADR Output Appendix G1 for a complete list of "J" qualified samples due to being detected below the reporting limit.

10. Duplicates	
Were any duplicate pairs analyzed in this SDG? Were RPDs between parent sample and duplicates ≤ lab limits or ≤ 30% for field duplicates?	Yes/Yes

Validated by: Michael Wilson 04/20/2016

Data Verification and Validation Summary
Data Validation Stage 2A

Project Name:	Soil Flushing Treatability Study	SDG/Report No.:	440-142922-1
Project No.:	100-SBO-T35000-2016-M05	Lab ID:	Test America Irvine
No. of Samples:	5	Matrix:	Water

Area Reviewed	Anomalies		Qualification Required	Action Required
	Yes	No	Yes or No	
1. Sample Preservation, Handling, and Transport		X	No	
2. Chain-of-Custody		X	No	
3. Holding Times		X	No	
4. Blanks		X	No	
5. Surrogates/Monitoring Compounds		X	No	
6. Matrix Spike/Matrix Spike Duplicate	X		Yes	The matrix spikes and/or matrix spike duplicate was outside the control limits for parent sample TT-TP1-M1-20160330. Therefore, the data was "J" qualified.
7. Laboratory Control Samples		X	No	
8. Interference Check Samples		X	No	
9. Compound Quantitation and Reporting Limits		X	No	
10. Duplicates		X	No	

Verification and Validation Label	Stage_2A_Validation_Manual
Verification and Validation Label Code	S2AVM

Overall Assessment: Acceptable as qualified.
Field QC samples checked for completeness only.
Usability: Sample results qualified "J", estimated, are useable for limited purposes only. All other results are considered valid and useable for all purposes.

Sample Information:
Cooler Temperature: Two coolers at 3.1º C and 3.5º C.

Field Sample Number	Lab Sample ID	Date Collected
TT-TP1-M1-20160330	440-142922-1	03/30/2016
TT-TP1-M2-20160330	440-142922-2	03/30/2016
TT-TP1-M3-20160330	440-142922-3	03/30/2016
TT-TP2-M1-20160330	440-142922-4	03/30/2016
TT-TP2-M2-20160330	440-142922-5	03/30/2016

Data Verification and Validation Summary
Data Validation Stage 2A

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 4°C (+ or – 2°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/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 correctly on data forms? Were recoveries/RPDs within laboratory established limits?	Yes/Yes/No
Method 6020: The Chromium result from parent sample TT-TP1-M1-20160330 was qualified as estimated and assigned a "J-" qualifier.	
Method 7199: The Hexavalent Chromium result from parent sample TT-TP1-M1-20160330 was qualified as estimated and assigned a "J-" qualifier.	

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. Interference Check Sample (ICS)	
Were interference check samples (ICS) analyzed at appropriate intervals? Were ICS recoveries within acceptable limits of the true value?	Yes

9. 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? Were there detections below the reporting limit?	Yes/Yes/ No
All: Results detected above the MDL but below the reporting limit are estimated and qualified "J". Please see the Qualifier Summary Report and the Reporting Limit Outlier Report in the ADR Output Appendix G1 for a complete list of "J" qualified samples due to being detected below the reporting limit.	

10. Duplicates	
Were any duplicate pairs analyzed in this SDG? Were RPDs between parent sample and duplicates ≤ lab limits or ≤ 30% for field duplicates?	No/NA

Validated by: Michael Wilson 04/20/2016

Data Verification and Validation Summary
Data Validation Stage 2A

Project Name:	Soil Flushing Treatability Study	SDG/Report No.:	440-143078-1
Project No.:	100-SBO-T35000-2016-M05	Lab ID:	Test America Irvine
No. of Samples:	14	Matrix:	Water

Area Reviewed	Anomalies		Qualification Required	Action Required
	Yes	No	Yes or No	
1. Sample Preservation, Handling, and Transport		X	No	
2. Chain-of-Custody		X	No	
3. Holding Times		X	No	
4. Blanks		X	No	
5. Surrogates/Monitoring Compounds		X	No	
6. Matrix Spike/Matrix Spike Duplicate	X		Yes	If the matrix spikes and/or matrix spike duplicate was outside the control limits for parent sample TT-TP4-M3-20160331 the data was "J" qualified.
7. Laboratory Control Samples		X	No	
8. Interference Check Samples		X	No	
9. Compound Quantitation and Reporting Limits	X		Yes	All sample results below the reporting limit are "J" qualified.
10. Duplicates		X	No	

Verification and Validation Label	Stage_2A_Validation_Manual
Verification and Validation Label Code	S2AVM

Overall Assessment: Acceptable as qualified.
Field QC samples checked for completeness only.
Usability: Sample results qualified "J", estimated, are useable for limited purposes only. All other results are considered valid and useable for all purposes.

Sample Information:
Cooler Temperature:

Field Sample Number	Lab Sample ID	Date Collected
TT-TP3-M1-20160331	440-143078-1	03/31/16
TT-TP3-M2-20160331	440-143078-2	03/31/16
TT-TP4-M1-20160331	440-143078-3	03/31/16
TT-TP4-M2-20160331	440-143078-4	03/31/16
TT-TP4-M3-20160331	440-143078-5	03/31/16
TT-TP4-M3-20160331-DUP	440-143078-6	03/31/16
TT-TP4-L1-20160331	440-143078-7	03/31/16
TT-TP3-L1-20160331	440-143078-9	03/31/16
TT-TP3-L2-20160331	440-143078-10	03/31/16
TT-TP3-L1-20160331	440-143078-11	03/31/16

Field Sample Number	Lab Sample ID	Date Collected
TT-TP2-L2-20160331	440-143078-12	03/31/16
TT-TP1-L1-20160331	440-143078-13	03/31/16
TT-TP1-L2-20160331	440-143078-14	03/31/16

Data Verification and Validation Summary
Data Validation Stage 2A

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 4°C (+ or – 2°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/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 correctly on data forms? Were recoveries/RPDs within laboratory established limits?	Yes/Yes/No
Method 314.0: The Perchlorate result from parent sample TT-TP4-M3-20160331 was qualified as estimated and assigned a "J" qualifier.	
Method 6020: The Chromium result from parent sample TT-TP4-M3-20160331 was qualified as estimated and assigned a "J-" qualifier.	
Method 7199: The Hexavalent Chromium result from parent sample TT-TP4-M3-20160331 was qualified as estimated and assigned a "J-" qualifier.	

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. Interference Check Sample (ICS)	
Were interference check samples (ICS) analyzed at appropriate intervals? Were ICS recoveries within acceptable limits of the true value?	Yes

9. 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? Were there detections below the reporting limit?	Yes/Yes/Yes

All: Results detected above the MDL but below the reporting limit are estimated and qualified "J". For a complete list of "J" qualified samples due to being detected below the reporting limit please see the Qualifier Summary Report and the Reporting Limit Outlier Report in the ADR Output in Appendix G1.

10. Duplicates	
Were any duplicate pairs analyzed in this SDG? Were RPDs between parent sample and duplicates ≤ lab limits or ≤ 30% for field duplicates?	Yes/Yes

Validated by: Michael Wilson 04/20/2016

Data Verification and Validation Summary
Data Validation Stage 2A

Project Name:	Soil Flushing Treatability Study	SDG/Report No.:	440-143273-1
Project No.:	100-SBO-T35000-2016-M05	Lab ID:	Test America Irvine
No. of Samples:	5	Matrix:	Water

Area Reviewed	Anomalies		Qualification Required	Action Required
	Yes	No	Yes or No	
1. Sample Preservation, Handling, and Transport		X	No	
2. Chain-of-Custody		X	No	
3. Holding Times	X		Yes	A holding time violation occurred for sample TT-TP2-M2-2016. The sample data was "J" qualified.
4. Blanks		X	No	
5. Surrogates/Monitoring Compounds		X	No	
6. Matrix Spike/Matrix Spike Duplicate		X		
7. Laboratory Control Samples		X	No	
8. Interference Check Samples		X	No	
9. Compound Quantitation and Reporting Limits	X		Yes	All sample results below the reporting limit are "J" qualified.
10. Duplicates		X	No	

Verification and Validation Label	Stage_2A_Validation_Manual
Verification and Validation Label Code	S2AVM

Overall Assessment: Acceptable as qualified.
Field QC samples checked for completeness only.
Usability: Sample results qualified "J", estimated, are useable for limited purposes only. All other results are considered valid and useable for all purposes.

Sample Information:
Cooler Temperature: Two coolers at receipt time were 3.0º C and 4.1º C.

Field Sample Number	Lab Sample ID	Date Collected
TT-TP1-M1-2016	440-143273-1	04/04/16
TT-TP1-M2-2016	440-143273-2	04/04/16
TT-TP1-M3-2016	440-143273-3	04/04/16
TT-TP2-M1-2016	440-143273-4	04/04/16
TT-TP2-M2-2016	440-143273-5	04/04/16

Data Verification and Validation Summary
Data Validation Stage 2A

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 4°C (+ or – 2°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?	No
Method 300.0: Sample TT-TP2-M2-2016 was analyzed pass its acceptable holding time for Nitrate as N. Therefore, the sample result was qualified as estimated and assigned a "J-" qualifier.	

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 correctly on data forms? Were recoveries/RPDs 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. Interference Check Sample (ICS)	
Were interference check samples (ICS) analyzed at appropriate intervals? Were ICS recoveries within acceptable limits of the true value?	Yes

9. 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? Were there detections below the reporting limit?	Yes/Yes/Yes

All: Results detected above the MDL but below the reporting limit are estimated and qualified "J". For a complete list of "J" qualified samples due to being detected below the reporting limit please see the Qualifier Summary Report and the Reporting Limit Outlier Report in the ADR Output in Appendix G1.

10. Duplicates	
Were any duplicate pairs analyzed in this SDG? Were RPDs between parent sample and duplicates ≤ lab limits or ≤ 30% for field duplicates?	No/NA

Validated by: Michael Wilson 6/9/2016

Data Verification and Validation Summary
Data Validation Stage 2A

Project Name:	Soil Flushing Treatability Study	SDG/Report No.:	440-143458-1
Project No.:	100-SBO-T35000-2016-M05	Lab ID:	Test America Irvine
No. of Samples:	15	Matrix:	Water

Area Reviewed	Anomalies		Qualification Required	Action Required
	Yes	No	Yes or No	
1. Sample Preservation, Handling, and Transport		X	No	
2. Chain-of-Custody		X	No	
3. Holding Times		X	No	
4. Blanks		X	No	
5. Surrogates/Monitoring Compounds		X	No	
6. Matrix Spike/Matrix Spike Duplicate	X		Yes	The parent sample TT-TP4-M3-20160405 data associated with the matrix spikes and/or matrix spike duplicates were "J" qualified.
7. Laboratory Control Samples		X	No	
8. Interference Check Samples		X	No	
9. Compound Quantitation and Reporting Limits	X		Yes	All sample results below the reporting limit are "J" qualified.
10. Duplicates	X		Yes	Parent sample TT-TP4-M3-20160405 relative percent difference to its respective duplicate sample was outside the control limit and was "J" or "UJ" qualified.

Verification and Validation Label	Stage_2A_Validation_Manual
Verification and Validation Label Code	S2AVM

Overall Assessment: Acceptable as qualified.
Field QC samples checked for completeness only.
Usability: Sample results qualified "J", estimated, are useable for limited purposes only. All other results are considered valid and useable for all purposes.

Sample Information:
Cooler Temperature: Four coolers at receipt time were 3.2º C, 4.1º C, 4.5º C and 4.6º C.

Field Sample Number	Lab Sample ID	Date Collected
TT-TP3-M1-20160405	440-143458-1	04/06/16
TT-TP3-M2-20160405	440-143458-2	04/06/16
TT-TP4-M1-20160405	440-143458-3	04/06/16
TT-TP4-M2-20160405	440-143458-4	04/06/16
TT-TP4-M3-20160405	440-143458-5	04/06/16
TT-TP4-L2-20160331	440-143458-6	04/06/16
TT-TP4-M3-20160405-DUP	440-143458-7	04/06/16
TT-TP1-L1-20160405	440-143458-8	04/06/16
TT-TP1-L2-20160405	440-143458-9	04/06/16

Field Sample Number	Lab Sample ID	Date Collected
TT-TP2-L1-20160405	440-143458-10	04/06/16
TT-TP2-L2-20160405	440-143458-11	04/06/16
TT-TP3-L1-20160405	440-143458-12	04/06/16
TT-TP3-L2-20160405	440-143458-13	04/06/16
TT-TP4-L1-20160405	440-143458-14	04/06/16
TT-TP4-L2-20160405	440-143458-15	04/06/16

Data Verification and Validation Summary
Data Validation Stage 2A

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 4°C (+ or – 2°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/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 correctly on data forms? Were recoveries/RPDs within laboratory established limits?	Yes/Yes/No
Method 300.0: Parent sample TT-TP4-M3-20160405 was qualified as estimated Nitrogen as N (J), Chloride (J-), and Sulfate (J-).	
Method 300.1B: The Chlorate results from parent sample TT-TP4-M3-20160405 was qualified as estimated and assigned a “J+” qualifier.	
Method 314.0: The Perchlorate results from parent sample TT-TP4-M3-20160405 was qualified as estimated and assigned a “J-” qualifier.	
Method SM5310B: The Total organic carbon result from parent sample TT-TP4-M3-20160405 was qualified as estimated and assigned a “J” qualifier.	
Method 6010B: The Calcium, Sodium, and Magnesium results from parent sample TT-TP4-M3-20160405 were qualified as estimated and assigned “J+” qualifiers.	
Method 6020: The Chromium result from parent sample TT-TP4-M3-20160405 was qualified as estimated and assigned a “J” qualifier.	
Method 7199: The Chromium, hexavalent result from parent sample TT-TP4-M3-20160405 was qualified as estimated and assigned a “J-” qualifier.	

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. Interference Check Sample (ICS)	
Were interference check samples (ICS) analyzed at appropriate intervals? Were ICS recoveries within acceptable limits of the true value?	Yes

9. 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? Were there detections below the reporting limit?	Yes/Yes/Yes
All: Results detected above the MDL but below the reporting limit are estimated and qualified "J". For a complete list of "J" qualified samples due to being detected below the reporting limit please see the Qualifier Summary Report and the Reporting Limit Outlier Report in the ADR Output in Appendix G1.	

10. Duplicates	
Were any duplicate pairs analyzed in this SDG? Were RPDs between parent sample and duplicates ≤ lab limits or ≤ 30% for field duplicates?	Yes/No
Method 6010B: The Iron result from parent sample TT-TP4-M3-20160405 was qualified as estimated undetected and assigned a "J" qualifier.	
Method 6020: The Selenium result from parent sample TT-TP4-M3-20160405 was qualified as estimated undetected and assigned a "UJ" qualifier.	

Validated by: Michael Wilson 6/9/2016

Data Verification and Validation Summary
Data Validation Stage 2A

Project Name:	Soil Flushing Treatability Study	SDG/Report No.:	440-144411-1
Project No.:	100-SBO-T35000-2016-M05	Lab ID:	Test America Irvine
No. of Samples:	3	Matrix:	Water

Area Reviewed	Anomalies		Qualification Required	Action Required
	Yes	No	Yes or No	
1. Sample Preservation, Handling, and Transport		X	No	
2. Chain-of-Custody		X	No	
3. Holding Times		X	No	
4. Blanks		X	No	
5. Surrogates/Monitoring Compounds		X	No	
6. Matrix Spike/Matrix Spike Duplicate	X		Yes	The matrix spikes and/or matrix spike duplicate was outside the control limits for parent sample TT-TP1-M1-20160413. Therefore, the data was "J" qualified.
7. Laboratory Control Samples		X	No	
8. Interference Check Samples		X	No	
9. Compound Quantitation and Reporting Limits		X	No	
10. Duplicates		X	No	

Verification and Validation Label	Stage_2A_Validation_Manual
Verification and Validation Label Code	S2AVM

Overall Assessment: Acceptable as qualified.
Field QC samples checked for completeness only.
Usability: Sample results qualified "J", estimated, are useable for limited purposes only. All other results are considered valid and useable for all purposes.

Sample Information:
Cooler Temperature: One cooler at receipt was 2.6º C.

Field Sample Number	Lab Sample ID	Date Collected
TT-TP1-M1-20160413	440-144411-1	4/13/16
TT-TP1-M2-20160413	440-144411-2	4/13/16
TT-TP1-M3-20160413	440-144411-3	4/13/16

Data Verification and Validation Summary
Data Validation Stage 2A

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 4ºC (+ or – 2ºC)? 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/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 correctly on data forms? Were recoveries/RPDs within laboratory established limits?	Yes/Yes/No
Method 7199: The Chromium, hexavalent result from parent sample TT-TP1-M1-20160413 was qualified as estimated and assigned a "J-" qualifier.	

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. Interference Check Sample (ICS)	
Were interference check samples (ICS) analyzed at appropriate intervals? Were ICS recoveries within acceptable limits of the true value?	Yes

9. 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? Were there detections below the reporting limit?	Yes/Yes/No

All: Results detected above the MDL but below the reporting limit are estimated and qualified "J". For a complete list of "J" qualified samples due to being detected below the reporting limit please see the Qualifier Summary Report and the Reporting Limit Outlier Report in the ADR Output in Appendix G1.

10. Duplicates	
Were any duplicate pairs analyzed in this SDG? Were RPDs between parent sample and duplicates ≤ lab limits or ≤ 30% for field duplicates?	No/NA

Validated by: Michael Wilson 06/07/2016

Data Verification and Validation Summary
Data Validation Stage 2A

Project Name:	Soil Flushing Treatability Study	SDG/Report No.:	440-145020-1
Project No.:	100-SBO-T35000-2016-M05	Lab ID:	Test America Irvine
No. of Samples:	6	Matrix:	Water

Area Reviewed	Anomalies		Qualification Required	Action Required
	Yes	No	Yes or No	
1. Sample Preservation, Handling, and Transport		X	No	
2. Chain-of-Custody		X	No	
3. Holding Times	X		Yes	A holding time violation occurred for one of the samples TT-TP4-M2-20160420. Therefore, the sample data associated with a holding time violation were "J" qualified.
4. Blanks		X	No	
5. Surrogates/Monitoring Compounds		X	No	
6. Matrix Spike/Matrix Spike Duplicate	X		Yes	The matrix spikes and/or matrix spike duplicate was outside the control limits for parent sample TT-TP4-M3-20160420. Therefore, the data was "J" qualified.
7. Laboratory Control Samples		X	No	
8. Interference Check Samples		X	No	
9. Compound Quantitation and Reporting Limits		X	No	
10. Duplicates		X	No	

Verification and Validation Label	Stage_2A_Validation_Manual
Verification and Validation Label Code	S2AVM

Overall Assessment: Acceptable as qualified.
Field QC samples checked for completeness only.
Usability: Sample results qualified "J", estimated, are useable for limited purposes only. All other results are considered valid and useable for all purposes.

Sample Information:
Cooler Temperature: 6 coolers at receipt time were 1.4º C, 1.5º C, 1.7º C, 1.9º C, 2.4º C and 2.5º C.

Field Sample Number	Lab Sample ID	Date Collected
TT-TP3-M1-20160420	440-145020-1	04/20/16
TT-TP3-M2-20160420	440-145020-2	04/20/16
TT-TP4-M1-20160420	440-145020-3	04/20/16
TT-TP4-M2-20160420	440-145020-4	04/20/16
TT-TP4-M3-20160420	440-145020-5	04/20/16
TT-TP4-M3-20160420-DUP	440-145020-6	04/20/16

Data Verification and Validation Summary
Data Validation Stage 2A

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 4°C (+ or – 2°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?	No
Method 7199: Sample TT-TP4-M2-20160420 was analyzed pass the acceptable holding time for Hexavalent Chromium. Therefore, the sample result was qualified as estimated and assigned a "J-" qualifier.	

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 correctly on data forms? Were recoveries/RPDs within laboratory established limits?	Yes/Yes/No
Method 7199: The Chromium, hexavalent result from parent sample TT-TP4-M3-20160420 was qualified as estimated and assigned a "J-" qualifier.	
Method 6020: The Chromium result from parent sample TT-TP4-M3-20160420 was qualified as estimated and assigned a "J-" qualifier.	
Method 314.0: The Perchlorate result from parent sample TT-TP4-M3-20160420 was qualified as estimated and assigned a "J+" qualifier.	

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. Interference Check Sample (ICS)	
Were interference check samples (ICS) analyzed at appropriate intervals? Were ICS recoveries within acceptable limits of the true value?	Yes

9. 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? Were there detections below the reporting limit?	Yes/Yes/No
All: Results detected above the MDL but below the reporting limit are estimated and qualified "J". For a complete list of "J" qualified samples due to being detected below the reporting limit please see the Qualifier Summary Report and the Reporting Limit Outlier Report in the ADR Output in Appendix G1.	

10. Duplicates	
Were any duplicate pairs analyzed in this SDG? Were RPDs between parent sample and duplicates ≤ lab limits or ≤ 30% for field duplicates?	Yes/Yes

Validated by: Michael Wilson 6/7/2016

Data Verification and Validation Summary
Data Validation Stage 2A

Project Name:	Soil Flushing Treatability Study	SDG/Report No.:	440-145023-1
Project No.:	100-SBO-T35000-2016-M05	Lab ID:	Test America Irvine
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	
2. Chain-of-Custody		X	No	
3. Holding Times		X	No	
4. Blanks		X	No	
5. Surrogates/Monitoring Compounds		X	No	
6. Matrix Spike/Matrix Spike Duplicate		X	No	
7. Laboratory Control Samples		X	No	
8. Interference Check Samples		X	No	
9. Compound Quantitation and Reporting Limits	X		Yes	All sample results below the reporting limit are "J" qualified.
10. Duplicates		X	No	

Verification and Validation Label	Stage_2A_Validation_Manual
Verification and Validation Label Code	S2AVM

Overall Assessment: Acceptable as qualified.
Field QC samples checked for completeness only.
Usability: Sample results qualified "J", estimated, are useable for limited purposes only. All other results are considered valid and useable for all purposes.

Sample Information:
Cooler Temperature: The temperature of the coolers at receipt was 2.5 C.

Lab Sample ID	Field Sample Number	Date Collected
440-145023-1	TT-TP1-L2-20160420	4/20/16
440-145023-2	TT-TP1-L2-20160420	4/20/16
440-145023-3	TT-TP2-L1-20160420	4/20/16
440-145023-4	TT-TP2-L2-20160420	4/20/16
440-145023-5	TT-TP3-L1-20160420	4/20/16
440-145023-6	TT-TP3-L2-20160420	4/20/16
440-145023-7	TT-TP4-L1-20160420	4/20/16
440-145023-8	TT-TP4-L2-20160420	4/20/16

Data Verification and Validation Summary
Data Validation Stage 2A

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 4°C (+ or – 2°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/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 correctly on data forms? Were recoveries/RPDs 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. Interference Check Sample (ICS)	
Were interference check samples (ICS) analyzed at appropriate intervals? Were ICS recoveries within acceptable limits of the true value?	Yes

9. 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? Were there detections below the reporting limit?	Yes/Yes/Yes
All: Results detected above the MDL but below the reporting limit are estimated and qualified "J". For a complete list of "J" qualified samples due to being detected below the reporting limit please see the Qualifier Summary Report and the Reporting Limit Outlier Report in the ADR Output in Appendix G1.	

10. Duplicates	
Were any duplicate pairs analyzed in this SDG? Were RPDs between parent sample and duplicates ≤ lab limits or ≤ 30% for field duplicates?	No/NA

Validated by: Michael Wilson 06/08/2016

Data Verification and Validation Summary
Data Validation Stage 2A

Project Name:	Soil Flushing Treatability Study	SDG/Report No.:	440-145639-1
Project No.:	100-SBO-T35000-2016-M05	Lab ID:	Test America Irvine
No. of Samples:	11	Matrix:	Water

Area Reviewed	Anomalies		Qualification Required	Action Required
	Yes	No	Yes or No	
1. Sample Preservation, Handling, and Transport		X	No	
2. Chain-of-Custody		X	No	
3. Holding Times		X	No	
4. Blanks		X	No	
5. Surrogates/Monitoring Compounds		X	No	
6. Matrix Spike/Matrix Spike Duplicate	X		Yes	The matrix spikes and/or matrix spike duplicate was outside the control limits for parent TT-TP4-M3-20160427. Therefore, the data was "J" qualified.
7. Laboratory Control Samples		X	No	
8. Interference Check Samples		X	No	
9. Compound Quantitation and Reporting Limits		X	No	
10. Duplicates		X	No	

Verification and Validation Label	Stage_2A_Validation_Manual
Verification and Validation Label Code	S2AVM

Overall Assessment: Acceptable as qualified.
Field QC samples checked for completeness only.
Usability: Sample results qualified "J", estimated, are useable for limited purposes only. All other results are considered valid and useable for all purposes.

Sample Information:
Cooler Temperature: Three coolers at receipt time were 1.6º C, 1.9º C and 2.1º C.

Lab Sample ID	Field Sample Number	Date Collected
440-145639-1	TT-TP1-M1-20160427	04/27/16
440-145639-2	TT-TP1-M2-20160427	04/27/16
440-145639-3	TT-TP1-M3-20160427	04/27/16
440-145639-4	TT-TP2-M1-20160427	04/27/16
440-145639-5	TT-TP2-M2-20160427	04/27/16
440-145639-6	TT-TP3-M1--20160427	04/27/16
440-145639-7	TT-TP3-M2-20160427	04/27/16
440-145639-8	TT-TP4-M1-20160427	04/27/16
440-145639-9	TT-TP4-M2-20160427	04/27/16
440-145639-10	TT-TP4-M3-20160427	04/27/16
440-145639-11	TT-TP4-M3-20160427-DUP	04/27/16

Data Verification and Validation Summary
Data Validation Stage 2A

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 4°C (+ or – 2°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/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 correctly on data forms? Were recoveries/RPDs within laboratory established limits?	Yes/Yes/No
Method 7199: The Chromium, hexavalent result from parent sample TT-TP4-M3-20160427 was qualified as estimated and assigned a "J-" qualifier.	
Method 314.0: The Perchlorate result from parent sample TT-TP4-M3-20160427 was qualified as estimated and assigned a "J" qualifier.	
Method 6020: The Chromium result from parent sample TT-TP4-M3-20160427 was qualified as estimated and assigned a "J-" qualifier.	

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. Interference Check Sample (ICS)	
Were interference check samples (ICS) analyzed at appropriate intervals? Were ICS recoveries within acceptable limits of the true value?	Yes

9. 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? Were there detections below the reporting limit?	Yes/Yes/No

All: Results detected above the MDL but below the reporting limit are estimated and qualified "J". For a complete list of "J" qualified samples due to being detected below the reporting limit please see the Qualifier Summary Report and the Reporting Limit Outlier Report in the ADR Output in Appendix G1.

10. Duplicates	
Were any duplicate pairs analyzed in this SDG? Were RPDs between parent sample and duplicates ≤ lab limits or ≤ 30% for field duplicates?	Yes/Yes

Validated by: Michael Wilson 06/08/2016

Data Verification and Validation Summary
Data Validation Stage 2A

Project Name:	Soil Flushing Treatability Study	SDG/Report No.:	440-145766-1
Project No.:	100-SBO-T35000-2016-M05	Lab ID:	Test America Irvine
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	
2. Chain-of-Custody		X	No	
3. Holding Times		X	No	
4. Blanks		X	No	
5. Surrogates/Monitoring Compounds		X	No	
6. Matrix Spike/Matrix Spike Duplicate		X	No	
7. Laboratory Control Samples		X	No	
8. Interference Check Samples		X	No	
9. Compound Quantitation and Reporting Limits	X		Yes	All sample results below the reporting limit are "J" qualified.
10. Duplicates		X	No	

Verification and Validation Label	Stage_2A_Validation_Manual
Verification and Validation Label Code	S2AVM

Overall Assessment: Acceptable as qualified.
Field QC samples checked for completeness only.
Usability: Sample results qualified "J", estimated, are useable for limited purposes only. All other results are considered valid and useable for all purposes.

Sample Information:
Cooler Temperature: Three coolers at receipt time were 1.3º C, 2.1º C and 3.9º C.

Lab Sample ID	Field Sample Number	Date Collected
440-145766-1	TT-TP1-L1-20160428	04/28/16
440-145766-2	TT-TP1-L2-20160428	04/28/16
440-145766-3	TT-TP2-L1-20160428	04/28/16
440-145766-4	TT-TP2-L2-20160428	04/28/16
440-145766-5	TT-TP3-L1-20160428	04/28/16
440-145766-6	TT-TP3-L2-20160428	04/28/16
440-145766-7	TT-TP4-L1-20160428	04/28/16
440-145766-8	TT-TP4-L2-20160428	04/28/16

Data Verification and Validation Summary
Data Validation Stage 2A

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 4°C (+ or – 2°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/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 correctly on data forms? Were recoveries/RPDs 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. Interference Check Sample (ICS)	
Were interference check samples (ICS) analyzed at appropriate intervals? Were ICS recoveries within acceptable limits of the true value?	Yes

9. 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? Were there detections below the reporting limit?	Yes/Yes/Yes
All: Results detected above the MDL but below the reporting limit are estimated and qualified "J". For a complete list of "J" qualified samples due to being detected below the reporting limit please see the Qualifier Summary Report and the Reporting Limit Outlier Report in the ADR Output in Appendix G1.	

10. Duplicates	
Were any duplicate pairs analyzed in this SDG? Were RPDs between parent sample and duplicates ≤ lab limits or ≤ 30% for field duplicates?	No/NA

Validated by: Michael Wilson 06/08/2016

Data Verification and Validation Summary
Data Validation Stage 2A

Project Name:	Soil Flushing Treatability Study	SDG/Report No.:	440-146375-1
Project No.:	100-SBO-T35000-2016-M05	Lab ID:	Test America Irvine
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	
2. Chain-of-Custody		X	No	
3. Holding Times		X	No	
4. Blanks		X	No	
5. Surrogates/Monitoring Compounds		X	No	
6. Matrix Spike/Matrix Spike Duplicate	X		Yes	The matrix spikes and/or matrix spike duplicate was outside the control limits for parent samples TT-TP1-M1-20160504 and TT-TP1-M2-20160504. Therefore, the data was "J" qualified.
7. Laboratory Control Samples		X	No	
8. Interference Check Samples		X	No	
9. Compound Quantitation and Reporting Limits	X		Yes	All sample results below the reporting limit are "J" qualified.
10. Duplicates		X	No	

Verification and Validation Label	Stage_2A_Validation_Manual
Verification and Validation Label Code	S2AVM

Overall Assessment: Acceptable as qualified.
Field QC samples checked for completeness only.
Usability: Sample results qualified "J", estimated, are useable for limited purposes only. All other results are considered valid and useable for all purposes.

Sample Information:
Cooler Temperature: Four coolers at receipt time were 1.2º C, 3.6º C, 4.1º C and 4.5º C.

Field Sample Number	Lab Sample ID	Date Collected
440-146375-1	TT-TP1-M1-20160504	05/04/16
440-146375-2	TT-TP1-M2-20160504	05/04/16
440-146375-3	TT-TP1-M3-20160504	05/04/16
440-146375-4	TT-TP2-M1-20160504	05/04/16

Data Verification and Validation Summary
Data Validation Stage 2A

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 4ºC (+ or – 2ºC)? 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/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 correctly on data forms? Were recoveries/RPDs within laboratory established limits?	Yes/Yes/No
Method 6010B: Parent sample TT-TP1-M2-20160504 was qualified as estimated Calcium (J+), Magnesium (J+), and Sodium (J).	
Method 6020: The Chromium result from parent sample TT-TP1-M1-20160504 was qualified as estimated and assigned a "J-" qualifier.	

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. Interference Check Sample (ICS)	
Were interference check samples (ICS) analyzed at appropriate intervals? Were ICS recoveries within acceptable limits of the true value?	Yes

9. 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? Were there detections below the reporting limit?	Yes/Yes/Yes

All: Results detected above the MDL but below the reporting limit are estimated and qualified "J". For a complete list of "J" qualified samples due to being detected below the reporting limit please see the Qualifier Summary Report and the Reporting Limit Outlier Report in the ADR Output in Appendix G1.

10. Duplicates	
Were any duplicate pairs analyzed in this SDG? Were RPDs between parent sample and duplicates ≤ lab limits or ≤ 30% for field duplicates?	No/NA

Validated by: Michael Wilson 06/08/2016

Data Verification and Validation Summary
Data Validation Stage 2A

Project Name:	Soil Flushing Treatability Study	SDG/Report No.:	440-146524-1
Project No.:	100-SBO-T35000-2016-M05	Lab ID:	Test America Irvine
No. of Samples:	14	Matrix:	Water

Area Reviewed	Anomalies		Qualification Required	Action Required
	Yes	No	Yes or No	
1. Sample Preservation, Handling, and Transport		X	No	
2. Chain-of-Custody		X	No	
3. Holding Times	X		Yes	A holding time violation occurred for samples TT-TP3-M2-20160505, and TT-TP2-M2-20160505. Therefore, the samples data associated with a holding time violation were "J" qualified.
4. Blanks		X	No	
5. Surrogates/Monitoring Compounds		X	No	
6. Matrix Spike/Matrix Spike Duplicate	X		Yes	The matrix spikes and/or matrix spike duplicate was outside the control limits for parent sample TT-TP4-M3-20160505. Therefore, the data was "J" qualified.
7. Laboratory Control Samples		X	No	
8. Interference Check Samples		X	No	
9. Compound Quantitation and Reporting Limits	X		Yes	All sample results below the reporting limit are "J" qualified.
10. Duplicates		X	No	

Verification and Validation Label	Stage_2A_Validation_Manual
Verification and Validation Label Code	S2AVM

Overall Assessment: Acceptable as qualified.
Field QC samples checked for completeness only.
Usability: Sample results qualified "J", estimated, are useable for limited purposes only. All other results are considered valid and useable for all purposes.

Sample Information:
Cooler Temperature: Four coolers at receipt time were 0.7º C, 1.6º C, 2.1º C and 3.0º C.

Lab Sample ID	Field Sample Number	Date Collected
440-146524-1	TT-TP2-M2-20160505	05/05/16
440-146524-2	TT-TP3-M2-20160505	05/05/16
440-146524-3	TT-TP3-M1-20160505	05/05/16
440-146524-4	TT-TP4-M1-20160505	05/05/16
440-146524-5	TT-TP4-M2-20160505	05/05/16
440-146524-6	TT-TP4-M3-20160505	05/05/16
440-146524-7	TT-TP2-L2-20160505	05/05/16

Data Verification and Validation Summary
Data Validation Stage 2A

Lab Sample ID	Field Sample Number	Date Collected
440-146524-8	TT-TP2-L1-20160505	05/05/16
440-146524-9	TT-TP3-L2-20160505	05/05/16
440-146524-10	TT-TP3-L1-20160505	05/05/16
440-146524-11	TT-TP4-L2-20160505	05/05/16
440-146524-12	TT-TP4-L1-20160505	05/05/16
440-146524-13	TT-TP1-L1-20160505	05/05/16
440-146524-14	TT-TP1-L2-20160505	05/05/16

Data Verification and Validation Summary
Data Validation Stage 2A

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 4°C (+ or – 2°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?	No
Method 7199: Samples TT-TP2-M2-20160505, and TT-TP3-M2-20160505 were analyzed pass the acceptable holding time for Hexavalent Chromium. Therefore, the samples results were qualified as estimated and assigned a "J" qualifier.	

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 correctly on data forms? Were recoveries/RPDs within laboratory established limits?	Yes/Yes/No
Method 300.0: The Nitrate as N, Chloride, and Sulfate results from parent sample TT-TP4-M3-20160505 were qualified as estimated and assigned a "J-" qualifier.	
Method 300.1B: The Chlorate result from parent sample TT-TP4-M3-20160505 was qualified as estimated and assigned a "J" qualifier.	
Method 314.0: The Perchlorate result from parent sample TT-TP4-M3-20160505 was qualified as estimated and assigned a "J-" qualifier.	
Method 6010B: The Magnesium, Boron, Calcium, Potassium, and Sodium results from parent sample TT-TP4-M3-20160505 were qualified as estimated and assigned a "J-" qualifier.	
Method 6020: The Arsenic and Chromium results from parent sample TT-TP4-M3-20160505 were qualified as estimated and assigned a "J+" qualifier.	

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. Interference Check Sample (ICS)	
Were interference check samples (ICS) analyzed at appropriate intervals? Were ICS recoveries within acceptable limits of the true value?	Yes

9. 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? Were there detections below the reporting limit?	Yes/Yes/Yes
All: Results detected above the MDL but below the reporting limit are estimated and qualified "J". For a complete list of "J" qualified samples due to being detected below the reporting limit please see the Qualifier Summary Report and the Reporting Limit Outlier Report in the ADR Output in Appendix G1.	

10. Duplicates	
Were any duplicate pairs analyzed in this SDG? Were RPDs between parent sample and duplicates ≤ lab limits or ≤ 30% for field duplicates?	No/NA

Validated by: Michael Wilson 06/08/2016

Data Verification and Validation Summary
Data Validation Stage 2A

Project Name:	Soil Flushing Treatability Study	SDG/Report No.:	440-147006-1
Project No.:	100-SBO-T35000-2016-M05	Lab ID:	Test America Irvine
No. of Samples:	3	Matrix:	Water

Area Reviewed	Anomalies		Qualification Required	Action Required
	Yes	No	Yes or No	
1. Sample Preservation, Handling, and Transport		X	No	
2. Chain-of-Custody		X	No	
3. Holding Times		X	No	
4. Blanks		X	No	
5. Surrogates/Monitoring Compounds		X	No	
6. Matrix Spike/Matrix Spike Duplicate		X	No	
7. Laboratory Control Samples		X	No	
8. Interference Check Samples		X	No	
9. Compound Quantitation and Reporting Limits		X	No	
10. Duplicates		X	No	

Verification and Validation Label	Stage_2A_Validation_Manual
Verification and Validation Label Code	S2AVM

Overall Assessment: Acceptable as qualified.
Field QC samples checked for completeness only.
Usability: Sample results qualified "J", estimated, are useable for limited purposes only. All other results are considered valid and useable for all purposes.

Sample Information:
Cooler Temperature: One cooler at receipt was 1.7º C.

Field Sample Number	Lab Sample ID	Date Collected
440-147006-1	TT-TP1-M1-20160510	5/10/16
440-147006-2	TT-TP1-M2-20160510	5/10/16
440-147006-3	TT-TP1-M3-20160510	5/10/16

Data Verification and Validation Summary
Data Validation Stage 2A

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 4°C (+ or – 2°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/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 correctly on data forms? Were recoveries/RPDs 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. Interference Check Sample (ICS)	
Were interference check samples (ICS) analyzed at appropriate intervals? Were ICS recoveries within acceptable limits of the true value?	N/A

9. 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
All: Results detected above the MDL but below the reporting limit are estimated and qualified "J".	

10. Duplicates	
Were any duplicate pairs analyzed in this SDG? Were RPDs between parent sample and duplicates ≤ lab limits or ≤ 30% for field duplicates?	No/NA

Validated by: Michael Wilson 06/08/2016

Data Verification and Validation Summary
Data Validation Stage 2A

Project Name:	Soil Flushing Treatability Study	SDG/Report No.:	440-147243-1
Project No.:	100-SBO-T35000-2016-M05	Lab ID:	Test America Irvine
No. of Samples:	16	Matrix:	Water

Area Reviewed	Anomalies		Qualification Required	Action Required
	Yes	No	Yes or No	
1. Sample Preservation, Handling, and Transport		X	No	
2. Chain-of-Custody		X	No	
3. Holding Times		X	No	
4. Blanks		X	No	
5. Surrogates/Monitoring Compounds		X	No	
6. Matrix Spike/Matrix Spike Duplicate	X		Yes	The matrix spikes and/or matrix spike duplicate was outside the control limits for parent sample TT-TP4-M3-20160511. Therefore, the data was "J" qualified.
7. Laboratory Control Samples		X	No	
8. Interference Check Samples		X	No	
9. Compound Quantitation and Reporting Limits	X		Yes	All sample results below the reporting limit are "J" qualified.
10. Duplicates		X	No	

Verification and Validation Label	Stage_2A_Validation_Manual
Verification and Validation Label Code	S2AVM

Overall Assessment: Acceptable as qualified.
Field QC samples checked for completeness only.
Usability: Sample results qualified "J", estimated, are useable for limited purposes only. All other results are considered valid and useable for all purposes.

Sample Information:
Cooler Temperature: Four coolers at receipt time were 0.7º C, 1.3º C, 2.0º C and 3.5º C.

Field Sample Number	Lab Sample ID	Date Collected
TT-TP2-M1-20160511	440-147243-1	05/11/16
TT-TP2-M2-20160511	440-147243-2	05/11/16
TT-TP3-M1-20160511	440-147243-3	05/11/16
TT-TP3-M2-20160511	440-147243-4	05/11/16
TT-TP4-M1-20160511	440-147243-5	05/11/16
TT-TP4-M2-20160511	440-147243-6	05/11/16
TT-TP4-M3-20160511	440-147243-7	05/11/16
TT-TP1-L1-20160511	440-147243-8	05/11/16
TT-TP1-L2-20160511	440-147243-9	05/11/16
TT-TP2-L1-20160511	440-147243-10	05/11/16
TT-TP2-L2-20160511	440-147243-11	05/11/16

Data Verification and Validation Summary
Data Validation Stage 2A

Field Sample Number	Lab Sample ID	Date Collected
TT-TP3-L1-20160511	440-147243-12	05/11/16
TT-TP3-L2-20160511	440-147243-13	05/11/16
TT-TP4-L1-20160511	440-147243-14	05/11/16
TT-TP4-L2-20160511	440-147243-15	05/11/16
TT-TP4-M3-20160511-DUP	440-147243-16	05/11/16

Data Verification and Validation Summary
Data Validation Stage 2A

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 4°C (+ or – 2°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/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 correctly on data forms? Were recoveries/RPDs within laboratory established limits?	Yes/Yes/No
Method 314.0: The Perchlorate result from parent sample TT-TP4-M3-20160511 was qualified as estimated and assigned a "J-" qualifier.	
Method SM5310B: The Total Organic Carbon result from parent sample TT-TP4-M3-20160511 was qualified as estimated and assigned a "J+" qualifier.	
Method 6020: The Chromium result from parent sample TT-TP4-M3-20160511 was qualified as estimated and assigned a "J-" qualifier.	

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. Interference Check Sample (ICS)	
Were interference check samples (ICS) analyzed at appropriate intervals? Were ICS recoveries within acceptable limits of the true value?	Yes

9. 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? Were there detections below the reporting limit?	Yes/Yes/Yes

All: Results detected above the MDL but below the reporting limit are estimated and qualified "J". For a complete list of "J" qualified samples due to being detected below the reporting limit please see the Qualifier Summary Report and the Reporting Limit Outlier Report in the ADR Output in Appendix G1.

10. Duplicates	
Were any duplicate pairs analyzed in this SDG? Were RPDs between parent sample and duplicates ≤ lab limits or ≤ 30% for field duplicates?	Yes/Yes

Validated by: Michael Wilson 06/08/2016

Data Verification and Validation Summary
Data Validation Stage 2A

Project Name:	Soil Flushing Treatability Study	SDG/Report No.:	440-147992-1
Project No.:	100-SBO-T35000-2016-M05	Lab ID:	Test America Irvine
No. of Samples:	19	Matrix:	Water

Area Reviewed	Anomalies		Qualification Required	Action Required
	Yes	No	Yes or No	
1. Sample Preservation, Handling, and Transport		X	No	
2. Chain-of-Custody		X	No	
3. Holding Times		X	No	
4. Blanks		X	No	
5. Surrogates/Monitoring Compounds		X	No	
6. Matrix Spike/Matrix Spike Duplicate	X		Yes	The matrix spikes and/or matrix spike duplicate was outside the control limits for parent sample TT-TP4-M3-20160519. Therefore, the data was "J" qualified.
7. Laboratory Control Samples		X	No	
8. Interference Check Samples		X	No	
9. Compound Quantitation and Reporting Limits	X		Yes	All sample results below the reporting limit are "J" qualified.
10. Duplicates		X	No	

Verification and Validation Label	Stage_2A_Validation_Manual
Verification and Validation Label Code	S2AVM

Overall Assessment: Acceptable as qualified.
Field QC samples checked for completeness only.
Usability: Sample results qualified "J", estimated, are useable for limited purposes only. All other results are considered valid and useable for all purposes.

Sample Information:
Cooler Temperature: Four coolers at receipt time were 1.6º C, 2.6º C, 2.8º C and 3.3º C

Field Sample Number	Lab Sample ID	Date Collected
TT-TP1-M1-20160519	440-147992-1	05/19/16
TT-TP1-M2-20160519	440-147992-2	05/19/16
TT-TP1-M3-20160519	440-147992-3	05/19/16
TT-TP2-M1-20160519	440-147992-4	05/19/16
TT-TP2-M2-20160519	440-147992-5	05/19/16
TT-TP3-M1-20160519	440-147992-6	05/19/16
TT-TP3-M2-20160519	440-147992-7	05/19/16
TT-TP4-M1-20160519	440-147992-8	05/19/16
TT-TP4-M2-20160519	440-147992-9	05/19/16
TT-TP4-M3-20160519	440-147992-10	05/19/16
TT-TP4-M3-20160519-DUP	440-147992-11	05/19/16
TT-TP1-L1-20160519	440-147992-12	05/19/16

Field Sample Number	Lab Sample ID	Date Collected
TT-TP1-L2-20160519	440-147992-13	05/19/16
TT-TP2-L1-20160519	440-147992-14	05/19/16
TT-TP2-L2-20160519	440-147992-15	05/19/16
TT-TP3-L1-20160519	440-147992-16	05/19/16
TT-TP3-L2-20160519	440-147992-17	05/19/16
TT-TP4-L1-20160519	440-147992-18	05/19/16
TT-TP4-L2-20160519	440-147992-19	05/19/16

Data Verification and Validation Summary
Data Validation Stage 2A

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 4°C (+ or – 2°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/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 correctly on data forms? Were recoveries/RPDs within laboratory established limits?	Yes/Yes/No
Method 314.0: The Perchlorate result from parent sample TT-TP4-M3-20160519 was qualified as estimated and assigned a "J-" qualifier.	
Method 6020: The Chromium result from parent sample TT-TP4-M3-20160519 was qualified as estimated and assigned a "J-" qualifier.	
Method 7199: The Hexavalent Chromium result from parent sample TT-TP4-M3-20160519 was qualified as estimated and assigned a "J-" qualifier.	

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. Interference Check Sample (ICS)	
Were interference check samples (ICS) analyzed at appropriate intervals? Were ICS recoveries within acceptable limits of the true value?	Yes

9. 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? Were there detections below the reporting limit?	Yes/Yes/Yes

All: Results detected above the MDL but below the reporting limit are estimated and qualified "J". For a complete list of "J" qualified samples due to being detected below the reporting limit please see the Qualifier Summary Report and the Reporting Limit Outlier Report in the ADR Output in Appendix G1.

10. Duplicates	
Were any duplicate pairs analyzed in this SDG? Were RPDs between parent sample and duplicates ≤ lab limits or ≤ 30% for field duplicates?	Yes/Yes

Validated by: Michael Wilson 06/23/2016

Data Verification and Validation Summary
Data Validation Stage 2A

Project Name:	Soil Flushing Treatability Study	SDG/Report No.:	440-148308-1
Project No.:	100-SBO-T35000-2016-M05	Lab ID:	Test America Irvine
No. of Samples:	3	Matrix:	Water

Area Reviewed	Anomalies		Qualification Required	Action Required
	Yes	No	Yes or No	
1. Sample Preservation, Handling, and Transport		X	No	
2. Chain-of-Custody		X	No	
3. Holding Times		X	No	
4. Blanks		X	No	
5. Surrogates/Monitoring Compounds		X	No	
6. Matrix Spike/Matrix Spike Duplicate	X		Yes	The matrix spikes and/or matrix spike duplicate was outside the control limits for parent sample TT-TP1-M1-20160524. Therefore, the data was "J" qualified.
7. Laboratory Control Samples		X	No	
8. Interference Check Samples		X	No	
9. Compound Quantitation and Reporting Limits		X	No	
10. Duplicates		X	No	

Verification and Validation Label	Stage_2A_Validation_Manual
Verification and Validation Label Code	S2AVM

Overall Assessment: Acceptable as qualified.
Field QC samples checked for completeness only.
Usability: Sample results qualified "J", estimated, are useable for limited purposes only. All other results are considered valid and useable for all purposes.

Sample Information:
Cooler Temperature: Five coolers at receipt time were 1.7º C, 2.0º C, 2.4º C, 2.5º C and 4.0º C.

Field Sample Number	Lab Sample ID	Date Collected
TT-TP1-M1-20160524	440-148308-1	05/24/16
TT-TP1-M2-20160524	440-148308-2	05/24/16
TT-TP1-M3-20160524	440-148308-3	05/24/16

Data Verification and Validation Summary
Data Validation Stage 2A

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 4ºC (+ or – 2ºC)? 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/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 correctly on data forms? Were recoveries/RPDs within laboratory established limits?	Yes/Yes/No
Method 6020: The Chromium result from parent sample TT-TP4-M3-20160211 was qualified as estimated and assigned a "J" qualifier.	
Method 7199: The Hexavalent Chromium result from parent sample TT-TP4-M3-20160211 was qualified as estimated and assigned a "J-" qualifier.	

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. Interference Check Sample (ICS)	
Were interference check samples (ICS) analyzed at appropriate intervals? Were ICS recoveries within acceptable limits of the true value?	Yes

9. 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? Were there detections below the reporting limit?	Yes/Yes/No

All: Results detected above the MDL but below the reporting limit are estimated and qualified "J". For a complete list of "J" qualified samples due to being detected below the reporting limit please see the Qualifier Summary Report and the Reporting Limit Outlier Report in the ADR Output in Appendix G1.

10. Duplicates	
Were any duplicate pairs analyzed in this SDG? Were RPDs between parent sample and duplicates ≤ lab limits or ≤ 30% for field duplicates?	No/NA

Validated by: Michael Wilson 06/23/2016

Data Verification and Validation Summary
Data Validation Stage 2A

Project Name:	Soil Flushing Treatability Study	SDG/Report No.:	440-148383-1
Project No.:	100-SBO-T35000-2016-M05	Lab ID:	Test America Irvine
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	
2. Chain-of-Custody		X	No	
3. Holding Times		X	No	
4. Blanks		X	No	
5. Surrogates/Monitoring Compounds		X	No	
6. Matrix Spike/Matrix Spike Duplicate		X	No	
7. Laboratory Control Samples		X	No	
8. Interference Check Samples		X	No	
9. Compound Quantitation and Reporting Limits	X			All sample results below the reporting limit are "J" qualified.
10. Duplicates		X	No	

Verification and Validation Label	Stage_2A_Validation_Manual
Verification and Validation Label Code	S2AVM

Overall Assessment: Acceptable as qualified.
Field QC samples checked for completeness only.
Usability: Sample results qualified "J", estimated, are useable for limited purposes only. All other results are considered valid and useable for all purposes.

Sample Information:
Cooler Temperature: Cooler at receipt was 1.1º C.

Field Sample Number	Lab Sample ID	Date Collected
TT-TP1-L1-20160525	440-148383-1	05/25/16
TT-TP1-L2-20160525	440-148383-2	05/25/16
TT-TP2-L1-20160525	440-148383-3	05/25/16
TT-TP2-L2-20160525	440-148383-4	05/25/16
TT-TP3-L1-20160525	440-148383-5	05/25/16
TT-TP3-L2-20160525	440-148383-6	05/25/16
TT-TP4-L1-20160525	440-148383-7	05/25/16
TT-TP4-L2-20160525	440-148383-8	05/25/16

Data Verification and Validation Summary
Data Validation Stage 2A

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 4°C (+ or – 2°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/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 correctly on data forms? Were recoveries/RPDs 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. Interference Check Sample (ICS)	
Were interference check samples (ICS) analyzed at appropriate intervals? Were ICS recoveries within acceptable limits of the true value?	Yes

9. 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? Were there detections below the reporting limit?	Yes/Yes/Yes
All: Results detected above the MDL but below the reporting limit are estimated and qualified "J". For a complete list of "J" qualified samples due to being detected below the reporting limit please see the Qualifier Summary Report and the Reporting Limit Outlier Report in the ADR Output in Appendix G1.	

10. Duplicates	
Were any duplicate pairs analyzed in this SDG? Were RPDs between parent sample and duplicates ≤ lab limits or ≤ 30% for field duplicates?	No/NA

Validated by: Michael Wilson 07/01/2016

Data Verification and Validation Summary
Data Validation Stage 2A

Project Name:	Soil Flushing Treatability Study	SDG/Report No.:	440-148500-1
Project No.:	100-SBO-T35000-2016-M05	Lab ID:	Test America Irvine
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	
2. Chain-of-Custody		X	No	
3. Holding Times		X	No	
4. Blanks		X	No	
5. Surrogates/Monitoring Compounds		X	No	
6. Matrix Spike/Matrix Spike Duplicate	X		Yes	The matrix spikes and/or matrix spike duplicate was outside the control limits for parent sample TT-TP4-M3-20160526. Therefore, the data was "J" qualified.
7. Laboratory Control Samples		X	No	
8. Interference Check Samples		X	No	
9. Compound Quantitation and Reporting Limits		X	No	
10. Duplicates		X	No	

Verification and Validation Label	Stage_2A_Validation_Manual
Verification and Validation Label Code	S2AVM

Overall Assessment: Acceptable as qualified.
Field QC samples checked for completeness only.
Usability: Sample results qualified "J", estimated, are useable for limited purposes only. All other results are considered valid and useable for all purposes.

Sample Information:
Cooler Temperature: Two coolers at receipt time were 2.1º C and 3.3º C.

Field Sample Number	Lab Sample ID	Date Collected
TT-TP2-M1-20160526	440-148500-1	05/26/16
TT-TP2-M2-20160526	440-148500-2	05/26/16
TT-TP3-M1-20160526	440-148500-3	05/26/16
TT-TP3-M2-20160526	440-148500-4	05/26/16
TT-TP4-M1-20160526	440-148500-5	05/26/16
TT-TP4-M2-20160526	440-148500-6	05/26/16
TT-TP4-M3-20160526	440-148500-7	05/26/16
TT-TP4-M3-20160526-DUP	440-148500-8	05/26/16

Data Verification and Validation Summary
Data Validation Stage 2A

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 4°C (+ or – 2°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/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 correctly on data forms? Were recoveries/RPDs within laboratory established limits?	Yes/Yes/No
Method 314.0: The Perchlorate result from parent sample TT-TP4-M3-20160526 was qualified as estimated and assigned a "J+" qualifier.	
Method 6020: The Chromium result from parent sample TT-TP4-M3-20160526 was qualified as estimated and assigned a "J-" qualifier.	
Method 7199: The Hexavalent Chromium result from parent sample TT-TP4-M3-20160526 was qualified as estimated and assigned a "J-" qualifier.	

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. Interference Check Sample (ICS)	
Were interference check samples (ICS) analyzed at appropriate intervals? Were ICS recoveries within acceptable limits of the true value?	Yes

9. 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? Were there detections below the reporting limit?	Yes/Yes/No

All: Results detected above the MDL but below the reporting limit are estimated and qualified "J". For a complete list of "J" qualified samples due to being detected below the reporting limit please see the Qualifier Summary Report and the Reporting Limit Outlier Report in the ADR Output in Appendix G1.

10. Duplicates	
Were any duplicate pairs analyzed in this SDG? Were RPDs between parent sample and duplicates ≤ lab limits or ≤ 30% for field duplicates?	Yes/Yes

Validated by: Michael Wilson 06/23/2016

Data Verification and Validation Summary
Data Validation Stage 2A

Project Name:	Soil Flushing Treatability Study	SDG/Report No.:	440-148926-1
Project No.:	100-SBO-T35000-2016-M05	Lab ID:	Test America Irvine
No. of Samples:	6	Matrix:	Water

Area Reviewed	Anomalies		Qualification Required	Action Required
	Yes	No	Yes or No	
1. Sample Preservation, Handling, and Transport		X	No	
2. Chain-of-Custody		X	No	
3. Holding Times		X	No	
4. Blanks		X	No	
5. Surrogates/Monitoring Compounds		X	No	
6. Matrix Spike/Matrix Spike Duplicate	X		Yes	The matrix spikes and/or matrix spike duplicate was outside the control limits for parent sample TT-TP1-M3-20160601. Therefore, the data was "J" qualified.
7. Laboratory Control Samples		X	No	
8. Interference Check Samples		X	No	
9. Compound Quantitation and Reporting Limits	X		Yes	All sample results below the reporting limit are "J" qualified.
10. Duplicates		X	No	

Verification and Validation Label	Stage_2A_Validation_Manual
Verification and Validation Label Code	S2AVM

Overall Assessment: Acceptable as qualified.
Field QC samples checked for completeness only.
Usability: Sample results qualified "J", estimated, are useable for limited purposes only. All other results are considered valid and useable for all purposes.

Sample Information:
Cooler Temperature: Two coolers at receipt time were 1.8º C and 4.4º C.

Field Sample Number	Lab Sample ID	Date Collected
TT-TP1-M3-20160601	440-148926-1	06/01/16
TT-TP1-M1-20160601	440-148926-2	06/01/16
TT-TP1-M2-20160601	440-148926-3	06/01/16
TT-TP2-M2-20160601	440-148926-4	06/01/16
TT-TP2-M1-20160601	440-148926-5	06/01/16
TT-TP3-M1-20160601	440-148926-6	06/01/16

Data Verification and Validation Summary
Data Validation Stage 2A

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 4°C (+ or – 2°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/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 correctly on data forms? Were recoveries/RPDs within laboratory established limits?	Yes/Yes/No
Method 6010B: The results from parent sample TT-TP1-M3-20160601 were qualified as estimated Calcium (J+), Magnesium (J-), and Sodium (J-).	

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. Interference Check Sample (ICS)	
Were interference check samples (ICS) analyzed at appropriate intervals? Were ICS recoveries within acceptable limits of the true value?	Yes

9. 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? Were there detections below the reporting limit?	Yes/Yes/Yes

All: Results detected above the MDL but below the reporting limit are estimated and qualified "J". For a complete list of "J" qualified samples due to being detected below the reporting limit please see the Qualifier Summary Report and the Reporting Limit Outlier Report in the ADR Output in Appendix G1.

10. Duplicates	
Were any duplicate pairs analyzed in this SDG? Were RPDs between parent sample and duplicates ≤ lab limits or ≤ 30% for field duplicates?	No/NA

Validated by: Michael Wilson 07/01/2016

Data Verification and Validation Summary
Data Validation Stage 2A

Project Name:	Soil Flushing Treatability Study	SDG/Report No.:	440-149036-1
Project No.:	100-SBO-T35000-2016-M05	Lab ID:	Test America Irvine
No. of Samples:	13	Matrix:	Water

Area Reviewed	Anomalies		Qualification Required	Action Required
	Yes	No	Yes or No	
1. Sample Preservation, Handling, and Transport		X	No	
2. Chain-of-Custody		X	No	
3. Holding Times		X	No	
4. Blanks		X	No	
5. Surrogates/Monitoring Compounds		X	No	
6. Matrix Spike/Matrix Spike Duplicate	X		Yes	The matrix spikes and/or matrix spike duplicate was outside the control limits for parent sample TT-TP4-M3-20160602. Therefore, the data was "J" qualified.
7. Laboratory Control Samples		X	No	
8. Interference Check Samples		X	No	
9. Compound Quantitation and Reporting Limits	X		Yes	All sample results below the reporting limit are "J" qualified.
10. Duplicates	X		Yes	Parent sample TT-TP4-M2-20160602 was qualified as estimated and assigned a "J" qualifier.

Verification and Validation Label	Stage_2A_Validation_Manual
Verification and Validation Label Code	S2AVM

Overall Assessment: Acceptable as qualified.
Field QC samples checked for completeness only.
Usability: Sample results qualified "J", estimated, are useable for limited purposes only. All other results are considered valid and useable for all purposes.

Sample Information:
Cooler Temperature: Three coolers at receipt time were 1.4º C, 2.2º C and 2.3º C.

Field Sample Number	Lab Sample ID	Date Collected
TT-TP3-M2-20160602	440-149036-1	06/02/16
TT-TP4-M2-20160602	440-149036-2	06/02/16
TT-TP4-M2-20160602-DUP	440-149036-3	06/02/16
TT-TP4-M1-20160602	440-149036-4	06/02/16
TT-TP4-M3-20160602	440-149036-5	06/02/16
TT-TP1-L1-20160602	440-149036-6	06/02/16
TT-TP1-L2-20160602	440-149036-7	06/02/16
TT-TP2-L1-20160602	440-149036-8	06/02/16
TT-TP2-L2-20160602	440-149036-9	06/02/16
TT-TP3-L1-20160602	440-149036-10	06/02/16
TT-TP3-L2-20160602	440-149036-11	06/02/16

Field Sample Number	Lab Sample ID	Date Collected
TT-TP4-L1-20160602	440-149036-12	06/02/16
TT-TP4-L2-20160602	440-149036-13	06/02/16

Data Verification and Validation Summary
Data Validation Stage 2A

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 4°C (+ or – 2°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/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 correctly on data forms? Were recoveries/RPDs within laboratory established limits?	Yes/Yes/No
Method 300: Parent sample TT-TP4-M3-20160602 was qualified as estimated for Nitrate as N (J), Chloride (J-), and Sulfate (J-).	
Method 300.1B: The Chlorate result from parent sample TT-TP4-M3-20160602 was qualified as estimated and assigned a "J+" qualifier.	
Method 314.0: The Perchlorate result from parent sample TT-TP4-M3-20160602 was qualified as estimated and assigned a "J+" qualifier.	
Method 6010B: The Magnesium, Sodium, Calcium, and Iron results from parent sample TT-TP4-M3-20160602 were qualified as estimated and assigned a "J-" qualifier.	
Method 6020: The Chromium result from parent sample TT-TP4-M3-20160602 was qualified as estimated and assigned a "J" qualifier.	
Method 7199: The Hexavalent Chromium result from parent sample TT-TP4-M3-20160602 was qualified as estimated and assigned a "J-" qualifier.	

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. Interference Check Sample (ICS)	
Were interference check samples (ICS) analyzed at appropriate intervals? Were ICS recoveries within acceptable limits of the true value?	Yes

9. 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? Were there detections below the reporting limit?	Yes/Yes/Yes
All: Results detected above the MDL but below the reporting limit are estimated and qualified "J". For a complete list of "J" qualified samples due to being detected below the reporting limit please see the Qualifier Summary Report and the Reporting Limit Outlier Report in the ADR Output in Appendix G1.	

10. Duplicates	
Were any duplicate pairs analyzed in this SDG? Were RPDs between parent sample and duplicates ≤ lab limits or ≤ 30% for field duplicates?	Yes/No
Method 6020: The nickel result from parent sample TT-TP4-M2-20160602 was qualified as estimated and assigned a "J" qualifier.	

Validated by: Michael Wilson 07/01/2016

Data Verification and Validation Summary
Data Validation Stage 2A

Project Name:	Soil Flushing Treatability Study	SDG/Report No.:	440-149621-1
Project No.:	100-SBO-T35000-2016-M05	Lab ID:	Test America Irvine
No. of Samples:	16	Matrix:	Water

Area Reviewed	Anomalies		Qualification Required	Action Required
	Yes	No	Yes or No	
1. Sample Preservation, Handling, and Transport		X	No	
2. Chain-of-Custody		X	No	
3. Holding Times		X	No	
4. Blanks		X	No	
5. Surrogates/Monitoring Compounds		X	No	
6. Matrix Spike/Matrix Spike Duplicate	X		Yes	The matrix spikes and/or matrix spike duplicate was outside the control limits for parent samples TT-TP1-M1-20160608 and TT-TP2-M2-20160608. Therefore, the data was "J" qualified.
7. Laboratory Control Samples		X	No	
8. Interference Check Samples		X	No	
9. Compound Quantitation and Reporting Limits	X		Yes	All sample results below the reporting limit are "J" qualified.
10. Duplicates		X	No	

Verification and Validation Label	Stage_2A_Validation_Manual
Verification and Validation Label Code	S2AVM

Overall Assessment: Acceptable as qualified.
Field QC samples checked for completeness only.
Usability: Sample results qualified "J", estimated, are useable for limited purposes only. All other results are considered valid and useable for all purposes.

Sample Information:
Cooler Temperature: Three coolers at receipt time were 2.6º C, 2.8º C and 3.1º C.

Field Sample Number	Lab Sample ID	Date Collected
TT-TP1-M1-20160608	440-149621-1	06/08/16
TT-TP1-M2-20160608	440-149621-2	06/08/16
TT-TP1-M3-20160608	440-149621-3	06/08/16
TT-TP2-M1-20160608	440-149621-4	06/08/16
TT-TP2-M2-20160608	440-149621-5	06/08/16
TT-TP3-M1-20160608	440-149621-6	06/08/16
TT-TP3-M2-20160608	440-149621-7	06/08/16
TT-TP4-M2-20160608	440-149621-8	06/08/16
TT-TP4-L1-20160608	440-149621-9	06/08/16
TT-TP4-L2-20160608	440-149621-10	06/08/16
TT-TP3-L1-20160608	440-149621-11	06/08/16

Field Sample Number	Lab Sample ID	Date Collected
TT-TP3-L2-20160608	440-149621-12	06/08/16
TT-TP2-L1-20160608	440-149621-13	06/08/16
TT-TP2-L2-20160608	440-149621-14	06/08/16
TT-TP1-L1-20160608	440-149621-15	06/08/16
TT-TP1-L2-20160608	440-149621-16	06/08/16

Data Verification and Validation Summary
Data Validation Stage 2A

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 4°C (+ or – 2°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/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 correctly on data forms? Were recoveries/RPDs within laboratory established limits?	Yes/Yes/No
Method 6020: The Chromium result from parent sample TT-TP1-M1-20160608 was qualified as estimated and assigned a "J+" qualifier. The Chromium result from parent sample TT-TP2-M2-20160608 was qualified as estimated and assigned a "J-" qualifier.	

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. Interference Check Sample (ICS)	
Were interference check samples (ICS) analyzed at appropriate intervals? Were ICS recoveries within acceptable limits of the true value?	Yes

9. 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? Were there detections below the reporting limit?	Yes/Yes/Yes

All: Results detected above the MDL but below the reporting limit are estimated and qualified "J". For a complete list of "J" qualified samples due to being detected below the reporting limit please see the Qualifier Summary Report and the Reporting Limit Outlier Report in the ADR Output in Appendix G1.

10. Duplicates	
Were any duplicate pairs analyzed in this SDG? Were RPDs between parent sample and duplicates ≤ lab limits or ≤ 30% for field duplicates?	No/NA

Validated by: Michael Wilson 07/01/2016

Data Verification and Validation Summary
Data Validation Stage 2A

Project Name:	Soil Flushing Treatability Study	SDG/Report No.:	440-149732-1
Project No.:	100-SBO-T35000-2016-M05	Lab ID:	Test America Irvine
No. of Samples:	3	Matrix:	Water

Area Reviewed	Anomalies		Qualification Required	Action Required
	Yes	No	Yes or No	
1. Sample Preservation, Handling, and Transport		X	No	
2. Chain-of-Custody		X	No	
3. Holding Times		X	No	
4. Blanks		X	No	
5. Surrogates/Monitoring Compounds		X	No	
6. Matrix Spike/Matrix Spike Duplicate	X		Yes	The matrix spikes and/or matrix spike duplicate was outside the control limits for parent sample TT-TP4-M3-20160609. Therefore, the data was "J" qualified.
7. Laboratory Control Samples		X	No	
8. Interference Check Samples		X	No	
9. Compound Quantitation and Reporting Limits		X	No	
10. Duplicates		X	No	

Verification and Validation Label	Stage_2A_Validation_Manual
Verification and Validation Label Code	S2AVM

Overall Assessment: Acceptable as qualified.
Field QC samples checked for completeness only.
Usability: Sample results qualified "J", estimated, are useable for limited purposes only. All other results are considered valid and useable for all purposes.

Sample Information:
Cooler Temperature: Three coolers at receipt time were 1.2º C, 1.4º C and 1.7º C.

Field Sample Number	Lab Sample ID	Date Collected
TT-TP4-M1-20160609	440-149732-1	06/09/16
TT-TP4-M3-20160609	440-149732-2	06/09/16
TT-TP4-M3-20160609-DUP	440-149732-3	06/09/16

Data Verification and Validation Summary
Data Validation Stage 2A

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 4°C (+ or – 2°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/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 correctly on data forms? Were recoveries/RPDs within laboratory established limits?	Yes/Yes/Yes
Method 6020: The Chromium result from parent sample TT-TP4-M3-20160609 was qualified as estimated and assigned a "J" qualifier.	
Method 7199: The Chromium, Hexavalent result from parent sample TT-TP4-M3-20160609 was qualified as estimated and assigned a "J-" qualifier.	

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. Interference Check Sample (ICS)	
Were interference check samples (ICS) analyzed at appropriate intervals? Were ICS recoveries within acceptable limits of the true value?	Yes

9. 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? Were there detections below the reporting limit?	Yes/Yes/No

All: Results detected above the MDL but below the reporting limit are estimated and qualified "J". For a complete list of "J" qualified samples due to being detected below the reporting limit please see the Qualifier Summary Report and the Reporting Limit Outlier Report in the ADR Output in Appendix G1.

10. Duplicates	
Were any duplicate pairs analyzed in this SDG? Were RPDs between parent sample and duplicates ≤ lab limits or ≤ 30% for field duplicates?	Yes/Yes

Validated by: Michael Wilson 07/01/2016

Data Verification and Validation Summary
Data Validation Stage 2A

Project Name:	Soil Flushing Treatability Study	SDG/Report No.:	440-150680-1
Project No.:	100-SBO-T35000-2016-M05	Lab ID:	Test America Irvine
No. of Samples:	3	Matrix:	Water

Area Reviewed	Anomalies		Qualification Required	Action Required
	Yes	No	Yes or No	
1. Sample Preservation, Handling, and Transport		X	No	
2. Chain-of-Custody		X	No	
3. Holding Times		X	No	
4. Blanks		X	No	
5. Surrogates/Monitoring Compounds		X	No	
6. Matrix Spike/Matrix Spike Duplicate		X	No	
7. Laboratory Control Samples		X	No	
8. Interference Check Samples		X	No	
9. Compound Quantitation and Reporting Limits		X	No	
10. Duplicates		X	No	

Verification and Validation Label	Stage_2A_Validation_Manual
Verification and Validation Label Code	S2AVM

Overall Assessment: Acceptable as qualified.
Field QC samples checked for completeness only.
Usability: Sample results qualified "J", estimated, are useable for limited purposes only. All other results are considered valid and useable for all purposes.

Sample Information:
Cooler Temperature: One cooler at 3.7º C

Field Sample Number	Lab Sample ID	Date Collected
TT-TP1-M1-20160621	440-150680-1	06/21/16
TT-TP1-M2-20160621	440-150680-2	06/21/16
TT-TP1-M3-20160621	440-150680-3	06/21/16

Data Verification and Validation Summary
Data Validation Stage 2A

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 4°C (+ or – 2°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/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 correctly on data forms? Were recoveries/RPDs 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. Interference Check Sample (ICS)	
Were interference check samples (ICS) analyzed at appropriate intervals? Were ICS recoveries within acceptable limits of the true value?	Yes

9. 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? Were there detections below the reporting limit?	Yes/Yes/No
All: Results detected above the MDL but below the reporting limit are estimated and qualified "J". For a complete list of "J" qualified samples due to being detected below the reporting limit please see the Qualifier Summary Report and the Reporting Limit Outlier Report in the ADR Output in Appendix G1.	

10. Duplicates	
Were any duplicate pairs analyzed in this SDG? Were RPDs between parent sample and duplicates ≤ lab limits or ≤ 30% for field duplicates?	No/NA

Validated by: Michael Wilson 07/06/2016

Data Verification and Validation Summary
Data Validation Stage 2A

Project Name:	Soil Flushing Treatability Study	SDG/Report No.:	440-150775-1
Project No.:	100-SBO-T35000-2016-M05	Lab ID:	Test America Irvine
No. of Samples:	16	Matrix:	Water

Area Reviewed	Anomalies		Qualification Required	Action Required
	Yes	No	Yes or No	
1. Sample Preservation, Handling, and Transport		X	No	
2. Chain-of-Custody		X	No	
3. Holding Times		X	No	
4. Blanks		X	No	
5. Surrogates/Monitoring Compounds		X	No	
6. Matrix Spike/Matrix Spike Duplicate	X		Yes	The matrix spikes and/or matrix spike duplicate was outside the control limits for parent sample TT-TP4-M3-20160622. Therefore, the data was "J" qualified.
7. Laboratory Control Samples		X	No	
8. Interference Check Samples		X	No	
9. Compound Quantitation and Reporting Limits	X		Yes	All sample results below the reporting limit are "J" qualified.
10. Duplicates		X	No	

Verification and Validation Label	Stage_2A_Validation_Manual
Verification and Validation Label Code	S2AVM

Overall Assessment: Acceptable as qualified.
Field QC samples checked for completeness only.
Usability: Sample results qualified "J", estimated, are useable for limited purposes only. All other results are considered valid and useable for all purposes.

Sample Information:
Cooler Temperature: Two coolers at receipt time were 2.1º C and 2.8º C

Field Sample Number	Lab Sample ID	Date Collected
TT-TP2-M1-20160622	440-150775-1	06/22/16
TT-TP2-M2-20160622	440-150775-2	06/22/16
TT-TP3-M1-20160622	440-150775-3	06/22/16
TT-TP3-M2-20160622	440-150775-4	06/22/16
TT-TP4-M1-20160622	440-150775-5	06/22/16
TT-TP4-M2-20160622	440-150775-6	06/22/16
TT-TP4-M3-20160622	440-150775-7	06/22/16
TT-TP4-M3-20160622-DUP	440-150775-8	06/22/16
TT-TP1-L1-20160622	440-150775-9	06/22/16
TT-TP1-L2-20160622	440-150775-10	06/22/16
TT-TP2-L1-20160622	440-150775-11	06/22/16

Field Sample Number	Lab Sample ID	Date Collected
TT-TP2-L2-20160622	440-150775-12	06/22/16
TT-TP3-L1-20160622	440-150775-13	06/22/16
TT-TP3-L2-20160622	440-150775-14	06/22/16
TT-TP4-L1-20160622	440-150775-15	06/22/16
TT-TP4-L2-20160622	440-150775-16	06/22/16

Data Verification and Validation Summary
Data Validation Stage 2A

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 4°C (+ or – 2°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/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 correctly on data forms? Were recoveries/RPDs within laboratory established limits?	Yes/Yes/No
Method 6020: The Chromium result from parent sample TT-TP4-M3-20160622 was qualified as estimated and assigned a "J-" qualifier.	
Method 7199: The Hexavalent Chromium result from parent sample TT-TP4-M3-20160622 was qualified as estimated and assigned a "J-" qualifier.	

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. Interference Check Sample (ICS)	
Were interference check samples (ICS) analyzed at appropriate intervals? Were ICS recoveries within acceptable limits of the true value?	Yes

9. 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? Were there detections below the reporting limit?	Yes/Yes/Yes
All: Results detected above the MDL but below the reporting limit are estimated and qualified "J". For a complete list of "J" qualified samples due to being detected below the reporting limit please see the Qualifier Summary Report and the Reporting Limit Outlier Report in the ADR Output in Appendix G1.	

10. Duplicates	
Were any duplicate pairs analyzed in this SDG? Were RPDs between parent sample and duplicates ≤ lab limits or ≤ 30% for field duplicates?	Yes/Yes

Validated by: Michael Wilson 07/07/2016

Data Verification and Validation Summary
Data Validation Stage 2A

Project Name:	Soil Flushing Treatability Study	SDG/Report No.:	440-151701-1
Project No.:	100-SBO-T35000-2016-M05	Lab ID:	Test America Irvine
No. of Samples:	16	Matrix:	Water

Area Reviewed	Anomalies		Qualification Required	Action Required
	Yes	No	Yes or No	
1. Sample Preservation, Handling, and Transport		X	No	
2. Chain-of-Custody		X	No	
3. Holding Times		X	No	
4. Blanks		X	No	
5. Surrogates/Monitoring Compounds		X	No	
6. Matrix Spike/Matrix Spike Duplicate		X	No	
7. Laboratory Control Samples		X	No	
8. Interference Check Samples		X	No	
9. Compound Quantitation and Reporting Limits	X		Yes	All sample results below the reporting limit are "J" qualified.
10. Duplicates		X	No	

Verification and Validation Label	Stage_2A_Validation_Manual
Verification and Validation Label Code	S2AVM

Overall Assessment: Acceptable as qualified.
Field QC samples checked for completeness only.
Usability: Sample results qualified "J", estimated, are useable for limited purposes only. All other results are considered valid and useable for all purposes.

Sample Information:
Cooler Temperature: Three coolers at receipt time were 2.9º C, 3.2º C and 3.9º C.

Field Sample Number	Lab Sample ID	Date Collected
TT-TP1-M1-20160705	440-151701-1	07/05/16
TT-TP1-M2-20160705	440-151701-2	07/05/16
TT-TP1-M3-20160705	440-151701-3	07/05/16
TT-TP2-M1-20160705	440-151701-4	07/05/16
TT-TP2-M2-20160705	440-151701-5	07/05/16
TT-TP3-M1-20160705	440-151701-6	07/05/16
TT-TP3-M2-20160705	440-151701-7	07/05/16
TT-TP4-M2-20160705	440-151701-8	07/05/16
TT-TP1-L1-20160705	440-151701-9	07/05/16
TT-TP1-L2-20160705	440-151701-10	07/05/16
TT-TP2-L1-20160705	440-151701-11	07/05/16
TT-TP2-L2-20160705	440-151701-12	07/05/16
TT-TP3-L1-20160705	440-151701-13	07/05/16

Field Sample Number	Lab Sample ID	Date Collected
TT-TP3-L2-20160705	440-151701-14	07/05/16
TT-TP4-L1-20160705	440-151701-15	07/05/16
TT-TP4-L2-20160705	440-151701-16	07/05/16

Data Verification and Validation Summary
Data Validation Stage 2A

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 4°C (+ or – 2°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/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 correctly on data forms? Were recoveries/RPDs 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. Interference Check Sample (ICS)	
Were interference check samples (ICS) analyzed at appropriate intervals? Were ICS recoveries within acceptable limits of the true value?	Yes

9. 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? Were there detections below the reporting limit?	Yes/Yes/Yes
All: Results detected above the MDL but below the reporting limit are estimated and qualified "J". For a complete list of "J" qualified samples due to being detected below the reporting limit please see the Qualifier Summary Report and the Reporting Limit Outlier Report in the ADR Output in Appendix G1.	

10. Duplicates	
Were any duplicate pairs analyzed in this SDG? Were RPDs between parent sample and duplicates ≤ lab limits or ≤ 30% for field duplicates?	No/NA

Validated by: Michael Wilson 07/21/2016

Data Verification and Validation Summary
Data Validation Stage 2A

Project Name:	Soil Flushing Treatability Study	SDG/Report No.:	440-151885-1
Project No.:	100-SBO-T35000-2016-M05	Lab ID:	Test America Irvine
No. of Samples:	3	Matrix:	Water

Area Reviewed	Anomalies		Qualification Required	Action Required
	Yes	No	Yes or No	
1. Sample Preservation, Handling, and Transport		X	No	
2. Chain-of-Custody		X	No	
3. Holding Times		X	No	
4. Blanks		X	No	
5. Surrogates/Monitoring Compounds		X	No	
6. Matrix Spike/Matrix Spike Duplicate	X		Yes	The matrix spikes and/or matrix spike duplicate was outside the control limits for parent sample TT-TP4-M3-20160706. Therefore, the data was "J" qualified.
7. Laboratory Control Samples		X	No	
8. Interference Check Samples		X	No	
9. Compound Quantitation and Reporting Limits		X	No	
10. Duplicates		X	No	

Verification and Validation Label	Stage_2A_Validation_Manual
Verification and Validation Label Code	S2AVM

Overall Assessment: Acceptable as qualified.
Field QC samples checked for completeness only.
Usability: Sample results qualified "J", estimated, are useable for limited purposes only. All other results are considered valid and useable for all purposes.

Sample Information:
Cooler Temperature: One cooler at 3.6º C

Field Sample Number	Lab Sample ID	Date Collected
TT-TP4-M1-20160706	440-151885-1	07/06/16
TT-TP4-M3-20160706	440-151885-2	07/06/16
TT-TP4-M3-20160706-DUP	440-151885-3	07/06/16

Data Verification and Validation Summary
Data Validation Stage 2A

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 4°C (+ or – 2°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/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 correctly on data forms? Were recoveries/RPDs within laboratory established limits?	Yes/Yes/No
Method 314.0: The Perchlorate result from parent sample TT-TP4-M3-20160706 was qualified as estimated and assigned a "J-" qualifier.	
Method 6020: The Chromium result from parent sample TT-TP4-M3-20160706 was qualified as estimated and assigned a "J+" qualifier.	

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. Interference Check Sample (ICS)	
Were interference check samples (ICS) analyzed at appropriate intervals? Were ICS recoveries within acceptable limits of the true value?	Yes

9. 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? Were there detections below the reporting limit?	Yes/Yes/No

All: Results detected above the MDL but below the reporting limit are estimated and qualified "J". For a complete list of "J" qualified samples due to being detected below the reporting limit please see the Qualifier Summary Report and the Reporting Limit Outlier Report in the ADR Output in Appendix G1.

10. Duplicates	
Were any duplicate pairs analyzed in this SDG? Were RPDs between parent sample and duplicates ≤ lab limits or ≤ 30% for field duplicates?	Yes/Yes

Validated by: Michael Wilson 07/21/2016

Data Verification and Validation Summary
Data Validation Stage 2A

Project Name:	Soil Flushing Treatability Study	SDG/Report No.:	440-153790-1
Project No.:	100-SBO-T35000-2016-M05	Lab ID:	Test America Irvine
No. of Samples:	12	Matrix:	Water

Area Reviewed	Anomalies		Qualification Required	Action Required
	Yes	No	Yes or No	
1. Sample Preservation, Handling, and Transport		X	No	
2. Chain-of-Custody		X	No	
3. Holding Times		X	No	
4. Blanks		X	No	
5. Surrogates/Monitoring Compounds		X	No	
6. Matrix Spike/Matrix Spike Duplicate	X		Yes	The matrix spikes and/or matrix spike duplicate was outside the control limits for parent samples TT-TP1-M1-20160727 and TT-TP1-M2-20160727. Therefore, the data was "J" qualified.
7. Laboratory Control Samples		X	No	
8. Interference Check Samples		X	No	
9. Compound Quantitation and Reporting Limits	X		Yes	All sample results below the reporting limit are "J" qualified.
10. Duplicates		X	No	

Verification and Validation Label	Stage_2A_Validation_Manual
Verification and Validation Label Code	S2AVM

Overall Assessment: Acceptable as qualified.
Field QC samples checked for completeness only.
Usability: Sample results qualified "J", estimated, are useable for limited purposes only. All other results are considered valid and useable for all purposes.

Sample Information:
Cooler Temperature:

Field Sample Number	Lab Sample ID	Date Collected
TT-TP1-M2-20160727	440-153790-1	07/27/16
TT-TP1-M1-20160727	440-153790-2	07/27/16
TT-TP1-M3-20160727	440-153790-3	07/27/16
TT-TP2-M1-20160727	440-153790-4	07/27/16
TT-TP1-L1-20160727	440-153790-5	07/27/16
TT-TP1-L2-20160727	440-153790-6	07/27/16
TT-TP2-L1-20160727	440-153790-7	07/27/16
TT-TP2-L2-20160727	440-153790-8	07/27/16
TT-TP3-L1-20160727	440-153790-9	07/27/16
TT-TP3-L2-20160727	440-153790-10	07/27/16

Data Verification and Validation Summary
Data Validation Stage 2A

Field Sample Number	Lab Sample ID	Date Collected
TT-TP4-L1-20160727	440-153790-11	07/27/16
TT-TP4-L2-20160727	440-153790-12	07/27/16

Data Verification and Validation Summary
Data Validation Stage 2A

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 4°C (+ or – 2°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/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 correctly on data forms? Were recoveries/RPDs within laboratory established limits?	Yes/Yes/No
Method 300.0: The Nitrate as N, Chloride, and Sulfate results from parent sample TT-TP1-M1-20160727 were qualified as estimated and assigned a "J-" qualifier.	
Method 6010B: Parent sample TT-TP1-M2-20160727 was qualified as estimated for Calcium (J-), Magnesium (J-), and Sodium (J).	

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. Interference Check Sample (ICS)	
Were interference check samples (ICS) analyzed at appropriate intervals? Were ICS recoveries within acceptable limits of the true value?	Yes

9. 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? Were there detections below the reporting limit?	Yes/Yes/Yes
All: Results detected above the MDL but below the reporting limit are estimated and qualified "J". For a complete list of "J" qualified samples due to being detected below the reporting limit please see the Qualifier Summary Report and the Reporting Limit Outlier Report in the ADR Output in Appendix G1.	

10. Duplicates	
Were any duplicate pairs analyzed in this SDG? Were RPDs between parent sample and duplicates ≤ lab limits or ≤ 30% for field duplicates?	No/NA

Validated by: Michael Wilson 08/22/2016

Data Verification and Validation Summary
Data Validation Stage 2A

Project Name:	Soil Flushing Treatability Study	SDG/Report No.:	440-153948-1
Project No.:	100-SBO-T35000-2016-M05	Lab ID:	Test America Irvine
No. of Samples:	7	Matrix:	Water

Area Reviewed	Anomalies		Qualification Required	Action Required
	Yes	No	Yes or No	
1. Sample Preservation, Handling, and Transport		X	No	
2. Chain-of-Custody		X	No	
3. Holding Times		X	No	
4. Blanks		X	No	
5. Surrogates/Monitoring Compounds		X	No	
6. Matrix Spike/Matrix Spike Duplicate	X		Yes	The matrix spikes and/or matrix spike duplicate was outside the control limits for parent sample TT-TP4-M3-20160728. Therefore, the data was "J" qualified.
7. Laboratory Control Samples		X	No	
8. Interference Check Samples		X	No	
9. Compound Quantitation and Reporting Limits	X		Yes	All sample results below the reporting limit are "J" qualified.
10. Duplicates		X	No	

Verification and Validation Label	Stage_2A_Validation_Manual
Verification and Validation Label Code	S2AVM

Overall Assessment: Acceptable as qualified.
Field QC samples checked for completeness only.
Usability: Sample results qualified "J", estimated, are useable for limited purposes only. All other results are considered valid and useable for all purposes.

Sample Information:
Cooler Temperature: Three coolers at 0.7º C, 1.8º C and 4.5º C

Field Sample Number	Lab Sample ID	Date Collected
TT-TP2-M2-20160728	440-153948-1	07/28/16
TT-TP3-M2-20160728	440-153948-2	07/28/16
TT-TP3-M1-20160728	440-153948-3	07/28/16
TT-TP4-M1-20160728	440-153948-4	07/28/16
TT-TP4-M2-20160728	440-153948-5	07/28/16
TT-TP4-M3-20160728	440-153948-6	07/28/16
TT-TP4-M3-20160728-DUP	440-153948-7	07/28/16

Data Verification and Validation Summary
Data Validation Stage 2A

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 4°C (+ or – 2°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/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 correctly on data forms? Were recoveries/RPDs within laboratory established limits?	Yes/Yes/No
Method 300.0: Parent sample TT-TP4-M3-20160728 was qualified as estimated for Nitrate as N (J-), Chloride (J+), and Sulfate (J+).	
Method 300.1B: Parent sample TT-TP4-M3-20160728 was qualified as estimated for Chlorate (J+).	
Method 314.0: Parent sample TT-TP4-M3-20160728 was qualified as estimated for Perchlorate (J+).	
Method 6010B: The Calcium, Magnesium, and Sodium results from parent sample TT-TP4-M3-20160728 were qualified as estimated and assigned "J-" qualifiers.	
Method 6020: The Chromium result from parent sample TT-TP4-M3-20160728 was qualified as estimated and assigned a "J-" qualifier.	
Method 7199: The Hexavalent Chromium result from parent sample TT-TP4-M3-20160728 was qualified as estimated and assigned a "J-" qualifier.	

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. Interference Check Sample (ICS)	
Were interference check samples (ICS) analyzed at appropriate intervals? Were ICS recoveries within acceptable limits of the true value?	Yes

9. 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? Were there detections below the reporting limit?	Yes/Yes/Yes
All: Results detected above the MDL but below the reporting limit are estimated and qualified "J". For a complete list of "J" qualified samples due to being detected below the reporting limit please see the Qualifier Summary Report and the Reporting Limit Outlier Report in the ADR Output in Appendix G1.	

10. Duplicates	
Were any duplicate pairs analyzed in this SDG? Were RPDs between parent sample and duplicates ≤ lab limits or ≤ 30% for field duplicates?	Yes/Yes

Validated by: Michael Wilson 08/22/2016

Data Verification and Validation Summary
Data Validation Stage 2A

Project Name:	Soil Flushing Treatability Study	SDG/Report No.:	440-155501-1
Project No.:	100-SBO-T35000-2016-M05	Lab ID:	Test America Irvine
No. of Samples:	21	Matrix:	Solid

Area Reviewed	Anomalies		Qualification Required	Action Required
	Yes	No	Yes or No	
1. Sample Preservation, Handling, and Transport		X	No	
2. Chain-of-Custody		X	No	
3. Holding Times		X	No	
4. Blanks		X	No	
5. Surrogates/Monitoring Compounds		X	No	
6. Matrix Spike/Matrix Spike Duplicate	X		Yes	The matrix spikes and/or matrix spike duplicate was outside the control limits for parent sample Tt-TP1-B4A-10 Therefore, the data was "J" qualified.
7. Laboratory Control Samples		X	No	
8. Interference Check Samples		X	No	
9. Compound Quantitation and Reporting Limits	X		Yes	All sample results below the reporting limit are "J" qualified.
10. Duplicates	X		Yes	Parent samples Tt-TP1-B4A-6 was qualified as estimated and assigned a "J" qualifier.

Verification and Validation Label	Stage_2A_Validation_Manual
Verification and Validation Label Code	S2AVM

Overall Assessment: Acceptable as qualified.
Field QC samples checked for completeness only.
Usability: Sample results qualified "J", estimated, are useable for limited purposes only. All other results are considered valid and useable for all purposes.

Sample Information:
Cooler Temperature: One cooler at receipt was 5.1º C.

Lab Sample ID	Field Sample Number	Date Collected
440-155501-1	Tt-TP1-B1A-2	08/11/16
440-155501-2	Tt-TP1-B1A-6	08/11/16
440-155501-3	Tt-TP1-B1A-10	08/11/16
440-155501-4	Tt-TP1-B1A-14	08/11/16
440-155501-5	Tt-TP1-B1A-18	08/11/16
440-155501-6	Tt-TP1-B1A-22	08/11/16
440-155501-7	Tt-TP1-B1A-26	08/11/16
440-155501-8	Tt-TP1-B4A-2	08/11/16
440-155501-9	Tt-TP1-B4A-6	08/11/16
440-155501-10	Tt-TP1-B4A-6-dup	08/11/16

Lab Sample ID	Field Sample Number	Date Collected
440-155501-11	Tt-TP1-B4A-10	08/11/16
440-155501-12	Tt-TP1-B4A-14	08/11/16
440-155501-13	Tt-TP1-B4A-18	08/11/16
440-155501-14	Tt-TP1-B4A-22	08/11/16
440-155501-15	Tt-TP1-B4A-26	08/11/16
440-155501-16	Tt-TP1-B3A-2	08/11/16
440-155501-17	Tt-TP1-B3A-6	08/11/16
440-155501-18	Tt-TP1-B3A-10	08/11/16
440-155501-19	Tt-TP1-B3A-14	08/11/16
440-155501-20	Tt-TP1-B3A-18	08/11/16
440-155501-21	Tt-TP1-B3A-26	08/11/16

Data Verification and Validation Summary
Data Validation Stage 2A

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 4°C (+ or – 2°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/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 correctly on data forms? Were recoveries/RPDs within laboratory established limits?	Yes/Yes/No
Method 314.0: The Perchlorate results from parent sample Tt-TP1-B4A-10 was qualified as estimated and assigned a "J-" qualifier.	

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. Interference Check Sample (ICS)	
Were interference check samples (ICS) analyzed at appropriate intervals? Were ICS recoveries within acceptable limits of the true value?	Yes

9. 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? Were there detections below the reporting limit?	Yes/Yes/Yes

All: Results detected above the MDL but below the reporting limit are estimated and qualified "J". For a complete list of "J" qualified samples due to being detected below the reporting limit please see the Qualifier Summary Report and the Reporting Limit Outlier Report in the ADR Output in Appendix G1.

10. Duplicates	
Were any duplicate pairs analyzed in this SDG? Were RPDs between parent sample and duplicates ≤ lab limits or ≤ 30% for field duplicates?	Yes/No
Method 2540C Leach: The Total dissolved solids result from parent sample Tt-TP1-B4A-6 was qualified as estimated and assigned a "J" qualifier.	
Method 314.0: The Total dissolved solids result from parent sample Tt-TP1-B4A-6 was qualified as estimated and assigned a "J" qualifier.	

Validated by: Michael Wilson 9/14/2016

Data Verification and Validation Summary
Data Validation Stage 2A

Project Name:	Soil Flushing Treatability Study	SDG/Report No.:	440-155570-1
Project No.:	100-SBO-T35000-2016-M05	Lab ID:	Test America Irvine
No. of Samples:	8	Matrix:	Solid

Area Reviewed	Anomalies		Qualification Required	Action Required
	Yes	No	Yes or No	
1. Sample Preservation, Handling, and Transport		X	No	
2. Chain-of-Custody		X	No	
3. Holding Times		X	No	
4. Blanks		X	No	
5. Surrogates/Monitoring Compounds		X	No	
6. Matrix Spike/Matrix Spike Duplicate	X		Yes	The parent sample Tt-TP2-B3A-14 data associated with the matrix spikes and/or matrix spike duplicates was "J" or "UJ" qualified.
7. Laboratory Control Samples		X	No	
8. Interference Check Samples		X	No	
9. Compound Quantitation and Reporting Limits	X		Yes	All sample results below the reporting limit are "J" qualified.
10. Duplicates	X		Yes	Parent sample Tt-TP2-B3A-14 relative percent difference to its respective duplicate sample was outside the control limit and was "J" qualified.

Verification and Validation Label	Stage_2A_Validation_Manual
Verification and Validation Label Code	S2AVM

Overall Assessment: Acceptable as qualified.
Field QC samples checked for completeness only.
Usability: Sample results qualified "J", estimated, are useable for limited purposes only. All other results are considered valid and useable for all purposes.

Sample Information:
Cooler Temperature: One cooler at receipt was 3.2º C.

Lab Sample ID	Field Sample Number	Date Collected
440-155570-1	Tt-TP2-B3A-2	08/12/16
440-155570-2	Tt-TP2-B3A-6	08/12/16
440-155570-3	Tt-TP2-B3A-10	08/12/16
440-155570-4	Tt-TP2-B3A-1	08/12/16
440-155570-5	Tt-TP2-B3A-14-dup	08/12/16
440-155570-6	Tt-TP2-B3A-18	08/12/16
440-155570-7	Tt-TP2-B3A-22	08/12/16
440-155570-8	Tt-TP2-B3A-26	08/12/16

Data Verification and Validation Summary
Data Validation Stage 2A

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 4°C (+ or – 2°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/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 correctly on data forms? Were recoveries/RPDs within laboratory established limits?	Yes/Yes/No
Method 300.0_Leach: Parent sample Tt-TP2-B3A-14 was qualified as estimated for Sulfate (J), Nitrate as NO3 (J+), and Chloride (J+).	
Method 6010B: The Iron, Manganese, and Titanium results from parent sample Tt-TP2-B3A-14 were qualified as estimated and assigned "J+" qualifiers.	
Method 6010B_Leach: Parent sample Tt-TP2-B3A-14 was qualified as estimated for Calcium (J+) and Sodium (J-).	
Method 6020: The results from parent sample Tt-TP3-L2-6 were qualified as estimated for Antimony (UJ), Arsenic (J-), Barium (J+), and Beryllium (J-).	

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. Interference Check Sample (ICS)	
Were interference check samples (ICS) analyzed at appropriate intervals? Were ICS recoveries within acceptable limits of the true value?	Yes

9. 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? Were there detections below the reporting limit?	Yes/Yes/Yes

All: Results detected above the MDL but below the reporting limit are estimated and qualified "J". For a complete list of "J" qualified samples due to being detected below the reporting limit please see the Qualifier Summary Report and the Reporting Limit Outlier Report in the ADR Output in Appendix G1.

10. Duplicates	
Were any duplicate pairs analyzed in this SDG? Were RPDs between parent sample and duplicates ≤ lab limits or ≤ 30% for field duplicates?	Yes/No
Method 300.0_Leach: The Sulfate result from parent sample Tt-TP2-B3A-14 was qualified as estimated and assigned a "J" qualifier. The Chloride result from parent sample Tt-TP2-B3A-14 was qualified as estimated and assigned a "J+" qualifier.	
Method 314.0: The Perchlorate result from parent sample Tt-TP2-B3A-14 was qualified as estimated and assigned a "J" qualifier.	
Method 6010B_Leach: The Calcium and Magnesium results from parent sample Tt-TP2-B3A-14 were qualified as estimated and assigned a "J" qualifier.	
Method 6020: The Chromium result from parent sample Tt-TP2-B3A-14 was qualified as estimated and assigned a "J" qualifier.	
Method 7199: The Chromium, Hexavalent result from parent sample Tt-TP2-B3A-14 was qualified as estimated and assigned a "J" qualifier.	

Validated by: Michael Wilson 9/19/2016

Data Verification and Validation Summary
Data Validation Stage 2A

Project Name:	Soil Flushing Treatability Study	SDG/Report No.:	440-155575-1
Project No.:	100-SBO-T35000-2016-M05	Lab ID:	Test America Irvine
No. of Samples:	23	Matrix:	Solid

Area Reviewed	Anomalies		Qualification Required	Action Required
	Yes	No	Yes or No	
1. Sample Preservation, Handling, and Transport		X	No	
2. Chain-of-Custody		X	No	
3. Holding Times		X	No	
4. Blanks		X	No	
5. Surrogates/Monitoring Compounds		X	No	
6. Matrix Spike/Matrix Spike Duplicate	X		Yes	The parent sample Tt-TP1-L2A-14 data associated with the matrix spikes and/or matrix spike duplicates was "J" qualified.
7. Laboratory Control Samples		X	No	
8. Interference Check Samples		X	No	
9. Compound Quantitation and Reporting Limits	X		Yes	All sample results below the reporting limit are "J" qualified.
10. Duplicates	X		Yes	Parent samples Tt-TP1-L2A-14 and Tt-TP1-B2A-14 were qualified as estimated and assigned "J" qualifiers.

Verification and Validation Label	Stage_2A_Validation_Manual
Verification and Validation Label Code	S2AVM

Overall Assessment: Acceptable as qualified.
Field QC samples checked for completeness only.
Usability: Sample results qualified "J", estimated, are useable for limited purposes only. All other results are considered valid and useable for all purposes.

Sample Information:
Cooler Temperature: One cooler at receipt was 2.9º C.

Lab Sample ID	Field Sample Number	Date Collected
440-155575-1	Tt-TP2-B4A-2	08/12/16
440-155575-2	Tt-TP2-B4A-6	08/12/16
440-155575-3	Tt-TP2-B4A-10	08/12/16
440-155575-4	Tt-TP2-B4A-14	08/12/16
440-155575-5	Tt-TP2-B4A-18	08/12/16
440-155575-6	Tt-TP2-B4A-22	08/12/16
440-155575-7	Tt-TP2-B4A-26	08/12/16
440-155575-8	Tt-TP1-B2A-2	08/12/16
440-155575-9	Tt-TP1-B2A-6	08/12/16
440-155575-10	Tt-TP1-B2A-10	08/12/16
440-155575-11	Tt-TP1-B2A-14	08/12/16

Data Verification and Validation Summary
Data Validation Stage 2A

Lab Sample ID	Field Sample Number	Date Collected
440-155575-12	Tt-TP1-B2A-14-dup	08/12/16
440-155575-13	Tt-TP1-B2A-18	08/12/16
440-155575-14	Tt-TP1-B2A-22	08/12/16
440-155575-16	Tt-TP1-L2A-2	08/12/16
440-155575-17	Tt-TP1-L2A-6	08/12/16
440-155575-18	Tt-TP1-L2A-10	08/12/16
440-155575-19	Tt-TP1-L2A-14	08/12/16
440-155575-20	Tt-TP1-L2A-14-dup	08/12/16
440-155575-21	Tt-TP1-L2A-18	08/12/16
440-155575-22	Tt-TP1-L2A-22	08/12/16
440-155575-23	Tt-TP1-L2A-26	08/12/16

Data Verification and Validation Summary
Data Validation Stage 2A

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 4°C (+ or – 2°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/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 correctly on data forms? Were recoveries/RPDs within laboratory established limits?	Yes/Yes/No
Method 314.0: The Perchlorate results from parent sample Tt-TP1-L2A-14 was qualified as estimated and assigned a "J+" qualifier.	

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. Interference Check Sample (ICS)	
Were interference check samples (ICS) analyzed at appropriate intervals? Were ICS recoveries within acceptable limits of the true value?	Yes

9. 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? Were there detections below the reporting limit?	Yes/Yes/Yes

All: Results detected above the MDL but below the reporting limit are estimated and qualified "J". For a complete list of "J" qualified samples due to being detected below the reporting limit please see the Qualifier Summary Report and the Reporting Limit Outlier Report in the ADR Output in Appendix G1.

10. Duplicates	
Were any duplicate pairs analyzed in this SDG? Were RPDs between parent sample and duplicates ≤ lab limits or ≤ 30% for field duplicates?	Yes/No
Method 314.0: The Perchlorate result from parent sample Tt-TP1-L2A-14 was qualified as estimated and assigned a "J+" qualifier. The Perchlorate result from parent sample Tt-TP1-B2A-14 was qualified as estimated and assigned a "J" qualifier.	
Method 2540C Leach: The Total Dissolved Solids result from parent sample Tt-TP1-L2A-14 was qualified as estimated and assigned a "J" qualifier.	

Validated by: Michael Wilson 9/15/2016

Data Verification and Validation Summary
Data Validation Stage 2A

Project Name:	Soil Flushing Treatability Study	SDG/Report No.:	440-155631-1
Project No.:	100-SBO-T35000-2016-M05	Lab ID:	Test America Irvine
No. of Samples:	67	Matrix:	Solid

Area Reviewed	Anomalies		Qualification Required	Action Required
	Yes	No	Yes or No	
1. Sample Preservation, Handling, and Transport		X	No	
2. Chain-of-Custody		X	No	
3. Holding Times		X	No	
4. Blanks		X	No	
5. Surrogates/Monitoring Compounds		X	No	
6. Matrix Spike/Matrix Spike Duplicate	X		Yes	The matrix spikes and/or matrix spike duplicate was outside the control limits for parent samples Tt-TP2-B1A-6, Tt-TP2-L2A-2, Tt-TP3-B2A-22, Tt-TP3-B3A-26, and Tt-TP4-B3A-22. Therefore, the data was were "J" qualified.
7. Laboratory Control Samples		X	No	
8. Interference Check Samples		X	No	
9. Compound Quantitation and Reporting Limits	X		Yes	All sample results below the reporting limit are "J" qualified.
10. Duplicates	X		Yes	Parent samples Tt-TP3-B2A-22, Tt-TP3-B1A-6, Tt-TP3-B4A-14, Tt-TP3-L2A-6, Tt-TP4-B3A-22 and Tt-TP2-B1A-22 relative percent difference to its respective duplicate sample was outside the control limit and were "J" or "UJ" qualified.

Verification and Validation Label	Stage_2A_Validation_Manual
Verification and Validation Label Code	S2AVM

Overall Assessment: Acceptable as qualified.
Field QC samples checked for completeness only.
Usability: Sample results qualified "J", estimated, are useable for limited purposes only. All other results are considered valid and useable for all purposes.

Sample Information:
Cooler Temperature: Three coolers at receipt time were 1.5º C, 4.1º C and 4.7º C.

Lab Sample ID	Field Sample Number	Date Collected
440-155631-1	Tt-TP2-L2A-2	08/13/16
440-155631-2	Tt-TP2-L2A-6	08/13/16
440-155631-3	Tt-TP2-L2A-10	08/13/16
440-155631-4	Tt-TP2-L2A-14	08/13/16
440-155631-5	Tt-TP2-L2A-18	08/13/16
440-155631-6	Tt-TP2-L2A-22	08/13/16
440-155631-7	Tt-TP2-L2A-26	08/13/16

Lab Sample ID	Field Sample Number	Date Collected
440-155631-8	Tt-TP2-B2A-2	08/13/16
440-155631-9	Tt-TP2-B2A-6	08/13/16
440-155631-10	Tt-TP2-B2A-10	08/13/16
440-155631-11	Tt-TP2-B2A-14	08/13/16
440-155631-12	Tt-TP2-B2A-18	08/13/16
440-155631-13	Tt-TP2-B2A-22	08/13/16
440-155631-14	Tt-TP2-B2A-26	08/13/16
440-155631-15	Tt-TP3-B3A-2	08/13/16
440-155631-16	Tt-TP3-B3A-6	08/13/16
440-155631-17	Tt-TP3-B3A-10	08/13/16
440-155631-18	Tt-TP3-B3A-14	08/13/16
440-155631-19	Tt-TP3-B3A-18	08/13/16
440-155631-20	Tt-TP3-B3A-22	08/13/16
440-155631-21	Tt-TP3-B3A-26	08/13/16
440-155631-22	Tt-TP3-B4A-2	08/14/16
440-155631-23	Tt-TP3-B4A-6	08/14/16
440-155631-24	Tt-TP3-B4A-10	08/14/16
440-155631-25	Tt-TP3-B4A-14	08/14/16
440-155631-26	Tt-TP3-B4A-14-DUP	08/14/16
440-155631-27	Tt-TP3-B4A-18	08/14/16
440-155631-28	Tt-TP3-B4A-22	08/14/16
440-155631-29	Tt-TP3-B1A-2	08/14/16
440-155631-30	Tt-TP3-B1A-6	08/14/16
440-155631-31	Tt-TP3-B1A-6-DUP	08/14/16
440-155631-32	Tt-TP3-B1A-10	08/14/16
440-155631-33	Tt-TP3-B1A-14	08/14/16
440-155631-34	Tt-TP3-B1A-18	08/14/16
440-155631-35	Tt-TP3-B1A-22	08/14/16
440-155631-36	Tt-TP3-B1A-28	08/14/16
440-155631-37	Tt-TP3-L2A-2	08/14/16
440-155631-38	Tt-TP3-L2A-6	08/14/16
440-155631-39	Tt-TP3-L2A-6-DUP	08/14/16
440-155631-40	Tt-TP3-L2A-10	08/14/16
440-155631-41	Tt-TP3-L2A-14	08/14/16
440-155631-42	Tt-TP3-L2A-18	08/14/16
440-155631-43	Tt-TP3-L2A-22	08/14/16
440-155631-44	Tt-TP3-L2A-26	08/14/16
440-155631-45	Tt-TP3-B2A-2	08/14/16
440-155631-46	Tt-TP3-B2A-6	08/14/16
440-155631-47	Tt-TP3-B2A-10	08/14/16
440-155631-48	Tt-TP3-B2A-14	08/14/16
440-155631-49	Tt-TP3-B2A-18	08/14/16
440-155631-50	Tt-TP3-B2A-22	08/14/16
440-155631-51	Tt-TP3-B2A-22-DUP	08/14/16
440-155631-52	Tt-TP4-B3A-2	08/15/16

Data Verification and Validation Summary
Data Validation Stage 2A

Lab Sample ID	Field Sample Number	Date Collected
440-155631-53	Tt-TP4-B3A-6	08/15/16
440-155631-54	Tt-TP4-B3A-10	08/15/16
440-155631-55	Tt-TP4-B3A-14	08/15/16
440-155631-56	Tt-TP4-B3A-18	08/15/16
440-155631-57	Tt-TP4-B3A-22	08/15/16
440-155631-58	Tt-TP4-B3A-22-DUP	08/15/16
440-155631-59	Tt-TP4-B3A-26	08/13/16
440-155631-60	Tt-TP2-B1A-2	08/13/16
440-155631-61	Tt-TP2-B1A-6	08/13/16
440-155631-62	Tt-TP2-B1A-10	08/13/16
440-155631-63	Tt-TP2-B1A-14	08/13/16
440-155631-64	Tt-TP2-B1A-18	08/13/16
440-155631-65	Tt-TP2-B1A-22	08/13/16
440-155631-66	Tt-TP2-B1A-22-DUP	08/13/16
440-155631-67	Tt-TP2-B1A-26	08/13/16

Data Verification and Validation Summary
Data Validation Stage 2A

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 4°C (+ or – 2°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/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 correctly on data forms? Were recoveries/RPDs within laboratory established limits?	Yes/Yes/No
Method 314.0: The Perchlorate results from parent samples Tt-TP2-B1A-6, Tt-TP2-L2A-2, Tt-TP3-B2A-22, and Tt-TP3-B3A-26 were qualified as estimated and assigned a "J" qualifier.	
Method 6010B: Parent sample Tt-TP4-B3A-22 was qualified as estimated for Iron (J-), Manganese (J-), and Titanium (J+).	

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. Interference Check Sample (ICS)	
Were interference check samples (ICS) analyzed at appropriate intervals? Were ICS recoveries within acceptable limits of the true value?	Yes

9. 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? Were there detections below the reporting limit?	Yes/Yes/Yes
All: Results detected above the MDL but below the reporting limit are estimated and qualified "J". For a complete list of "J" qualified samples due to being detected below the reporting limit please see the Qualifier Summary Report and the Reporting Limit Outlier Report in the ADR Output in Appendix G1.	

10. Duplicates	
Were any duplicate pairs analyzed in this SDG? Were RPDs between parent sample and duplicates ≤ lab limits or ≤ 30% for field duplicates?	Yes/No
Method 314.0: The Perchlorate results from parent samples Tt-TP3-B2A-22, Tt-TP3-B1A-6, Tt-TP3-B4A-14, Tt-TP3-L2A-6, Tt-TP4-B3A-22 and Tt-TP2-B1A-22 were qualified as estimated and assigned "J" qualifiers.	
Method 2540C Leach: Parent samples Tt-TP2-B1A-22 and Tt-TP3-L2A-6 were qualified as estimated for Total Dissolved Solids (J).	
Method 300.0: The Chloride, Sulfate, and Nitrate as NO3 results from parent sample Tt-TP3-L2A-6 were qualified as estimated and assigned "J" qualifiers. The Chloride result from parent sample Tt-TP4-B3A-22 was qualified as estimated and assigned a "J" qualifier.	
Method 6010: The Boron and Manganese results from parent sample Tt-TP3-L2A-6 were qualified as estimated and assigned "J" qualifiers.	
Method 6010B Leach: The Magnesium result from parent sample Tt-TP3-L2A-6 were qualified as estimated and assigned "J" qualifiers. The Magnesium and Calcium results from parent sample Tt-TP4-B3A-22 were qualified as estimated and assigned "J" qualifiers.	
Method 6020: Parent sample Tt-TP3-L2A-6 was qualified as estimated for Arsenic (J), Chromium (J), Cobalt (J), Copper (J), Selenium (UJ), and Zinc (J). Parent sample Tt-TP4-B3A-22 was qualified as estimated for Beryllium (J), Cobalt (J), Copper (J), Lead (J), Nickel (J), Zinc (J), and Molybdenum (UJ).	
Method 7199: The Chromium, hexavalent result from parent sample Tt-TP4-B3A-22 was qualified as estimated and assigned "J" qualifiers.	

Validated by: Michael Wilson 9/16/2016

Data Verification and Validation Summary
Data Validation Stage 2A

Project Name:	Soil Flushing Treatability Study	SDG/Report No.:	440-155720-1
Project No.:	100-SBO-T35000-2016-M05	Lab ID:	Test America Irvine
No. of Samples:	23	Matrix:	Solid

Area Reviewed	Anomalies		Qualification Required	Action Required
	Yes	No	Yes or No	
1. Sample Preservation, Handling, and Transport		X	No	
2. Chain-of-Custody		X	No	
3. Holding Times		X	No	
4. Blanks		X	No	
5. Surrogates/Monitoring Compounds		X	No	
6. Matrix Spike/Matrix Spike Duplicate	X		Yes	The parent samples Tt-TP4-L2A-22 and Tt-TP4-L2A-26 data associated with the matrix spikes and/or matrix spike duplicates were "J" or "UJ" qualified.
7. Laboratory Control Samples		X	No	
8. Interference Check Samples		X	No	
9. Compound Quantitation and Reporting Limits	X		Yes	All sample results below the reporting limit are "J" qualified.
10. Duplicates	X		Yes	Parent sample Tt-TP4-L2A-26 was outside the control limits of its respective duplicate sample. Therefore the sample data was "J" Qualified

Verification and Validation Label	Stage_2A_Validation_Manual
Verification and Validation Label Code	S2AVM

Overall Assessment: Acceptable as qualified.
Field QC samples checked for completeness only.
Usability: Sample results qualified "J", estimated, are useable for limited purposes only. All other results are considered valid and useable for all purposes.

Sample Information:
Cooler Temperature: One cooler at receipt was 3.2º C.

Field Sample Number	Lab Sample ID	Date Collected
440-155720-1	Tt-TP4-B4A-2	08/16/16
440-155720-2	Tt-TP4-B4A-6	08/16/16
440-155720-3	Tt-TP4-B4A-10	08/16/16
440-155720-4	Tt-TP4-B4A-14	08/16/16
440-155720-5	Tt-TP4-B4A-18	08/16/16
440-155720-6	Tt-TP4-B4A-22	08/16/16
440-155720-7	Tt-TP4-B4A-26	08/16/16
440-155720-8	Tt-TP4-B1A-2	08/16/16
440-155720-9	Tt-TP4-B1A-6	08/16/16
440-155720-10	Tt-TP4-B1A-10	08/16/16

Data Verification and Validation Summary
Data Validation Stage 2A

Field Sample Number	Lab Sample ID	Date Collected
440-155720-11	Tt-TP4-B1A-14	08/16/16
440-155720-12	Tt-TP4-B1A-18	08/16/16
440-155720-13	Tt-TP4-B1A-26	08/16/16
440-155720-14	Tt-TP4-B1A-26-dup	08/16/16
440-155720-15	Tt-TP4-B1A-24	08/16/16
440-155720-16	Tt-TP4-L2A-2	08/16/16
440-155720-17	Tt-TP4-L2A-6	08/16/16
440-155720-18	Tt-TP4-L2A-10	08/16/16
440-155720-19	Tt-TP4-L2A-14	08/16/16
440-155720-20	Tt-TP4-L2A-18	08/16/16
440-155720-21	Tt-TP4-L2A-22	08/16/16
440-155720-22	Tt-TP4-L2A-26	08/16/16
440-155720-23	Tt-TP4-L2A-26-dup	08/16/16

Data Verification and Validation Summary
Data Validation Stage 2A

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 4°C (+ or – 2°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/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 correctly on data forms? Were recoveries/RPDs within laboratory established limits?	Yes/Yes/No
Method 300.1_Leach: The Chlorate results from parent sample Tt-TP4-L2A-22 was qualified as estimated and assigned a "J-" qualifier.	
Method 314.0: The Perchlorate results from parent sample Tt-TP4-L2A-22 and Tt-TP4-L2A-26 were qualified as estimated and assigned a "J+" qualifier.	
Method 6010B: The results from parent sample Tt-TP4-L2A-22 were qualified as estimated and Iron (J-) and Titanium (J+).	
Method 6010_Leach: The Sodium result from parent sample Tt-TP4-L2A-22 was qualified as estimated and assigned a "J+" qualifier.	
Method 6020: The results from parent sample Tt-TP4-L2A-22 were qualified as estimated for Copper (J-), Antimony (UJ), Barium (J+), Beryllium (J-), Chromium (J-), Nickel (J-), and Zinc (J-).	

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. Interference Check Sample (ICS)	
Were interference check samples (ICS) analyzed at appropriate intervals? Were ICS recoveries within acceptable limits of the true value?	Yes

9. 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? Were there detections below the reporting limit?	Yes/Yes/Yes
All: Results detected above the MDL but below the reporting limit are estimated and qualified "J". For a complete list of "J" qualified samples due to being detected below the reporting limit please see the Qualifier Summary Report and the Reporting Limit Outlier Report in the ADR Output in Appendix G1.	

10. Duplicates	
Were any duplicate pairs analyzed in this SDG? Were RPDs between parent sample and duplicates ≤ lab limits or ≤ 30% for field duplicates?	Yes/No
Method 314.0: The Perchlorate result from parent samples Tt-TP4-L2A-26 was qualified as estimated and assigned "J-" qualifiers.	
Method 2540C Leach: Parent sample Tt-TP4-L2A-26 was qualified as estimated for Total Dissolved Solids (J).	

Validated by: Michael Wilson 9/16/2016

Data Verification and Validation Summary
Data Validation Stage 2A

Project Name:	Soil Flushing Treatability Study	SDG/Report No.:	440-155767-1
Project No.:	100-SBO-T35000-2016-M05	Lab ID:	Test America Irvine
No. of Samples:	9	Matrix:	Solid

Area Reviewed	Anomalies		Qualification Required	Action Required
	Yes	No	Yes or No	
1. Sample Preservation, Handling, and Transport		X	No	
2. Chain-of-Custody		X	No	
3. Holding Times		X	No	
4. Blanks		X	No	
5. Surrogates/Monitoring Compounds		X	No	
6. Matrix Spike/Matrix Spike Duplicate	X		Yes	The parent samples Tt-TP4-B2A-6 and Tt-TP4-B2A-10 data associated with the matrix spikes and/or matrix spike duplicates were "J" qualified.
7. Laboratory Control Samples		X	No	
8. Interference Check Samples		X	No	
9. Compound Quantitation and Reporting Limits	X		Yes	All sample results below the reporting limit are "J" qualified.
10. Duplicates	X		Yes	Parent sample Tt-TP4-B2A-22 and Tt-TP4-B2A-6 was outside the control limits of its respective duplicate sample. Therefore the sample data was "J" or "UJ" Qualified.

Verification and Validation Label	Stage_2A_Validation_Manual
Verification and Validation Label Code	S2AVM

Overall Assessment: Acceptable as qualified.
Field QC samples checked for completeness only.
Usability: Sample results qualified "J", estimated, are useable for limited purposes only. All other results are considered valid and useable for all purposes.

Sample Information:
Cooler Temperature: One cooler at receipt was 2.7º C.

Field Sample Number	Lab Sample ID	Date Collected
440-155767-1	Tt-TP4-B2A-2	08/16/16
440-155767-2	Tt-TP4-B2A-6	08/16/16
440-155767-3	Tt-TP4-B2A-6-dup	08/16/16
440-155767-4	Tt-TP4-B2A-10	08/16/16
440-155767-5	Tt-TP4-B2A-14	08/16/16
440-155767-6	Tt-TP4-B2A-18	08/16/16
440-155767-7	Tt-TP4-B2A-22	08/16/16
440-155767-8	Tt-TP4-B2A-26	08/16/16
440-155767-9	Tt-TP4-B2A-22-dup	08/16/16

Data Verification and Validation Summary
Data Validation Stage 2A

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 4°C (+ or – 2°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/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 correctly on data forms? Were recoveries/RPDs within laboratory established limits?	Yes/Yes/No
Method 314.0: The Perchlorate results from parent sample Tt-TP4-B2A-6 was qualified as estimated and assigned a "J-" qualifier.	
Method 6010B: Parent sample Tt-TP4-B2A-10 were qualified as estimated for Iron (J), Manganese (J+), and Titanium (J+).	
Method 6020: Parent sample Tt-TP4-B2A-10 was qualified as estimated for Antimony (UJ), Barium (J+), Chromium (J-), Cobalt (J-), Copper (J-), Nickel (J-), and Selenium (J-).	

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. Interference Check Sample (ICS)	
Were interference check samples (ICS) analyzed at appropriate intervals? Were ICS recoveries within acceptable limits of the true value?	Yes

9. 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? Were there detections below the reporting limit?	Yes/Yes/Yes

All: Results detected above the MDL but below the reporting limit are estimated and qualified "J". For a complete list of "J" qualified samples due to being detected below the reporting limit please see the Qualifier Summary Report and the Reporting Limit Outlier Report in the ADR Output in Appendix G1.

10. Duplicates	
Were any duplicate pairs analyzed in this SDG? Were RPDs between parent sample and duplicates ≤ lab limits or ≤ 30% for field duplicates?	Yes/No
Method 2320B Leach: Parent sample Tt-TP4-B2A-22 was qualified as estimated for Alkalinity as CaCO3 (J).	
Method 2540C Leach: Parent samples Tt-TP4-B2A-22 and Tt-TP4-B2A-6 were qualified as estimated for Total Dissolved Solids (J).	
Method 300.0 Leach: The Chloride, Sulfate, and Nitrate as NO3 results from parent sample Tt-TP4-B2A-22 were qualified as estimated and assigned "J" qualifiers.	
Method 314.0: The Perchlorate results from parent samples Tt-TP4-B2A-22 and Tt-TP4-B2A-6 were qualified as estimated and assigned "J" qualifiers.	
Method 9060: Parent samples Tt-TP4-B2A-22 as qualified as estimated for Total Organic Carbon (J).	
Method 6010B: The Manganese, Boron, and Iron results from parent sample Tt-TP4-B2A-22 were qualified as estimated and assigned "J" qualifiers.	
Method 6010B Leach: The Manganese, Boron, and Calcium results from parent sample Tt-TP4-B2A-22 were qualified as estimated and assigned "J" qualifiers.	
Method 6020: Parent sample Tt-TP4-B2A-22 was qualified as estimated for Barium (J), Cobalt (J), Copper (J), Molybdenum (J), Nickel (J), and Selenium (J).	
Method 7199: The Chromium, hexavalent result from parent sample Tt-TP4-B2A-22 was qualified as estimated and assigned "UJ" qualifiers.	

Validated by: Michael Wilson 9/16/2016

Appendix E.3
Laboratory Data Packages

Appendix E.4
DVSR Access Database

Appendix F
UNLV Microcosm Study Report

Microcosm Studies to Support Soil Flushing Pilot Testing at the NERT site in Henderson, Nevada

FINAL REPORT

PI: Jacimaria R. Batista, Ph.D., P.E., Professor
Co-PI: Daniel Gerrity, Ph.D., Assistant Professor
Department of Civil and Environmental Engineering and Construction

1. BACKGROUND

Tetra Tech, on behalf of the Nevada Environmental Response Trust (NERT), is proposing to perform pilot experiments to investigate the effectiveness of using (a) soil flushing with water only and (b) soil flushing amended with electron donor to reduce the contaminant load, particularly that of perchlorate, present in the vadose zone of the NERT site in Henderson, Nevada. Currently, perchlorate-impacted groundwater is treated by the Groundwater Extraction and Treatment System (GWETS). The GWETS includes pumping and biologically treating the groundwater using fluidized bed reactors. Ethanol is used as an organic substrate for the reduction of perchlorate and other co-occurring anions (e.g., oxygen, nitrate, and chlorate). The planned soil flushing is thought of as a supplemental technology that could be used in conjunction with the existing GWETS. At least two possibilities are envisioned:

A) *Perchlorate and other contaminants are removed from the vadose zone by water flushing. Perchlorate and co-occurring contaminants are transported to the groundwater that is currently being treated by the GWETS.* This approach has potential benefits and challenges. Benefits include (1) treating the groundwater with the existing GWETS and (2) cleanup of the vadose zone, which is a perchlorate source to the Las Vegas Wash during rainfall events. The challenges include (1) transporting salinity (i.e., total dissolved solids) from the vadose zone to the groundwater, which might slow down perchlorate degradation kinetics, and (2) increasing the volume of groundwater that must be treated by the GWETS due to water added for flushing.

B) *Amendment of soil flushing with an organic substrate will promote biodegradation of perchlorate in the vadose zone.* It has been established that perchlorate degradation at the NERT site is limited by a lack of organic substrate and high salinity in some areas (Batista et al., 2003). Benefits of amending the soil during flushing include increased perchlorate removal from the vadose zone and reduction of perchlorate loads to the groundwater over time. One potential challenge is fostering perchlorate degradation in areas with high salinity. A second challenge is potential clogging of soil pores by bacterial biomass due to

substrate addition. This is a concern because of the presence of other electron acceptors (e.g., nitrate, chlorate, and oxygen), all of which will be reduced before perchlorate, thereby generating significant microbial growth that could hinder soil permeability. Bench-scale and pilot testing will generate important data that can be used to minimize the expected challenges and to support soil flushing as an additional technology to remove perchlorate at the NERT site.

2. OBJECTIVES AND TECHNICAL APPROACH

Tetra Tech is proposing pilot soil flushing testing to examine the impacts of soil flushing speed (slow versus fast flushing rates) and organic substrate amendment to remove perchlorate from the vadose zone at the NERT site. The pilot soil flushing test consists of four plots that will be set up as follows:

- Plot 1: Operated at high flow rate and flushed with water only (HIGH-Water)
- Plot 2: Operated at reduced flow rate and flushed with water only (LOW-Water)
- Plot 3: Operated at high flow rate and flushed with water amended with an organic substrate (HIGH-Substrate), and
- Plot 4: Operated at reduced flow rate and flushed with water amended with an organic substrate (LOW-Substrate).

The objectives of the pilot soil flushing tests are as follows:

a) Examine the effectiveness of soil flushing as a method to reduce perchlorate from the vadose zone soils at NERT
b) Determine the impacts of flushing rate and organic amendment on perchlorate removal from the vadose zone
c) Determine the impacts of soil flushing on the composition of the groundwater below the vadose zone, and
d) Use the results of the pilot testing, if successful, to estimate the cost and required timeframe for full-scale implementation of the process at the NERT site.

The University of Nevada Las Vegas (UNLV) Environmental Engineering and Water Quality Laboratory has been given a contract to perform microcosm biodegradation tests to assist Tetra Tech

with the soil flushing pilot testing at the NERT site. The objectives of the microcosm testing are as follows:

a) Evaluate the use of emulsified oil (EOS-100), glycerol, and compost extract as potential electron donors for the degradation of perchlorate contained in the vadose zone soils at the NERT site. EOS-100 is an emulsified oil produced by EOS Remediation LLC, from Raleigh, NC
b) Investigate the need for macronutrient addition (i.e., phosphorus) to the vadose zone soils to support perchlorate biodegradation
c) Determine the impact of soil to water ratios on perchlorate degradation kinetics, and
d) Determine the impact of salinity levels on the acclimation time and perchlorate degradation kinetics.

3. METHODOLOGY

Microcosm testing using soils drilled from the NERT site and Stabilized Lake Mead Water (SLMW) was performed to meet the objectives outlined above. SLMW is untreated water from Lake Mead that is delivered by the Basic Management Complex (BMI) to the NERT site for industrial application purposes. Previous research (Batista et al., 2003) has identified more than 30 species of perchlorate reducing bacteria present in the soils at NERT. Therefore, bacteria are present in the soils and there is no need for bioaugmentation in the microcosms. The objective of the microcosm studies is to investigate whether flushing with solutions containing electron donors (e.g. glycerol, emulsified oil, and compost extract) will promote biodegradation of desired contaminants (i.e. perchlorate, chlorate, and nitrate) contained in the vadose zone soils of the NERT site.

3.1 Vadose Zone Soil Sampling and Contaminant Concentrations

The first task in this research involved determining the contaminant concentrations present in the vadose zone soils collected from the NERT site. At UNLV, the characterization was performed using blended soil profiles as explained below. However, Tetra Tech has collected samples by depth at the NERT site and has sent them for analysis by a commercial laboratory. The results of these analyses are not part of this report.

Four soil samples were collected from boreholes drilled in the each of the four plots Tetra Tech selected for the pilot soil flushing tests, east of the BT Tank Farm at the NERT site. For the microcosm tests, soil boring cuttings were collected by Tetra Tech in aseptic plastic buckets with

hand shovels provided by UNLV. New 2-gallon plastic buckets and metal garden shovels were used for sampling. The buckets and were rinsed with 5% chlorine water and rinsed 8 times with deionized autoclaved water and allowed to air dry, covered with autoclaved aluminum folio. The shovels were flame -sterilized using ethyl alcohol and then wrapped with aluminum folio. The soil samples were named TP-1, TP-2, TP-3, and TP-4 and were collected from 0-12 feet and 14-26 feet depth. Samples TP1 to TP-3 are very similar in grain size and have a light brown-yellowish appearance. Sample TP-4 is darker, coarser, and wetter than the other samples (Figure 1).

For the microcosm tests, equal volumes (3 L) of each soil sample were mixed together in sterilized plastic pans (Figure 1). Samples TP-1 and TP-2 were mixed together in Pan A and samples TP-3 and TP-4 were mixed together in Pan B, using aseptic hand shovels. Next, half the sample volume of Pan A and half of Pan B were mixed together in a third pan. This procedure was performed four more times to assure a homogeneous sample was obtained. Mixed samples were then stored back in the refrigerator in a labeled container. This sample was labeled TT- Soil-blend-flushing.

To determine the concentration of contaminants in the vadose zone soils on a dry weight basis, the moisture content of the soil blend was determined and the samples were submitted to sequential extraction using high purity nanopure water. For the moisture content, 20 g of sample were weighed and dried in an oven at 105^0C for 12 hours (Table 1). The replicate samples show average moisture of about 7.7% for the blend.

Table 1. Moisture content of duplicate soil blend samples from the vadose zone at the NERT site.

TT-Soil blend-flushing (replicates)	**Moisture Content**
Soil Flushing-1	7.2%
Soil Flushing-2	8.2%

Image on Left: TP-4 soil sample was noticeably darker, coarser and wetter than the other three samples.

Images on Right: Blending process.

Figure 1: Images of Soil Sample TP-4 and Soil Blending Process

For the contaminant extraction, two 20g blended soil samples were each placed in a 50 ml centrifuge tubes along with 20 ml of ultrapure water. The tube was then placed in a refrigerated centrifuge at 9,000 G (Sorvall Legent-GT) for 10 minutes. The supernatant water was then decanted and reserved. This procedure was repeated 9 times. The resulting combined extract was then reserved for contaminant analysis by ion chromatography and spectrophotometry. Only major ions of interest are reported (Table 2). Perchlorate was analyzed by EPA Method 314 with a Dionex ICS 2000 ion chromatograph (IC). Nitrate was analyzed by Hach/EPA Method 10206 using a Hach DR-5000 spectrophotometer. Next, the average moisture and contaminant concentrations were used to estimate the amount of nitrate, perchlorate, and chlorate present in the vadose zone soil (Table 2).

Table 2. Nitrate and perchlorate concentrations in blended vadose zone soils at the NERT site

Extraction	Extract (ml)	NO3-N (mg/L)	NO_3^- (mg/L)	ClO_4^- (mg/L)	ClO_3^- (mg/L) **
1st to 8th	68 68	20.47 20.70 20.6 (avg)	90.66 91.67 91.20 (avg)	47.73 48.37 48.05 (avg)	N/A
9th	11	0.28	1.24	< 1 mg/L	N/A
mg/g of dry soil*		**0.076**	**0.34**	**0.18**	**0.18**
mg/Kg of dry soil		**76**	**340**	**180**	**180**

- * assumed average moisture content of 7.7%
- ** not analyzed, assumed chlorate equals perchlorate concentration based on past data for the NERT site.

Notice that the soil samples contain very high concentrations of perchlorate and nitrate, both of which are electron acceptors to bacteria. The concentration of nitrate in these soils is almost double that of perchlorate. It was necessary to develop a new IC calibration curve for these analyses (1-5 ppm range) given the high concentrations. The high TDS if the soil samples did not allow for an accurate measurement of chlorate in the samples. Based on past data from the NERT site (Batista et al. 2003), the perchlorate and chlorate concentrations were assumed to be similar to each other.

3.2 Electron Donor Characterization

Three electron donors were chosen for testing, namely, EOS-100 oil (EOS Remediation, Raleigh, NC, glycerol (Sigma Aldrich), and compost extract. The compost extract was generated by adding 1 lb of food compost (A1 Organics, North Las Vegas, NV) to a perforated funnel and recirculating deionized water (using cotton balls to help with flow spreading) for 24 hours at a flow rate of 150 ml/minute (Figure 2) . A peristaltic pump was used for recirculation. The chemical oxygen demand (COD) of the electron donors was computed in order to determine the adequate amount needed to support biodegradation of the contaminants of interest. COD is a good measure of organic carbon availability and it is much faster and easily measured in the field. Because the pilot test will be performed in the vadose zone and because of the variation in oxygen concentration in the SLMW, the contribution of dissolved oxygen to electron donor use has to be taken into account. Alternatively, one may choose to add an oxygen scavenger during testing to eliminate the use of electron donor to support aerobic degradation.

COD was measure in full strength EOS oil and in diluted samples of glycerol (Table 3). Glycerol is very viscous and difficult to pipet, therefore a diluted sample was generated by placing a known weight of glycerol in warm water and mixing well until a constant COD value was reached.

Table 3: COD Concentrations for Electron Donors Used in Vadose Zone Microcosms

Electron Donor	Average COD Value (mg/L)
Compost Solution	253
EOS Remediation Oil	2,070,000
EOS Remediation Oil (Serial Dilution Only)	2,085,000
Glycerol (Serial Dilution Only)	1,210,000

EOS-100 emulsified oil has a COD approximately 1.7 times that of glycerol (Table 3). The compost extract generated had a low COD of 253 mg/L.

Figure 2: Compost extract generation using compost in the bottom container and cotton balls in the top container.

3.3 Determination of Electron Donor Requirements

Taking into consideration the concentrations of contaminants (i.e. electron acceptors) in the vadose zone soils (Table 2) and the COD of the electron donors (Table 3), the amount of electron donor to be added to the microcosm can be computed. EOS-100 emulsified oil is composed of 85% soybean oil and 15% by weight of other unidentified slow release organics (EOS Remediation, North

Carolina). Its specific gravity is 0.97. Anaerobic degradation of emulsified oils occurs by ester linkage breakage resulting in the release of saturated and unsaturated long-chain fatty acids and glycerol. Saturated long-chain fatty acids are further degraded into one mole of acetate and 4 moles of hydrogen. Unsaturated long-chain fatty acids will also be biodegraded further generating 2 moles of hydrogen and one mole of acetate (Sawyer et al., 1994). Therefore, the major electron donor produced by EOS-100 degradation is hydrogen, although acetic acid is also generated. Compared with other commonly used electron donors for perchlorate and nitrate reduction, oils generate about 2.7 times as much hydrogen (Table 4). Therefore, the reducing power of oils is 2.7 times that of acetate or glucose.

Glycerol ($C_3H_8O_3$) is a highly biodegradable compound that can be fermented to 1,3-propanediol and then to acetate. There exist many types of bacteria that can degrade glycerol to several products including acetate, ethanol, butyrate, formate, and hydrogen (Viana et al., 2012) (Figure 3). The specific degradation pathway and end products will depend on the type of bacteria present and environmental conditions. Because the bacteria community that can be developed at the NERT site is not known, in this research, the reducing power of glycerol will be estimated comparatively to that of EOS-100, in terms of COD. In this case, the COD of EOS-100 is 1.7 times that of glycerol (Table 3). Alternatively, one can also assume glycerol will be degraded completely to acetate, which releases 4 moles of H_2 per mole of acetate or 0.0666 moles H_2/gram of acetate (Table 4). This corresponds to 0.133 lbs H_2/lbs of acetate (Table 4). Thus, in terms of reducing power, acetate has approximately three times less power than soybean oil (i.e., 0.4 lbs H_2/lb of oil).

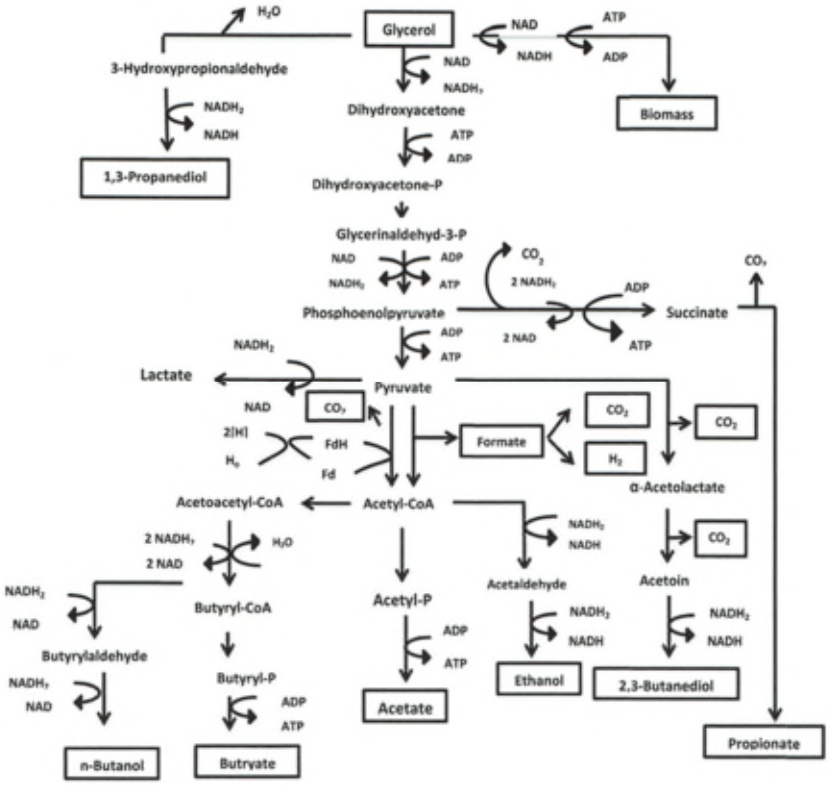


Figure 3: Metabolic pathways of glycerol (after Viana et al., 2012)

Table 4: Hydrogen release by biodegradation of oils and other biodegradable compounds (ESTCP, 2006)

Substrate	Molecular weight	H_2 released per mole of substrate	Moles H_2 released per gram of substrate	Lbs of Hydrogen released per Lbs of compound
Glucose	180.2	12	0.0666	0.133
Acetate	60.1	4.0	0.0666	0.133
Lactate	90.1	6.0	0.0666	0.133
Soybean oil	**873.1**	**156.5**	**0.1792**	**0.358**
Palm oil	848.5	152.8	0.1800	0.360
EOS-100	Specific gravity=0.93		0.200	**0.400**

The stoichiometric hydrogen demands for the electron acceptors found in the vadose zone of the NERT site are summarized in Table 5. Based on the values in Table 5 and given one lb of EOS-100 generates 0.4 lbs of hydrogen, one lb of EOS-100 is sufficient to treat 22.4, 5.57, 4.95, and 3.2 lbs of iron III, chlorate, perchlorate, and oxygen, respectively. In a general manner, the demand for

hydrogen, on a weight basis for nitrate, chlorate and perchlorate are similar. One pound of EOS-100 can supply the hydrogen demand of about 5.2 lbs of these electron acceptors.

Table 5: Stoichiometric hydrogen and oil demand for the electron acceptors found at NERT

Electron acceptor	Reduction Equation	Moles H_2/moles acceptor	wt/wt H_2	*Lbs Acc/Lbs EOS-100
Oxygen	$O_2 + 2\ H_2 \rightarrow 2\ H_2O$	2.0	7.94	3.176
Nitrate	$2\ NO_3^- + 2\ H^+ + 5\ H_2 \rightarrow N_2 + 6\ H_2O$	2.5	12.40	4.960
Perchlorate	$ClO_4^- + 4\ H_2 \rightarrow Cl^- + 4\ H_2O$	4.0	12.38	4.952
Chlorate	$ClO_3^- + 3H_2 \rightarrow Cl^- + 3\ H_2O$	3.0	13.92	5.568
Sulfate	$2\ SO_4^{-2} + 3\ H^+ + 8\ H_2 \rightarrow H_2S + HS^- + 8\ H_2O$	4.0	12.00	4.800
Iron III	$2\ Fe^{+3} + H_2 \rightarrow 2\ Fe^{+2} + 2\ H^+$	0.5	56.0	22.40
*One lb of EOS-100 generated 0.4 lbs of H_2, according to the manufacturer. Therefore, to generate 1 lb of H_2, 2.5 lbs of EOS oil are needed.				

Table 6 shows oil and glycerol demands for biodegradation microcosm testing using 30 g of vadose soil and 100 ml of SLMW. The total stoichiometric oil need in the microcosm, with 30 g soil, would be 4.363 mg or 0.0045 ml of oil. Given the uncertainty of electron donor availability due to the variability of local geology, in the Stage 1 microcosm tests, slightly above 100 times stoichiometric ratio (0.5 ml of oil) was used. Glycerol has lower COD and less reducing capacity than EOS. However, EOS adsorbs to soils while glycerol does not and it is highly soluble. In the Stage 1 microcosm tests, 0.7 ml of glycerol was used in each microcosm. Studies performed at the University of North Carolina (ESTCP, 2006) have found that the adsorption of EOS-100 to soils vary from 0.02 g/g soil to 0.06 g/g soil. The required EOS-100 for the NERT vadose zone soils has been estimated as 0.0001490 g/g soil (Table 6). Therefore, the required EOS-100 concentration needed for bioremediation is much smaller than the amount that can be adsorbed to the soils.

Table 6: Estimated electron donor need for soil flushing microcosm (EOS-100 and glycerol)

Electron Acceptor (EA)	wt/wt H_2	lbs of EA / lbs of EOS-100	EA in soil of NERT site, mg/Kg soil	EA – in 30 g of soil (mg)	EOS need g oil/g soil	EOS-100 required (mg oil)
Nitrate	12.40	4.960	340	10.2	6.76 x 10-5	2.10
Perchlorate	12.38	4.952	180	5.4	3.57 x 10-5	1.10
Chlorate	13.92	5.568	180	5.4	3.198 x 10-5	0.99
Oxygen*	7.94	3.176	16.67	0.5	5.21 x 10-6	0.16
Iron III**	56.0	22.4	10.00	0.3	4.46 x 10-7	0.013
Total			**726.67**	**21.8**	**0.0001490**	**4.363 (0.0045 ml)**
Stage 1 Microcosm Electron Donor Amendments						
EOS-100 (s.g. 0.97)	Microcosm with 30 g soil and 100 ml SLMW.					**0.5 ml** ***
Glycerol	Microcosm with 30 g soil and 100 ml SLMW.					**0.7 ml**

*Assumed 5 mg/L oxygen in SLMW; 30% effective porosity, 16.67 pore volumes flushed through soil (water/soil =3.3) bulk density of soil of 2.2 kg/L.

** Fe III concentration assumed to be 3 mg/L based (measured with 30 g soil and 100 ml water extraction).

*** Used 0.5 ml of EOS-100 (specific gravity of 0.97) in 30 g of soils; about 100 x stoichiometric ratio.

For glycerol, used 0.7 ml in each microcosm because glycerol has less reducing power than EOS. The COD of oil is about 1.7 times that of glycerol.

3.4. Biodegradation Microcosm Set-up

Microcosm testing was performed to determine if the addition of an electron donor can promote perchlorate, chlorate, and nitrate biodegradation concomitantly with flushing of vadose zone soils. That is, vadose zone soils would be treated by two mechanisms (a) biodegradation due to the addition of electron donor, and (b) flushing due to high water solubility of the contaminants of interest (i.e. electron acceptors). The amount of contaminants that can be removed by biodegradation will depend on the kinetics of biodegradation and the amount of contaminant present. Contaminants flushed out of the soils and not biodegraded within the retention time in the vadose zone will be transferred to the groundwater and can be treated by the Groundwater Extraction and Treatment System (GWETS) currently operating at the NERT site.

Given oxygen and nitrate are preferred electron acceptors to chlorate and perchlorate, the relative amount of the contaminants will also influence the removal mechanism. Oxygen and nitrate will be degraded first, followed by chlorate and perchlorate. Because perchlorate biodegradation has a high half saturation constant [i.e., few ppm (Waller et al., 2004 to 8-33 ppm, Logan et al., 2001)] it

is desirable to keep perchlorate concentrations in the vadose zone soils, during biodegradation, as high as possible. Therefore, the amount of water to be used in soil flushing should be minimized to avoid unnecessary dilution. In addition, applying too much water during soil flushing may also result in dilution of contaminant groundwater currently treated at the GWETS. Furthermore, minimizing water use in soil flushing will save water and reduce the cost associated with it.

Microcosms were performed using blended soil from the site where the pilot soil flushing testing will be performed. SLMW will be used as the flushing agent. SLMW for the microcosm testing was collected from a pipe located in the proximity of the testing area. Water was not sterilized; therefore, bacteria present in the microcosm originate from both the vadose zone soils and SLMW. No additional macronutrients, nitrogen or phosphorus, were added to the microcosms, except for the nutrient control microcosm to which only phosphorus was added. Nitrate concentration present in the soil is more than is sufficient to support the microbial nitrogen need for biodegradation. Macronutrient requirement calculations assumed a typical bacterial cell composition of $C_5H_7O_2N$.

Three stages of testing were performed to investigate the impact of electron donor type, (1) electron donor dosage, (2) ratios of soil to water, and (3) phosphate addition as a macronutrient. For stage one, 30 g of wet soil were weighed for each microcosm. The soil was then transferred into autoclaved 150 ml borosilicate glass bottles along with 100 ml of SLMW, followed by the addition of 0.5 ml EOS-100 or 7 ml of diluted glycerol (10 x). For the compost, 40 ml compost solution and 60 ml SLMW were added. The bottles were then closed with a butyl rubber cap and crimped sealed with an aluminum ring. Oxygen was not removed from the bottles to simulate field conditions. Bottles were then wrapped in black felt, to eliminate algae growth, and placed horizontally in a shaker (Lab-Line Environ-Shaker) to mix at 21°C ± 1°C (Figure 4). Mixing was sufficient to completely mix the soil with the water (about 70 rpm). Upon mixing, the water became very turbid due to the suspension of fines present in the soils (Figure 4). Microcosm bottles were sacrificed at predetermined time intervals. The crimpled bottles were open using small pliers and the contents were transferred to 250 ml centrifuge bottles. The bottles were then centrifuged at 4000 G for 20 minutes or until a clear solution was obtained on top of the settled solids. The solution was then decanted into a vial labeled “extract one” and was submitted to analysis for perchlorate, nitrate, COD, and other components of interest as per analytical methods noted in Table 7. The leftover soil from centrifugation was then rinsed and extracted sequentially with three rinses of 20 ml deionized water. The consecutive rinsates were then accumulated into a vial and labeled “extract II”. The result of the analysis of both extracts

was used to determine if perchlorate and nitrate and electron donors have been fully extracted from the soil.

Figure 4: Microcosm bottles with vadose zone soils and SLMW (images on left) and incubation of bottles in a horizontal mixing shaker covered with felt to avoid light exposure and potential algae growth (image on right).

Table 7: Analytical Method Used in the Vadose Zone Microcosm Testing

- Perchlorate: EPA Method 314 by IC
- Conductivity: YSI conductivity meter
- Nitrate: Hach 10020 and EPA Method 352.1- chromotropic method
- Total Nitrogen: Hach 10072
- Sulfate: EPA Method 8051 by IC and Hach/Hach 8051-ascorbic acid
- COD: Hach 8000-digestion
- TDS: SM 2540 and EPA Method 160.1, gravimetry
- Ferric and ferrous ions: Hach 8008 and 8147
- Sulfide: Hach 8131- Blue Method
- Soil mixture pH: EPA Method 9045 D
- Phosphate: EPA Method 365.1

3.5. Quality Assurance of Biodegradation Experiments

Biodegradation experiments were performed in duplicates. EOS-100 was provided by the manufacturer and sent directly to UNLV. Glycerol was purchased commercially and is ACS grade. All standards used, including those for perchlorate, were high purity salts. A Google Drive was created containing all experimental procedures and data to facilitate communication among the many

students working on the project and the principal investigators. The Google Drive contains pictures and all the raw data. It also shows samples reruns for samples that did not pass QA/QC. The drive also contains all perchlorate analysis, including all QA/QC checks. The drive was shared with Tetra Tech from the beginning of the research.

Perchlorate and chlorate were determined using ion-chromatography using EPA Method 314. Seven calibration standards were used. Calibration correlation coefficient will be at least 0.997. Standards will be made with Aldrich sodium perchlorate with 99.9% purity. Nitrate, chloride, and sulfate were measured using Hach methods approved by EPA as noted. At least two standards were run before any samples were analyzed. Quality control samples for all parameters were run for every 10 samples run. If less than 10 samples were run, then at least one replicate was included. Quality control and quality assurance of the data were checked weekly by the PIs and by Winnie Davis, the chemist working on this project. The QA/QC checks are noted on the data posted in the Google Drive.

4. RESULTS AND DISCUSSION

4.1 Stage 1 Microcosms: Impact of Electron Donor Type on Contaminant Biodegradation Kinetics

An important decision to be made for the cleanup of the vadose zone soils at the NERT site is the type of electron donor to be used. The objective of Stage 1 microcosm testing was to investigate various types of electron donors to support the biological reduction of perchlorate and nitrate contained in the vadose zone soils. Three electron donors were tested: (1) glycerol, a readily soluble substrate; (2) emulsified oil (EOS-100), a slow release electron donor; and (3) compost extract, generated from commercially available organic compost. The testing matrix used in stage one microcosm is shown in Table 8. All microcosms were run in duplicate. Blank microcosm (BK in Table 8), to which no electron donor was added were also present in the matrix. Abiotic controls were also included (AB in Table 8). These bottles were autoclaved to kill bacteria. However, autoclaving soils are not as effective as using mercury as a biocide. However, mercury use was not desired and not applied in this research. Phosphate was also added to some bottles to investigate if phosphate addition would be needed (NB bottles in Table 8). The ratio of water to wet soil was 3.3 by weight (100 ml of water and 30 g of vadose zone soil). Microcosm batch tests were run for 25 days, and sacrificial microcosm bottles were analyzed in duplicate in the days shown in Table 8.

Table 8: Impact of Electron Donor on Biodegradation of Contaminants Present in Vadose Zone Soils at the NERT Site (Stage 1 Microcosms Matrix)

DAY	**2**	**6**	**8**	**12**	**16**	**20**	**24**	**25**	**25**
EOS	E2	E6	E8	E12	E16	E20	E24	BK-E2	C12
	E2-D	E6-D	E8-D	E12-D	E16-D	E20-D	E24-D	BK-G2	C12-D
Glycerol	G2	G6	G8	G12	G16	G20	G24	BK-G6	AC-C1
	G2-D	G6-D	G8-D	G12-D	G16-D	G20-D	G24-D	BK –E2	AC-C2
Compost Extract	C2	C6	C8	C12	C16	C20	ENB-1	BK-C6	CNB1
	C2-D	C6-D	C8-D	C12-D	C16-D	C20-D	ENB-2	BK-C2	CNB2
Nutrient Controls, Blanks, and Abiotic Controls		E-NB	C-NB	G-NB		CNB-1	GNB-1	C-NB	BK-E1
		C-NB	E-NB	G-NB		CNB-2	GNB-2	C-NB	BK-E2
						BK-C1	AC-E1		BK-G1
						BK-C2	AC-E2		BK-G2
							AC-G1		GNB 2
							AC-G2		ENB2

- For most microcosms: 30 g wet soil (7.7% moisture content) and 100 ml SLMW was used.
- For the compost bottles: 40 ml compost extract, 60 ml SLMW, and 30 g of soil were used.
- EOS-100: 0.5 ml of EOS/100ml (COD equivalent of about 10,000 mg/L)
- Glycerol: 7 ml of 10x diluted glycerol (COD equivalent of 8,470 mg/L), and 93 ml of SLMW used.

Notation:

E = EOS-100 oil , G = Glycerol, C = Compost, AC = Abiotic Control (autoclaved soil and water mixture with electron acceptor)

BK = Blank (No electron donor nor phosphate added), D = Duplicate ; NB = nutrient buffer (addition of phosphate (6.5 mg P/L)

1 and 2 are replicates of blanks and abiotic controls, as per example:

AC-E1 and AC-E2 = two replicates of abiotic control bottles using EOS-100.

The commercially available EOS-100 emulsified oil has a very high COD value (>$2.0x10^6$) mg/L) that is roughly twice that of glycerol (Table 9). The soluble COD extracted from organic compost was very low at about 185 mg/L. Several attempts to generate a more concentrated compost extract were unsuccessful. In the microcosms, although about the same amount of COD (10,000-11,000 mg/L) was added as glycerol and as EOS-100, the measured COD for the EOS-100 microcosms (122-164 mg/L) was about one order of magnitude lower than the glycerol microcosms (10,960-11,260 mg/L). This is due to adsorption of EOS-100 to the vadose zone soil while glycerol stays in the water phase after soil addition. It was also observed that some of EOS-100 became insoluble with the addition of the soil. Therefore, two factors likely contribute to the lower soluble COD in the EOS-100 microcosms: (1) adsorption to soil and (2) insolubility of the EOS-100. The insolubility is easily visible as oil floating on top of the water (Figure 5). It was also observed that a white “curd-like” precipitate was formed. It was speculated that EOS-100 insolubility is the result of

the reaction of oil with calcium concentrations present at high concentrations (>2,000 mg/L) in the soils and also in the SLMW used in the tests. This issue was not been fully investigated in this research. However, some batch testing was performed using ethylenediaminetetraacetic acid (EDTA) to precipitate the calcium and thereby increase oil solubility. The addition of large amounts of EDTA (> 10 times stoichiometric) were found to increase the EOS-100 solubility and fewer "curd-like" precipitates were visible. However, this research was not pursued further and it was out of the scope of this research.

Table 9 - Chemical Oxygen Demand (COD) of Electron Donors Used in Microcosm Testing, Before and After Soil Addition.

Sample	Initial COD in microcosms, mg/L (before soil addition)	COD, mg/L (after 30 g vadose zone soil addition to 100 ml of water)
EOS-100	10,000	122
EOS-100 D	10,000	164
Compost	190	185
Compost-D	190	187.5
Glycerol	11,000	10,960
Glycerol-D	11,000	11,260

Note: COD of raw materials used (measured at UNLV)
Glycerol = 1.21×10^6 mg/$L_{glycerol}$
EOS-100 = 2.07×10^6 mg/$L_{EOS\text{-}100}$

Figure 5: Insolubility of EOS-100 in vadose zone soil microcosm with SLMW

The biodegradation of perchlorate over time using EOS-100 and glycerol (100 times stoichiometric ratios) as the electron donors is shown in Figure 6. Initially, the biodegradation rate was faster for EOS-100 than for glycerol. By day 8, most of the perchlorate was biodegraded with EOS-100, and only about one-third was degraded with glycerol. However, by day 16, biodegradation supported by glycerol and EOS-100 were similar (Figure 6). As shown in Figure 6c, compost extract did not support significant biodegradation of perchlorate. By day 20, the perchlorate concentration remained at 50 mg/L for microcosms amended with compost extract, compared to an initial concentration of 55-60 mg/L. The data also show that if no electron donor is available (e.g., blank (BK) bottles) or if microbes are not present (e.g., abiotic controls (AC) bottles), perchlorate degradation does not occur. The same was observed for microcosms to which compost extracted was added along with phosphate (CNB1 and CNB2) and for blank microcosms to which no compost extract (i.e., no electron donor) was added (BK-C1 and BK-C2). Figure 6b indicates that the addition of either EOS or glycerol promoted almost complete degradation of all perchlorate within 25 days.

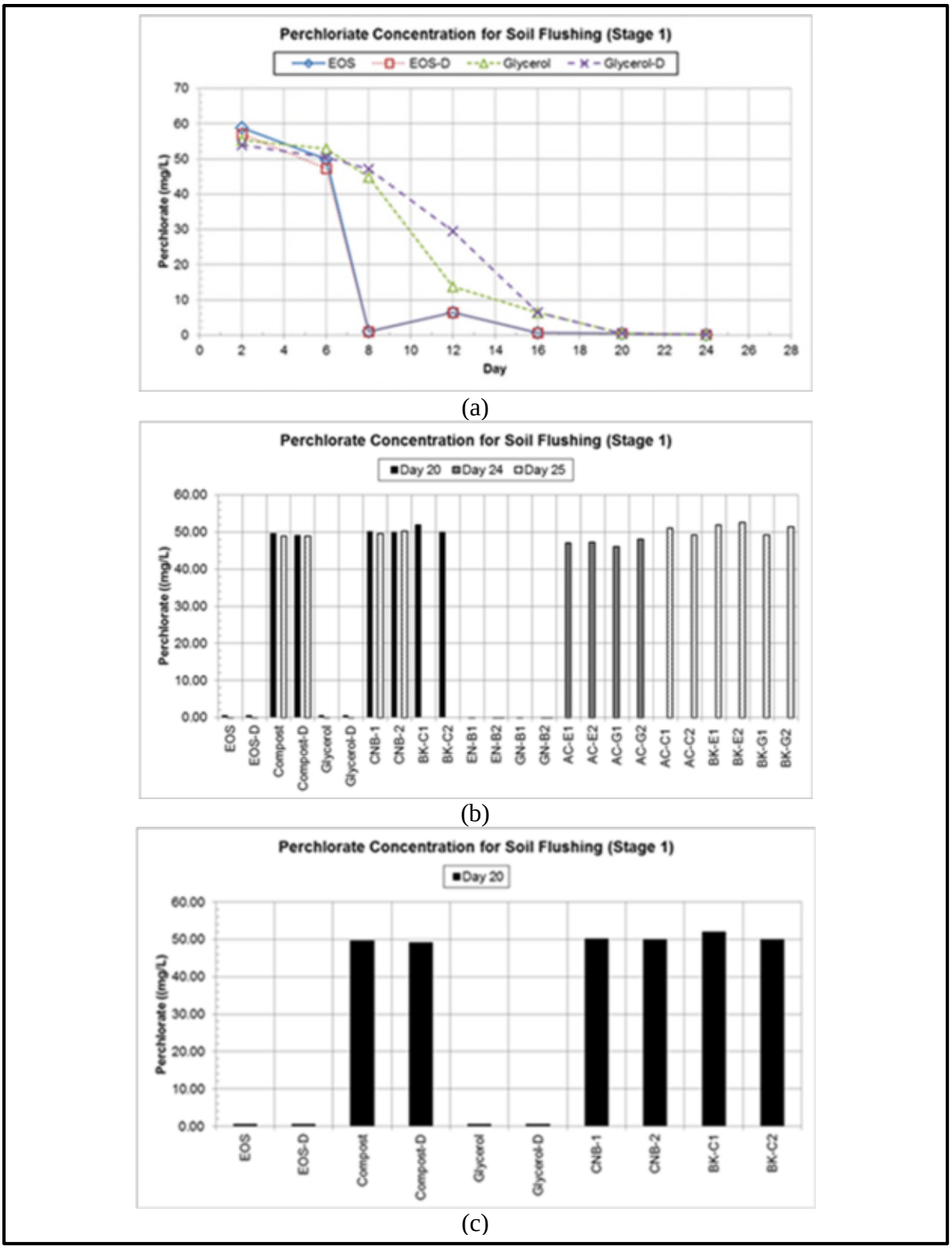


Figure 6: Impact of electron donor type on perchlorate biodegradation in the microcosms. (a) Perchlorate reduction over the entire testing period with EOS-100 or glycerol as the electron donor. (b) Perchlorate reduction in all microcosms on days 20, 24, and 25. (c) Perchlorate reduction on day 20.

The biodegradation of nitrate in the presence of various electron donors is depicted in Figure 7. The observations are very similar to those noted for perchlorate but with a few exceptions. Glycerol and EOS-100 promoted nitrate degradation, but compost extract did not. As expected, nitrate degradation occurred before perchlorate degradation. By day 2, nitrate concentrations were reduced from 55-60 mg-N/L to about 15-20 mg-N/L (Figure 7a). All nitrate was degraded in microcosms supplemented with EOS by day 6, and all nitrate was degraded in microcosms supplemented with glycerol by day 8. Note that these are also the days at which perchlorate degradation started. However, a major difference was observed between perchlorate and nitrate degradation in the abiotic controls (AC). For perchlorate, independent of the electron donor, very little degradation was observed at day 25, but for nitrate, degradation was observed in most of the autoclaved soil bottles. It seems that autoclaving reduced some types of bacteria, but not all. It seems autoclaving was more effective in inactivating perchlorate reducers. Considering that some nitrate-reducing bacteria are unable to reduce perchlorate, this theory seems plausible. Since no speciation of bacteria was performed during this study, it is not possible to ascertain why perchlorate-reducing bacteria were more sensitive to autoclaving.

At the end of the testing, after about 24-25 days, the degradation rates in bottles with phosphate (i.e., NB) and without additional phosphate were similar (Figure 7b). The concentration of soluble phosphate in the microcosms is shown in Figure 8. EOS-100 appears to contain a higher concentration of phosphate than glycerol, which might explain the faster initial degradation rate for bottles containing EOS as compared to those containing glycerol. The manufacturer of EOS-100 later confirmed that EOS 100 contains some phosphate. Examination of entire microcosm phosphate data, shows that: (a) phosphate concentrations added (i.e. 10 mg/L) decreased only slightly in blank bottles and in bottles containing compost extract where biodegradation did not take place; (b) added phosphate decreased significantly in bottles containing EOS-100 and glycerol, where biodegradation of nitrate and perchlorate occurred; (c) bottles were phosphate was added initially had higher degradation rates. However, with time the bottles with no phosphate caught up with those containing phosphate. At the end of 24-25 days, the remaining phosphate concentration in bottles with EOS-100 and glycerol and supplemented with phosphate was between 1-2 mg/L. Bottles fed glycerol had remaining phosphate concentrations around 0.2-0.4 mg/L, while the concentrations were higher (0.5-1 mg/L) for EOS-100 fed bottles. Although degradation using EOS-100 and glycerol were compatible, it seems advantageous to supplement with phosphate when using glycerol. It is advisable to add phosphate to increase biodegradation rates. An N:P mass ratio of 5:1 is recommended as the

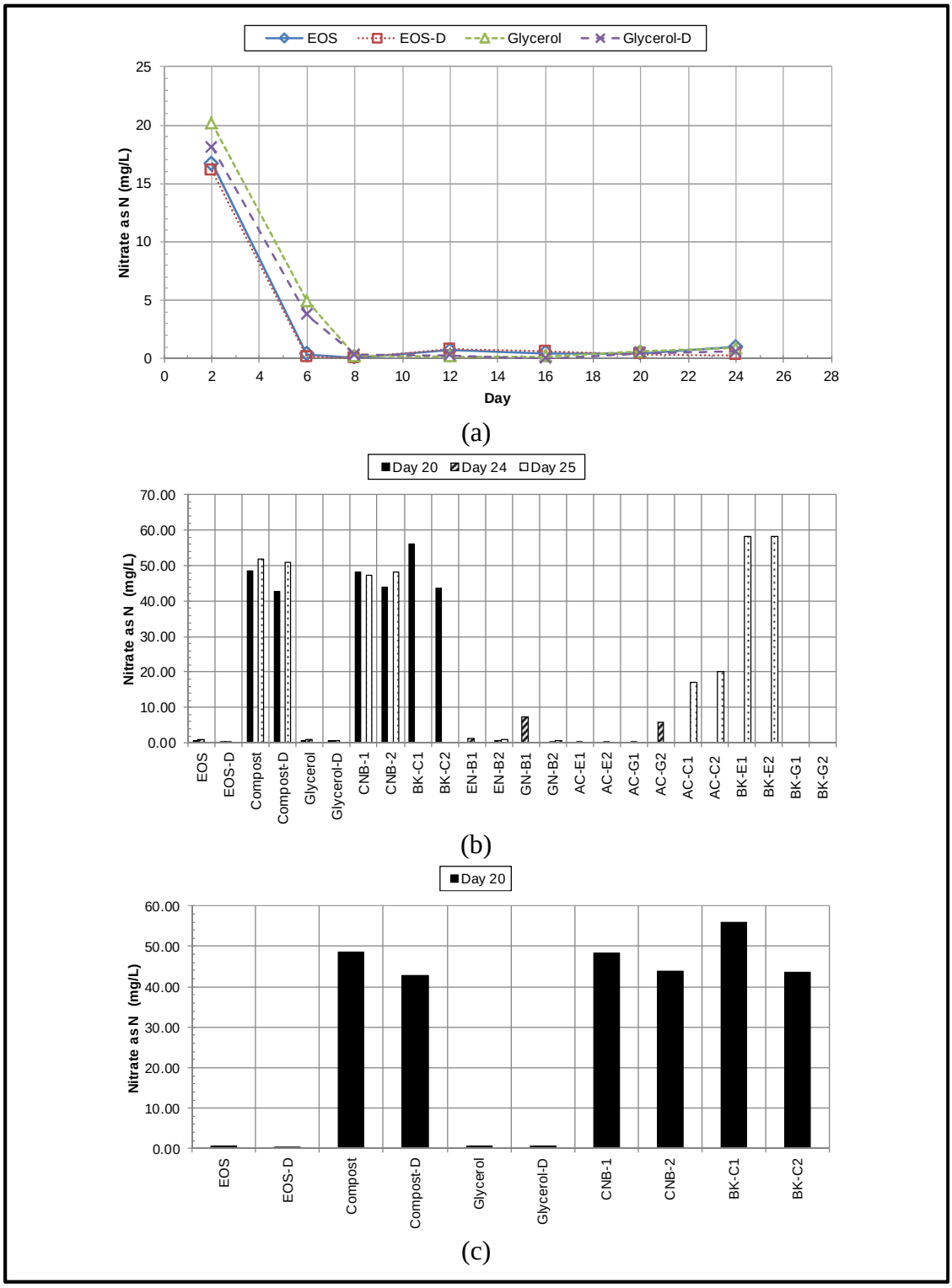


Figure 7 - Impact of electron donor type on nitrate biodegradation in the microcosms. (a) Nitrate reduction over the entire testing period with EOS-100 or glycerol as the electron donor. (b) Nitrate reduction in all microcosms on days 20, 24, and 25. (c) Nitrate reduction on day 20.

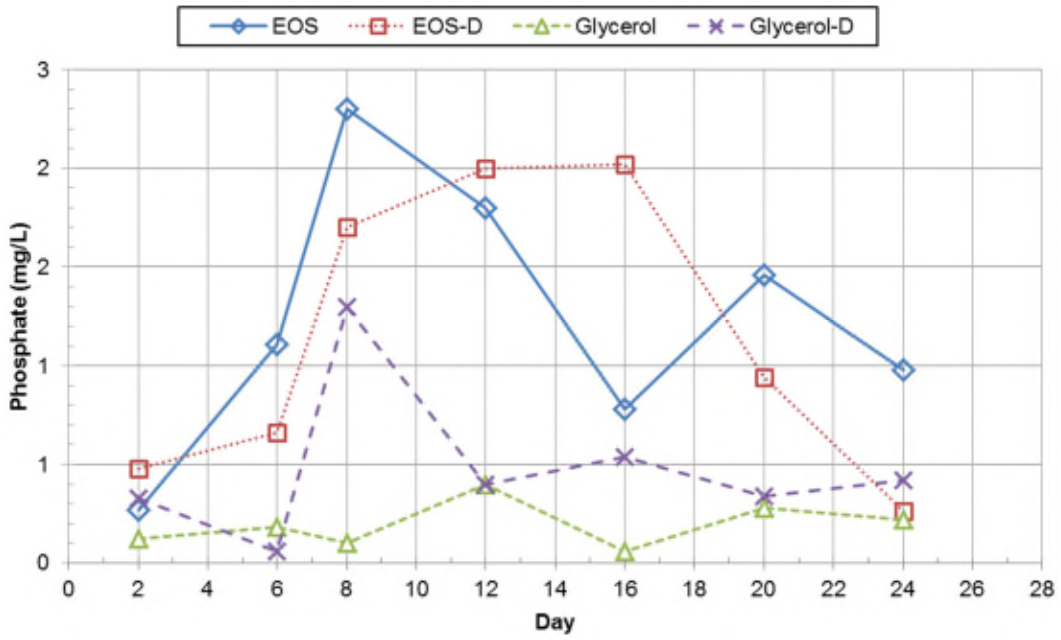


Figure 8: Phosphate concentration in the microcosms where EOS-100 and glycerol were used as electron donors.

maximum ratio. One must keep in mind that phosphate can be used by any bacteria in soils, including the ones that are not using the contaminants of interest. Therefore, starting with a very low ratio, say 2:1 may be a good cautionary measure to avoid overgrowth of bacteria.

The soluble chemical oxygen demand (COD), which is an indirect measure of the concentration of electron donor in the microcosms, is shown in Figure 9. The data are consistent with the COD values presented earlier in Table 9. The critical finding is that the majority of the EOS-100 is adsorbed to soil and glycerol stays in the liquid phase. The soil and SLMW had very low soluble COD concentrations (~10 mg/L), as shown by the blank tests (BK) in Figure 9b. During the entire degradation period, the COD of the EOS bottles remained around 100 mg/L, showing continuous release of EOS-100 with degradation. The COD of glycerol bottles started about 11,000 mg/L and dropped to about 10,000 mg/L after 25 days. The addition of EOS-100 and glycerol at 100 times the stoichiometric requirement effectively promoted degradation of perchlorate and nitrate. However, a large amount of electron donor still remained in solution or attached to the soils after 25 days. Therefore, it might be possible to significantly reduce the initial concentration of organic electron donor used to promote biodegradation in the vadose zone soils.

The variation in sulfate concentration over time is shown in Figure 10 and Table 10. Notice that the initial sulfate concentrations were 390-430 mg/L, 670 mg/L, and 350 mg/L for microcosms

supplemented with EOS, compost, and glycerol, respectively (Table 10, day 2). The higher sulfate concentration for the compost extract was expected given it was a highly oxidized organic compost, and the sulfate concentration in the EOS microcosm was slightly higher than that of glycerol.

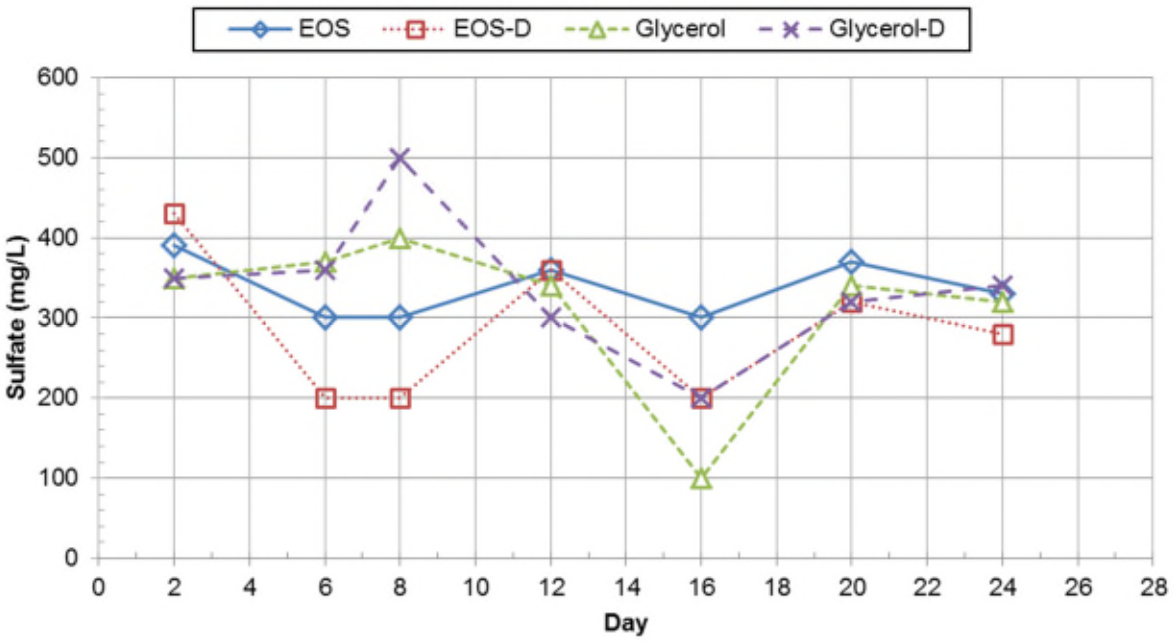


Figure 10: Sulfate concentrations in microcosm Stage 1 with 100 x Stoichiometric Ratios of .EOS-100 and Glycerol

Figure 10: Sulfate concentrations in microcosm Stage 1 with 100x stoichiometric ratios of EOS-100 and glycerol

Table 10: Sulfate concentration in all microcosms on Days 2 and 24.

Sample	Day #	Sample	DIH2O	DF	Measured	Adjusted
		mL	mL		mg/L	mg/L
EOS	2	1	9	10	39	390
EOS-D	2	1	9	10	43	430
Compost	2	1	9	10	67	670
Compost-D	2	1	9	10	67	670
Glycerol	2	1	9	10	35	350
Glycerol-D	2	1	9	10	35	350
E12 Day 24	24	1	9	10	33	330
E12-D Day 24	24	1	9	10	28	280
G12 Day 24	24	1	9	10	32	320
G12-D Day 24	24	1	9	10	34	340
ENB(1) Day 24	**24**	**1**	**9**	**10**	**7**	**70**
ENB(2) Day 24	**24**	**1**	**9**	**10**	**7**	**70**
GNB (1) Day 24	**24**	**1**	**9**	**10**	**12**	**120**
GNB(2) Day 24	**24**	**1**	**9**	**10**	**3**	**30**
AC-E1	24	1	9	10	42	420
AC-E2	24	1	9	10	42	420
AC-G1	24	1	9	10	45	450
AC-G2	24	1	9	10	37	370

Despite some variability throughout the test, sulfate concentrations decreased slightly in the microcosms supplemented with EOS-100 and glycerol alone. However, in all bottles with glycerol and EOS-100, supplemented with phosphate (i.e. NB bottles), significant sulfate reduction occurred with concentrations dropping to 30-70 mg/L (Table 10). The rotten egg smell characteristic of hydrogen sulfide was highly evident when these specific microcosm bottles were opened for analysis, thereby indicating the reduction of sulfate to hydrogen sulfide. Therefore, despite the somewhat faster kinetics observed in bottles supplemented with phosphate, its addition clearly promoted sulfate reduction. Because the impact of phosphate addition on nitrate and perchlorate degradation kinetics is only slight and considering the potential for sulfate reduction, phosphate addition should be minimized.

Sulfide levels measured in days 2, 12, and 25 show that sulfide concentration in the bottles increased with time (Figure 11) due do sulfate degradation. For days 25, where two microcosm bottles containing supplemental phosphate in the presence of EOS-100 and glycerol, sulfide concentrations measured varied from 40-118 mg/L.

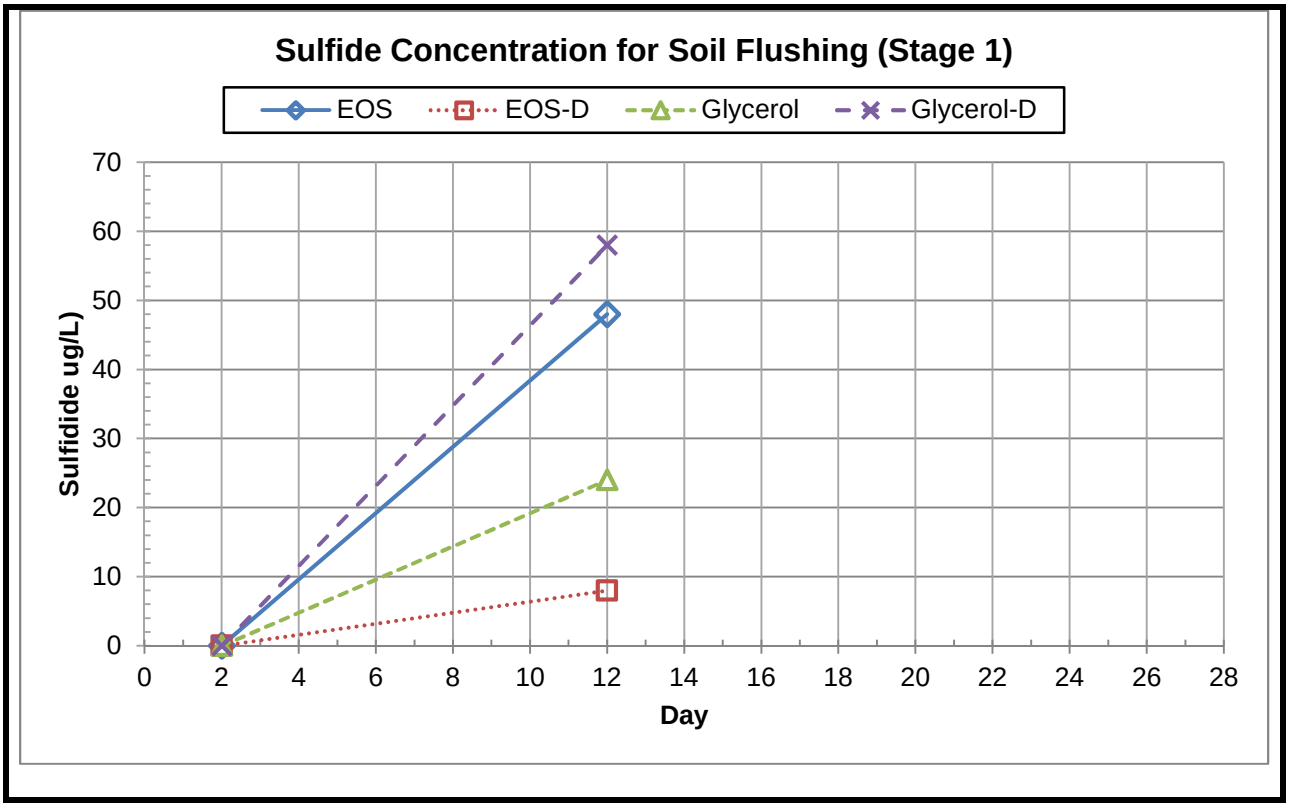
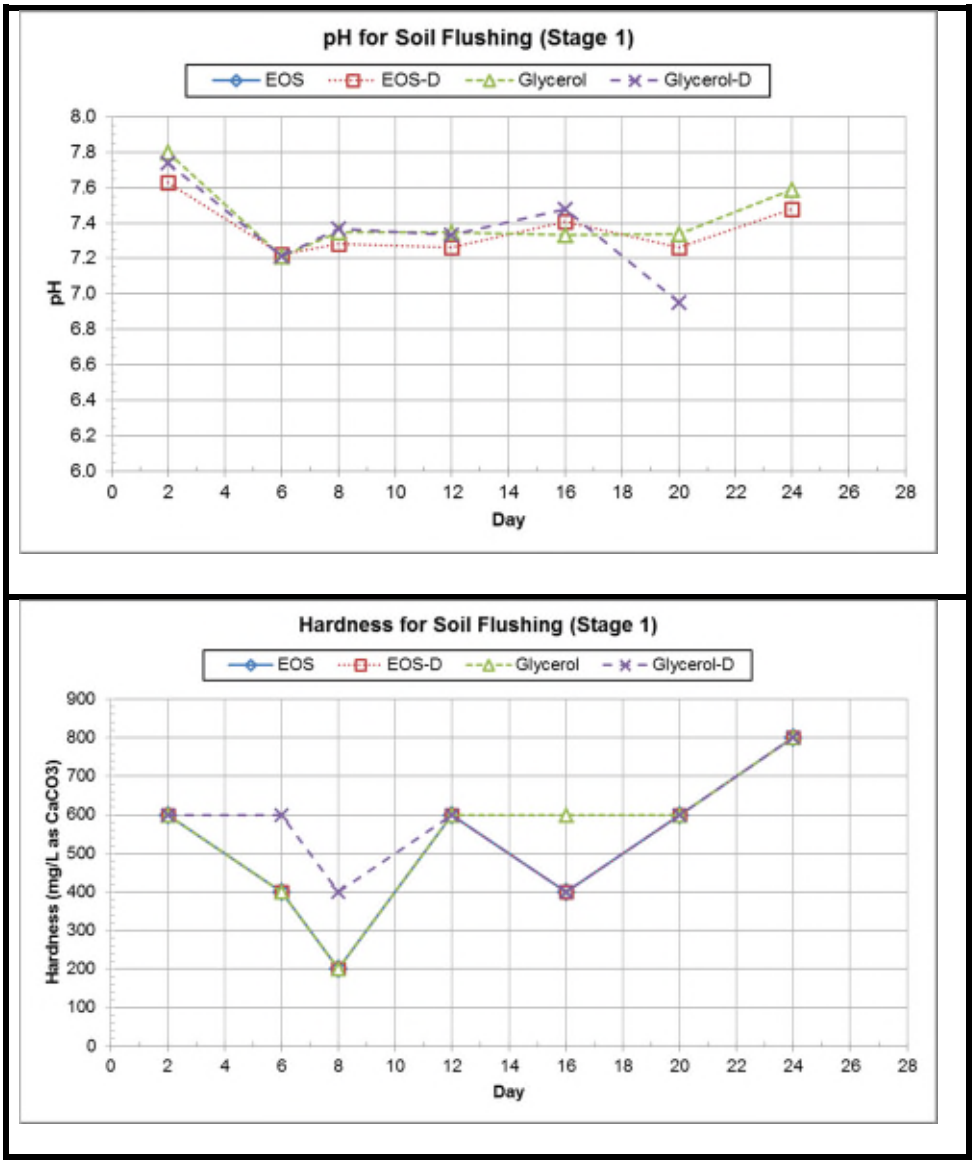


Figure 11: Sulfide concentrations in microcosms fed EOS-100 and glycerol.

The pH, total dissolved solids (TDS) and hardness in the microcosms are shown in Figures 12. The pH of the microcosms started about 7.8 and it stayed around 7.4 for most bottles. The pH of the SLMW used is about 7.8. In general, the pH varied less than 0.5 units from day 2 to day 25, in the microcosms. However, in bottles supplemented with phosphate, the pH decreased to 7.7 and 5.8 as a result of sulfate reduction. The TDS concentration in the microcosm stayed around 800 mg/L, but significant variability was noticed in the data. TDS of the SLMW is about 620 mg/L. The compost extract had a higher TDS around 1,300-1,400 mg/L. Hardness in the microcosms varied from 600-800 mg/L as $CaCO_3$ and is likely related to the precipitation of calcium due to the presence of oil and glycerol. Visually, precipitate curds were observed in both, the bottles containing glycerol and EOS-100. However, more precipitates were observed with the addition of EOS-100.



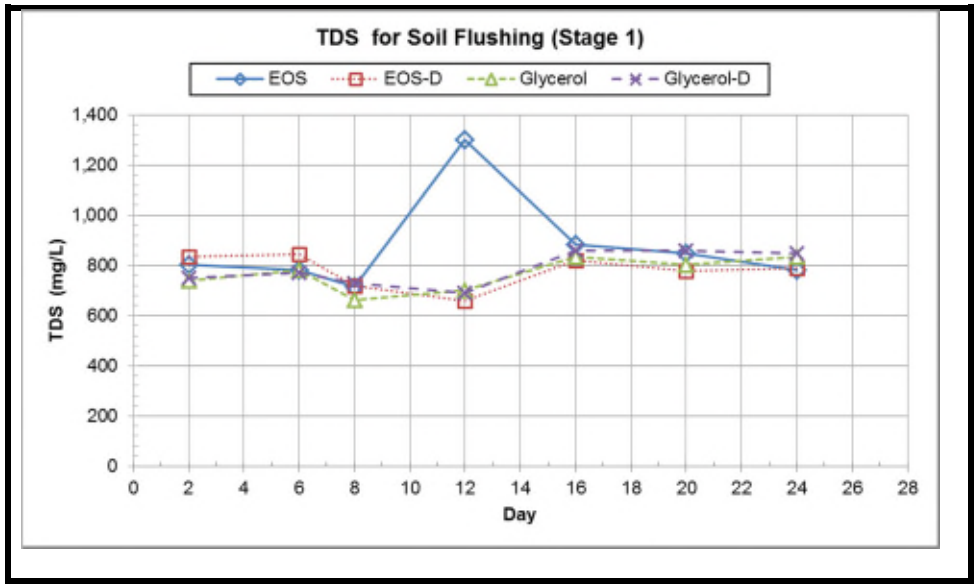


Figure 12: pH, Hardness, and TDS measurements in Microcosm Stage 1.

4.2 <u>Stage 2 Microcosms:</u> Impact of Lower Electron Donor Dose and High and Low Soil/Water Ratios on Biodegradation

In the Stage 2 microcosm tests, the impacts of water to soil ratios and glycerol dosage were examined. The matrix detailing the testing is shown in Table 11. Glycerol was chosen by Tetra Tech for further testing because there was not a significant difference in nitrate degradation kinetics when EOS-100 and glycerol were used and because EOS-100 application to the vadose zone has some challenges. Lower glycerol dosages were chosen, 10 times and 5 times stoichiometric ratios for Stage Two testing. Water to soil ratios of 3.3: 1(00 ml water/30 g soil), 2:1 (60 ml water/30 g soil), and 1.33:1 (40 ml water/30 g soil) were investigated.

Table 11: Stage 2 Soil Flushing Microcosms - Impact of Electron Donor (Glycerol) Dose and Water/Soil Ratios on Biodegradation Kinetics

	Day 5	**Day 13**	**Day 18***	**Day 24-A**	**Day 24-B**	**Day 35**	**Day 40**
5X-W100	Day 5	Day 13	Day 18	Day 24	Day 24	Day 35	Day 40-R
	Day 5-R	Day 13-R	Day 18-R	Day 24-R	Day 24-R	Day 35-R	Day 40-R
10X–W100	Day 5	Day 13	Day 18	Day 24	Day 24	Day 35	Day 40-R
	Day5-R	Day 13-R	Day 18-R	Day 24-R	Day 24-R	Day 35-R	Day 40-R
5X–W60	Day 5	Day 13	Day 18	Day 24	Day 24	Day 35	Day 40-R
	Day 5-R	Day 13-R	Day 18-R	Day 24-R	Day 24-R	Day 35-R	Day 40-R
10X–W60	Day 5	Day 13	Day 18	Day 24	Day 24	Day 35	Day 40-R
	Day 5-R	Day 13-R	Day 18-R	Day 24-R	Day 24-R	Day 35-R	Day 40-R
Controls	10X-W100 No nutrient	W100 No carbon	5X-W100 No nutrient	W60 No carbon	10X-W40 With P	W100 No carbon	W60 No carbon
	5X–W100 No nutrient	W60 No carbon	W60 No carbon	W100 No carbon	5X-W40 With P	5X-W100 No nutrient	10X-W100 No nutrient

*After day 14, injected more glycerol into microcosms using a needle. Increased stoichiometric ratios to 110 and 25 times.
** Phosphate was added (10 mg/L) to all microcosms, except to control bottles.
5X and 10X = five times and ten times stoichiometric amount of glycerol (0.7 ml and 0.35 ml) of 10X diluted glycerol solution.
W100 is 100 ml of SLMW added to 30 g of soil = 3.3 water to soil mass ratio
W60 is 60 ml of SLMW added to 30 g of soil = 2.0 water to soil mass ratio
W40 is 40 ml of SLMW and 30 g of soil = 1.33 water to soil mass ratio
No carbon= no glycerol added; No nutrient = no phosphate added.

After sampling for two weeks, it was determined that nitrate was not degrading indicating that the electron donor dosage was not sufficient. Therefore, a decision was made to increase the dosage of glycerol to 110 times and 25 times stoichiometric. The concentrations of COD in the microcosms, using glycerol and various water to soil ratio is depicted in Figure 13. Notice that until day 13, the concentrations of COD were low and below 50 mg/L. It is important to keep in mind that the initial concentration of contaminants in the microcosm is affected by the amount of water present. Microcosm using 40 and 60 ml of SLMW will have a higher concentration of contaminants as compared to those with 100 ml water. For 60 ml and 40 ml water, the concentrations of contaminants are expected to be 1.66 and 2.5 times greater. For bottles containing 5 and 10 times stoichiometric ratio of glycerol, the COD values were below 50 mg/L when measured in days 5 and 13. Because very slow degradation of nitrate was observed under 5 X and 10 X stoichiometric glycerol ratios, the glycerol was then increased to 110 times and 25 times stoichiometric. This was performed by injecting glycerol into the bottles using a syringe and a needle to puncture the butyl rubber cap that closes the microcosm bottles. Upon increasing glycerol, the COD of the bottles increased to above 1,000 mg/L in the 110 x stoichiometric ratio bottle. For the 25 times stoichiometric ratio, COD values

varied from 20-65 mg/L. The COD in most bottles decreased with time proportional to the degradation of nitrate as will be shown later. The COD in the last days of the experiment are also shown in Figure 13. Notice that for the bottles with 110 stoichiometric ratios the remaining COD is still around 600-1,000 mg/L. For the 25 times stoichiometric ratio, the COD remaining varies from 10-45 mg/L.

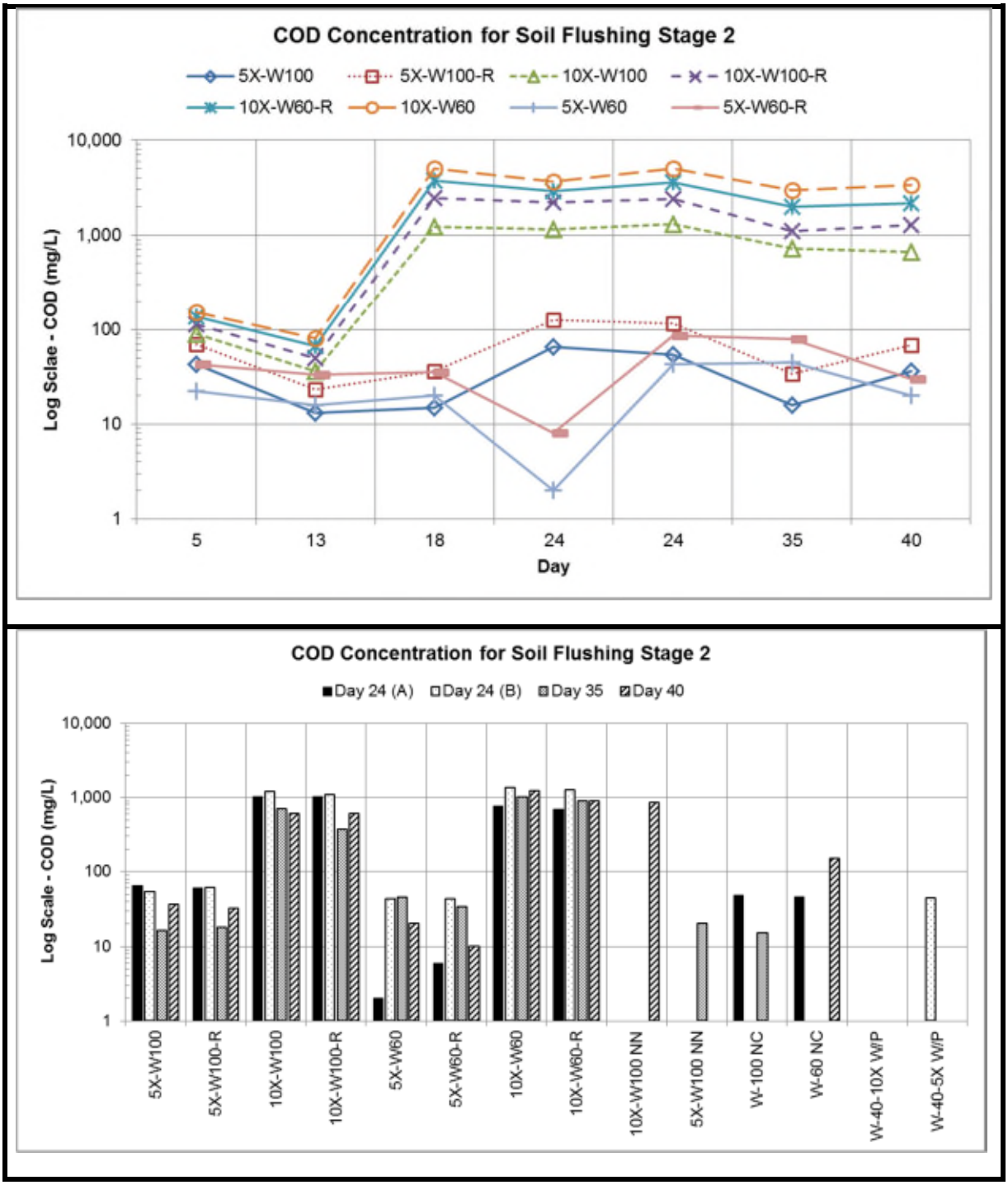


Figure 13: COD in Microcosm Stage 2 performed with glycerol and added phosphate. Until day 13, glycerol dosages were 5X and 10X stoichiometric demand. After day 13, glycerol dosages were increased to 25X and 110X stoichiometric demand.

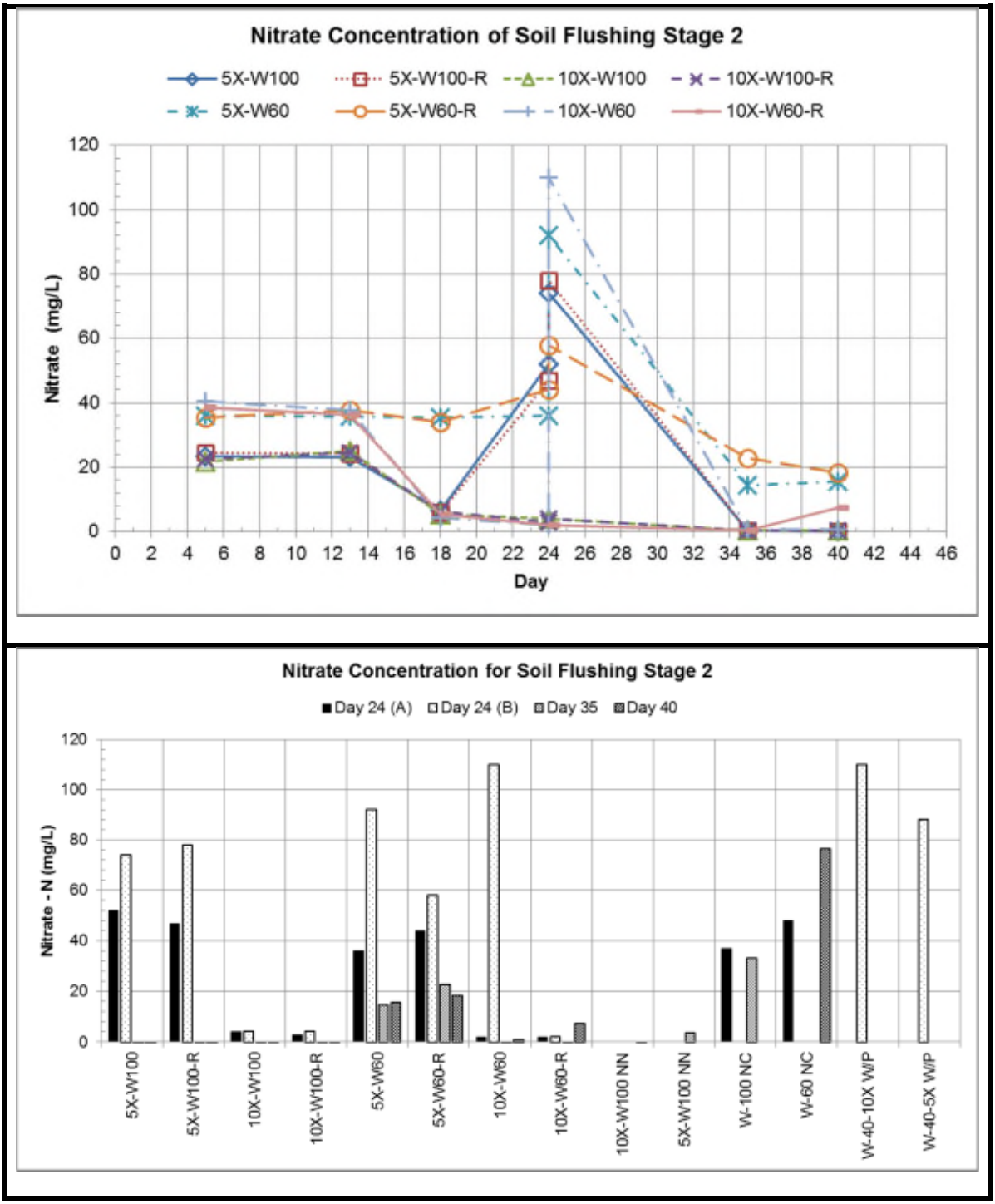


Figure 14: Nitrate degradation on Stage 2 microcosms with different glycerol doses and soil/water ratios. After day 13 glycerol dosages were 25X and 110X stoichiometric demand.

The nitrate degradation in Stage Two microcosms is shown in Figure 14. During the first 13 days, when the glycerol dosage was 5 and 10 times the stoichiometric requirement, degradation of nitrate was not observed. Once the glycerol dosage was increased, nitrate degradation started and by the fifth day after increased glycerol dosage, most of the nitrate was biodegraded. Nitrate degradation

was faster in bottles with higher glycerol dosages, independent of water/soil ratios. Indeed, nitrate in bottles with 2:1 water/soil ratio degraded faster than bottles with a 3.3:1 ratio when higher glycerol (110 times) dosages were applied. This fact can clearly be observed in the bottom graph of Figure 14. The nitrate degradation data also show that bottles with no added phosphate (i.e. NN) had somewhat slower degradation. For example, in day 18, the bottles containing he same oil dosage and water/soil ratios with and without phosphate had nitrate concentrations around. In day 35, under the same circumstance, nitrate concentration in bottles without phosphate was 3.5 mg NO_3-N/L as compared to 0.3 mg NO_3-N/L in the presence of phosphate.

Perchlorate degradation did not occur in the microcosm until day 24 (Figure 15) because nitrate was still present. More degradation occurred in the microcosms with high glycerol concentrations than those with lower concentrations. However, significant perchlorate degradation was not observed within the experimental period because the lower glycerol dosages initially used limited nitrate degradation, which resulted in delayed perchlorate degradation.

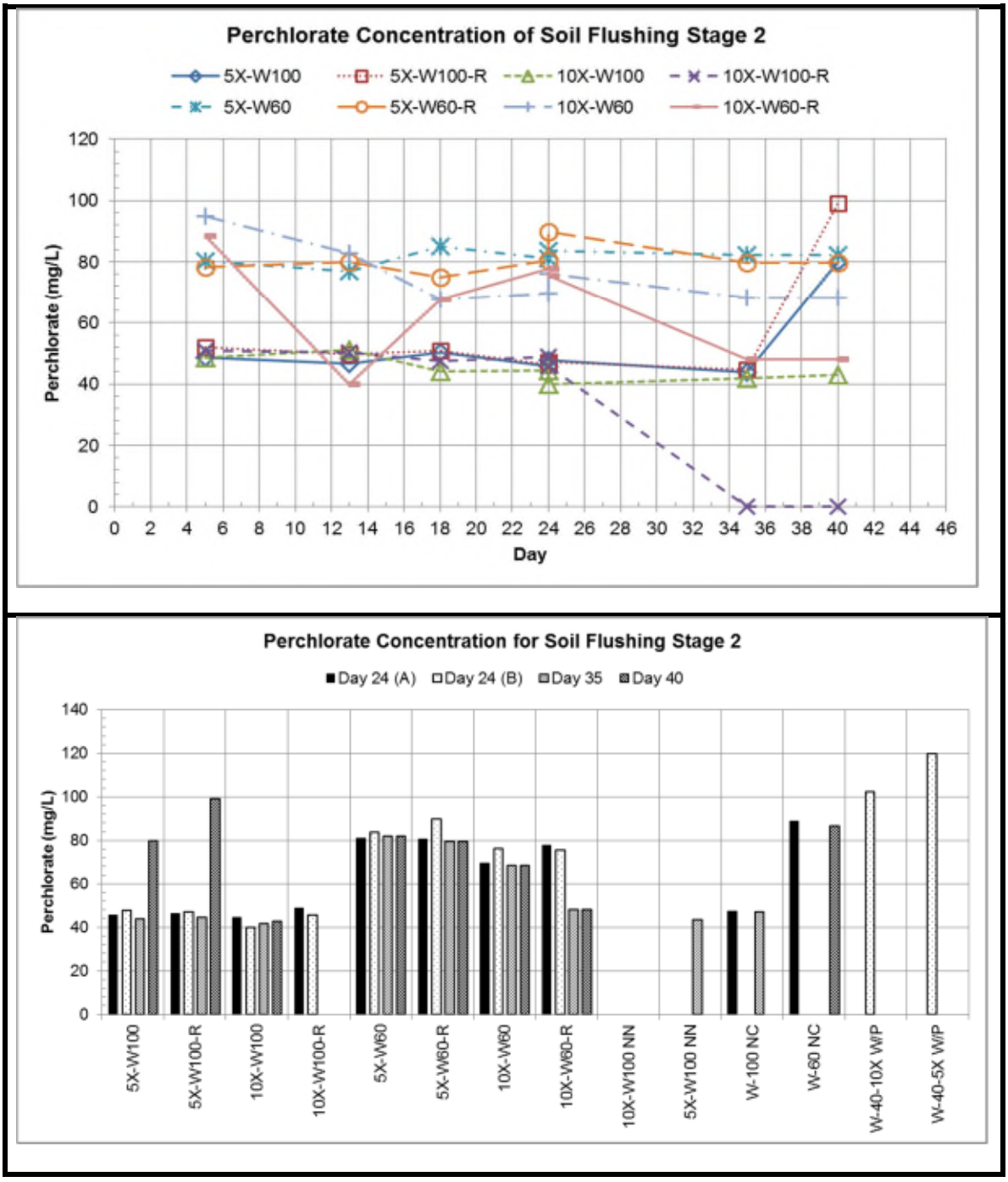


Figure 15: Perchlorate degradation with varying water/soil ratios and glycerol dosages (Stage 2 microcosms)

Phosphate and iron concentrations in Stage 2 microcosms are shown in Figure 16. Notice that the soil phosphate concentration for a 3.3:1 ratio is less than 0.5 mg/L. The data also shows that for the highest water/soil ratios the initial phosphate at day 5 is greater than the final phosphate concentration, showing it was used up in degradation. Interestingly, phosphate concentration in

bottles with lower water/soil ratios in day 5 were significantly smaller. This is likely due to precipitation reactions between phosphate and calcium. Bottles with smaller water/soil ratio had a higher concentration of all constituents because of lower dilution. It was also observed that bottles with higher dosages of glycerol had very low final phosphate concentrations, reflecting perhaps the higher degradation rates that occurred. Nonetheless, the reaction of phosphate in the microcosm are complex. Some phosphate will precipitate in the presence of high hardness (i.e calcium), some will adsorb to the soil, and some will remain in solution and can be used by bacteria for biodegradation. The fate of phosphate in the vadose zone soil at NERT has not been investigated and therefore we cannot ascertain that phosphate is a limiting factor in biodegradation. The Stage 2 microcosm results indicate that glycerol dosages are a limiting factor on degradation. It also indicated, in some instances, that phosphate promotes somewhat faster kinetics. In the end of the testing, dissolved phosphate in the bottles was below 1 mg/L and for bottles with a higher dosage of glycerol, phosphate concentrations were below detection (< 0.1 mg/L).

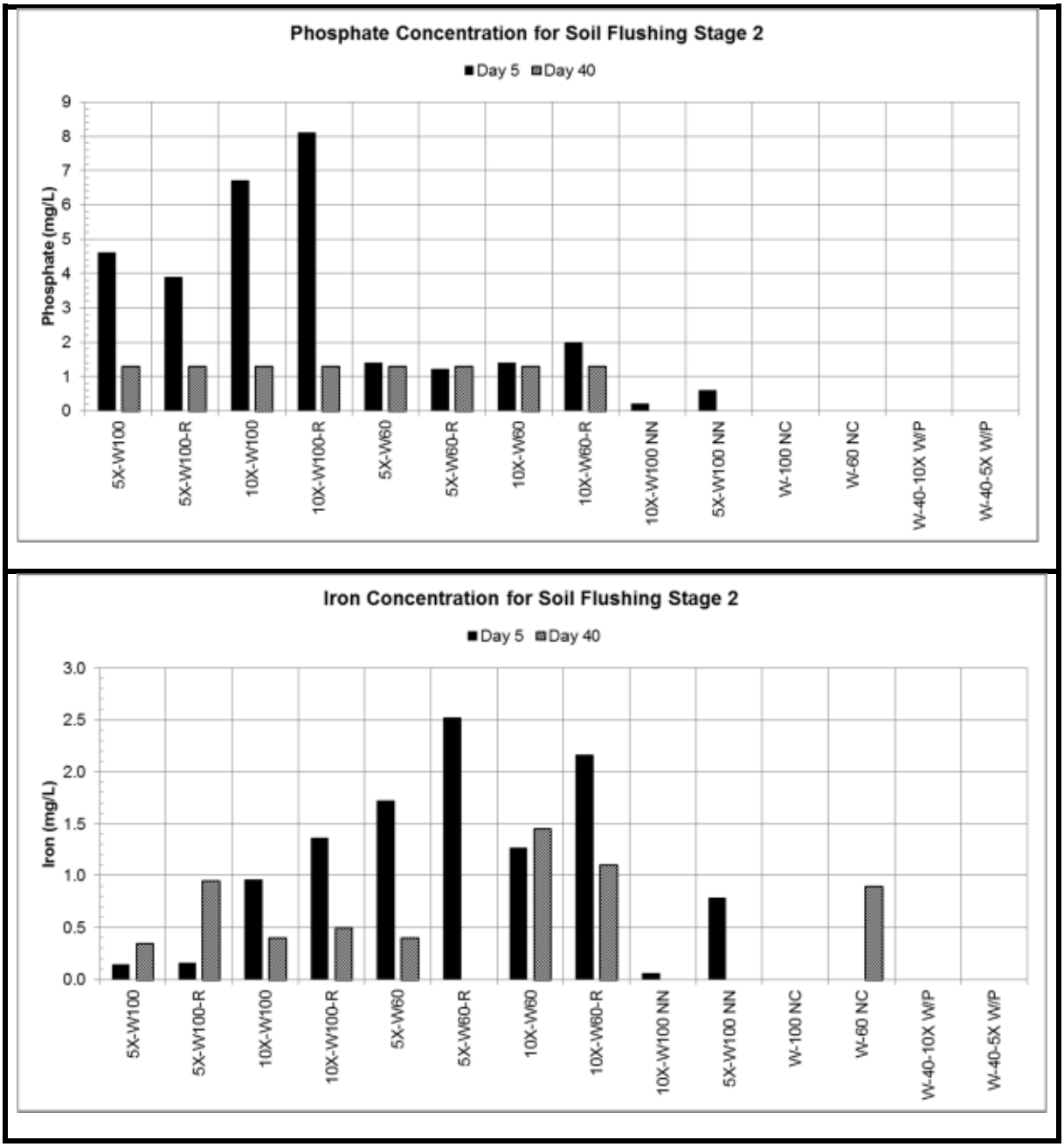


Figure 16: Phosphate and iron concentration in Stage 2 microcosms with different glycerol dosages and different water/soil ratios.

Initial dissolved iron concentration in the microcosms is low and varies from 0.1-2.5 mg/L, with higher concentrations in the bottles with lower water/soil ratios, as expected. Iron reduction was observed as smaller dissolved iron concentrations were found at the end of the experiments (Figure 16, lower graph). The pH in the microcosm changed by about one pH unit (from 8.3 to 7.15) (Figure 17), as expected with biodegradation and the formation of fatty acids. The change in only one pH unit is a positive finding and it relates to the high buffering capacities of the Lake Mead Water and

the vadose zone soils. Sulfide levels in the microcosms were very erratic despite the many repeated measurements (Figure 17). A strong hydrogen sulfide oder was detected only at day 40. It does not appear that a large amount of sulfate reduction occurred during this experiment.

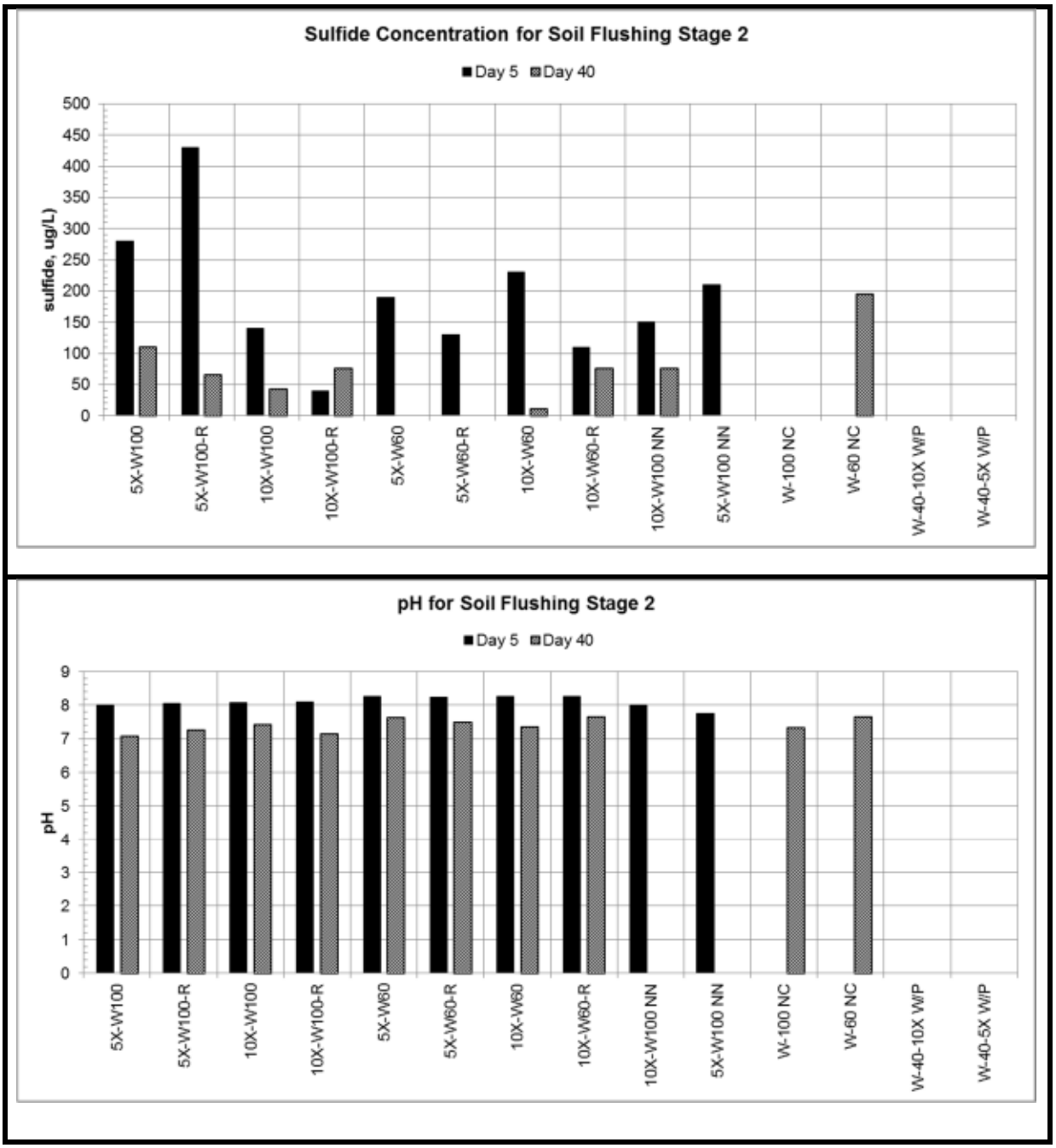


Figure 17: Sulfide and pH values in Microcosm Stage 2 using different water/soil ratios and glycerol dosages.

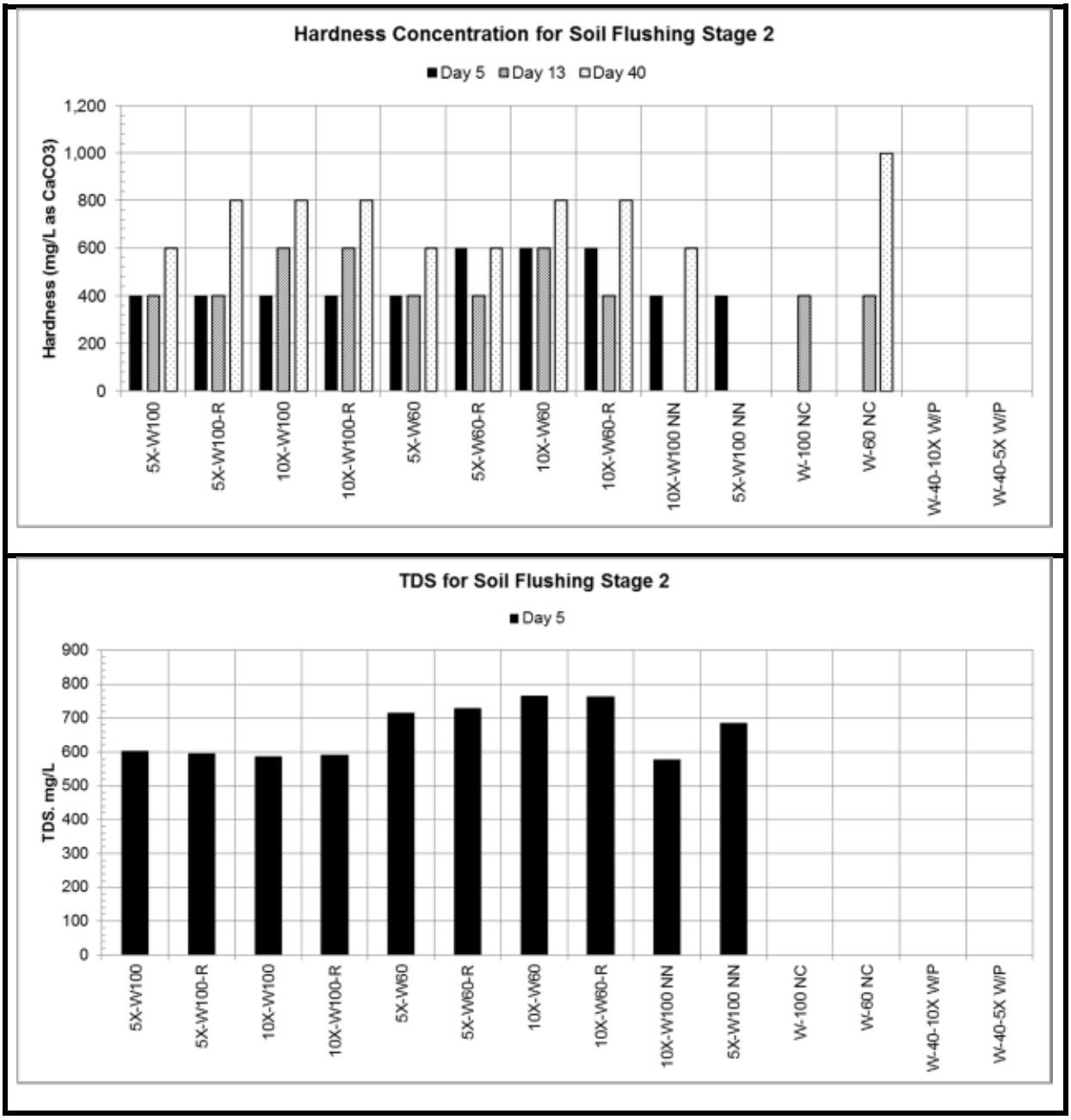


Figure 18: Hardness and TDS Stage 2 using different water/soil ratios and glycerol dosages.

Total hardness measured at three different days for the microcosms show that the hardness was about 400 mg/L as $CaCO_3$, reflecting the hardness of SLMW (i.e., 280-320 mg/L as $CaCO_3$) and hardness present in the soil (Figure 18). The results show a clear increase of hardness as the experiment progressed, indicating dissolution of hardness from the soils. High hardness is a concern because of its reaction with phosphate and oils, decreasing their availability. The initial TDS was found to be about 600 mg/L (Figure 18). It was not possible to measure the final hardness because not

enough sample was available after the many measurements needed due to the initial delay in biodegradation.

4.3 Stage 3 Microcosms: Impact of Higher Electron Donor Dose and Water/Soil Ratios

The results of previous microcosm test indicated that very low glycerol dosages, 5-10 times stoichiometric did not promote rapid degradation of nitrate and perchlorate. The results also showed that degradation was faster at 110 times stoichiometric ratios than at 25 times stoichiometric ratio. In addition, the results indicated that phosphate addition provides some benefits, but glycerol addition is a more significant limiting factor on degradation. In Microcosm Stage 3, glycerol dosages of 50 X and 100X stoichiometric ratios were tested with and without phosphate addition. Furthermore, three water/soil ratios were tested. The experimental matrix for Stage 3 microcosm is showed in Table 12.

Table 12: Soil Flushing Microcosms– Stage 3 – Impact of Electron Donor Dosage and Water/Soil Ratios on Biodegradation Kinetics

	Day 7	**Day 14**	**Day 20**	**Day 25**
100X-W100	Day 7	Day 14	Day 20	Day 25
	Day 7R	Day 14R	Day 20R	Day 25R
50X – W 100	Day 7	Day 14	Day 20	Day 25
	Day 7R	Day 14R	Day 20R	Day 25R
100X – W60	Day 7	Day 14	Day 20	Day 25
	Day 7R	Day 14R	Day 20R	Day 25R
50X – W60	Day 7	Day 14	Day 20	Day 25
	Day 7R	Day 14R	Day 20R	Day 25R
100X-W30	Day 7	Day 14	Day 20	Day 25
	Day 7R	Day 14R	Day 20R	Day 25R
50X – W30	Day 7	Day 14	Day 20	Day 25
	Day 7R	Day 14R	Day 20R	Day 35R
Carbon control	100X-W100-NP Day 7	100X-W60-NP Day 14	100X-W30-NP * Day 20	NG-100W Day 25
	50X-W100-NP Day 7 100X-W100-NPR	50X-W60-NP	50X-W30-NP* 100X–W30-NPR	NG-R-100W Day 25

NP = No phosphate added
NPR= No phosphate added replicate
NG= no glycerol
50X = 50 times stoichiometric glycerol added
100X = 100 times stoichiometric glycerol added
W100 = water to soil ratio of 3.3:1
W 60 = water to soil ratio of 2:1
W 30= water to soil ratio of 1:1

The COD in the Stage 3 microcosms are shown in Figure 19. Initial COD values are varied from 40-to about 150 mg/L. For the 100 X dosage COD values varied from 400-1,000 mg/L, but

were not directly proportional to the dilution. The reason for a non-linearity in COD values may be related to the interactions of glycerol and calcium in the water and soils. A curd-like precipitate, urds, similar in appearance to those previously reported, were observed in the microcosms, but not as much as when oil is added.

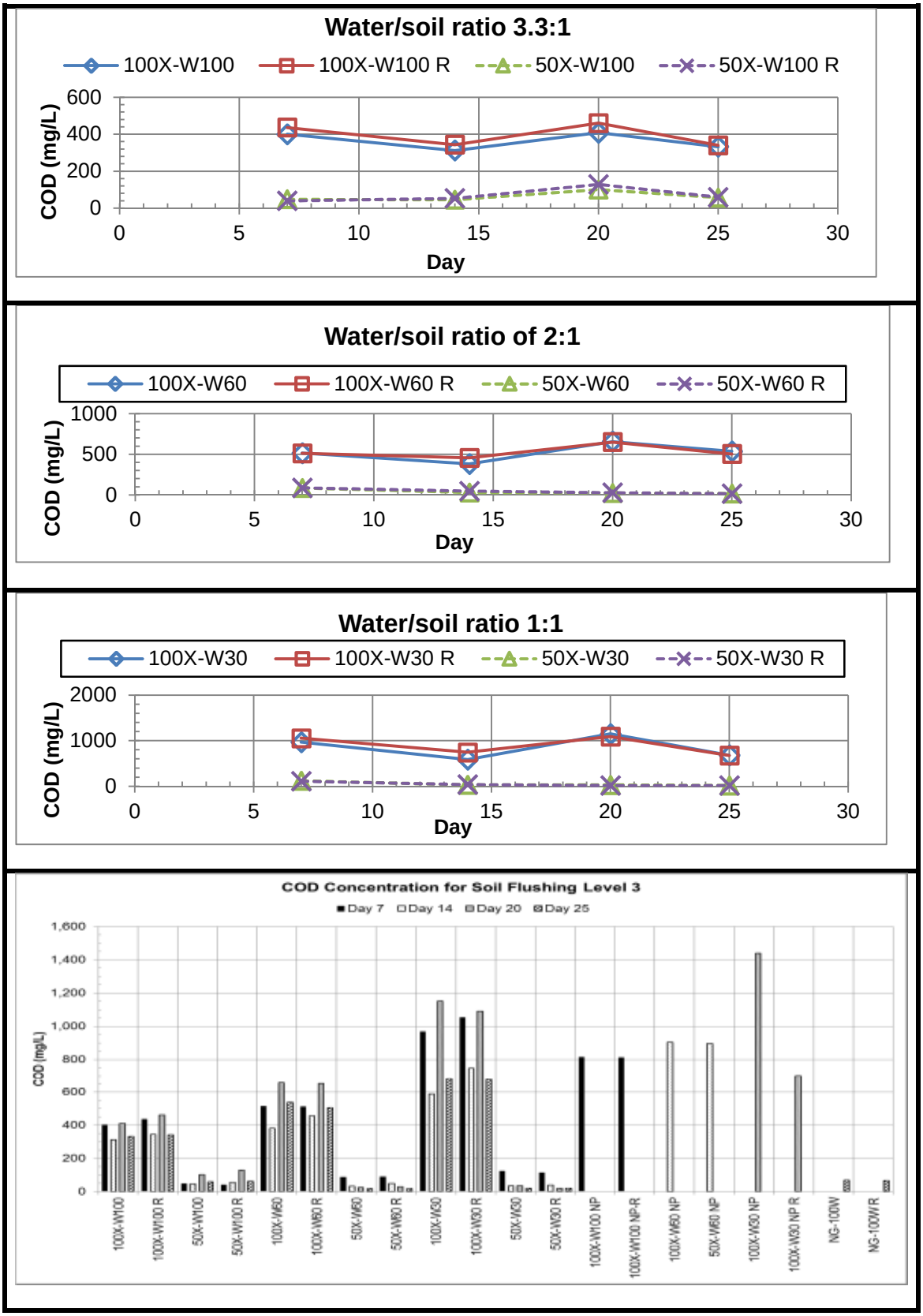


Figure 19: COD in Stage 3 microcosms for 50X and 100X stoichiometric glycerol addition and with varying water/soil ratios.

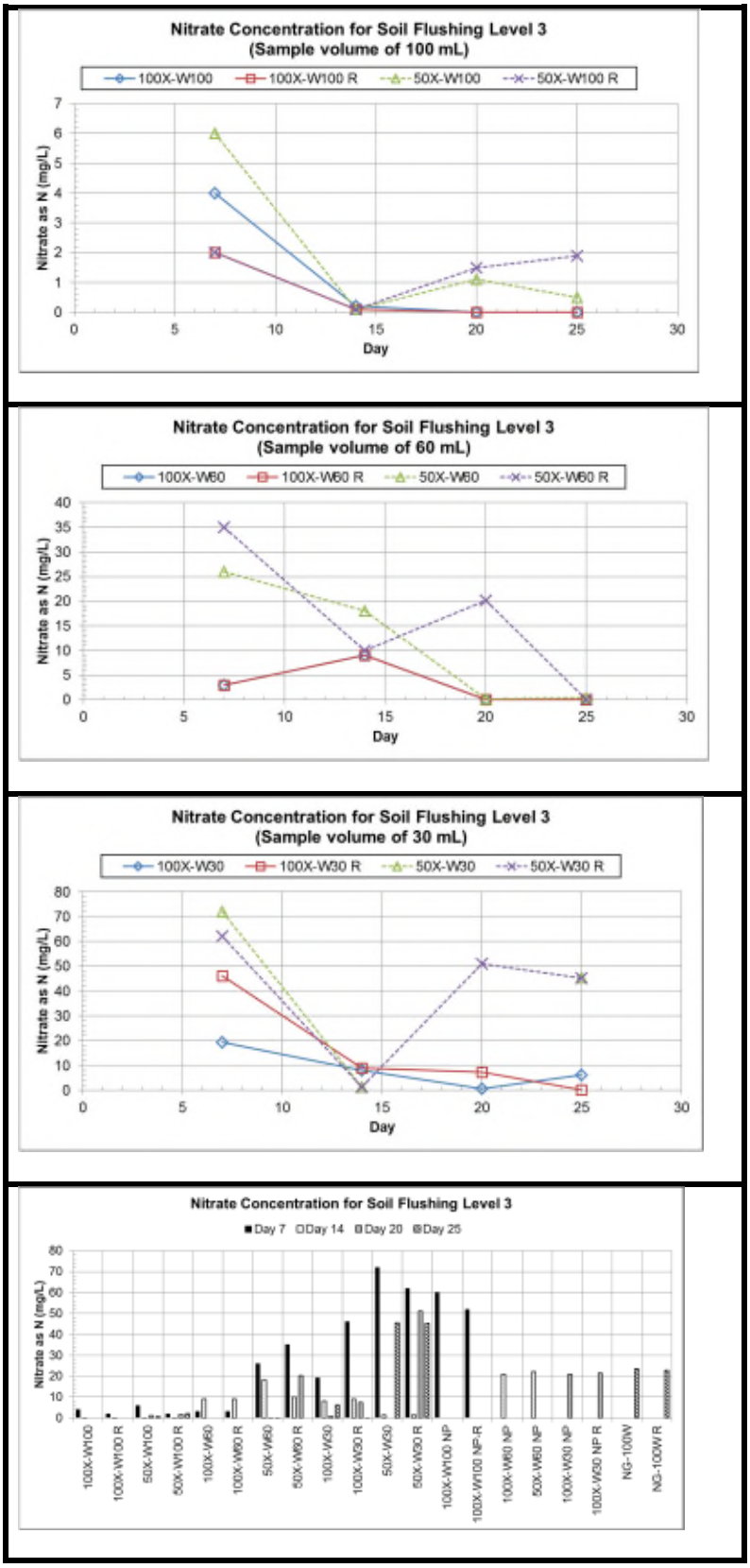
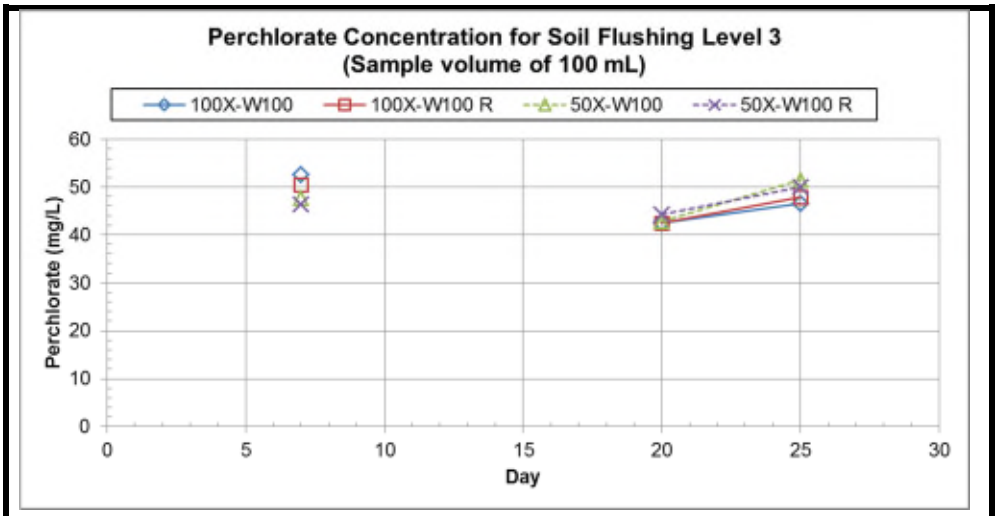
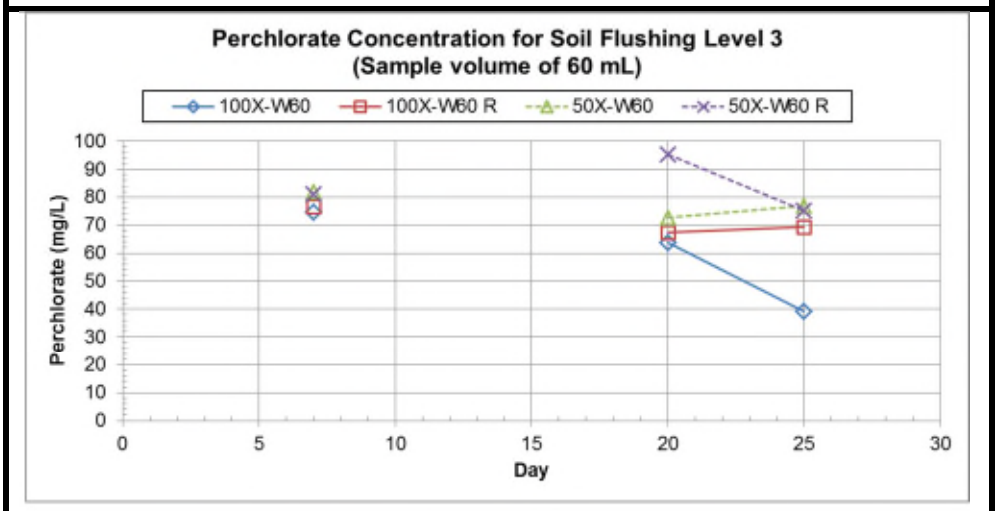


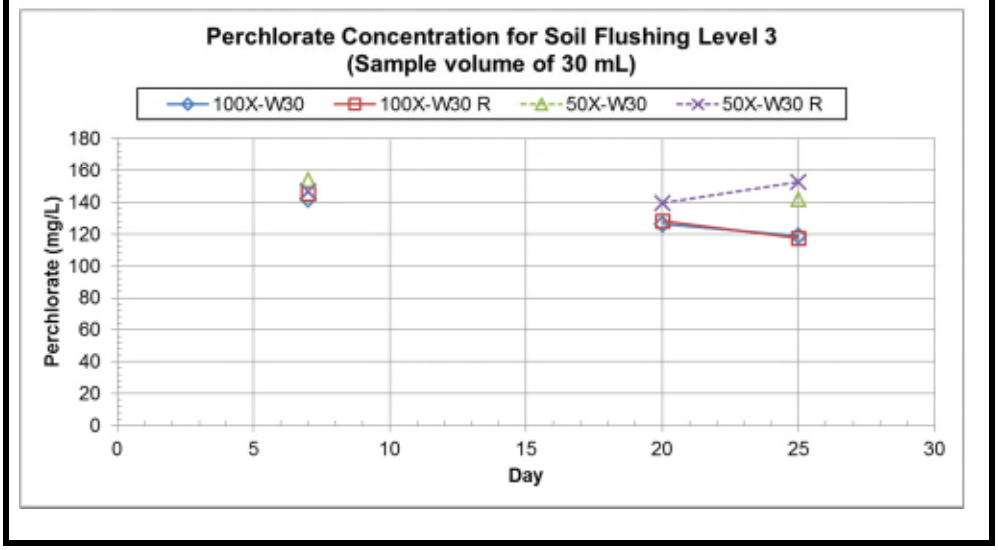
Figure 20: Nitrate reduction in Stage 3 microcosms for 50X and 100X stoichiometric glycerol addition and with varying water/soil ratios.

Nitrate degradation in the microcosms is shown in Figure 20. Initial nitrate concentrations in each bottle varied based on the water/soil ratios and were at day zero approximately 23 mg/L, 38 mg/L, and 76 mg/L for 3.3:1, 2:1, and 1:1 soil/water ratios, respectively. Nitrate degradation progressed quickly and the rate was faster for microcosms with 100X stoichiometric ratio of glycerol. In the last graph of Figure 20, a comparison between initial and final concentration is displayed. It shows that when glycerol is not added, as expected, degradation does not take place. It also shows that bottles with phosphate have faster degradation rates, independent of the glycerol concentration or the water/soil ratios. At 100X stoichiometric demand, degradation rates were 91.3%, 87% and 47.5% for soil to water ratios of 3.3:1, 2:1, and 1:1, respectively. For 50X stoichiometric of glycerol, the degradation rates drop drastically to 73.9%, 21%, and 7.9% for the same water/soil ratios. The data indicate that when less water is added, degradation rates decrease. The reason for that is likely the negative impact of higher TDS present at smaller water/soil ratios. Several studies have demonstrated high TDS negatively affects nitrate and perchlorate reduction. The data also shows that 100 X stoichiometric glycerol addition increases the rate of degradation. Relating these results to the COD concentrations remaining after degradation, the bottles with 50X stoichiometric demand have remaining glycerol concentrations much smaller (i.e. 16-60 mg/L) as compared to those for 100X stoichiometric demand (i.e. 300-700 mg/L).

The perchlorate data for the microcosm is depicted in Figure 21. Initial perchlorate concentrations were on average, 49 mg/L, 81 mg/l, and 161 mg/L for water to soil ratios of 3.3:1, 2:1, and 1:1, respectively. No perchlorate degradation occurred until day 20 because nitrate was still present. At day 25, some degradation was noticed. Unfortunately, the experiment was designed to be completed in 25 days and no more microcosm was left to observe perchlorate degradation. Nonetheless, once nitrate is removed, perchlorate degradation generally occurs very quickly. In Stage 1 microcosm testing, nitrate and perchlorate degradation occurred about 3-4 days earlier and using the same water/soil ratio and 100X glycerol. There was a difference in methodology in the Stage 3 microcosm testing. The horizontal shaker at the UNLV laboratory failed, and a rotating mixer was used in this test. It is likely this change affected the results somewhat. The data also show a bottle with complete perchlorate degradation. This bottle had no phosphate added to it. Its replicate, however, did not show as much degradation. This microcosm was analyzed for perchlorate three times and show no perchlorate. Given its replicate and other bottles had very little degradation, this data point should not merit much consideration.


Perchlorate Concentration for Soil Flushing Level 3
(Sample volume of 100 mL)
100X-W100
100X-W100 R
50X-W100
50X-W100 R
Perchlorate (mg/L)
Day


Perchlorate Concentration for Soil Flushing Level 3
(Sample volume of 60 mL)
100X-W60
100X-W60 R
50X-W60
50X-W60 R
Perchlorate (mg/L)
Day


Perchlorate Concentration for Soil Flushing Level 3
(Sample volume of 30 mL)
100X-W30
100X-W30 R
50X-W30
50X-W30 R
Perchlorate (mg/L)
Day

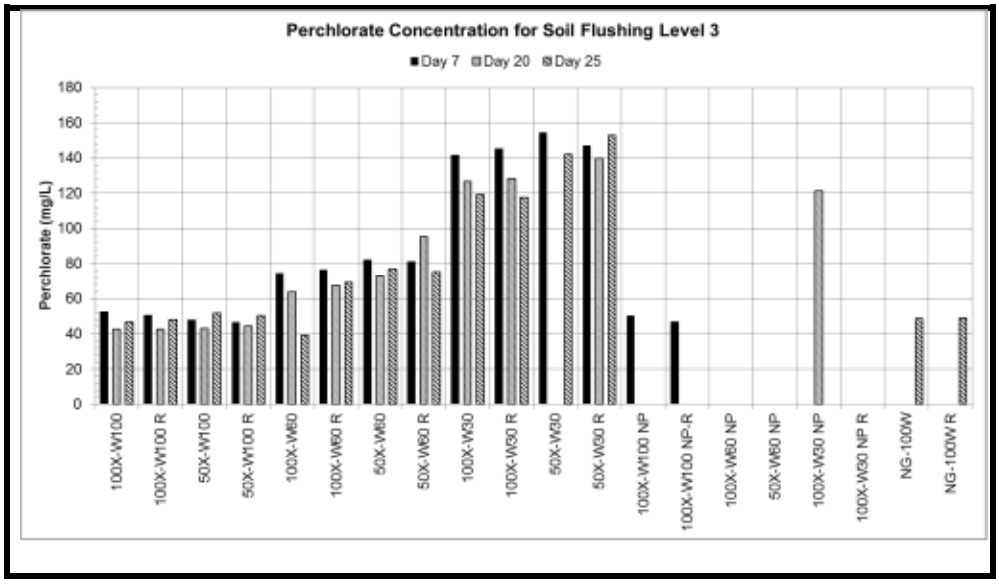
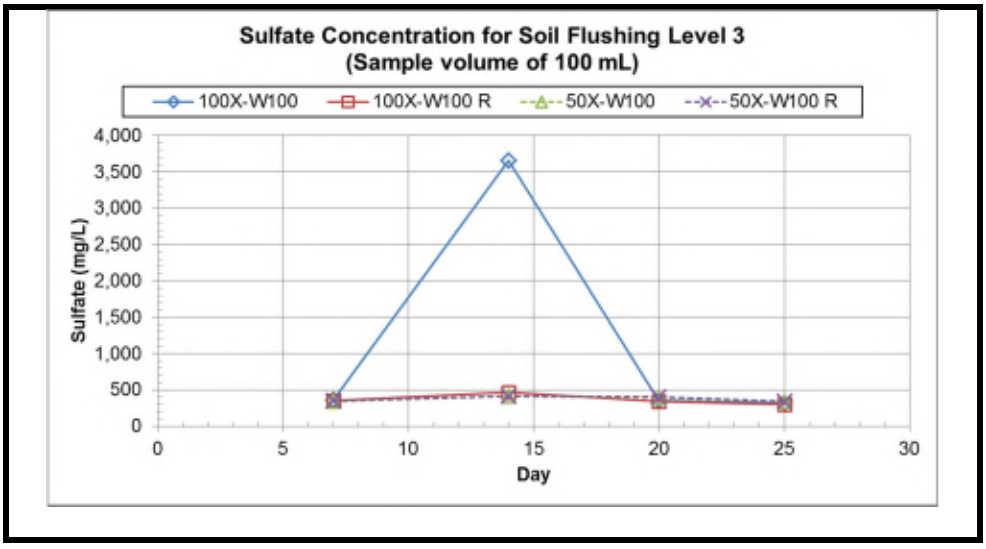


Figure 21: Perchlorate reduction in Stage 3 microcosm for 50X and 100X stoichiometric glycerol addition and with varying water/soil ratios.



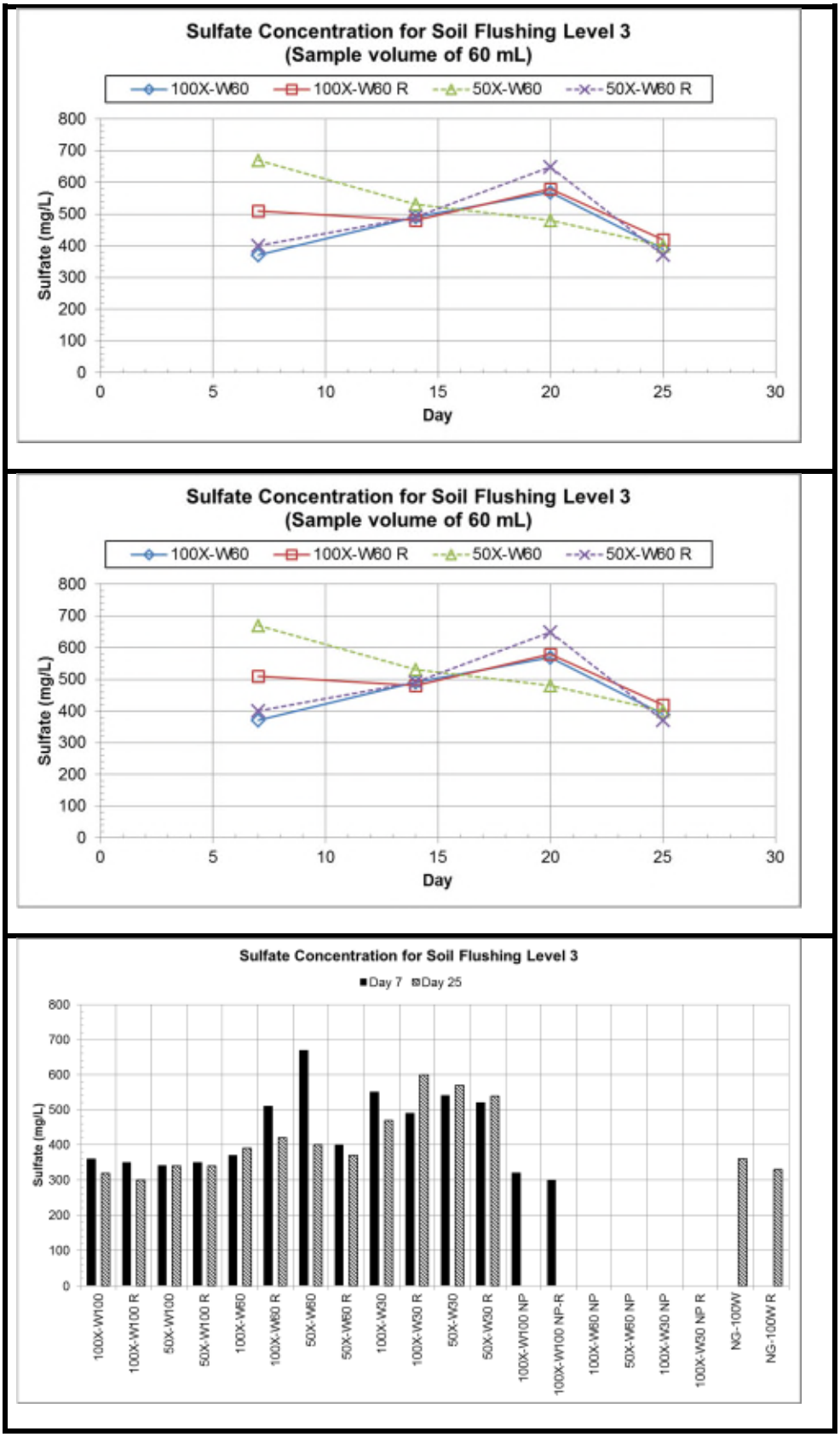


Figure 22: Sulfate reduction in Stage 3 microcosm for 50X and 100X stoichiometric glycerol addition and with varying water/soil ratios.

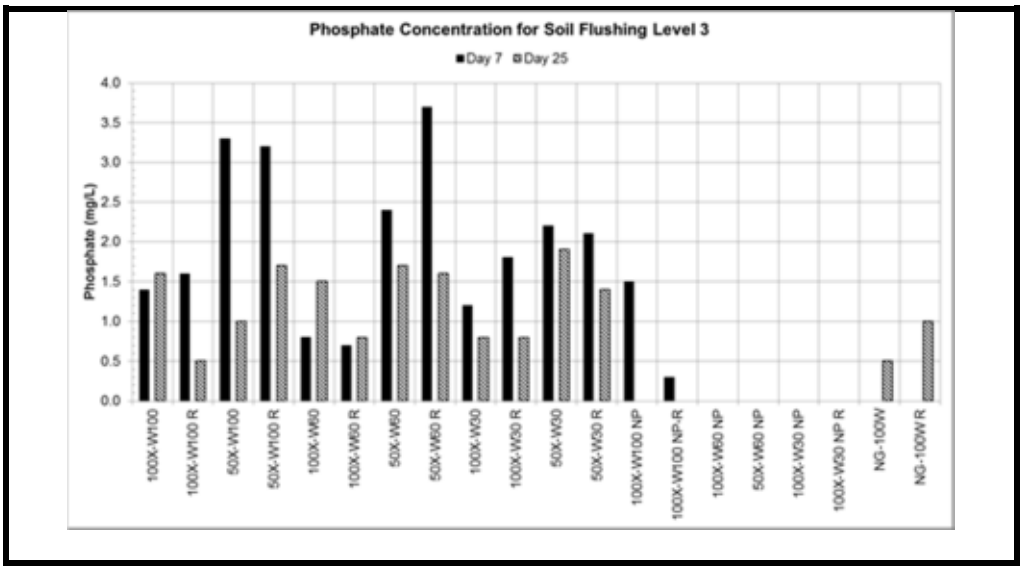


Figure 23: Phosphate concentrations in Stage 3 microcosm for 50X and 10 X stoichiometric glycerol addition and with varying water/soil ratios.

The phosphate concentrations in the microcosm (Figure 23) reflect the water/soil ratios used and also the adsorption of phosphate to soils. The data also show the decrease in phosphate concentration between day 7 and day 25 and the presence of very small amounts (< 0.5 mg/L) of phosphate in the soils.

5. CONCLUSIONS

The following conclusions can be drawn from the microcosm testing using vadose zone soils from the NERT site:

1) Vadose zone soils at NERT contain high concentrations of nitrate and perchlorate. The concentration of nitrate (340 mg/Kg dry soil) in these soils is almost double that of perchlorate (180 mg/Kg dry soil).
2) Three electron donors were tested for biodegradation, namely, compost extract, glycerol and emulsified oil (EOS-100). EOS-100 has a COD approximately 1.7 times that of glycerol. The compost extract generated had a low COD of 253 mg/L.
3) Both EOS-100 and glycerol can promote biodegradation of perchlorate and nitrate. The compost extract failed to promote biodegradation due to its low COD.
4) Glycerol dosages of 50-100 times stoichiometric demand yielded the highest biodegradation rates in the microcosms.
5) The testing with varying water to soil ratios showed that using less water during results in slower degradation rates. It is thought that this lower kinetic rates are due to the impacts of high total dissolved solids (TDS) on the degradation of perchlorate.

6) The EOS oil tested contains phosphate, but glycerol does not. Testing using glycerol shows that phosphate addition increases the rate of biodegradation.

References

ESTCP, -Department of Defense (May 2006). Protocol for enhanced in-situ bioremediation using edible oil. Prepared by IES solutions.

Viana, M.B. , A. V. Freitas , R. C. Leitão , G. A.S. Pinto , S. T. Santaella. Anaerobic digestion of crude glycerol: a review, Environmental Technology Reviews Vol. 1, Issue. 1, 2012.

Sawyer, C.N., P.L. McCarty, and G.F. Parkin. 1994. Chemistry for Environmental Engineering.

Appendix G
GES Double-Ring Infiltrometer Test Report

GES
GEOTECHNICAL & ENVIRONMENTAL SERVICES, INC.
We make the ground work for you... ®

PROVIDING
- Geotechnical Engineering
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- IAS Accredited
- AASHTO Accredited Testing Laboratory

April 30, 2015
Project No. 20153655E1

Mr. Mark Feldman
Tetra Tech
301 East Vanderbilt Way, Suite 450
San Bernardino, California 92408

RE: Summary Letter of Test Results
Double-Ring Infiltrometer Testing of the Central Basin
Nevada Environmental Response Trust (APN 178-12-701-004)
Black Mountain Industrial Complex, Henderson, Nevada

Dear Mr. Feldman:

The purpose of this report is to provide the results of a recent double-ring infiltrometer testing program performed by Geotechnical & Environmental Services, Inc. (GES) to aid in the design of proposed soil flushing systems projected for use in the central basin of the Nevada Environmental Response Trust (NERT) Property within the Black Mountain Industrial Complex. The test area lies within the southern portion of APN 178-12-701-004 at 510 4th Street, Henderson, Clark County, Nevada.

Introduction

Four double-ring infiltrometer (constant head) tests (Tt-TP1-I1 through Tt-TP4-I1) were performed by Geotechnical & Environmental Services, Inc. (GES) between the dates of April 13, 2015, and April 24, 2015, within the NERT Property central basin, to measure the in-situ average infiltration rate. Figure 1 shows the approximate location of the project site within the Las Vegas Valley and Figure 2 shows the approximate test locations within the site.

Instrumentation

The equipment utilized to measure the in-situ infiltration rate consists of 2 stainless steel rings measuring approximately 12-inch and 24-inch diameter by 24 inches high in accordance with the ASTM D3385 test method. Two graduated Mariotte tubes were used to provide a constant head of water during the test and measure the flow rate. Clear, 3/8-inch diameter tubing and copper fittings were also used to provide water to the metal rings during the test. Figure 3 shows the typical setup used when performing double ring infiltrometer testing.

Methodology

Tests conducted at Tt-TP1-I1 and Tt-TP2-I2 were performed in general accordance with the ASTM D3385 test method which consisted essentially of driving two concentric metal rings into the ground approximately 4-inches to 6-inches for the outer ring and approximately 2-inches to 4-inches for the inner ring and measuring the amount of water needed to maintain a constant water elevation inside the rings. The measurements were obtained at intervals of approximately 15 minutes for the first hour, 30 minutes for the second hour, and at least one every hour thereafter for up to 6 hours or until steady state was obtained. As requested, the infiltration testing was performed at a depth of approximately 6-inches beneath the current grade of the central pit. Excavations of approximately 30-inches in diameter were hand dug using a pick, dig bar, and shovel.

Due to the cobbly and relatively dense nature of the soils encountered on the site, a modified ring penetration method was used to conduct the tests performed at locations Tt-TP3-I1 and Tt-TP4-I1. GES determined the need of this modification after it was discovered that refusal of the rings on near surface cobbles had resulted in distortion of the rings. The distorted rings were subsequently replaced with new rings prior to completing the remaining tests.

To perform the modified test GES personnel utilized a pick-axe and small steel shovel to trench a circle approximately the same diameter as the large ring. Following this the ring was placed into the newly excavated trench and a mixture of bentonite and native soils was compacted around the outside of the ring. Where soil had been disturbed on the inside of the ring, native soil was replaced and compacted. An attempt was then made to drive the inner ring without further disturbing the soil. At Tt-TP3-I1 the inner ring encountered refusal at approximately 1-inch beneath the testing surface on a cobble. In order to obtain additional penetration for the inner ring, the cobble was excavated from the test area. After this cobble was removed, the inner ring was placed and native soils were recompacted within the rings.

Subsurface and Atmospheric Conditions

The material encountered within the testing areas consisted primarily of dry to moist dark brown silty sand with gravel and trace to some cobbles. Encountered soils were typically dense to very dense. Nodules of weakly cemented material were noted throughout the study area. The test area was likely excavated down to the current grades by previous earthwork observations.

High wind events were noted during infiltration tests performed at locations Tt-TP2-I1 and Tt-TP4-I1. The test method recommends that a shade shelter be used while performing infiltration testing to prevent unnecessary evaporation. While GES personnel were able to use the shade shelter on all other tests, winds proved to be too strong to use it during test Tt-TP2-I1. Strong winds may also likely have an effect on evaporation rates.

Results

Figures 4 through 7 show the complete data collected during testing operations and the corresponding plot of incremental infiltration rate versus time. The reported approximate infiltration rate for each plot was obtained by averaging the infiltration rates determined throughout the course of the test.

The approximate average infiltration rates obtained during our testing program are summarized below:

Test Number	Location[1]	Average Infiltration Rate, cm/h
Tt-TP1-I1	N:36.0468, W:-115.0026	5.046
Tt-TP2-I1	N:36.0468, W: -115.0023	0.759
Tt-TP3-I1	N:36.0469, W:-115.0021	4.091
Tt-TP4-I1	N:36.0469, W:-115.0019	2.423

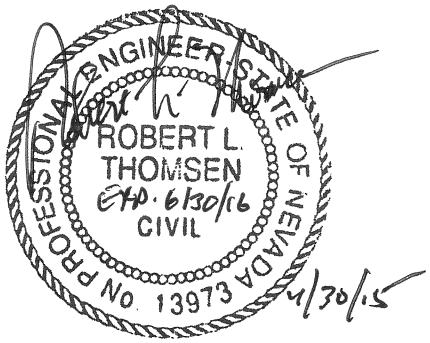
[1] WGS84 Coordinate System, Obtained using a Handheld E-Trex 9 GPS Unit reporting a +/- 12' variance.

Limitations

Our services were performed using that degree of care and skill ordinarily exercised under similar circumstances by reputable engineering firms in this or similar localities. No other warranty, either express or implied, is included or intended in this report.

Should you have any questions regarding this matter or have further need of our services, please feel free to contact us at your convenience.

Sincerely,
Geotechnical & Environmental Services, Inc.



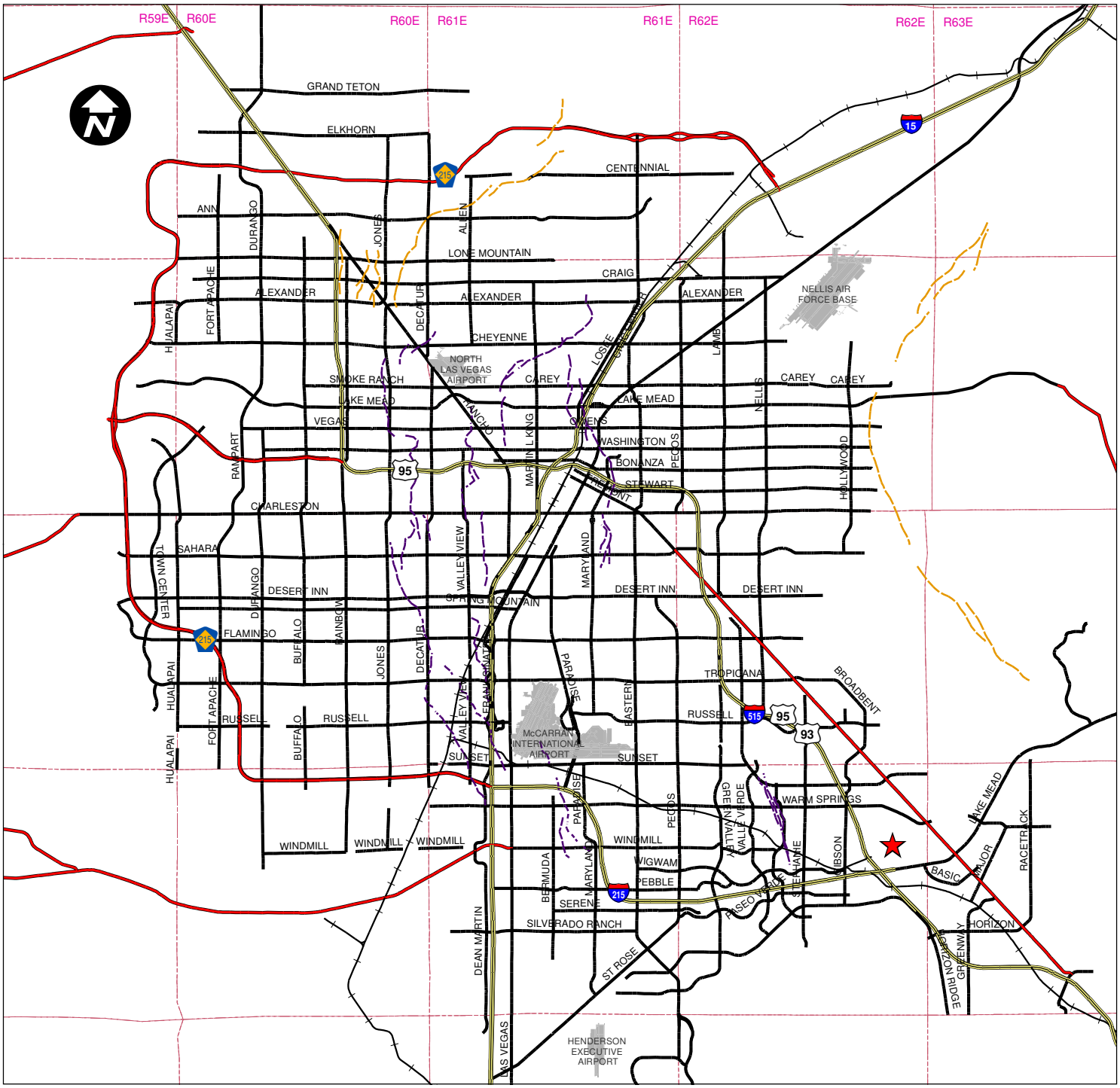
Armand J. Rodrigues
Staff Geologist

Robert L. Thomsen, P.E.
Project Engineer

AJR:RLT:aen

Enc: Figure 1 – Vicinity Map
Figure 2 – Testing Location Map
Figure 3 – Typical Test Set-up Photographs
Figures 4 through 7 – Incremental Velocity vs. Time

Dist: Original delivered to addressee
PDF copy to addressee at mark.feldman@tetratech.com
CC to the project file



Legend

- Approximate Project Location
- Airports
- Township & Range
- Interstate
- Major Streets
- Railroad
- State Highway

Linear Faults (USGS, 2010)

- Class B
- Less than 1,600,000 years
- Less than 750,000 years
- Less than 130,000 years
- Less than 15,000 years
- Less than 150 years
- Unknown

NOTE: Data presented on this map is a compilation of GIS Metadata extracted from a variety of sources. Major Streets, Airports, and Railroads is data obtained from the Southern Nevada GIS Management Office. This data is downloaded by GES for incorporation into drawings generated by GES. Data contained within this page is to be used for informational purposes only. GES has not modified the data contained herein and uses it as it is acquired from the respective agency.

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7150 Placid St.
Las Vegas, NV 89119
702-365-1001
www.gesnevada.com

VICINITY MAP
501 4TH STREET
NEVADA ENVIRONMENTAL RESPONSE TRUST
HENDERSON, NEVADA

Drawn By:	Date Drawn:
AJR	04/29/2015
Project No.	Figure No.
20153655E1	1

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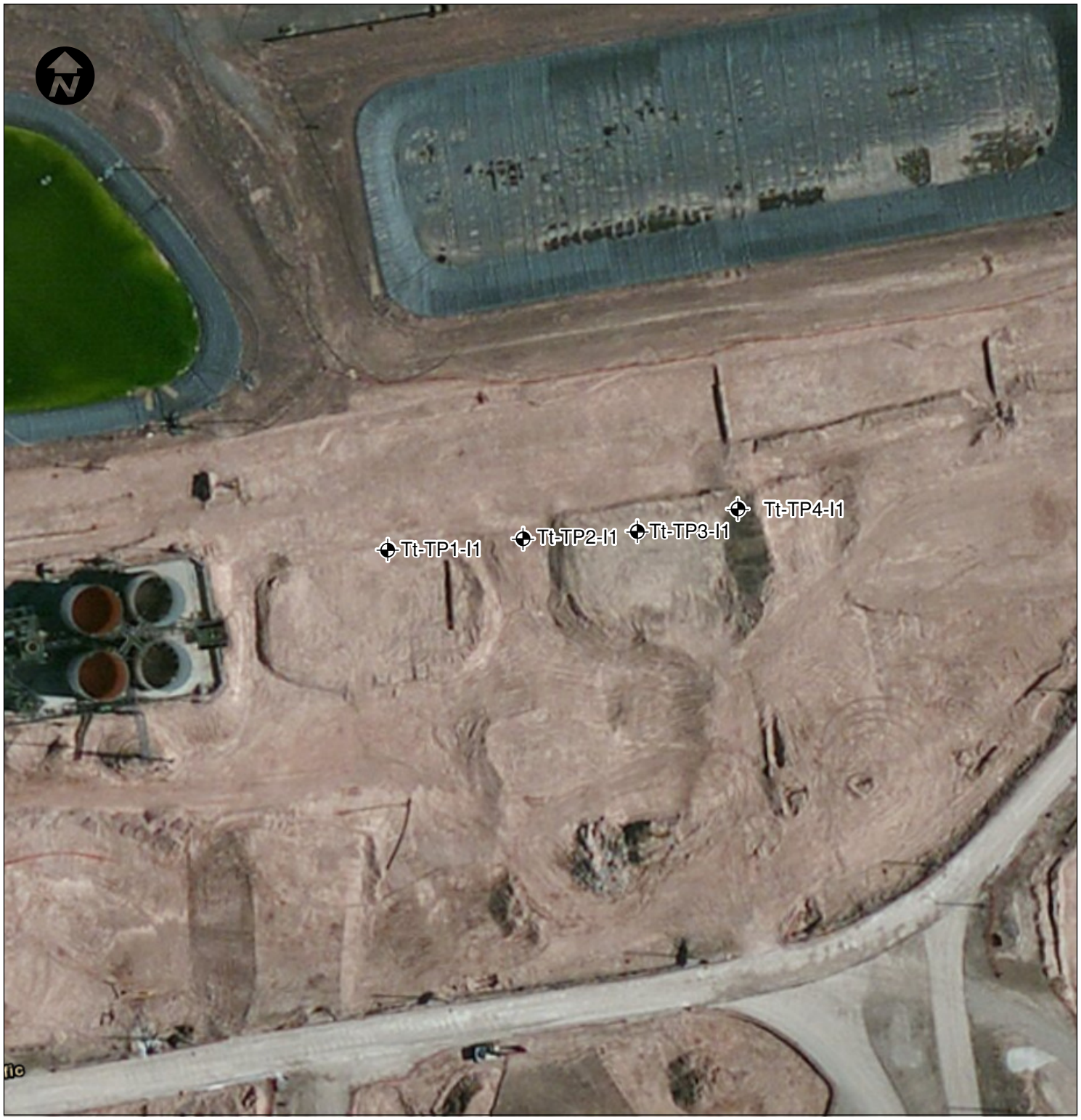

Legend

Tt-TP4-I1 ApproximateLlocation of Infiltrometer Testing

GEOTECHNICAL & ENVIRONMENTAL SERVICES, INC.
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Las Vegas, NV 89119
702-365-1001
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TESTING LOCATION MAP
501 4TH STREET
NEVADA ENVIRONMENTAL RESPONSE TRUST
HENDERSON, NEVADA

Drawn By:	Date Drawn:
AJR	04/30/2015
Project No.	Figure No.
20153655E1	2

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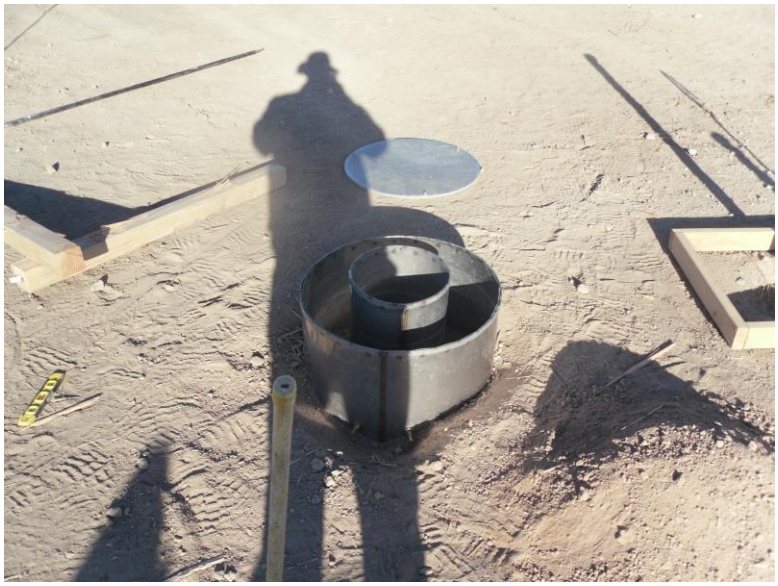
1. To prepare for double ring infiltrometer testing an approximately 6-inch deep by 30-inch pit was excavated at each location.



2. View of the infiltrometer rings after they were driven into the ground utilizing a 15 pound sledge hammer.

3. Looking north at the typical set-up used to perform double ring infiltrometer testing.

GES	**20153655E1** 501 4th Street NERT Henderson, NV **FIGURE 3**

	NERT Infiltrometer Testing	Constants	Area, cm²	Liq depth, cm	
Project Number	20153655	Inner ring	706.9	10	
Test Number	Tt-TP1-I1	Annular space	2827.4	10	
Test Location	N:36.0468, W:115.0026	Inner ring penetration		10.1	
Date	4/13/2015	Outer ring penetration		15.25	
Tested By	A. Rodrigues				
Liquid Used	Water	Liquid level maintained using:		Mariotte Tubes	
Liquid pH	7.5 (Approximate)				
Weather	Sunny				
Ground Temp	24.3				
Testing Depth	30.50 cm (Approximate)				

No.	Start (S) or End (E)	Time	Elpd Time D / (total)	Flow Readings Inner		Annular		Liq Temp	Infiltration Rate Inner	Annular	Remarks
			(min)	Mariotte Height, cm	flow, cm³	Mariotte Height, cm	flow, cm³	ºC	cm / h	cm / h	
1	S	8:58	15	60.0		60.0		16.0 ºC	9.05	6.25	
	E	9:13	(15)	28.0	1600	33.5	4416.68	16.0 ºC			Refilled Mariotte Tubes
2	S	9:13	15	60.0		60.0		16.0 ºC	5.91	5.99	
	E	9:28	(30)	39.1	1045	34.6	4233.34	16.0 ºC			Refilled Mariotte Tubes
3	S	9:28	15	39.1		34.6		16.0 ºC	4.44	4.74	
	E	9:43	(45)	23.4	785	14.5	3350.01	16.5 ºC			
4	S	9:43	15	60.0		60.0		16.5 ºC	4.16	4.86	
	E	9:58	(60)	45.3	735	39.4	3433.34	16.5 ºC			Refilled Mariotte Tubes
5	S	9:58	30	60.0		60.0		16.5 ºC	4.68	4.33	
	E	10:28	(90)	26.9	1655	23.3	6116.68	16.5 ºC			Refilled Mariotte Tubes
6	S	10:28	30	60.0		60.0		16.5 ºC	4.38	4.24	
	E	10:58	(120)	29.1	1547.5	24.0	6000.01	16.5 ºC			Refilled Mariotte Tubes
7	S	10:58	42	60.0		60.0		16.5 ºC	4.76	5.04	
	E	11:40	(162)	12.9	2355	0.1	9985.02	16.5 ºC			Refilled Mariotte Tubes
8	S	11:40	30	60.0		60.0		17.0 ºC	5.53	5.16	
	E	12:10	(192)	20.9	1955	16.2	7300.01	17.0 ºC			Refilled Mariotte Tubes
9	S	12:10	30	60.0		60.0		17.0 ºC	4.02	4.42	
	E	12:40	(222)	31.6	1420	22.5	6250.01	17.0 ºC			Refilled Mariotte Tubes
10	S	12:40	30	60.0		60.0		17.0 ºC	4.36	4.98	
	E	13:10	(252)	29.2	1540	17.8	7033.35	17.0 ºC			Refilled Mariotte Tubes
11	S	13:10	30	60.0		60.0		17.5 ºC	4.23	4.94	
	E	13:40	(282)	30.1	1495	18.1	6983.35	17.5 ºC			Refilled Mariotte Tubes
12	S	13:40	30	60.0		60.0		17.5 ºC	5.05	5.06	
	E	14:10	(312)	24.3	1785	17.1	7150.01	18.0 ºC			Refilled Mariotte Tubes
13	S	14:10	30	60.0		60.0		18.0 ºC	4.89	4.69	
	E	14:40	(342)	25.4	1730	20.2	6633.35	18.0 ºC			Refilled Mariotte Tubes
14	S	14:40	30	60.0		60.0		18.0 ºC	5.18	4.92	
	E	15:10	(172)	23.4	1830	18.3	6950.01	18.0 ºC			Refilled Mariotte Tubes

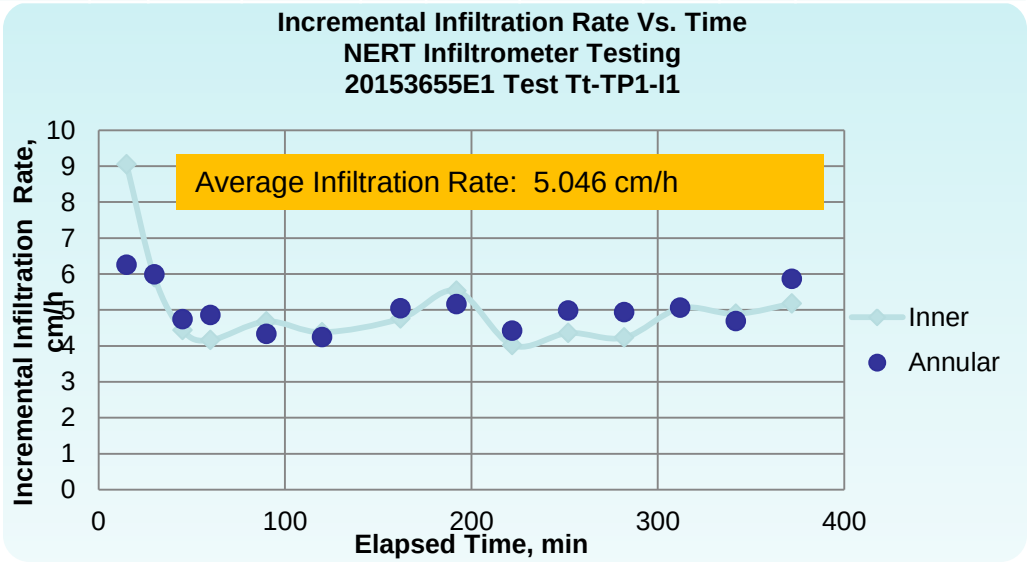
Formulas:

Inner Infiltration Rate:

$V_{IR} = DV_{IR} / (A_{IR} * Dt)$

Annular space infiltration rate:

$V_A = DV_A / (A_A * Dt)$



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Henderson, Nevada

Incremental Infiltration

Project No.	Figure No.
20153655E1	4

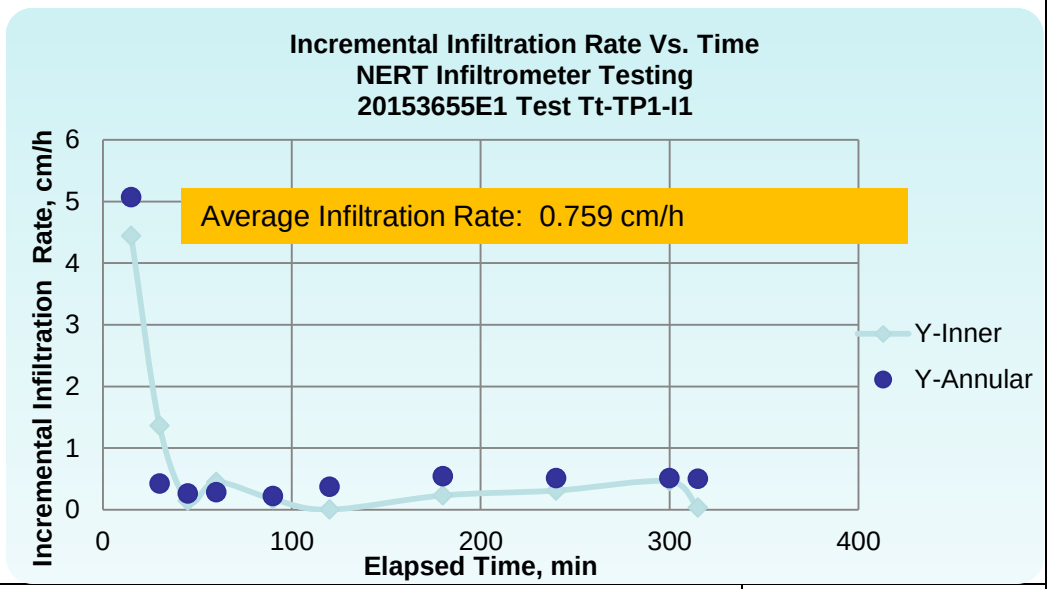
	NERT Infiltrometer Testing	Constants	Area, cm^2	Liq depth, cm
Project Number	20153655	Inner ring	706.9	10
Test Number	Tt-TP2-I1	Annular space	2827.4	10
Test Location	N:36.0468 W:115.0023	Inner ring penetration		5.1
Date	4/14/2015	Outer ring penetration		10.1
Tested By	A. Rodrigues			
Liquid Used	Water	Liquid level maintained using:		Mariotte Tubes
Liquid pH	7.0 (Approximate)			
Weather	Wind Advisory			
Ground Temp	25.1			
Testing Deph	19.25 cm (Approximate)			

No.	Start (S) or End (E)	Time	Elpd Time D / (total) (min)	Flow Readings Inner Mariotte Height, cm	Inner flow, cm^3	Annular Mariotte Height, cm	Annular flow, cm^3	Liq Temp ºC	Infiltration Rate Inner cm / h	Annular cm / h	Remarks
1	S	10:45	15	60.0		60.0		23.9 ºC	4.44	5.07	
	E	11:00	(15)	44.3	785	38.5	3583.3	23.7 ºC			
2	S	11:00	15	44.3		38.5		23.6 ºC	1.36	0.42	
	E	11:15	(30)	39.5	240	36.7	300	23.4 ºC			
3	S	11:15	15	39.5		36.7		23.4 ºC	0.14	0.26	
	E	11:30	(45)	39.0	25	35.6	183.33	23.1 ºC			
4	S	11:30	15	39.0		35.6		23.1 ºC	0.45	0.28	
	E	11:45	(60)	37.4	80	34.4	200	23.1 ºC			
5	S	11:45	30	37.4		34.4		23.0 ºC	0.17	0.22	
	E	12:15	(90)	36.2	60	32.5	316.67	23.0 ºC			
6	S	12:15	30	36.2		32.5		23.0 ºC	0.00	0.37	
	E	12:45	(120)	36.2	0	29.4	516.67	23.0 ºC			
7	S	12:45	60	36.2		29.4		22.9 ºC	0.23	0.54	
	E	13:45	(180)	32.9	165	20.3	1516.7	22.9 ºC			
8	S	13:45	60	32.9		20.3		23.1 ºC	0.31	0.51	
	E	14:45	(240)	28.5	220	11.6	1450	23.3 ºC			
9	S	14:45	60	60.0		60.0		23.3 ºC	0.46	0.51	
	E	15:45	(300)	53.5	325	51.3	1450	23.3 ºC			
10	S	15:45	15	53.5		51.3		23.3 ºC	0.03	0.50	
	E	16:00	(315)	53.4	5	49.2	350	23.3 ºC			Refilled Mariotte Tubes

Formulas:

Inner Infiltration Rate: $V_{IR} = DV_{IR} / (A_{IR} * Dt)$

Annular space infiltration rate: $V_A = DV_A / (A_A * Dt)$



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Project No.	Figure No.
20153655E1	5

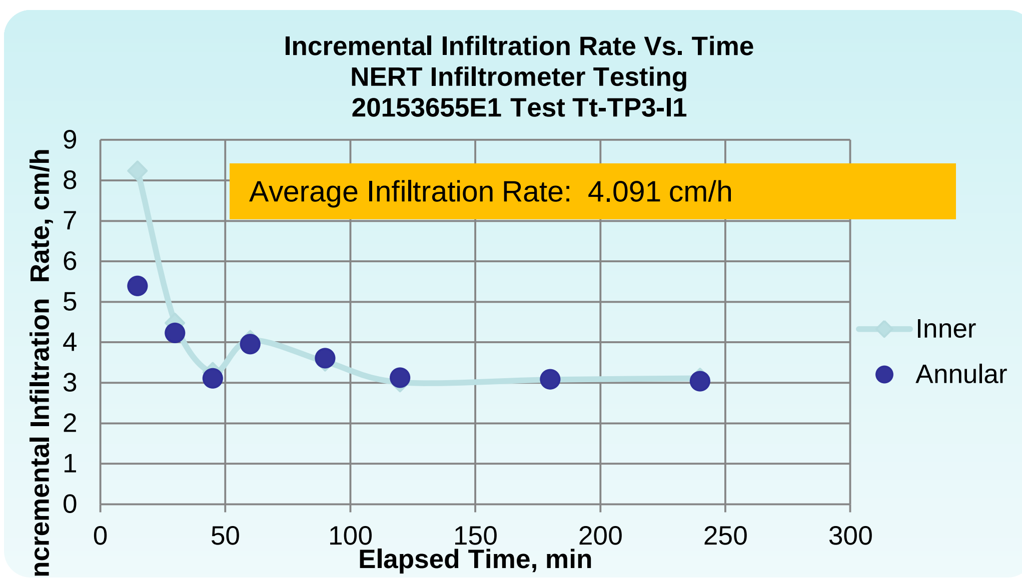
	NERT Infiltrometer Testing	Constants	Area, cm^2 / Liq depth, cm
Project Number	20153655	Inner ring	706.9 / 10
Test Number	Tt-TP3-I1	Annular space	2126.6 / 10
Test Location	N:36.04694, W:115.00212	Inner ring penetration	10.16
Date	4/24/2015	Outer ring penetration	15.24
Tested By	A. Rodrigues		
Liquid Used	Water	Liquid level maintained using:	Mariotte Tubes
Liquid pH	7.5 (Approximate)		
Weather	Sunny		
Ground Temp	21.9		
Testing Depth	10.16 cm (Approximate)		

No.	Start (S) or End (E)	Time	Elpd Time D / (total) (min)	Flow Readings Inner Mariotte Height, cm	Inner flow, cm^3	Annular Mariotte Height, cm	Annular flow, cm^3	Liq Temp ºC	Infiltration Rate Inner cm / h	Infiltration Rate Annular cm / h	Remarks
1	S	6:00	15	60.0		60.0		16.0 ºC	8.23	5.39	
	E	6:15	(15)	30.9	1455	42.8	2866.67	16.0 ºC			
2	S	6:15	15	60.0		60.0		16.0 ºC	4.47	4.23	
	E	6:30	(30)	44.2	790	46.5	2250	16.0 ºC			Refilled Mariotte Tubes
3	S	6:30	15	44.2		46.5		16.0 ºC	3.25	3.10	
	E	6:45	(45)	32.7	575	36.6	1650	16.0 ºC			
4	S	6:45	15	32.7		36.6		16.0 ºC	4.05	3.95	
	E	7:00	(60)	18.4	715	24.0	2100	16.0 ºC			
5	S	7:00	30	60.0		60.0		16.0 ºC	3.52	3.61	
	E	7:30	(90)	35.1	1245	37.0	3833.34	16.0 ºC			
6	S	7:30	30	60.0		60.0		16.0 ºC	3.01	3.12	
	E	8:00	(120)	38.7	1065	40.1	3316.67	16.1 ºC			Refilled Mariotte Tubes
7	S	8:00	60	60.0		60.0		16.1 ºC	3.08	3.08	
	E	9:00	(180)	16.5	2175	20.7	6550.01	16.7 ºC			Refilled Mariotte Tubes
8	S	9:00	60	60.0		60.0		16.7 ºC	3.11	3.03	
	E	10:00	(240)	16.0	2200	21.3	6450.01	17.4 ºC			Refilled Mariotte Tubes

Formulas:

Inner Infiltration Rate: $V_{IR} = DV_{IR} / (A_{IR} * Dt)$

Annular space infiltration rate: $V_A = DV_A / (A_A * Dt)$



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Incremental Infiltration	
Project No. 20153655E1	Figure No. 6

	NERT Infiltrometer Testing	Constants	Area, cm^2	Liq depth, cm
Project Number	20153655	Inner ring	706.9	10
Test Number	Tt-TP4-I1	Annular space	2126.6	10
Test Location	N:36.04698, W:115.0992	Inner ring penetration		7.62
Date	4/24/2015	Outer ring penetration		12.7
Tested By	A. Rodrigues			
Liquid Used	Water	Liquid level maintained using:		Mariotte Tubes
Liquid pH	7.5 (Approximate)			
Weather	Sunny			
Ground Temp	25.8			
Testing Depth	7.62 cm (Approximate)			

No.	Start (S) or End (E)	Time	Elpd Time D / (total)	Flow Readings Inner		Annular		Liq Temp	Infiltration Rate Inner	Annular	Remarks
			(min)	Mariotte Height, cm	flow, cm^3	Mariotte Height, cm	flow, cm^3	ºC	cm / h	cm / h	
1	S	11:00	15	60.0		60.0		22.0 ºC	3.96	3.70	
	E	11:15	(15)	46.0	700	48.2	1966.67	22.0 ºC			Refilled Mariotte Tubes
2	S	11:15	15	46.0		48.2		22.0 ºC	3.45	5.14	
	E	11:30	(30)	33.8	610	31.8	2733.34	22.2 ºC			Refilled Mariotte Tubes
3	S	11:30	15	60.0		60.0		22.2 ºC	2.46	3.73	
	E	11:45	(45)	51.3	435	48.1	1983.34	22.2 ºC			
4	S	11:45	15	51.3		48.1		22.2 ºC	2.91	4.26	
	E	12:00	(60)	41.0	515	34.5	2266.67	22.2 ºC			Refilled Mariotte Tubes
5	S	12:00	30	60.0		60.0		22.2 ºC	1.91	3.89	
	E	12:30	(90)	46.5	675	35.2	4133.34	21.6 ºC			Refilled Mariotte Tubes
6	S	12:30	30	60.0		60.0		21.6 ºC	1.97	3.07	
	E	1:00	(120)	46.1	695	40.4	3266.67	21.7 ºC			Refilled Mariotte Tubes
7	S	1:00	30	46.1		40.4		21.7 ºC	1.87	3.45	
	E	1:30	(150)	32.9	660	18.4	3666.67	21.8 ºC			Refilled Mariotte Tubes
8	S	1:30	30	60.0		60.0		21.8 ºC	2.08	3.48	
	E	2:00	(180)	45.3	735	37.8	3700.01	22.0 ºC			Refilled Mariotte Tubes
9	S	2:00	30	60.0		60.0		22.1 ºC	1.98	3.39	
	E	2:30	(210)	46.0	700	38.4	3600.01	22.3 ºC			Refilled Mariotte Tubes
10	S	2:30	30	46.0		38.4		22.3 ºC	2.02	2.68	
	E	3:00	(240)	31.7	715	21.3	2850.01	22.3 ºC			Refilled Mariotte Tubes
11	S	3:00	30	60.0		60.0		22.3 ºC	2.04	3.89	
	E	3:30	(270)	45.6	720	35.2	4133.34	22.3 ºC			Refilled Mariotte Tubes

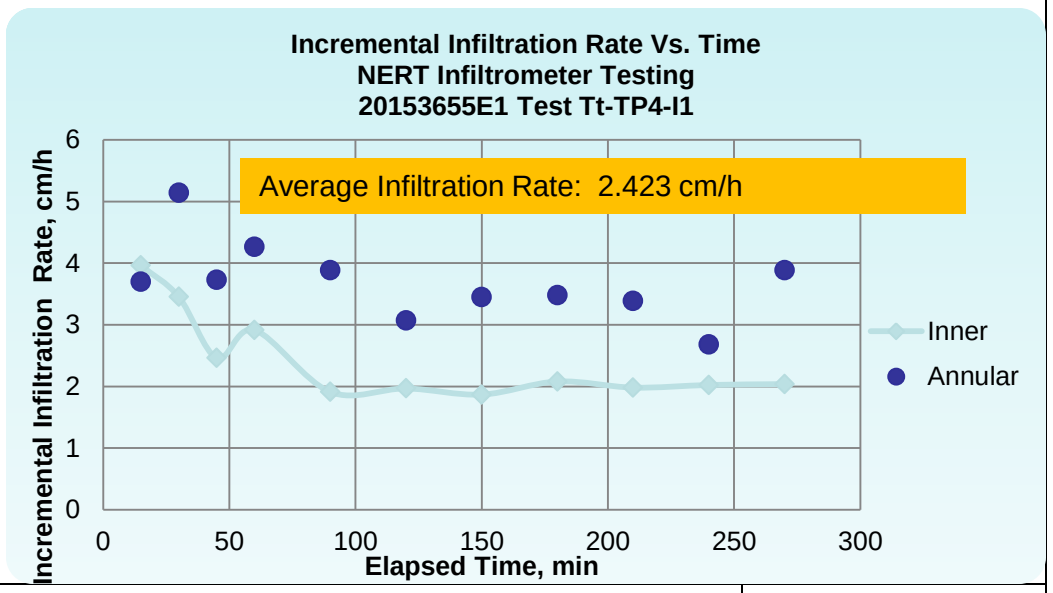
Formulas:

Inner Infiltration Rate:

$V_{IR} = DV_{IR} / (A_{IR} * Dt)$

Annular space infiltration rate:

$V_A = DV_A / (A_A * Dt)$



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