Data Validation Summary Report
(DVSR ID: TetraTech-M16-2018rev1)
Vacuum Enhanced Recovery Treatability Study
Nevada Environmental Response Trust Site
Henderson, Nevada

PREPARED FOR

Nevada Environmental Response Trust
35 E. Wacker Drive, Suite 690
Chicago, IL 60601

PRESENTED BY

Tetra Tech, Inc.
150 S. 4th Street, Unit A
Henderson, NV 89015

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Acronyms/Abbreviations	Definition
ADR	automated data review
AG	soil vapor
BW	blank water
CCB	continuing calibration blank
CCV	continuing calibration verification
DL	detection limit
DMC	deuterated monitoring compound
DQO	data quality objectives
DUP	duplicate
DVSR	data validation summary report
EB	equipment blank
EDD	electronic data delivery
FD	field duplicate
GC-MS	gas chromatography-mass spectroscopy
ICAL	initial calibration
ICB	initial calibration blank
ICS	interference check samples
ICV	initial calibration verification
LCS/LCSD	laboratory control sample/laboratory control sample duplicate
MDL	method detection limit
mg/kg	milligram per kilogram
mg/L	milligram per liter
MS/MSD	matrix spike/matrix spike duplicate
MSI	matrix spike-insoluble
NORM	normal field sample
N/A	not applicable
NDEP	Nevada Division of Environmental Protection
NERT	Nevada Environmental Response Trust
NFG	National Functional Guidelines
%C	percent completeness
%D	percent difference or drift
%R	percent recovery

Acronyms/Abbreviations	Definition
%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
SO	soil
SQL	sample quantitation limit
SVOC	semivolatile organic compound
TB	trip blank
TDS	total dissolved solids
Tetra Tech	Tetra Tech, Inc.
TKN	total kjeldahl nitrogen
TOC	total organic carbon
Treatability Study	Vacuum Enhanced Recovery Treatability Study
TSS	total suspended solids
USEPA	United States Environmental Protection Agency
µg/kg	micrograms per kilogram
µg/L	micrograms per liter
µg/m3	micrograms per cubic meter
VOC	volatile organic compound
WG	groundwater
WQ	water quality

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 Vacuum Enhanced Recovery Treatability Study (Treatability Study) for the NERT site, located in Clark County, Nevada. Sampling protocol can be found in Vacuum Enhanced Recovery Treatability Study Work Plan (Tetra Tech, 2017). Tetra Tech performed the Treatability Study, which included the collection and analyses of groundwater, soil, and soil vapor samples. Tetra Tech collected additional quality assurance and quality control (QA/QC) samples to aid in assessing data quality.

TestAmerica, Inc. provided laboratory analytical services. The analyses were performed by the methods shown in Table 1.

The laboratory assigns job numbers, also called sample delivery groups (SDGs), to all samples. The samples associated with QA/QC are designed to document the data quality of the samples in each sampling round or within an SDG. Table 2 cross-references each sample with its analysis, SDG, collection date, client sample number, laboratory sample number, QC type, matrix, and stage of validation. Samples included in Table 2 are those submitted in the DVSR electronic data deliverable (EDD). Field readings for the samples in Table 2 are submitted in a separate EDD table because they are not validated. Laboratory data packages may be found in Appendix B.3.

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 (NDEP, 2009) and with correspondence from NDEP personnel. The analytical data were evaluated for QA/QC based on the following documents: *Quality Assurance Project Plan, Revision 2* (Ramboll Environ, 2017); NDEP *Revised Guidance on Qualifying Data due to Blank Contamination for the BMI Complex and Common Areas*, (NDEP, 2012); *National Functional Guidelines for Inorganic Superfund Methods Data Review, (USEPA, 2017a)*; *National Functional Guidelines for Superfund Organic Methods Data Review, (USEPA, 2017b);* and the *USEPA SW-846 Third Edition, Test Methods for Evaluating Solid Waste,* including Updates I, II, IIA, IIB, III, and IV (USEPA, 1996), and laboratory methods. The samples were validated based on the quality assurance project plan (QAPP) and other references in place at time of validation. All samples were validated to Stage 2A using Automated Data Review (ADR) software. For the closing round of sampling, approximately 90 percent of the data were validated to Stage 2B and 10 percent to Stage 4. The ADR software was configured to meet the NERT protocols and validation practices. The software is programed to perform qualifier assignments based on summary QC with preset limits. The ADR software outputs contain the raw data from the electronic validation, which is then reviewed to determine the final qualifier assignments. The review process uses professional judgment and National Functional Guidelines (NFG) guidance to determine the final qualifiers, which are added to the database and presented in the DVSR tables. Therefore, there will be some qualifiers in the ADR outputs that are excluded from the database and final data tables because after professional review, their inclusion was not warranted. The ADR outputs are found in Appendix B.1. Stage 2B and Stage 4 data validation checklists are compiled in Appendix B.2

This report summarizes the QA/QC evaluation of the data using precision, accuracy, representativeness, comparability, completeness, and sensitivity (PARCCS) relative to the project data quality objectives (DQOs). This report provides a quantitative and qualitative assessment of the data and identifies potential sources of error, uncertainty, and bias that may affect the overall usability of the data.

2.0 PRECISION AND ACCURACY OF ENVIRONMENTAL DATA

Environmental data quality depends on sample collection procedures, analytical methods and instrumentation, documentation, and sample matrix properties. Both sampling procedures and laboratory analyses contain potential sources of uncertainty, error, and/or bias, which may affect the overall quality of a measurement. Errors for sample data may result from incomplete equipment decontamination, inappropriate sampling techniques, sample heterogeneity, improper filtering, and improper preservation. The accuracy of analytical results is dependent on selecting appropriate analytical methods, maintaining equipment properly, and complying with QC requirements. The sample matrix also is an important factor in the ability to obtain precise and accurate results within a given medium.

Environmental and laboratory QA/QC samples provide information on the effects of sampling procedures and evaluate laboratory contamination, laboratory performance, and matrix effects. Field QA/QC samples include equipment blanks (EBs), field duplicates (FDs), matrix spike/matrix spike duplicates (MS/MSDs), and trip blanks (TBs). Laboratory QA/QC samples include method blanks, laboratory control samples/laboratory control sample duplicates (LCS/LCSDs), laboratory duplicates (DUP), matrix spike-insoluble (MSI) samples, and additional MS/MSDs needed to meet method requirements.

2.1 PRECISION

Precision is a measure of the agreement of analytical results under a given set of conditions. It is a quantity that is not measured directly but is calculated from concentrations. Precision can be expressed as the relative percent difference (RPD) between two measurements:

$$RPD = \frac{(C1 - C2)*100}{(C1 + C2)/2}$$

where:
C1 = reported concentration for the sample
C2 = reported concentration for the duplicate

Precision can be expressed as the percent relative standard deviation (%RSD) between three or more measurements:

$$\%RSD = (s/\bar{a})*100$$

where:
%RSD = percent relative standard deviation
s = standard deviation
$\bar{a}$ = mean of replicate analyses

Precision is assessed by calculating %RSD during an initial calibration (ICAL) and RPD from the percent recoveries of the spiked compounds for each sample in the MS/MSD pair. In the absence of an MS/MSD pair, a laboratory duplicate or LCS/LCSD pair can be analyzed as an alternative means of assessing precision. An additional measure of sampling precision is obtained by collecting and analyzing field duplicate samples, which are compared using the RPD results as the evaluation criteria.

MS and MSD samples are field samples which have been spiked by the laboratory with target analytes prior to preparation and analysis. The MSI is used to evaluate soil samples that are analyzed by methods developed for waters. These samples measure the appropriateness of the analytical method and effectiveness in recovering target analytes from a specific environmental matrix. The LCS sample is spiked with the same target analytes as the MS/MSD using an interference-free matrix instead of a field sample aliquot. The LCS measures laboratory

efficiency in recovering target analytes in the absence of matrix interferences. It is used to verify that the analyses are being performed in control.

The laboratory analyzes laboratory replicates. A field sample is analyzed and an unspiked duplicate of that sample is also analyzed. The data reviewer compares the reported results of the primary analysis and the laboratory duplicate and calculates RPDs to assess laboratory precision.

Calibration precision is determined by calculating %RSD. Laboratory and field sampling precision are evaluated by calculating RPDs for field sample duplicate pairs. 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 samples indicates imprecision. Imprecision is the variance in the consistency with which the laboratory arrives at a reported result. The actual analyte concentration may be higher or lower than the reported result.

Possible causes of poor precision include sample heterogeneity, sample matrix interference, improper sample collection or handling, inconsistent sample preparation, instrument column fouling, and poor instrument stability. In duplicate pairs, results may be reported in either the primary or duplicate samples at levels below the practical quantitation limit (PQL) or non-detected. Since these values are estimated, RPD exceedances from these duplicate pairs do not suggest a significant impact to data quality.

2.2 ACCURACY

Accuracy is a measure of the closeness of agreement between a measured value and the true value of an analytical parameter. It may be used to identify bias in each measurement system. Recoveries outside acceptable QC limits may be caused by factors such as instrumentation, analyst error, or matrix interference. Accuracy is assessed through the analysis of continuing calibrations, MS, MSD, MSI, 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 (%R) of MS and LCS analyses.

Percent recovery is calculated using the following equation:

$$\%R = (A-B)/C \times 100$$

where:
A = measured concentration in the spiked sample
B = measured 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, MSIs, and LCS/LCSD is evaluated with the acceptance criteria specified by the QAPPs and laboratory limits. Spike recoveries outside the acceptable QC accuracy limits provide an indication of bias, where the reported data may overestimate or underestimate the actual concentration of compounds detected or quantitation limits reported for environmental samples.

2.3 REPRESENTATIVENESS

Representativeness is a qualitative parameter that expresses the degree to which the sample data are characteristic of a population. It is evaluated by reviewing the QC results of blanks, samples, and holding times. Positive detects of compounds in the blank samples identify compounds that may have been introduced into the samples during sample collection, transport, preparation, or analysis. The QA/QC blanks collected and analyzed are method blanks, calibration blanks, EBs, and TBs.

A method blank is a laboratory grade water or solid matrix that contains the method reagents and has undergone the same preparation and analysis as the environmental samples. The method blank provides a measure of the combined contamination derived from the laboratory source water, glassware, instruments, reagents, and sample

preparation steps. Method blanks are prepared for each sample of a similar matrix extracted by the same method at a similar concentration level.

Several methods require the use of initial calibration blanks (ICBs) and continuing calibration blanks (CCBs). ICBs and CCBs are laboratory-grade water samples that are analyzed at the beginning, during, and at the end of sample analysis runs. The frequency is dependent on the analytical method. These blanks estimate residual contaminants from the previous sample or standards analysis and measure baseline shifts that commonly occur in emission and absorption spectroscopy.

EBs consist of analyte-free water poured over or through the sample collection equipment. The water is collected in a sample container for laboratory analysis. These blanks are collected after the sampling equipment is decontaminated; they are used to measure effectiveness of the decontamination procedure. Equipment blanks are collected and analyzed for all target analytes.

TBs consist of analyte-free water prepared at the laboratory, shipped to the field with sample containers, and returned to the laboratory with the samples receiving volatile organic compound (VOC) analysis. The trip blank is analyzed for VOCs using the same sample preparation and analysis procedures used for the actual field samples.

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 are greater than the PQL and the sample result is less than 10 times the blank contaminant value. The blanks and associated samples are evaluated per the NDEP *Revised Guidance on Qualifying Data Due to Blank Contamination for the BMI Complex and Common Areas* (NDEP, 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 are qualified according to USEPA National Functional Guidelines (NFGs).

2.4 COMPARABILITY

Comparability is a qualitative characteristic that defines the extent to which the data for a chemical parameter measurement are consistent with, and may be compared with, data from other sampling events. Comparability is dependent upon the design of the sampling plans and execution of activities consistent with approved plans. Factors affecting comparability include sample collection and handling techniques, matrix type, and analytical method. Comparability is achieved through the use of standard techniques to collect representative samples, consistent application of analytical method protocols, and use of appropriate units in reporting analytical results. Comparability is also dependent upon other PARCCS criteria, because only when precision, accuracy, and representativeness are known can datasets be compared with confidence.

2.5 COMPLETENESS

Completeness is defined as the percentage of acceptable sample results compared to the total number of sample results. Completeness is evaluated to determine if an acceptable amount of usable data were obtained so that a valid scientific site assessment can be completed. Completeness equals the total number of sample results for each fraction minus the total number of rejected sample results divided by the total number of sample results multiplied by 100. As specified in the project DQOs, the goal for completeness for target analytes in each analytical fraction is 90 percent.

Percent completeness is calculated using the following equation:

$$\%C = (T - R)/T \times 100$$

where:

%C = percent completeness
T = total number of sample results
R = total number of rejected sample results

Completeness is also determined by comparing the planned number of samples per method and matrix as specified in the QAPPs, with the number determined above.

2.6 SENSITIVITY

Sensitivity is the ability of an analytical method or instrument to discriminate between measurement responses representing different concentrations. It is generally used to describe the instrument detection limits (DLs) or PQLs established to meet project DQOs. The method detection limit (MDL) represents the minimum concentration of a substance that can be measured and reported with 99 percent confidence that the analyte concentration is greater than zero. Sample quantitation limits (SQLs) are adjusted MDL values that reflect sample-specific actions, such as dilutions or varying aliquot sizes. The laboratory data reports show MDL in place of the SQL. The MDL was adjusted to reflect the sample analysis conditions. The PQL is the minimum concentration that can be reported based on the analysis of a specific matrix. The PQL is often the lowest acceptable calibration point for the analyte.

For this project, the laboratory data reports show reporting limit (RL) in place of the PQL. The laboratory reported detected analytes down to the adjusted MDL/SQL. All results reported between the SQL and PQL were qualified “J” by the laboratory. Sample results are compared to method and field quality blank results to identify possible effects of laboratory background and field procedures on sensitivity.

3.0 VALIDATION RESULTS AND PARCCS

This section discusses the validation results and the associated PARCCS criteria. Before conducting the PARCCS evaluation, the analytical data were validated according to the QAPP in place at the time of validation (Ramboll Environ, 2017), National Functional Guidelines (2017a, and 2017b), and the analytical methods.

Samples not meeting the acceptance criteria were denoted with a validation qualifier that indicates a deficiency with the data. Table 3 contains validation qualifiers used in data validation.

When more than one validation qualifier is applicable to a data point, the final validation qualifier applied is based on the following hierarchy:

R > J	R takes precedence over the J qualifier.
J+	The high bias (J+) qualifier is applied to detected results only.
J > J+ or J-	The unbiased (J) qualifier supersedes biased (J+ or J-) qualifiers since it is not possible to assess the direction of the potential bias.
J = J+ plus J-	Adding biased (J+ or J-) qualifiers with opposite signs results in an unbiased qualifier (J).
UJ = U plus J	The UJ qualifier is used when a non-detected (U) flag is added to a (J) flag.

Table 4 identifies the QC elements reviewed for each validation level. The actual elements are method-dependent.

Table 5 lists the reason codes used. Reason codes explain why data were qualified and identify possible limitations of data use. Reason codes are cumulative except when one of the flags is R. In that case, only the reason code associated with the R flag is used.

Table 6 presents the overall qualified results after the validation qualifiers and associated reason codes were applied.

3.1 PRECISION

3.1.1 Instrument Calibration

The objective of an ICAL is to ensure that an instrument can produce acceptable qualitative and quantitative data by determining the ratio of instrument response to analyte concentration. %RSD is used to evaluate ICAL results and provide a means of evaluating precision within an analytical system. No data were qualified for imprecision in the ICAL for this task.

3.1.2 MS/MSD and Laboratory Duplicate Samples

One MS/MSD RPD was outside of acceptance criteria as stated in the QAPP. There were no laboratory duplicate issues.

The perchlorate result in sample VMW-02D-20.0-20171018 was qualified “J” for MS/MSD imprecision. The RPD was 43%. The RPD acceptance limit is 30%. The result qualified is found in Table 6 with reason code “ld.”

3.1.3 LCS/LCSD Samples

Three results were qualified for LCS/LCSD RPD outliers. Acetone results in samples EFFLUENT-01172018, VER-01I-C-36-AIR and VER-01I-C-48-AIR were qualified “J” for LCS/LCSD imprecision. The acetone RPD between the LCS/LCSD in batch 320-206143 was 27%. The acceptance limit is 25%. The results are found in Table 6 with reason code “ld.”

3.1.4 Field Duplicate Samples

For results > 5X the PQL, the FD samples were evaluated for acceptable precision with RPDs. If one or both results was < 5X the PQL, samples were evaluated by the difference between the two measurements. Table 7 includes results where RPDs exceeded 30 percent for water or 50 percent for soils, or the difference between the values was greater than the absolute value of the PQL. Ten results were qualified for imprecision between the parent and FD. Results qualified for FD imprecision are found in Table 6 with reason code “fd.” The parent sample and the FD were qualified “J” for detects and “UJ” for non-detects.

3.2 ACCURACY

3.2.1 Instrument Calibration

The objective of continuing calibration is to ensure that the instrument continues to meet the sensitivity and linearity criteria throughout each analytical sequence. Initial and continuing calibration verification (CCV) results provide a means of evaluating accuracy within an analytical run. Percent difference or drift (%D), percent recovery (%R), correlation coefficient, and coefficient of determination are the parameters used to measure the effectiveness of instrument calibration. The correlation coefficient indicates the linearity of the calibration curve. %R and %D are used to verify the ongoing calibration acceptability of the analytical system.

Most calibration criteria were met. Several VOCs had %Ds that exceeded the acceptance limits. The compounds were non-detects, but were qualified “UJ” per organic NFGs. Ten results were qualified and are found in Table 6 with reason code “c.” The calibration exceedances are found in Table 8.

3.2.2 MS/MSD and MSI Samples

Several MS/MSD and MSI %Rs were outside of acceptance criteria shown in the QAPPs. MS/MSD and MSI %R exceedances can be found in Table 9. Analytes that were present in the parent sample in concentrations greater than 4 times the amount spiked were not qualified and are not shown in the table. In cases where the recoveries were high and the parent sample was non-detect, no qualification was applied. Qualifiers were applied to parent samples only. In cases where dilutions caused the low recoveries, the data were not rejected or qualified. The effect of dilution on matrix spike recoveries is determined on a case-by-case-basis using professional judgment, knowledge of the lab’s procedures, and input from the lab. For some analyses, the lab may dilute the sample prior to preparation for analyses and prior to addition of the matrix spike compounds. The lab approaches this on a case-by-case basis. One phosphorus result was rejected. Seven results were qualified. Associated results rejected or qualified for MS/MSD or MSI recoveries can be found in Table 6 with reason code “m.”

3.2.3 LCS/LCSD Samples

No data were qualified for LCS/LCSD %R outliers.

3.2.4 Serial Dilutions

The serial dilution is used to determine whether physical or chemical interferences exist due to matrix. Serial dilution %Ds were less than 10 percent as required in the inorganic NFG. Chromium in sample VER-01I-C-72 had a serial dilution %D of 15% and was qualified “J”, estimated. The result can be found in Table 6 with reason code “sd.”

3.2.5 Interference Check Samples

Interference check samples (ICS) are analyzed in the following methods: EPA 314.0, SW-6010B, and SW-6020. All interference check %Rs met acceptance criteria of 80 to 120 percent.

3.2.6 Surrogates

Surrogates are added to all samples analyzed by EPA 300.1B, SW-8260B, and TO15 to measure the efficiency of the analytical method. Several surrogates were not recovered because of high dilutions in EPA 300.1B. The effect of dilution on surrogate recoveries is determined on a case-by-case-basis using professional judgment, knowledge of the lab's procedures, and input from the lab. The data were not qualified for surrogate recovery outliers.

3.2.7 Analyte Quantitation and Target Identification

Raw data were evaluated for the Stage 4 samples. All analyte quantitation and target identifications reviewed matched the reported values.

Two tert-Butyl alcohol results were qualified for sample identification. The SW-8260B compound was identified by retention time and a single ion only. They were qualified "NJ" and assigned reason code "o" during validation.

3.3 REPRESENTATIVENESS

3.3.1 Sample Preservation and Holding Times

Holding times and sample preservation were evaluated to verify compliance with the analytical methods. Most samples met the preservation and holding time criteria shown in the QAPP.

The VOC aliquot of sample VER-01D-35.0 was not preserved to pH <2. The holding time for unpreserved aqueous VOCs is 7 days. The sample was analyzed on day 11. Sixty-eight results were rejected and one result was qualified "J" for missed holding times. The results are denoted in Table 6 with reason code "h."

3.3.2 Blanks

Method blanks, ICBs, CCBs, EBs, and TBs were analyzed to evaluate representativeness. The concentration of an analyte in any blank was used for data qualification. If contaminants were detected in a blank, the blank concentration was compared to the sample results. If the analyte was not detected in the sample, no qualification was applied to the sample. If the sample concentration was greater than 10 times the amount in the blank, after dilutions were considered, no qualification was applied.

For concentrations detected in the sample below the PQL, the sample result was qualified "J." Based on the hierarchy of validation qualification, the "J" qualifier, in this case applied to detected results below the PQL, supersedes the positive bias associated with blank contamination. For concentrations detected in the sample above the PQL and less than 10 times the amount in the blank, the sample results were qualified "J+."

3.3.2.1 Method and Calibration Blanks

Several contaminants were detected in the laboratory blanks. Eleven results were qualified because of contamination in laboratory blanks. Method blank detections that resulted in qualification are shown in Table 10. Qualified results are shown in Table 6 with reason code "bl."

3.3.2.2 Equipment Blanks and Trip Blanks

There were several detections in the EBs and TBs associated with this data set. No associated samples were qualified. The analytes were either not detected in the associated samples or the concentrations were greater than.10 times the amount in the blank.

3.4 COMPARABILITY

The laboratory used standard analytical methods for all analyses. In all cases, the SQLs attained were at or below the PQLs. Target compounds detected below the PQLs were flagged “J” by the laboratory and should be considered estimated. Qualified results are shown with reason code “sp” in Table 6. The comparability of the data is acceptable.

3.5 COMPLETENESS

The overall completeness level attained for the field samples, EBs, and TBs is 98.9 percent and meets the project goal of 90 percent. The percentage was calculated as the total number of accepted (non-rejected) sample results divided by the total number of sample results multiplied by 100. Sixty-nine results were rejected because of missed holding times and low MS/MSD recoveries. Completeness for VOCs by 8260B was 98.5%. Completeness for total phosphorous by EPA 365.3 was 50.0%. All analytical parameters met the completeness goal except total phosphorous, which is not a contaminant of potential concern. It is used during the treatability study as an indicator of nutrient presence. The rejected results do not affect the overall data quality of the treatability study. A completeness summary is provided in Table 11.

3.6 SENSITIVITY

The calibrations were evaluated for instrument sensitivity and were determined to be technically acceptable. Due to high analyte concentrations, many analytical runs were analyzed at dilutions. For diluted analyses, SQLs and PQLs were elevated.

3.6.1 Internal Standards

Internal standards were added to all samples analyzed by methods SW-6020, SW-8260B, and TO15. In SW-6020, internal standards were used to determine the existence and magnitude of instrument drift and physical interferences. In SW-8260B and TO15, internal standard areas and retention times were evaluated to ensure that instrument sensitivity and response remained stable during analysis. No analytes were qualified for internal standard anomalies.

4.0 CONCLUSIONS AND RECOMMENDATIONS

The analytical data quality assessment for the soil and water laboratory analytical results generated during the Vacuum Enhanced Recovery Treatability Study at the NERT site in Henderson, Nevada, established that the overall project requirements and completeness levels were met, even though completeness for total phosphorous was 50.0%. Most sample results were found to be usable. Sixty-nine results were rejected because of holding time and low MS/MSD recoveries. Rejected results are not usable. Sample results that were qualified as estimated are usable for limited purposes only.

5.0 REFERENCES

Nevada Division of Environmental Protection (NDEP). (2009). *Data Verification and Validation Requirements – Supplement April 2009*.

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USEPA. (2017a). *National Functional Guidelines for Inorganic Superfund Methods Data Review*. EPA-540-R-2017-001. January.

USEPA. (2017b). *National Functional Guidelines for Superfund Organic Methods Data Review.* EPA-540-R-2017-002. January.

Tables

Table 1 Analytical Methods

Method	Parameters
EPA 200.7	Calcium and Magnesium
EPA 300.0	Nitrate, Nitrite, Sulfate
EPA 300.1B	Chlorate and Chlorite
EPA 314.0	Perchlorate
EPA 351.2	Total Kjeldahl Nitrogen (TKN)
EPA 365.3	Phosphorus
SM2320B	Alkalinity, Bicarbonate, Carbonate, Hydroxide
SM2340C	Hardness as calcium carbonate
SM2540C	Total Dissolved Solids (TDS)
SM2540D	Total Suspended Solids (TSS)
SM5310B	Total Organic Carbon
SW-6010B	Chromium and Manganese
SW-6020	Metals
SW-7199	Chromium [VI]
SW-8260B	Volatile Organic Compounds (VOCs)
TO15	VOCs

Table 2 Sample Cross-Reference

SDG	Client Sample ID	Lab Sample ID	Matrix	Sample Date	QC Type	Validation Stage	Alkalinity, Bicarbonate, Carbonate, Hydroxide by SM2320B	Calcium and Magnesium by EPA 200.7	Chlorate and Chlorite by EPA 300.1	Chromium [VI] by SW-7199	Chromium and Manganese by SW-6010B	Hardness as calcium carbonate by SM2340C	Metals by SW-6020	Nitrate, Nitrite, Sulfate by EPA 300.0	Perchlorate by EPA 314.0
320-35247-1	VER-01I-C-BL-AIR	320-35247-1	AG	1/15/2018	NORM	Stage 2A									
320-35247-1	VER-01I-C-04-AIR	320-35247-2	AG	1/15/2018	NORM	Stage 2A									
320-35247-1	VER-01I-C-08-AIR	320-35247-3	AG	1/15/2018	NORM	Stage 2A									
320-35247-1	EFFLUENT-01152018	320-35247-4	AG	1/15/2018	NORM	Stage 2A									
320-35247-1	VER-01I-C-12-AIR	320-35247-5	AG	1/15/2018	NORM	Stage 2A									
320-35247-1	VER-01I-C-24-AIR	320-35247-6	AG	1/16/2018	NORM	Stage 2A									
320-35247-1	EFFLUENT-01162018	320-35247-7	AG	1/16/2018	NORM	Stage 2A									
320-35247-1	VER-01I-C-36-AIR	320-35247-8	AG	1/16/2018	NORM	Stage 2A									
320-35247-1	EFFLUENT-01172018	320-35247-9	AG	1/17/2018	NORM	Stage 2A									
320-35247-1	VER-01I-C-48-AIR	320-35247-10	AG	1/17/2018	NORM	Stage 2A									
320-35247-1	VER-01I-C-60-AIR	320-35247-11	AG	1/17/2018	NORM	Stage 2A									
320-35247-1	EFFLUENT-01182018	320-35247-12	AG	1/18/2018	NORM	Stage 2A									
320-35247-1	VER-01I-C-70.5-AIR	320-35247-13	AG	1/18/2018	NORM	Stage 2A									
320-35962-1	VER-01D-C-BL-AIR	320-35962-1	AG	2/5/2018	NORM	Stage 2B									
320-35962-1	VER-01D-C-04-AIR	320-35962-2	AG	2/5/2018	NORM	Stage 2B									
320-35962-1	VER-01D-C-20180205-EFFLUENT	320-35962-3	AG	2/5/2018	NORM	Stage 2B									
320-35962-1	VER-01D-C-08-AIR	320-35962-4	AG	2/5/2018	NORM	Stage 2B									
320-35962-1	VER-01D-C-12-AIR	320-35962-5	AG	2/6/2018	NORM	Stage 2B									
320-35962-1	VER-01D-C-20180206-EFFLUENT	320-35962-6	AG	2/6/2018	NORM	Stage 2B									
320-35962-1	VER-01D-C-24-AIR	320-35962-7	AG	2/6/2018	NORM	Stage 2B									
320-35962-1	VER-01D-C-36-AIR	320-35962-8	AG	2/7/2018	NORM	Stage 2B									
320-35962-1	VER-01D-C-20180207-EFFLUENT	320-35962-9	AG	2/7/2018	NORM	Stage 2B									
320-35962-1	VER-01D-C-48-AIR	320-35962-10	AG	2/7/2018	NORM	Stage 4									
320-35962-1	VER-01D-C-60-AIR	320-35962-11	AG	2/8/2018	NORM	Stage 2B									
320-35962-1	VER-01D-C-20180208-EFFLUENT	320-35962-12	AG	2/8/2018	NORM	Stage 4									
320-35962-1	VER-01D-C-72-AIR	320-35962-13	AG	2/8/2018	NORM	Stage 2B									
320-35962-1	VER-01D-C-84-AIR	320-35962-14	AG	2/9/2018	NORM	Stage 2B									
440-193156-1	TRIPBLANK-09282017	440-193156-1	BW	9/28/2017	TB	Stage 2A									
440-193156-1	VMW-01D-5.0-20170928	440-193156-2	SO	9/28/2017	NORM	Stage 2A			X	X	X				X
440-193156-1	VMW-01D-10.0-20170928	440-193156-3	SO	9/28/2017	NORM	Stage 2A			X	X	X				X
440-193156-1	VMW-01D-15.0-20170928	440-193156-4	SO	9/28/2017	NORM	Stage 2A			X	X	X				X
440-193156-1	VMW-01D-20.0-20170928	440-193156-5	SO	9/28/2017	NORM	Stage 2A			X	X	X				X
440-193156-1	VMW-01D-25.0-20170928	440-193156-6	SO	9/28/2017	NORM	Stage 2A			X	X	X				X
440-193156-1	VMW-01D-30.0-20170928	440-193156-7	SO	9/28/2017	NORM	Stage 2A			X	X	X				X
440-193156-1	VMW-01D-40.0-20170928	440-193156-8	SO	9/28/2017	NORM	Stage 2A			X	X	X				X
440-193156-1	VMW-01D-50.0-20170928	440-193156-9	SO	9/28/2017	NORM	Stage 2A			X	X	X				X
440-193156-1	VMW-01D-60.0-20170928	440-193156-10	SO	9/28/2017	NORM	Stage 2A			X	X	X				X
440-193156-1	VMW-01D-70.0-20170928	440-193156-11	SO	9/28/2017	NORM	Stage 2A			X	X	X				X
440-193156-1	VMW-01D-34.0-20170928	440-193156-12	WG	9/28/2017	NORM	Stage 2A			X	X	X				X
440-193156-1	VMW-01D-80.0-20170928	440-193156-13	SO	9/28/2017	NORM	Stage 2A			X	X	X				X
440-193156-1	VMW-01D-90.0-20170928	440-193156-14	SO	9/28/2017	NORM	Stage 2A			X	X	X				X
440-193156-1	VMW-01D-90.0-20170928-EB	440-193156-15	BW	9/28/2017	EB	Stage 2A			X	X	X				X
440-193156-1	VMW-01D-100.0-20170928	440-193156-16	SO	9/28/2017	NORM	Stage 2A			X	X	X				X
440-193224-1	TRIPBLANK-09292017	440-193224-1	BW	9/29/2017	TB	Stage 2A									
440-193224-1	VMW-01D-110.0-20170929	440-193224-2	SO	9/29/2017	NORM	Stage 2A			X	X	X				X
440-193224-1	VMW-01D-110.0-20170929-FD	440-193224-3	SO	9/29/2017	FD	Stage 2A			X	X	X				X

Table 2 Sample Cross-Reference

SDG	Client Sample ID	Lab Sample ID	Matrix	Sample Date	QC Type	Validation Stage	Phosphorus by EPA 365.3	Total Dissolved Solids [TDS] by SM2540C	Total Kjeldahl Nitrogen [TKN] by EPA 351.2	Total Organic Carbon by SM5310B	Total Suspended Solids [TSS] by SM2540D	Volatile Organic Compounds (VOCs) by SW-8260B	Volatile Organic Compounds (VOCs) by TO15
320-35247-1	VER-01I-C-BL-AIR	320-35247-1	AG	1/15/2018	NORM	Stage 2A							X
320-35247-1	VER-01I-C-04-AIR	320-35247-2	AG	1/15/2018	NORM	Stage 2A							X
320-35247-1	VER-01I-C-08-AIR	320-35247-3	AG	1/15/2018	NORM	Stage 2A							X
320-35247-1	EFFLUENT-01152018	320-35247-4	AG	1/15/2018	NORM	Stage 2A							X
320-35247-1	VER-01I-C-12-AIR	320-35247-5	AG	1/15/2018	NORM	Stage 2A							X
320-35247-1	VER-01I-C-24-AIR	320-35247-6	AG	1/16/2018	NORM	Stage 2A							X
320-35247-1	EFFLUENT-01162018	320-35247-7	AG	1/16/2018	NORM	Stage 2A							X
320-35247-1	VER-01I-C-36-AIR	320-35247-8	AG	1/16/2018	NORM	Stage 2A							X
320-35247-1	EFFLUENT-01172018	320-35247-9	AG	1/17/2018	NORM	Stage 2A							X
320-35247-1	VER-01I-C-48-AIR	320-35247-10	AG	1/17/2018	NORM	Stage 2A							X
320-35247-1	VER-01I-C-60-AIR	320-35247-11	AG	1/17/2018	NORM	Stage 2A							X
320-35247-1	EFFLUENT-01182018	320-35247-12	AG	1/18/2018	NORM	Stage 2A							X
320-35247-1	VER-01I-C-70.5-AIR	320-35247-13	AG	1/18/2018	NORM	Stage 2A							X
320-35962-1	VER-01D-C-BL-AIR	320-35962-1	AG	2/5/2018	NORM	Stage 2B							X
320-35962-1	VER-01D-C-04-AIR	320-35962-2	AG	2/5/2018	NORM	Stage 2B							X
320-35962-1	VER-01D-C-20180205-EFFLUENT	320-35962-3	AG	2/5/2018	NORM	Stage 2B							X
320-35962-1	VER-01D-C-08-AIR	320-35962-4	AG	2/5/2018	NORM	Stage 2B							X
320-35962-1	VER-01D-C-12-AIR	320-35962-5	AG	2/6/2018	NORM	Stage 2B							X
320-35962-1	VER-01D-C-20180206-EFFLUENT	320-35962-6	AG	2/6/2018	NORM	Stage 2B							X
320-35962-1	VER-01D-C-24-AIR	320-35962-7	AG	2/6/2018	NORM	Stage 2B							X
320-35962-1	VER-01D-C-36-AIR	320-35962-8	AG	2/7/2018	NORM	Stage 2B							X
320-35962-1	VER-01D-C-20180207-EFFLUENT	320-35962-9	AG	2/7/2018	NORM	Stage 2B							X
320-35962-1	VER-01D-C-48-AIR	320-35962-10	AG	2/7/2018	NORM	Stage 4							X
320-35962-1	VER-01D-C-60-AIR	320-35962-11	AG	2/8/2018	NORM	Stage 2B							X
320-35962-1	VER-01D-C-20180208-EFFLUENT	320-35962-12	AG	2/8/2018	NORM	Stage 4							X
320-35962-1	VER-01D-C-72-AIR	320-35962-13	AG	2/8/2018	NORM	Stage 2B							X
320-35962-1	VER-01D-C-84-AIR	320-35962-14	AG	2/9/2018	NORM	Stage 2B							X
440-193156-1	TRIPBLANK-09282017	440-193156-1	BW	9/28/2017	TB	Stage 2A						X	
440-193156-1	VMW-01D-5.0-20170928	440-193156-2	SO	9/28/2017	NORM	Stage 2A							
440-193156-1	VMW-01D-10.0-20170928	440-193156-3	SO	9/28/2017	NORM	Stage 2A							
440-193156-1	VMW-01D-15.0-20170928	440-193156-4	SO	9/28/2017	NORM	Stage 2A							
440-193156-1	VMW-01D-20.0-20170928	440-193156-5	SO	9/28/2017	NORM	Stage 2A							
440-193156-1	VMW-01D-25.0-20170928	440-193156-6	SO	9/28/2017	NORM	Stage 2A							
440-193156-1	VMW-01D-30.0-20170928	440-193156-7	SO	9/28/2017	NORM	Stage 2A							
440-193156-1	VMW-01D-40.0-20170928	440-193156-8	SO	9/28/2017	NORM	Stage 2A							
440-193156-1	VMW-01D-50.0-20170928	440-193156-9	SO	9/28/2017	NORM	Stage 2A							
440-193156-1	VMW-01D-60.0-20170928	440-193156-10	SO	9/28/2017	NORM	Stage 2A							
440-193156-1	VMW-01D-70.0-20170928	440-193156-11	SO	9/28/2017	NORM	Stage 2A							
440-193156-1	VMW-01D-34.0-20170928	440-193156-12	WG	9/28/2017	NORM	Stage 2A						X	
440-193156-1	VMW-01D-80.0-20170928	440-193156-13	SO	9/28/2017	NORM	Stage 2A							
440-193156-1	VMW-01D-90.0-20170928	440-193156-14	SO	9/28/2017	NORM	Stage 2A							
440-193156-1	VMW-01D-90.0-20170928-EB	440-193156-15	BW	9/28/2017	EB	Stage 2A						X	
440-193156-1	VMW-01D-100.0-20170928	440-193156-16	SO	9/28/2017	NORM	Stage 2A							
440-193224-1	TRIPBLANK-09292017	440-193224-1	BW	9/29/2017	TB	Stage 2A						X	
440-193224-1	VMW-01D-110.0-20170929	440-193224-2	SO	9/29/2017	NORM	Stage 2A							
440-193224-1	VMW-01D-110.0-20170929-FD	440-193224-3	SO	9/29/2017	FD	Stage 2A							

Table 2 Sample Cross-Reference

SDG	Client Sample ID	Lab Sample ID	Matrix	Sample Date	QC Type	Validation Stage	Alkalinity, Bicarbonate, Carbonate, Hydroxide by SM2320B	Calcium and Magnesium by EPA 200.7	Chlorate and Chlorite by EPA 300.1	Chromium [VI] by SW-7199	Chromium and Manganese by SW-6010B	Hardness as calcium carbonate by SM2340C	Metals by SW-6020	Nitrate, Nitrite, Sulfate by EPA 300.0	Perchlorate by EPA 314.0
440-193224-1	VMW-01D-110-0-20170929-EB	440-193224-4	BW	9/29/2017	EB	Stage 2A			X	X	X				X
440-194571-1	TRIPBLANK-10182017	440-194571-1	BW	10/18/2017	TB	Stage 2A									
440-194571-1	VMW-02D-5.0-20171018	440-194571-2	SO	10/18/2017	NORM	Stage 2A			X	X	X				X
440-194571-1	VMW-02D-5.0-20171018-FD	440-194571-3	SO	10/18/2017	FD	Stage 2A			X	X	X				X
440-194571-1	VMW-02D-10.0-20171018	440-194571-4	SO	10/18/2017	NORM	Stage 2A			X	X	X				X
440-194571-1	VMW-02D-15.0-20171018	440-194571-5	SO	10/18/2017	NORM	Stage 2A			X	X	X				X
440-194571-1	VMW-02D-20.0-20171018	440-194571-6	SO	10/18/2017	NORM	Stage 2A			X	X	X				X
440-194571-1	VMW-02D-25.0-20171018	440-194571-7	SO	10/18/2017	NORM	Stage 2A			X	X	X				X
440-194571-1	VMW-02D-30.0-20171018	440-194571-8	SO	10/18/2017	NORM	Stage 2A			X	X	X				X
440-194571-1	VMW-02D-35.0-20171018	440-194571-9	WG	10/18/2017	NORM	Stage 2A			X	X	X				X
440-194571-1	VMW-02D-40.0-20171018	440-194571-10	SO	10/18/2017	NORM	Stage 2A			X	X	X				X
440-194571-1	VMW-02D-50.0-20171018	440-194571-11	SO	10/18/2017	NORM	Stage 2A			X	X	X				X
440-194571-1	VMW-02D-60.0-20171018	440-194571-12	SO	10/18/2017	NORM	Stage 2A			X	X	X				X
440-194571-1	VMW-02D-70.0-20171018	440-194571-13	SO	10/18/2017	NORM	Stage 2A			X	X	X				X
440-194571-1	VMW-02D-80.0-20171018	440-194571-14	SO	10/18/2017	NORM	Stage 2A			X	X	X				X
440-194571-1	VMW-02D-90.0-20171018	440-194571-15	SO	10/18/2017	NORM	Stage 2A			X	X	X				X
440-194571-1	VMW-02D-100.0-20171018	440-194571-16	SO	10/18/2017	NORM	Stage 2A			X	X	X				X
440-194571-1	VMW-02D-110.0-20171018	440-194571-17	SO	10/18/2017	NORM	Stage 2A			X	X	X				X
440-194571-1	VMW-02D-110.0-171018EB	440-194571-18	BW	10/18/2017	EB	Stage 2A			X	X	X				X
440-194623-1	TRIPBLANK-10192017	440-194623-1	BW	10/19/2017	TB	Stage 2A									
440-194623-1	VER-01I-5.0-20171019	440-194623-2	SO	10/19/2017	NORM	Stage 2A			X	X	X				X
440-194623-1	VER-01I-5.0-20171019-FD	440-194623-3	SO	10/19/2017	FD	Stage 2A			X	X	X				X
440-194623-1	VER-01I-10.0-20171019	440-194623-4	SO	10/19/2017	NORM	Stage 2A			X	X	X				X
440-194623-1	VER-01I-15.0-20171019	440-194623-5	SO	10/19/2017	NORM	Stage 2A			X	X	X				X
440-194623-1	VER-01I-20.0-20171019	440-194623-6	SO	10/19/2017	NORM	Stage 2A			X	X	X				X
440-194623-1	VER-01I-25.0-20171019	440-194623-7	SO	10/19/2017	NORM	Stage 2A			X	X	X				X
440-194623-1	VER-01I-30.0-20171019	440-194623-8	SO	10/19/2017	NORM	Stage 2A			X	X	X				X
440-194623-1	VER-01I-35.0-20171019	440-194623-9	WG	10/19/2017	NORM	Stage 2A			X	X	X				X
440-194623-1	VER-01I-40.0-20171019	440-194623-10	SO	10/19/2017	NORM	Stage 2A			X	X	X				X
440-194623-1	VER-01I-50.0-20171019	440-194623-11	SO	10/19/2017	NORM	Stage 2A			X	X	X				X
440-194623-1	VER-01I-50.0-20171019-EB	440-194623-12	BW	10/19/2017	EB	Stage 2A			X	X	X				X
440-194623-1	VER-01I-70.0-20171019	440-194623-13	SO	10/19/2017	NORM	Stage 2A			X	X	X				X
440-194623-1	VER-01I-70.0-20171019-FD	440-194623-14	SO	10/19/2017	FD	Stage 2A			X	X	X				X
440-194641-1	VER-01I-60.0-20171019	440-194641-1	SO	10/19/2017	NORM	Stage 2A			X	X	X				X
440-194754-1	TRIPBLANK-10202017	440-194754-1	BW	10/20/2017	TB	Stage 4									
440-194754-1	VER-01D-5.0-20171020	440-194754-2	SO	10/20/2017	NORM	Stage 4			X	X	X				X
440-194754-1	VER-01D-10.0-20171020	440-194754-3	SO	10/20/2017	NORM	Stage 4			X	X	X				X
440-194754-1	VER-01D-10.0-20171020-FD	440-194754-4	SO	10/20/2017	FD	Stage 4			X	X	X				X
440-194754-1	VER-01D-15.0-20171020	440-194754-5	SO	10/20/2017	NORM	Stage 4			X	X	X				X
440-194754-1	VER-01D-20.0-20171020	440-194754-6	SO	10/20/2017	NORM	Stage 4			X	X	X				X
440-194754-1	VER-01D-25.0-20171020	440-194754-7	SO	10/20/2017	NORM	Stage 4			X	X	X				X
440-194754-1	VER-01D-30.0-20171020	440-194754-8	SO	10/20/2017	NORM	Stage 4			X	X	X				X
440-194754-1	VER-01D-35.0-20171020	440-194754-9	WG	10/20/2017	NORM	Stage 4			X	X	X				X
440-194754-1	VER-01D-40.0-20171020	440-194754-10	SO	10/20/2017	NORM	Stage 4			X	X	X				X
440-194754-1	VER-01D-50.0-20171020	440-194754-11	SO	10/20/2017	NORM	Stage 4			X	X	X				X
440-194754-1	VER-01D-60.0-20171020	440-194754-12	SO	10/20/2017	NORM	Stage 4			X	X	X				X

Table 2 Sample Cross-Reference

SDG	Client Sample ID	Lab Sample ID	Matrix	Sample Date	QC Type	Validation Stage	Phosphorus by EPA 365.3	Total Dissolved Solids [TDS] by SM2540C	Total Kjeldahl Nitrogen [TKN] by EPA 351.2	Total Organic Carbon by SM5310B	Total Suspended Solids [TSS] by SM2540D	Volatile Organic Compounds (VOCs) by SW-8260B	Volatile Organic Compounds (VOCs) by TO15
440-193224-1	VMW-01D-110-0-20170929-EB	440-193224-4	BW	9/29/2017	EB	Stage 2A						X	
440-194571-1	TRIPBLANK-10182017	440-194571-1	BW	10/18/2017	TB	Stage 2A						X	
440-194571-1	VMW-02D-5.0-20171018	440-194571-2	SO	10/18/2017	NORM	Stage 2A							
440-194571-1	VMW-02D-5.0-20171018-FD	440-194571-3	SO	10/18/2017	FD	Stage 2A							
440-194571-1	VMW-02D-10.0-20171018	440-194571-4	SO	10/18/2017	NORM	Stage 2A							
440-194571-1	VMW-02D-15.0-20171018	440-194571-5	SO	10/18/2017	NORM	Stage 2A							
440-194571-1	VMW-02D-20.0-20171018	440-194571-6	SO	10/18/2017	NORM	Stage 2A							
440-194571-1	VMW-02D-25.0-20171018	440-194571-7	SO	10/18/2017	NORM	Stage 2A							
440-194571-1	VMW-02D-30.0-20171018	440-194571-8	SO	10/18/2017	NORM	Stage 2A							
440-194571-1	VMW-02D-35.0-20171018	440-194571-9	WG	10/18/2017	NORM	Stage 2A						X	
440-194571-1	VMW-02D-40.0-20171018	440-194571-10	SO	10/18/2017	NORM	Stage 2A							
440-194571-1	VMW-02D-50.0-20171018	440-194571-11	SO	10/18/2017	NORM	Stage 2A							
440-194571-1	VMW-02D-60.0-20171018	440-194571-12	SO	10/18/2017	NORM	Stage 2A							
440-194571-1	VMW-02D-70.0-20171018	440-194571-13	SO	10/18/2017	NORM	Stage 2A							
440-194571-1	VMW-02D-80.0-20171018	440-194571-14	SO	10/18/2017	NORM	Stage 2A							
440-194571-1	VMW-02D-90.0-20171018	440-194571-15	SO	10/18/2017	NORM	Stage 2A							
440-194571-1	VMW-02D-100.0-20171018	440-194571-16	SO	10/18/2017	NORM	Stage 2A							
440-194571-1	VMW-02D-110.0-20171018	440-194571-17	SO	10/18/2017	NORM	Stage 2A							
440-194571-1	VMW-02D-110.0-171018EB	440-194571-18	BW	10/18/2017	EB	Stage 2A						X	
440-194623-1	TRIPBLANK-10192017	440-194623-1	BW	10/19/2017	TB	Stage 2A						X	
440-194623-1	VER-01I-5.0-20171019	440-194623-2	SO	10/19/2017	NORM	Stage 2A							
440-194623-1	VER-01I-5.0-20171019-FD	440-194623-3	SO	10/19/2017	FD	Stage 2A							
440-194623-1	VER-01I-10.0-20171019	440-194623-4	SO	10/19/2017	NORM	Stage 2A							
440-194623-1	VER-01I-15.0-20171019	440-194623-5	SO	10/19/2017	NORM	Stage 2A							
440-194623-1	VER-01I-20.0-20171019	440-194623-6	SO	10/19/2017	NORM	Stage 2A							
440-194623-1	VER-01I-25.0-20171019	440-194623-7	SO	10/19/2017	NORM	Stage 2A							
440-194623-1	VER-01I-30.0-20171019	440-194623-8	SO	10/19/2017	NORM	Stage 2A							
440-194623-1	VER-01I-35.0-20171019	440-194623-9	WG	10/19/2017	NORM	Stage 2A						X	
440-194623-1	VER-01I-40.0-20171019	440-194623-10	SO	10/19/2017	NORM	Stage 2A							
440-194623-1	VER-01I-50.0-20171019	440-194623-11	SO	10/19/2017	NORM	Stage 2A							
440-194623-1	VER-01I-50.0-20171019-EB	440-194623-12	BW	10/19/2017	EB	Stage 2A						X	
440-194623-1	VER-01I-70.0-20171019	440-194623-13	SO	10/19/2017	NORM	Stage 2A							
440-194623-1	VER-01I-70.0-20171019-FD	440-194623-14	SO	10/19/2017	FD	Stage 2A							
440-194641-1	VER-01I-60.0-20171019	440-194641-1	SO	10/19/2017	NORM	Stage 2A							
440-194754-1	TRIPBLANK-10202017	440-194754-1	BW	10/20/2017	TB	Stage 4						X	
440-194754-1	VER-01D-5.0-20171020	440-194754-2	SO	10/20/2017	NORM	Stage 4							
440-194754-1	VER-01D-10.0-20171020	440-194754-3	SO	10/20/2017	NORM	Stage 4							
440-194754-1	VER-01D-10.0-20171020-FD	440-194754-4	SO	10/20/2017	FD	Stage 4							
440-194754-1	VER-01D-15.0-20171020	440-194754-5	SO	10/20/2017	NORM	Stage 4							
440-194754-1	VER-01D-20.0-20171020	440-194754-6	SO	10/20/2017	NORM	Stage 4							
440-194754-1	VER-01D-25.0-20171020	440-194754-7	SO	10/20/2017	NORM	Stage 4							
440-194754-1	VER-01D-30.0-20171020	440-194754-8	SO	10/20/2017	NORM	Stage 4							
440-194754-1	VER-01D-35.0-20171020	440-194754-9	WG	10/20/2017	NORM	Stage 4						X	
440-194754-1	VER-01D-40.0-20171020	440-194754-10	SO	10/20/2017	NORM	Stage 4							
440-194754-1	VER-01D-50.0-20171020	440-194754-11	SO	10/20/2017	NORM	Stage 4							
440-194754-1	VER-01D-60.0-20171020	440-194754-12	SO	10/20/2017	NORM	Stage 4							

Table 2 Sample Cross-Reference

SDG	Client Sample ID	Lab Sample ID	Matrix	Sample Date	QC Type	Validation Stage	Alkalinity, Bicarbonate, Carbonate, Hydroxide by SM2320B	Calcium and Magnesium by EPA 200.7	Chlorate and Chlorite by EPA 300.1	Chromium [VI] by SW-7199	Chromium and Manganese by SW-6010B	Hardness as calcium carbonate by SM2340C	Metals by SW-6020	Nitrate, Nitrite, Sulfate by EPA 300.0	Perchlorate by EPA 314.0
440-194754-1	VER-01D-70.0-20171020	440-194754-13	SO	10/20/2017	NORM	Stage 4			X	X	X				X
440-194754-1	VER-01D-70.0-20171020-EB	440-194754-14	BW	10/20/2017	EB	Stage 4			X	X	X				X
440-194754-1	VER-01D-80.0-20171020	440-194754-15	SO	10/20/2017	NORM	Stage 4			X	X	X				X
440-194754-1	VER-01D-100.0-20171020	440-194754-16	SO	10/20/2017	NORM	Stage 4			X	X	X				X
440-194754-1	VER-01D-110.0-20171020	440-194754-17	SO	10/20/2017	NORM	Stage 4			X	X	X				X
440-194754-1	VER-01D-110.0-20171020-FD	440-194754-18	SO	10/20/2017	FD	Stage 4			X	X	X				X
440-194764-1	VER-01D-90.0-20171020	440-194764-1	SO	10/20/2017	NORM	Stage 2A			X	X	X				X
440-195909-1	TRIPBLANK-11072017	440-195909-1	BW	11/7/2017	TB	Stage 2A									
440-195909-1	VMW-01D-20171107	440-195909-2	WG	11/7/2017	NORM	Stage 2A			X	X	X				X
440-195909-1	VMW-01D-20171107-FD	440-195909-3	WG	11/7/2017	FD	Stage 2A			X	X	X				X
440-195909-1	VMW-01I-20171107	440-195909-4	WG	11/7/2017	NORM	Stage 2A			X	X	X				X
440-195909-1	VER-01D-20171107	440-195909-5	WG	11/7/2017	NORM	Stage 2A			X	X	X				X
440-195909-1	VER-01D-20171107-EB	440-195909-6	BW	11/7/2017	EB	Stage 2A			X	X	X				X
440-196039-1	TRIPBLANK-11082017	440-196039-1	BW	11/8/2017	TB	Stage 2A									
440-196039-1	VER-01I-20171108	440-196039-2	WG	11/8/2017	NORM	Stage 2A			X	X	X				X
440-196039-1	VMW-02D-20171108	440-196039-3	WG	11/8/2017	NORM	Stage 2A			X	X	X				X
440-196039-1	VMW-02I-20171108	440-196039-4	WG	11/8/2017	NORM	Stage 2A			X	X	X				X
440-196039-1	VMW-02I-20171108-EB	440-196039-5	BW	11/8/2017	EB	Stage 2A			X	X	X				X
440-200466-1	VER-01I-B-BL	440-200466-1	WG	1/11/2018	NORM	Stage 2A			X	X	X				X
440-200466-1	TRIPBLANK-01112018	440-200466-2	BW	1/11/2018	TB	Stage 2A									
440-200466-1	VER-01I-B-12	440-200466-3	WG	1/11/2018	NORM	Stage 2A			X	X	X				X
440-200815-1	VER-01I-B-24	440-200815-1	WG	1/12/2018	NORM	Stage 2A			X	X	X				X
440-200815-1	TRIPBLANK-01122018	440-200815-2	BW	1/12/2018	TB	Stage 2A									
440-200815-1	VER-01I-B-36	440-200815-3	WG	1/12/2018	NORM	Stage 2A			X	X	X				X
440-200815-1	TB-011218	440-200815-4	BW	1/12/2018	TB	Stage 2A									
440-200988-1	VER-01I-C-BL	440-200988-1	WG	1/15/2018	NORM	Stage 2A			X	X	X				X
440-200988-1	TRIPBLANK-01152018	440-200988-2	BW	1/15/2018	TB	Stage 2A									
440-200988-1	VER-01I-C-12	440-200988-3	WG	1/15/2018	NORM	Stage 2A			X	X	X				X
440-201049-1	VER-01I-C-24	440-201049-1	WG	1/16/2018	NORM	Stage 2A			X	X	X				X
440-201049-1	TB-011618	440-201049-2	BW	1/16/2018	TB	Stage 2A									
440-201049-1	VER-01I-C-36	440-201049-3	WG	1/16/2018	NORM	Stage 2A			X	X	X				X
440-201313-1	VER-01I-C-48	440-201313-1	WG	1/17/2018	NORM	Stage 2A			X	X	X				X
440-201313-1	TRIPBLANK-01172018	440-201313-2	BW	1/17/2018	TB	Stage 2A									
440-201313-1	VER-01I-C-60	440-201313-3	WG	1/17/2018	NORM	Stage 2A			X	X	X				X
440-201437-1	VER-01I-C-72	440-201437-1	WG	1/18/2018	NORM	Stage 2A			X	X	X				X
440-201437-1	TRIPBLANK-01182018	440-201437-2	BW	1/18/2018	TB	Stage 2A									
440-201437-1	VER-01I-C-77.5	440-201437-3	WG	1/18/2018	NORM	Stage 2A	X	X	X	X	X	X	X	X	X
440-201739-1	M16-20180123-TB	440-201739-1	BW	1/23/2018	TB	Stage 2A									
440-201739-1	VER-01D-B-BL	440-201739-2	WG	1/23/2018	NORM	Stage 2A			X	X	X				X
440-201739-1	VER-01D-B-12	440-201739-3	WG	1/23/2018	NORM	Stage 2A			X	X	X				X
440-201843-1	VER-01D-B-24	440-201843-1	WG	1/24/2018	NORM	Stage 2A			X	X	X				X
440-201843-1	M16-20180124-TB	440-201843-2	BW	1/24/2018	TB	Stage 2A									
440-201843-1	VER-01D-B-36	440-201843-3	WG	1/24/2018	NORM	Stage 2A			X	X	X				X
440-201923-1	VER-01D-B-48	440-201923-1	WG	1/25/2018	NORM	Stage 2A			X	X	X				X
440-201923-1	M16-20180125-TB	440-201923-2	BW	1/25/2018	TB	Stage 2A									
440-202628-1	M16-20180205-TB	440-202628-1	BW	2/5/2018	TB	Stage 2A									

Table 2 Sample Cross-Reference

SDG	Client Sample ID	Lab Sample ID	Matrix	Sample Date	QC Type	Validation Stage	Phosphorus by EPA 365.3	Total Dissolved Solids [TDS] by SM2540C	Total Kjeldahl Nitrogen [TKN] by EPA 351.2	Total Organic Carbon by SM5310B	Total Suspended Solids [TSS] by SM2540D	Volatile Organic Compounds (VOCs) by SW-8260B	Volatile Organic Compounds (VOCs) by TO15
440-194754-1	VER-01D-70.0-20171020	440-194754-13	SO	10/20/2017	NORM	Stage 4							
440-194754-1	VER-01D-70.0-20171020-EB	440-194754-14	BW	10/20/2017	EB	Stage 4						X	
440-194754-1	VER-01D-80.0-20171020	440-194754-15	SO	10/20/2017	NORM	Stage 4							
440-194754-1	VER-01D-100.0-20171020	440-194754-16	SO	10/20/2017	NORM	Stage 4							
440-194754-1	VER-01D-110.0-20171020	440-194754-17	SO	10/20/2017	NORM	Stage 4							
440-194754-1	VER-01D-110.0-20171020-FD	440-194754-18	SO	10/20/2017	FD	Stage 4							
440-194764-1	VER-01D-90.0-20171020	440-194764-1	SO	10/20/2017	NORM	Stage 2A							
440-195909-1	TRIPBLANK-11072017	440-195909-1	BW	11/7/2017	TB	Stage 2A						X	
440-195909-1	VMW-01D-20171107	440-195909-2	WG	11/7/2017	NORM	Stage 2A						X	
440-195909-1	VMW-01D-20171107-FD	440-195909-3	WG	11/7/2017	FD	Stage 2A						X	
440-195909-1	VMW-01I-20171107	440-195909-4	WG	11/7/2017	NORM	Stage 2A						X	
440-195909-1	VER-01D-20171107	440-195909-5	WG	11/7/2017	NORM	Stage 2A						X	
440-195909-1	VER-01D-20171107-EB	440-195909-6	BW	11/7/2017	EB	Stage 2A						X	
440-196039-1	TRIPBLANK-11082017	440-196039-1	BW	11/8/2017	TB	Stage 2A						X	
440-196039-1	VER-01I-20171108	440-196039-2	WG	11/8/2017	NORM	Stage 2A						X	
440-196039-1	VMW-02D-20171108	440-196039-3	WG	11/8/2017	NORM	Stage 2A						X	
440-196039-1	VMW-02I-20171108	440-196039-4	WG	11/8/2017	NORM	Stage 2A						X	
440-196039-1	VMW-02I-20171108-EB	440-196039-5	BW	11/8/2017	EB	Stage 2A						X	
440-200466-1	VER-01I-B-BL	440-200466-1	WG	1/11/2018	NORM	Stage 2A						X	
440-200466-1	TRIPBLANK-01112018	440-200466-2	BW	1/11/2018	TB	Stage 2A						X	
440-200466-1	VER-01I-B-12	440-200466-3	WG	1/11/2018	NORM	Stage 2A						X	
440-200815-1	VER-01I-B-24	440-200815-1	WG	1/12/2018	NORM	Stage 2A						X	
440-200815-1	TRIPBLANK-01122018	440-200815-2	BW	1/12/2018	TB	Stage 2A						X	
440-200815-1	VER-01I-B-36	440-200815-3	WG	1/12/2018	NORM	Stage 2A						X	
440-200815-1	TB-011218	440-200815-4	BW	1/12/2018	TB	Stage 2A						X	
440-200988-1	VER-01I-C-BL	440-200988-1	WG	1/15/2018	NORM	Stage 2A						X	
440-200988-1	TRIPBLANK-01152018	440-200988-2	BW	1/15/2018	TB	Stage 2A						X	
440-200988-1	VER-01I-C-12	440-200988-3	WG	1/15/2018	NORM	Stage 2A						X	
440-201049-1	VER-01I-C-24	440-201049-1	WG	1/16/2018	NORM	Stage 2A						X	
440-201049-1	TB-011618	440-201049-2	BW	1/16/2018	TB	Stage 2A						X	
440-201049-1	VER-01I-C-36	440-201049-3	WG	1/16/2018	NORM	Stage 2A						X	
440-201313-1	VER-01I-C-48	440-201313-1	WG	1/17/2018	NORM	Stage 2A						X	
440-201313-1	TRIPBLANK-01172018	440-201313-2	BW	1/17/2018	TB	Stage 2A						X	
440-201313-1	VER-01I-C-60	440-201313-3	WG	1/17/2018	NORM	Stage 2A						X	
440-201437-1	VER-01I-C-72	440-201437-1	WG	1/18/2018	NORM	Stage 2A						X	
440-201437-1	TRIPBLANK-01182018	440-201437-2	BW	1/18/2018	TB	Stage 2A						X	
440-201437-1	VER-01I-C-77.5	440-201437-3	WG	1/18/2018	NORM	Stage 2A	X	X	X	X	X	X	
440-201739-1	M16-20180123-TB	440-201739-1	BW	1/23/2018	TB	Stage 2A						X	
440-201739-1	VER-01D-B-BL	440-201739-2	WG	1/23/2018	NORM	Stage 2A						X	
440-201739-1	VER-01D-B-12	440-201739-3	WG	1/23/2018	NORM	Stage 2A						X	
440-201843-1	VER-01D-B-24	440-201843-1	WG	1/24/2018	NORM	Stage 2A						X	
440-201843-1	M16-20180124-TB	440-201843-2	BW	1/24/2018	TB	Stage 2A						X	
440-201843-1	VER-01D-B-36	440-201843-3	WG	1/24/2018	NORM	Stage 2A						X	
440-201923-1	VER-01D-B-48	440-201923-1	WG	1/25/2018	NORM	Stage 2A						X	
440-201923-1	M16-20180125-TB	440-201923-2	BW	1/25/2018	TB	Stage 2A						X	
440-202628-1	M16-20180205-TB	440-202628-1	BW	2/5/2018	TB	Stage 2A						X	

Table 2 Sample Cross-Reference

SDG	Client Sample ID	Lab Sample ID	Matrix	Sample Date	QC Type	Validation Stage	Alkalinity, Bicarbonate, Carbonate, Hydroxide by SM2320B	Calcium and Magnesium by EPA 200.7	Chlorate and Chlorite by EPA 300.1	Chromium [VI] by SW-7199	Chromium and Manganese by SW-6010B	Hardness as calcium carbonate by SM2340C	Metals by SW-6020	Nitrate, Nitrite, Sulfate by EPA 300.0	Perchlorate by EPA 314.0
440-202628-1	VER-01D-C-BL	440-202628-2	WG	2/5/2018	NORM	Stage 2A			X	X	X				X
440-202628-1	VER-01D-C-12	440-202628-3	WG	2/5/2018	NORM	Stage 2A			X	X	X				X
440-202782-1	VER-01D-C-24	440-202782-1	WG	2/6/2018	NORM	Stage 2A			X	X	X				X
440-202782-1	M16-20180206-TB	440-202782-2	BW	2/6/2018	TB	Stage 2A									
440-202782-1	VER-01D-C-36	440-202782-3	WG	2/6/2018	NORM	Stage 2A			X	X	X				X
440-202847-1	VER-01D-C-48	440-202847-1	WG	2/7/2018	NORM	Stage 2A			X	X	X				X
440-202847-1	M16-20180207-TB	440-202847-2	BW	2/7/2018	TB	Stage 2A									
440-202847-1	VER-01D-C-60	440-202847-3	WG	2/7/2018	NORM	Stage 2A			X	X	X				X
440-202979-1	VER-01D-C-72	440-202979-1	WG	2/8/2018	NORM	Stage 2A			X	X	X				X
440-202979-1	M16-20180208-TB	440-202979-2	BW	2/8/2018	TB	Stage 2A									
440-202979-1	VER-01D-C-84	440-202979-3	WG	2/8/2018	NORM	Stage 2A			X	X	X				X
440-203119-1	VER-01D-C-96	440-203119-1	WG	2/9/2018	NORM	Stage 2A	X	X	X	X	X		X	X	X
440-203119-1	M16-20180209-TB	440-203119-2	BW	2/9/2018	TB	Stage 2A									

Table 2 Sample Cross-Reference

SDG	Client Sample ID	Lab Sample ID	Matrix	Sample Date	QC Type	Validation Stage	Phosphorus by EPA 365.3	Total Dissolved Solids [TDS] by SM2540C	Total Kjeldahl Nitrogen [TKN] by EPA 351.2	Total Organic Carbon by SM5310B	Total Suspended Solids [TSS] by SM2540D	Volatile Organic Compounds (VOCs) by SW-8260B	Volatile Organic Compounds (VOCs) by TO15
440-202628-1	VER-01D-C-BL	440-202628-2	WG	2/5/2018	NORM	Stage 2A						X	
440-202628-1	VER-01D-C-12	440-202628-3	WG	2/5/2018	NORM	Stage 2A						X	
440-202782-1	VER-01D-C-24	440-202782-1	WG	2/6/2018	NORM	Stage 2A						X	
440-202782-1	M16-20180206-TB	440-202782-2	BW	2/6/2018	TB	Stage 2A						X	
440-202782-1	VER-01D-C-36	440-202782-3	WG	2/6/2018	NORM	Stage 2A						X	
440-202847-1	VER-01D-C-48	440-202847-1	WG	2/7/2018	NORM	Stage 2A						X	
440-202847-1	M16-20180207-TB	440-202847-2	BW	2/7/2018	TB	Stage 2A						X	
440-202847-1	VER-01D-C-60	440-202847-3	WG	2/7/2018	NORM	Stage 2A						X	
440-202979-1	VER-01D-C-72	440-202979-1	WG	2/8/2018	NORM	Stage 2A						X	
440-202979-1	M16-20180208-TB	440-202979-2	BW	2/8/2018	TB	Stage 2A						X	
440-202979-1	VER-01D-C-84	440-202979-3	WG	2/8/2018	NORM	Stage 2A						X	
440-203119-1	VER-01D-C-96	440-203119-1	WG	2/9/2018	NORM	Stage 2A	X	X	X	X	X	X	
440-203119-1	M16-20180209-TB	440-203119-2	BW	2/9/2018	TB	Stage 2A						X	

Table 3 Validation Qualifiers and Definitions

Validation Qualifier	Definition
J-	The result is an estimated quantity, but the result may be biased low.
J	The result is an estimated quantity. The associated numerical value is the approximate concentration of the analyte in the sample.
J+	The result is an estimated quantity, but the result may be biased high.
NJ	The analyte has been “tentatively identified” or “presumptively” as present and the associated numerical value is the estimated concentration in the sample.
U	The analyte was analyzed for, but was not detected above the level of the reported sample quantitation limit.
UJ	The analyte was analyzed for, but was not detected. The reported quantitation limit is approximate and may be inaccurate or imprecise.
R	The data are unusable. The sample results are rejected due to serious deficiencies in meeting QC criteria. The analyte may or may not be present in the sample.

Table 4 Validation Checks and Stages

Verification and Validation Checks	Stage 2A	Stage 2B	Stage 4
Documentation identifies the laboratory receiving and conducting analyses, and includes documentation for all samples submitted by the project or requester for analyses.	X	X	X
Requested analytical methods were performed and the analysis dates are present.	X	X	X
Requested target analyte results are reported along with the original laboratory data qualifiers and data qualifier definitions for each reported result (and the uncertainty of each result and clear indication of the type of uncertainty reported if required, e.g., for radiochemical analyses).	X	X	X
Requested target analyte result units are reported (along with their associated uncertainty units if required, e.g., for radiochemical analyses).	X	X	X
Requested reporting limits for all samples are present and results at and below the requested (required) reporting limits are clearly identified (including sample detection limits if required).	X	X	X
Sampling dates (including times if needed), date and time of laboratory receipt of samples, and sample conditions upon receipt at the laboratory (including preservation, pH, and temperature) are documented.	X	X	X
For radiochemical analyses, the sample-specific critical values (sometimes called "critical level," "decision level," or "detection threshold") and sample specific minimum detectable value, activity, or concentration for all samples are reported and results at and below the requested (required) critical values are clearly identified.	X	X	X
For radiochemical analyses, the chemical yield (if applicable to the method) and reference date and time (especially for short lived isotopes) are reported for all samples (as appropriate).	X	X	X
Sample results are evaluated by comparing sample conditions upon receipt at the laboratory (e.g., preservation checks) and sample characteristics (e.g., percent moisture) to the requirements and guidelines present in national or regional data validation documents, analytical method(s), or contract.	X	X	X
Requested methods (handling, preparation, cleanup, and analytical) are performed.	X	X	X
Method dates (including dates, times and duration of analysis for radiation counting measurements and other methods, if needed) for handling (e.g., Toxicity Characteristic Leaching Procedure), preparation, cleanup and analysis are present, as appropriate.	X	X	X
Sample-related QC data and QC acceptance criteria (e.g., method blanks, surrogate recoveries, deuterated monitoring compounds (DMC) recoveries, laboratory control sample (LCS) recoveries, duplicate analyses, matrix spike and matrix spike duplicate recoveries, serial dilutions, post digestion spikes, standard reference materials) are provided and linked to the reported field samples (including the field quality control samples such as trip and equipment blanks).	X	X	X
Requested spike analytes or compounds (e.g., surrogate, DMCs, LCS spikes, post digestion spikes) have been added, as appropriate.	X	X	X
Sample holding times (from sampling date to preparation and preparation to analysis) are evaluated.	X	X	X
Frequency of QC samples is checked for appropriateness (e.g., one LCS per 20 samples in a preparation batch).	X	X	X

Table 4 Validation Checks and Stages

Verification and Validation Checks	Stage 2A	Stage 2B	Stage 4
Sample results are evaluated by comparing holding times and sample-related QC data to the requirements and guidelines present in national or regional data validation documents, analytical method(s) or contract.	X	X	X
Initial calibration data (e.g., initial calibration standards, initial calibration verification [ICV] standards, initial calibration blanks [ICBs]) are provided for all requested analytes and linked to field samples reported. For each initial calibration, the calibration type used is present along with the initial calibration equation used including any weighting factor(s) applied and the associated correlation coefficients, as appropriate. Recalculations of the standard concentrations using the initial calibration curve are present, along with their associated percent recoveries, as appropriate (e.g., if required by the project, method, or contract). For the ICV standard, the associated percent recovery (or percent difference, as appropriate) is present.		X	X
Appropriate number and concentration of initial calibration standards are present.		X	X
Continuing calibration data (e.g., continuing calibration verification [CCV] standards and continuing calibration blanks [CCBs]) are provided for all requested analytes and linked to field samples reported, as appropriate. For the CCV standard(s), the associated percent recoveries (or percent differences, as appropriate) are present.		X	X
Reported samples are bracketed by CCV standards and CCBs standards as appropriate.		X	X
Method specific instrument performance checks are present as appropriate (e.g., tunes for mass spectrometry methods, DDT/Endrin breakdown checks for pesticides and aroclors, instrument blanks and interference checks for ICP methods).		X	X
Frequency of instrument QC samples is checked for appropriateness (e.g., gas chromatography-mass spectroscopy [GC-MS] tunes have been run every 12 hours).		X	X
Sample results are evaluated by comparing instrument-related QC data to the requirements and guidelines present in national or regional data validation documents, analytical method(s), or contract.		X	X
Instrument response data (e.g., GC peak areas, ICP corrected intensities) are reported for requested analytes, surrogates, internal standards, and DMCs for all requested field samples, matrix spikes, matrix spike duplicates, LCS, and method blanks, as well as calibration data and instrument QC checks (e.g., tunes, DDT/Endrin breakdowns, interelement correction factors, and Florisil cartridge checks).			X
Reported target analyte instrument responses are associated with appropriate internal standard analyte(s) for each (or selected) analyte(s) (for methods using internal standard for calibration).			X
Fit and appropriateness of the initial calibration curve used or required (e.g., mean calibration factor, regression analysis [linear or non-linear, with or without weighting factors, with or without forcing]) is checked with recalculation of the initial calibration curve for each (or selected) analyte(s) from the instrument response.			X
Comparison of instrument response to the minimum response requirements for each (or selected) analyte(s)			X

Table 4 Validation Checks and Stages

Verification and Validation Checks	Stage 2A	Stage 2B	Stage 4
Recalculation of each (or selected) opening and closing CCV (and CCB) response from the peak data reported for each (or selected) analyte(s) from the instrument response, as appropriate			X
Compliance check of recalculated opening and/or closing CCV (and CCB) response to recalculated initial calibration response for each (or selected) analyte(s)			X
Recalculation of percent ratios for each (or selected) tune from the instrument response, as appropriate			X
Compliance check of recalculated percent ratio for each (or selected) tune from the instrument response.			X
Recalculation of each (or selected) instrument performance check (e.g., DDT/Endrin breakdown for pesticide analysis, instrument blanks, interference checks) from the instrument response			X
Recalculation and compliance check of retention time windows (for chromatographic methods) for each (or selected) analyte(s) from the laboratory reported retention times			X
Recalculation of reported results for each reported (or selected) target analyte(s) from the instrument response			X
Recalculation of each (or selected) reported spike recovery (surrogate recoveries, DMC recoveries, LCS recoveries, duplicate analyses, matrix spike and matrix spike duplicate recoveries, serial dilutions, post digestion spikes, standard reference materials, etc.) from the instrument response			X
Each (or selected) sample result(s) and spike recovery(ies) are evaluated by comparing the recalculated numbers to the laboratory reported numbers according to the requirements and guidelines present in national or regional data validation documents, analytical method(s) or contract.			X
All required instrument outputs (e.g., chromatograms, mass spectra, atomic emission spectra, instrument background corrections, and interference corrections) for evaluating sample and instrument performance are present.			X
Sample results are evaluated by checking each (or selected) instrument output (e.g., chromatograms, mass spectra, atomic emission spectra data, instrument background corrections, interference corrections) for correct identification and quantitation of analytes (e.g., peak integrations, use of appropriate internal standards for quantitation, elution order of analytes, and interferences).			X
Each (or selected) instrument's output(s) is evaluated for confirmation of non-detected or tentatively identified analytes.			X

Table 5 Reason Codes

Reason Code	Description of Qualification
a	Qualified due to low abundance (radiochemical activity)
be	Qualified due to equipment blank contamination
bf	Qualified due to field blank contamination
bl	Qualified due to lab blank contamination
bt	Qualified due to trip blank contamination
bp	Qualified due to pump blank contamination (for wells without dedicated pumps)
br	Qualified due to filter blank contamination (aqueous hexavalent chromium and dissolved sample fractions)
c	Qualified due to calibration problems
cp	Qualified due to insufficient ingrowth (radiochemical only)
dc	Dual column confirmation % difference exceeded
e	Sample concentration exceeded the calibration range
fd	Qualified due to field duplicate imprecision
h	Qualified due to holding time exceedance
i	Qualified due to internal standard areas or retention times
k	Qualified as Estimated Maximum Possible Concentrations (dioxins and PCB congeners)
l	Qualified due to LCS recoveries
ld	Qualified due to lab duplicate imprecision (matrix duplicate, MSD, LCSD)
m	Qualified due to matrix spike recoveries
nb	Qualified due to negative lab blank contamination (nondetect results only)
nd	Qualified due to non-detected target analyte
o	Other
p	Qualified as a false positive due to contamination during shipping
pH	Sample preservation not within acceptance range
q	Qualified due to quantitation problem
s	Qualified due to surrogate recoveries
sd	Serial dilution did not meet control criteria
sp	Detected value reported between MDL/SQL and RL/PQL
st	Sample receipt temperature exceeded
t	Qualified due to elevated helium tracer concentrations
vh	Headspace detected in aqueous sample containers submitted for volatile analysis
x	Qualified due to low % solids
z	Qualified due to interference check sample results

Table 6 Results Qualified During Validation

SDG	Sample ID	Sample Type	Sample Date	Method	Filtered	Analyte	Result	Units	Lab Qualifier	SQL	PQL	Validation Qualifier	Reason Code	Reason-Code Description
320-35247-1	EFFLUENT-01152018	N	1/15/18	TO15	N	1,2,4-Trimethylbenzene	7.2	ug/m3	J	2.0	10	J	sp	Detect < PQL
320-35247-1	EFFLUENT-01152018	N	1/15/18	TO15	N	1,3,5-Trimethylbenzene	3.0	ug/m3	J	1.6	5.0	J	sp	Detect < PQL
320-35247-1	EFFLUENT-01152018	N	1/15/18	TO15	N	4-Ethyltoluene	3.8	ug/m3	J	2.3	5.0	J	sp	Detect < PQL
320-35247-1	EFFLUENT-01152018	N	1/15/18	TO15	N	Benzene	0.87	ug/m3	J	0.64	3.2	J	sp	Detect < PQL
320-35247-1	EFFLUENT-01152018	N	1/15/18	TO15	N	Carbon disulfide	1.7	ug/m3	J B	0.62	6.3	J	bl,sp	Lab Blank, Detect < PQL
320-35247-1	EFFLUENT-01152018	N	1/15/18	TO15	N	Chloromethane	1.8	ug/m3	J	1.0	4.2	J	sp	Detect < PQL
320-35247-1	EFFLUENT-01152018	N	1/15/18	TO15	N	Dichloromethane [Methylene chloride]	0.74	ug/m3	J	0.64	3.5	J	sp	Detect < PQL
320-35247-1	EFFLUENT-01152018	N	1/15/18	TO15	N	Ethylbenzene	2.0	ug/m3	J	0.69	4.4	J	sp	Detect < PQL
320-35247-1	EFFLUENT-01152018	N	1/15/18	TO15	N	o-Xylene	3.8	ug/m3	J	0.60	4.4	J	sp	Detect < PQL
320-35247-1	EFFLUENT-01152018	N	1/15/18	TO15	N	Toluene	2.2	ug/m3	J	0.49	3.8	J	sp	Detect < PQL
320-35247-1	EFFLUENT-01162018	N	1/16/18	TO15	N	1,3,5-Trimethylbenzene	1.7	ug/m3	J	0.61	2.0	J	sp	Detect < PQL
320-35247-1	EFFLUENT-01162018	N	1/16/18	TO15	N	4-Ethyltoluene	1.4	ug/m3	J	0.92	2.0	J	sp	Detect < PQL
320-35247-1	EFFLUENT-01162018	N	1/16/18	TO15	N	Benzene	0.28	ug/m3	J	0.25	1.3	J	sp	Detect < PQL
320-35247-1	EFFLUENT-01162018	N	1/16/18	TO15	N	Carbon disulfide	0.85	ug/m3	J B	0.24	2.5	J	bl,sp	Lab Blank, Detect < PQL
320-35247-1	EFFLUENT-01162018	N	1/16/18	TO15	N	Chlorobenzene	0.42	ug/m3	J	0.29	1.4	J	sp	Detect < PQL
320-35247-1	EFFLUENT-01162018	N	1/16/18	TO15	N	Dichloromethane [Methylene chloride]	0.43	ug/m3	J	0.25	1.4	J	sp	Detect < PQL
320-35247-1	EFFLUENT-01162018	N	1/16/18	TO15	N	Ethylbenzene	0.56	ug/m3	J	0.27	1.7	J	sp	Detect < PQL
320-35247-1	EFFLUENT-01162018	N	1/16/18	TO15	N	m,p-Xylene	2.8	ug/m3	J	0.43	3.5	J	sp	Detect < PQL
320-35247-1	EFFLUENT-01162018	N	1/16/18	TO15	N	o-Xylene	1.1	ug/m3	J	0.23	1.7	J	sp	Detect < PQL
320-35247-1	EFFLUENT-01172018	N	1/17/18	TO15	N	Acetone	15	ug/m3	*	0.42	12	J	ld	Lab Duplicate
320-35247-1	EFFLUENT-01172018	N	1/17/18	TO15	N	Carbon disulfide	1.3	ug/m3	J	0.24	2.5	J	sp	Detect < PQL
320-35247-1	EFFLUENT-01172018	N	1/17/18	TO15	N	Chloromethane	0.99	ug/m3	J	0.41	1.7	J	sp	Detect < PQL
320-35247-1	EFFLUENT-01172018	N	1/17/18	TO15	N	Dichloromethane [Methylene chloride]	0.33	ug/m3	J	0.25	1.4	J	sp	Detect < PQL
320-35247-1	EFFLUENT-01172018	N	1/17/18	TO15	N	Methyl ethyl ketone [2-Butanone]	1.4	ug/m3	J	0.59	2.4	J	sp	Detect < PQL
320-35247-1	EFFLUENT-01182018	N	1/18/18	TO15	N	1,3,5-Trimethylbenzene	0.89	ug/m3	J	0.61	2.0	J	sp	Detect < PQL
320-35247-1	EFFLUENT-01182018	N	1/18/18	TO15	N	Benzene	0.48	ug/m3	J	0.25	1.3	J	sp	Detect < PQL
320-35247-1	EFFLUENT-01182018	N	1/18/18	TO15	N	Carbon disulfide	0.91	ug/m3	J B	0.24	2.5	J	bl,sp	Lab Blank, Detect < PQL
320-35247-1	EFFLUENT-01182018	N	1/18/18	TO15	N	Chlorobenzene	0.37	ug/m3	J	0.29	1.4	J	sp	Detect < PQL
320-35247-1	EFFLUENT-01182018	N	1/18/18	TO15	N	Chloromethane	1.5	ug/m3	J	0.41	1.7	J	sp	Detect < PQL
320-35247-1	EFFLUENT-01182018	N	1/18/18	TO15	N	Dichloromethane [Methylene chloride]	0.40	ug/m3	J	0.25	1.4	J	sp	Detect < PQL
320-35247-1	EFFLUENT-01182018	N	1/18/18	TO15	N	Ethylbenzene	0.68	ug/m3	J	0.27	1.7	J	sp	Detect < PQL
320-35247-1	EFFLUENT-01182018	N	1/18/18	TO15	N	m,p-Xylene	2.7	ug/m3	J	0.43	3.5	J	sp	Detect < PQL
320-35247-1	EFFLUENT-01182018	N	1/18/18	TO15	N	o-Xylene	0.98	ug/m3	J	0.23	1.7	J	sp	Detect < PQL
320-35247-1	VER-01I-C-04-AIR	N	1/15/18	TO15	N	Benzene	62	ug/m3	J	27	140	J	sp	Detect < PQL
320-35247-1	VER-01I-C-04-AIR	N	1/15/18	TO15	N	Carbon disulfide	71	ug/m3	J B	26	270	J	bl,sp	Lab Blank, Detect < PQL
320-35247-1	VER-01I-C-08-AIR	N	1/15/18	TO15	N	Acetone	110	ug/m3	J	5.4	150	J	sp	Detect < PQL
320-35247-1	VER-01I-C-08-AIR	N	1/15/18	TO15	N	Benzene	11	ug/m3	J	3.2	16	J	sp	Detect < PQL
320-35247-1	VER-01I-C-08-AIR	N	1/15/18	TO15	N	Carbon disulfide	8.7	ug/m3	J B	3.1	32	J	bl,sp	Lab Blank, Detect < PQL
320-35247-1	VER-01I-C-08-AIR	N	1/15/18	TO15	N	Methyl ethyl ketone [2-Butanone]	19	ug/m3	J	7.5	30	J	sp	Detect < PQL
320-35247-1	VER-01I-C-08-AIR	N	1/15/18	TO15	N	Tetrachloroethene	8.0	ug/m3	J	4.4	35	J	sp	Detect < PQL
320-35247-1	VER-01I-C-08-AIR	N	1/15/18	TO15	N	Trichloroethene	16	ug/m3	J	7.2	28	J	sp	Detect < PQL
320-35247-1	VER-01I-C-12-AIR	N	1/15/18	TO15	N	Chlorobenzene	1.3	ug/m3	J	0.97	4.6	J	sp	Detect < PQL
320-35247-1	VER-01I-C-12-AIR	N	1/15/18	TO15	N	Chloroform	1.8	ug/m3	J	1.5	4.8	J	sp	Detect < PQL
320-35247-1	VER-01I-C-12-AIR	N	1/15/18	TO15	N	Chloromethane	1.8	ug/m3	J	1.3	5.5	J	sp	Detect < PQL
320-35247-1	VER-01I-C-12-AIR	N	1/15/18	TO15	N	Dichloromethane [Methylene chloride]	1.5	ug/m3	J	0.83	4.6	J	sp	Detect < PQL
320-35247-1	VER-01I-C-12-AIR	N	1/15/18	TO15	N	Methyl ethyl ketone [2-Butanone]	5.2	ug/m3	J	1.9	7.8	J	sp	Detect < PQL

Table 6 Results Qualified During Validation

SDG	Sample ID	Sample Type	Sample Date	Method	Filtered	Analyte	Result	Units	Lab Qualifier	SQL	PQL	Validation Qualifier	Reason Code	Reason-Code Description
320-35247-1	VER-01I-C-24-AIR	N	1/16/18	TO15	N	Carbon disulfide	1.8	ug/m3	J B	0.44	4.5	J	bl,sp	Lab Blank, Detect < PQL
320-35247-1	VER-01I-C-24-AIR	N	1/16/18	TO15	N	Chlorobenzene	1.7	ug/m3	J	0.54	2.5	J	sp	Detect < PQL
320-35247-1	VER-01I-C-24-AIR	N	1/16/18	TO15	N	Chloromethane	1.6	ug/m3	J	0.74	3.0	J	sp	Detect < PQL
320-35247-1	VER-01I-C-24-AIR	N	1/16/18	TO15	N	Dichloromethane [Methylene chloride]	1.4	ug/m3	J	0.46	2.5	J	sp	Detect < PQL
320-35247-1	VER-01I-C-24-AIR	N	1/16/18	TO15	N	Freon-12 [Dichlorodifluoromethane]	1.9	ug/m3	J	1.3	3.6	J	sp	Detect < PQL
320-35247-1	VER-01I-C-24-AIR	N	1/16/18	TO15	N	Trichloroethene	2.4	ug/m3	J	1.0	3.9	J	sp	Detect < PQL
320-35247-1	VER-01I-C-36-AIR	N	1/16/18	TO15	N	Acetone	210	ug/m3	*	0.42	12	J	ld	Lab Duplicate
320-35247-1	VER-01I-C-36-AIR	N	1/16/18	TO15	N	Carbon disulfide	0.86	ug/m3	J	0.24	2.5	J	sp	Detect < PQL
320-35247-1	VER-01I-C-36-AIR	N	1/16/18	TO15	N	Carbon tetrachloride	0.70	ug/m3	J	0.40	5.0	J	sp	Detect < PQL
320-35247-1	VER-01I-C-36-AIR	N	1/16/18	TO15	N	Chlorobenzene	1.1	ug/m3	J	0.29	1.4	J	sp	Detect < PQL
320-35247-1	VER-01I-C-36-AIR	N	1/16/18	TO15	N	Chloromethane	1.4	ug/m3	J	0.41	1.7	J	sp	Detect < PQL
320-35247-1	VER-01I-C-36-AIR	N	1/16/18	TO15	N	Dichloromethane [Methylene chloride]	1.1	ug/m3	J	0.25	1.4	J	sp	Detect < PQL
320-35247-1	VER-01I-C-36-AIR	N	1/16/18	TO15	N	Freon-11 [Trichlorofluoromethane]	1.1	ug/m3	J	1.1	2.2	J	sp	Detect < PQL
320-35247-1	VER-01I-C-36-AIR	N	1/16/18	TO15	N	Freon-12 [Dichlorodifluoromethane]	1.9	ug/m3	J	0.72	2.0	J	sp	Detect < PQL
320-35247-1	VER-01I-C-36-AIR	N	1/16/18	TO15	N	Tetrachloroethene	0.50	ug/m3	J	0.35	2.7	J	sp	Detect < PQL
320-35247-1	VER-01I-C-48-AIR	N	1/17/18	TO15	N	1,1,2,2-Tetrachloroethane	0.93	ug/m3	J	0.81	4.7	J	sp	Detect < PQL
320-35247-1	VER-01I-C-48-AIR	N	1/17/18	TO15	N	Acetone	91	ug/m3	*	0.73	20	J	ld	Lab Duplicate
320-35247-1	VER-01I-C-48-AIR	N	1/17/18	TO15	N	Carbon disulfide	0.94	ug/m3	J	0.42	4.3	J	sp	Detect < PQL
320-35247-1	VER-01I-C-48-AIR	N	1/17/18	TO15	N	Chlorobenzene	0.87	ug/m3	J	0.51	2.4	J	sp	Detect < PQL
320-35247-1	VER-01I-C-48-AIR	N	1/17/18	TO15	N	Chloromethane	1.4	ug/m3	J	0.70	2.8	J	sp	Detect < PQL
320-35247-1	VER-01I-C-48-AIR	N	1/17/18	TO15	N	Freon-12 [Dichlorodifluoromethane]	2.3	ug/m3	J	1.2	3.4	J	sp	Detect < PQL
320-35247-1	VER-01I-C-48-AIR	N	1/17/18	TO15	N	Tetrachloroethene	0.66	ug/m3	J	0.59	4.7	J	sp	Detect < PQL
320-35247-1	VER-01I-C-60-AIR	N	1/17/18	TO15	N	Carbon disulfide	1.2	ug/m3	J B	0.24	2.5	J	bl,sp	Lab Blank, Detect < PQL
320-35247-1	VER-01I-C-60-AIR	N	1/17/18	TO15	N	Carbon tetrachloride	1.9	ug/m3	J	0.40	5.0	J	sp	Detect < PQL
320-35247-1	VER-01I-C-60-AIR	N	1/17/18	TO15	N	Chloromethane	1.6	ug/m3	J	0.41	1.7	J	sp	Detect < PQL
320-35247-1	VER-01I-C-60-AIR	N	1/17/18	TO15	N	Dichloromethane [Methylene chloride]	1.4	ug/m3	J	0.25	1.4	J	sp	Detect < PQL
320-35247-1	VER-01I-C-60-AIR	N	1/17/18	TO15	N	Freon-12 [Dichlorodifluoromethane]	1.5	ug/m3	J	0.72	2.0	J	sp	Detect < PQL
320-35247-1	VER-01I-C-60-AIR	N	1/17/18	TO15	N	Tetrachloroethene	1.0	ug/m3	J	0.35	2.7	J	sp	Detect < PQL
320-35247-1	VER-01I-C-60-AIR	N	1/17/18	TO15	N	Trichloroethene	1.2	ug/m3	J	0.56	2.1	J	sp	Detect < PQL
320-35247-1	VER-01I-C-70.5-AIR	N	1/18/18	TO15	N	Benzene	3.0	ug/m3	J	0.76	3.8	J	sp	Detect < PQL
320-35247-1	VER-01I-C-70.5-AIR	N	1/18/18	TO15	N	Carbon disulfide	1.7	ug/m3	J B	0.73	7.5	J	bl,sp	Lab Blank, Detect < PQL
320-35247-1	VER-01I-C-70.5-AIR	N	1/18/18	TO15	N	Carbon tetrachloride	1.4	ug/m3	J	1.2	15	J	sp	Detect < PQL
320-35247-1	VER-01I-C-70.5-AIR	N	1/18/18	TO15	N	Chlorobenzene	1.0	ug/m3	J	0.88	4.1	J	sp	Detect < PQL
320-35247-1	VER-01I-C-70.5-AIR	N	1/18/18	TO15	N	Chloromethane	1.9	ug/m3	J	1.2	5.0	J	sp	Detect < PQL
320-35247-1	VER-01I-C-70.5-AIR	N	1/18/18	TO15	N	Dichloromethane [Methylene chloride]	1.6	ug/m3	J	0.75	4.2	J	sp	Detect < PQL
320-35247-1	VER-01I-C-70.5-AIR	N	1/18/18	TO15	N	Methyl ethyl ketone [2-Butanone]	4.3	ug/m3	J	1.8	7.1	J	sp	Detect < PQL
320-35247-1	VER-01I-C-70.5-AIR	N	1/18/18	TO15	N	Tetrachloroethene	1.6	ug/m3	J	1.0	8.1	J	sp	Detect < PQL
320-35247-1	VER-01I-C-BL-AIR	N	1/15/18	TO15	N	1,3-Dichlorobenzene	2.9	ug/m3	J	2.4	8.9	J	sp	Detect < PQL
320-35247-1	VER-01I-C-BL-AIR	N	1/15/18	TO15	N	Benzene	4.1	ug/m3	J	0.93	4.7	J	sp	Detect < PQL
320-35247-1	VER-01I-C-BL-AIR	N	1/15/18	TO15	N	Carbon disulfide	6.5	ug/m3	J B	0.89	9.2	J	bl,sp	Lab Blank, Detect < PQL
320-35247-1	VER-01I-C-BL-AIR	N	1/15/18	TO15	N	Chloromethane	1.8	ug/m3	J	1.5	6.1	J	sp	Detect < PQL
320-35247-1	VER-01I-C-BL-AIR	N	1/15/18	TO15	N	Dichloromethane [Methylene chloride]	1.4	ug/m3	J	0.92	5.1	J	sp	Detect < PQL
320-35962-1	VER-01D-C-04-AIR	N	2/5/18	TO15	N	Carbon disulfide	0.48	ug/m3	J	0.24	2.5	J	sp	Detect < PQL
320-35962-1	VER-01D-C-04-AIR	N	2/5/18	TO15	N	Dichloromethane [Methylene chloride]	0.42	ug/m3	J	0.25	1.4	J	sp	Detect < PQL
320-35962-1	VER-01D-C-04-AIR	N	2/5/18	TO15	N	Freon-12 [Dichlorodifluoromethane]	1.1	ug/m3	J	0.72	2.0	J	sp	Detect < PQL
320-35962-1	VER-01D-C-08-AIR	N	2/5/18	TO15	N	Carbon disulfide	0.80	ug/m3	J	0.46	4.7	J	sp	Detect < PQL

Table 6 Results Qualified During Validation

SDG	Sample ID	Sample Type	Sample Date	Method	Filtered	Analyte	Result	Units	Lab Qualifier	SQL	PQL	Validation Qualifier	Reason Code	Reason-Code Description
320-35962-1	VER-01D-C-08-AIR	N	2/5/18	TO15	N	Carbon tetrachloride	1.0	ug/m3	J	0.76	9.6	J	sp	Detect < PQL
320-35962-1	VER-01D-C-08-AIR	N	2/5/18	TO15	N	Chloromethane	2.0	ug/m3	J	0.77	3.1	J	sp	Detect < PQL
320-35962-1	VER-01D-C-08-AIR	N	2/5/18	TO15	N	Dichloromethane [Methylene chloride]	1.1	ug/m3	J	0.48	2.6	J	sp	Detect < PQL
320-35962-1	VER-01D-C-08-AIR	N	2/5/18	TO15	N	Ethylbenzene	0.68	ug/m3	J	0.52	3.3	J	sp	Detect < PQL
320-35962-1	VER-01D-C-08-AIR	N	2/5/18	TO15	N	Freon-12 [Dichlorodifluoromethane]	1.7	ug/m3	J	1.4	3.8	J	sp	Detect < PQL
320-35962-1	VER-01D-C-08-AIR	N	2/5/18	TO15	N	m,p-Xylene	3.5	ug/m3	J	0.83	6.6	J	sp	Detect < PQL
320-35962-1	VER-01D-C-08-AIR	N	2/5/18	TO15	N	o-Xylene	1.6	ug/m3	J	0.45	3.3	J	sp	Detect < PQL
320-35962-1	VER-01D-C-12-AIR	N	2/6/18	TO15	N	1,2,4-Trimethylbenzene	4.2	ug/m3	J	2.8	14	J	sp	Detect < PQL
320-35962-1	VER-01D-C-12-AIR	N	2/6/18	TO15	N	2-Hexanone	1.2	ug/m3	J	1.2	5.7	J	sp	Detect < PQL
320-35962-1	VER-01D-C-12-AIR	N	2/6/18	TO15	N	Benzene	2.4	ug/m3	J	0.88	4.5	J	sp	Detect < PQL
320-35962-1	VER-01D-C-12-AIR	N	2/6/18	TO15	N	Chloromethane	2.4	ug/m3	J	1.4	5.8	J	sp	Detect < PQL
320-35962-1	VER-01D-C-12-AIR	N	2/6/18	TO15	N	Dichloromethane [Methylene chloride]	1.6	ug/m3	J	0.88	4.9	J	sp	Detect < PQL
320-35962-1	VER-01D-C-12-AIR	N	2/6/18	TO15	N	m,p-Xylene	4.8	ug/m3	J	1.5	12	J	sp	Detect < PQL
320-35962-1	VER-01D-C-12-AIR	N	2/6/18	TO15	N	o-Xylene	2.2	ug/m3	J	0.82	6.1	J	sp	Detect < PQL
320-35962-1	VER-01D-C-12-AIR	N	2/6/18	TO15	N	Trichloroethene	4.1	ug/m3	J	2.0	7.5	J	sp	Detect < PQL
320-35962-1	VER-01D-C-20180205-EFFLUENT	N	2/5/18	TO15	N	Acetone	1.2	ug/m3	J	0.42	12	J	sp	Detect < PQL
320-35962-1	VER-01D-C-20180205-EFFLUENT	N	2/5/18	TO15	N	Carbon disulfide	1.2	ug/m3	J	0.24	2.5	J	sp	Detect < PQL
320-35962-1	VER-01D-C-20180206-EFFLUENT	N	2/6/18	TO15	N	1,2,4-Trimethylbenzene	1.5	ug/m3	J	0.80	3.9	J	sp	Detect < PQL
320-35962-1	VER-01D-C-20180206-EFFLUENT	N	2/6/18	TO15	N	1,3,5-Trimethylbenzene	0.73	ug/m3	J	0.61	2.0	J	sp	Detect < PQL
320-35962-1	VER-01D-C-20180206-EFFLUENT	N	2/6/18	TO15	N	2-Hexanone	0.57	ug/m3	J	0.36	1.6	J	sp	Detect < PQL
320-35962-1	VER-01D-C-20180206-EFFLUENT	N	2/6/18	TO15	N	4-Ethyltoluene	1.2	ug/m3	J	0.92	2.0	J	sp	Detect < PQL
320-35962-1	VER-01D-C-20180206-EFFLUENT	N	2/6/18	TO15	N	4-Methyl-2-pentanone [MIBK]	0.67	ug/m3	J	0.55	1.6	J	sp	Detect < PQL
320-35962-1	VER-01D-C-20180206-EFFLUENT	N	2/6/18	TO15	N	Benzene	0.49	ug/m3	J	0.25	1.3	J	sp	Detect < PQL
320-35962-1	VER-01D-C-20180206-EFFLUENT	N	2/6/18	TO15	N	Dichloromethane [Methylene chloride]	0.33	ug/m3	J	0.25	1.4	J	sp	Detect < PQL
320-35962-1	VER-01D-C-20180206-EFFLUENT	N	2/6/18	TO15	N	Ethylbenzene	1.2	ug/m3	J	0.27	1.7	J	sp	Detect < PQL
320-35962-1	VER-01D-C-20180206-EFFLUENT	N	2/6/18	TO15	N	Tetrachloroethene	0.38	ug/m3	J	0.35	2.7	J	sp	Detect < PQL
320-35962-1	VER-01D-C-20180207-EFFLUENT	N	2/7/18	TO15	N	Acetone	9.2	ug/m3	J	0.42	12	J	sp	Detect < PQL
320-35962-1	VER-01D-C-20180207-EFFLUENT	N	2/7/18	TO15	N	Benzene	0.42	ug/m3	J	0.25	1.3	J	sp	Detect < PQL
320-35962-1	VER-01D-C-20180207-EFFLUENT	N	2/7/18	TO15	N	Carbon disulfide	0.31	ug/m3	J	0.24	2.5	J	sp	Detect < PQL
320-35962-1	VER-01D-C-20180207-EFFLUENT	N	2/7/18	TO15	N	Chloromethane	1.6	ug/m3	J	0.41	1.7	J	sp	Detect < PQL
320-35962-1	VER-01D-C-20180207-EFFLUENT	N	2/7/18	TO15	N	Dichloromethane [Methylene chloride]	0.36	ug/m3	J	0.25	1.4	J	sp	Detect < PQL
320-35962-1	VER-01D-C-20180207-EFFLUENT	N	2/7/18	TO15	N	m,p-Xylene	1.8	ug/m3	J	0.43	3.5	J	sp	Detect < PQL
320-35962-1	VER-01D-C-20180207-EFFLUENT	N	2/7/18	TO15	N	Methyl ethyl ketone [2-Butanone]	1.7	ug/m3	J	0.59	2.4	J	sp	Detect < PQL
320-35962-1	VER-01D-C-20180207-EFFLUENT	N	2/7/18	TO15	N	o-Xylene	0.69	ug/m3	J	0.23	1.7	J	sp	Detect < PQL
320-35962-1	VER-01D-C-20180207-EFFLUENT	N	2/7/18	TO15	N	Toluene	1.2	ug/m3	J	0.19	1.5	J	sp	Detect < PQL
320-35962-1	VER-01D-C-20180208-EFFLUENT	N	2/8/18	TO15	N	Carbon disulfide	0.86	ug/m3	J	0.24	2.5	J	sp	Detect < PQL
320-35962-1	VER-01D-C-20180208-EFFLUENT	N	2/8/18	TO15	N	Chloromethane	1.4	ug/m3	J	0.41	1.7	J	sp	Detect < PQL
320-35962-1	VER-01D-C-20180208-EFFLUENT	N	2/8/18	TO15	N	Dichloromethane [Methylene chloride]	0.35	ug/m3	J	0.25	1.4	J	sp	Detect < PQL
320-35962-1	VER-01D-C-24-AIR	N	2/6/18	TO15	N	1,2,4-Trimethylbenzene	2.0	ug/m3	J	0.80	3.9	J	sp	Detect < PQL
320-35962-1	VER-01D-C-24-AIR	N	2/6/18	TO15	N	1,3,5-Trimethylbenzene	0.70	ug/m3	J	0.61	2.0	J	sp	Detect < PQL
320-35962-1	VER-01D-C-24-AIR	N	2/6/18	TO15	N	Benzene	0.54	ug/m3	J	0.25	1.3	J	sp	Detect < PQL
320-35962-1	VER-01D-C-24-AIR	N	2/6/18	TO15	N	Carbon disulfide	0.52	ug/m3	J	0.24	2.5	J	sp	Detect < PQL
320-35962-1	VER-01D-C-24-AIR	N	2/6/18	TO15	N	Chloromethane	1.5	ug/m3	J	0.41	1.7	J	sp	Detect < PQL
320-35962-1	VER-01D-C-24-AIR	N	2/6/18	TO15	N	Dichloromethane [Methylene chloride]	0.58	ug/m3	J	0.25	1.4	J	sp	Detect < PQL
320-35962-1	VER-01D-C-24-AIR	N	2/6/18	TO15	N	Freon-11 [Trichlorofluoromethane]	1.2	ug/m3	J	1.1	2.2	J	sp	Detect < PQL
320-35962-1	VER-01D-C-24-AIR	N	2/6/18	TO15	N	Freon-12 [Dichlorodifluoromethane]	1.3	ug/m3	J	0.72	2.0	J	sp	Detect < PQL

Table 6 Results Qualified During Validation

SDG	Sample ID	Sample Type	Sample Date	Method	Filtered	Analyte	Result	Units	Lab Qualifier	SQL	PQL	Validation Qualifier	Reason Code	Reason-Code Description
320-35962-1	VER-01D-C-24-AIR	N	2/6/18	TO15	N	m,p-Xylene	2.4	ug/m3	J	0.43	3.5	J	sp	Detect < PQL
320-35962-1	VER-01D-C-24-AIR	N	2/6/18	TO15	N	Methyl ethyl ketone [2-Butanone]	2.3	ug/m3	J	0.59	2.4	J	sp	Detect < PQL
320-35962-1	VER-01D-C-24-AIR	N	2/6/18	TO15	N	o-Xylene	1.1	ug/m3	J	0.23	1.7	J	sp	Detect < PQL
320-35962-1	VER-01D-C-24-AIR	N	2/6/18	TO15	N	Tetrachloroethene	0.84	ug/m3	J	0.35	2.7	J	sp	Detect < PQL
320-35962-1	VER-01D-C-24-AIR	N	2/6/18	TO15	N	Toluene	1.4	ug/m3	J	0.19	1.5	J	sp	Detect < PQL
320-35962-1	VER-01D-C-36-AIR	N	2/7/18	TO15	N	Benzene	0.64	ug/m3	J	0.25	1.3	J	sp	Detect < PQL
320-35962-1	VER-01D-C-36-AIR	N	2/7/18	TO15	N	Carbon disulfide	0.76	ug/m3	J	0.24	2.5	J	sp	Detect < PQL
320-35962-1	VER-01D-C-36-AIR	N	2/7/18	TO15	N	Chloroform	0.52	ug/m3	J	0.46	1.5	J	sp	Detect < PQL
320-35962-1	VER-01D-C-36-AIR	N	2/7/18	TO15	N	Chloromethane	1.3	ug/m3	J	0.41	1.7	J	sp	Detect < PQL
320-35962-1	VER-01D-C-36-AIR	N	2/7/18	TO15	N	Dichloromethane [Methylene chloride]	0.75	ug/m3	J	0.25	1.4	J	sp	Detect < PQL
320-35962-1	VER-01D-C-36-AIR	N	2/7/18	TO15	N	Freon-11 [Trichlorofluoromethane]	1.2	ug/m3	J	1.1	2.2	J	sp	Detect < PQL
320-35962-1	VER-01D-C-36-AIR	N	2/7/18	TO15	N	Freon-12 [Dichlorodifluoromethane]	1.4	ug/m3	J	0.72	2.0	J	sp	Detect < PQL
320-35962-1	VER-01D-C-36-AIR	N	2/7/18	TO15	N	Tetrachloroethene	0.87	ug/m3	J	0.35	2.7	J	sp	Detect < PQL
320-35962-1	VER-01D-C-36-AIR	N	2/7/18	TO15	N	Toluene	0.78	ug/m3	J	0.19	1.5	J	sp	Detect < PQL
320-35962-1	VER-01D-C-36-AIR	N	2/7/18	TO15	N	Trichloroethene	0.69	ug/m3	J	0.56	2.1	J	sp	Detect < PQL
320-35962-1	VER-01D-C-48-AIR	N	2/7/18	TO15	N	2-Hexanone	1.6	ug/m3	J	1.1	4.9	J	sp	Detect < PQL
320-35962-1	VER-01D-C-48-AIR	N	2/7/18	TO15	N	4-Ethyltoluene	3.8	ug/m3	J	2.8	5.9	J	sp	Detect < PQL
320-35962-1	VER-01D-C-48-AIR	N	2/7/18	TO15	N	Carbon disulfide	2.7	ug/m3	J	0.73	7.5	J	sp	Detect < PQL
320-35962-1	VER-01D-C-48-AIR	N	2/7/18	TO15	N	Chloromethane	1.8	ug/m3	J	1.2	5.0	J	sp	Detect < PQL
320-35962-1	VER-01D-C-48-AIR	N	2/7/18	TO15	N	Dichloromethane [Methylene chloride]	0.89	ug/m3	J	0.75	4.2	J	sp	Detect < PQL
320-35962-1	VER-01D-C-48-AIR	N	2/7/18	TO15	N	Ethylbenzene	2.3	ug/m3	J	0.82	5.2	J	sp	Detect < PQL
320-35962-1	VER-01D-C-48-AIR	N	2/7/18	TO15	N	Styrene	2.5	ug/m3	J	0.75	5.1	J	sp	Detect < PQL
320-35962-1	VER-01D-C-48-AIR	N	2/7/18	TO15	N	Trichloroethene	3.8	ug/m3	J	1.7	6.4	J	sp	Detect < PQL
320-35962-1	VER-01D-C-60-AIR	N	2/8/18	TO15	N	1,2,4-Trimethylbenzene	3.6	ug/m3	J	0.80	3.9	J	sp	Detect < PQL
320-35962-1	VER-01D-C-60-AIR	N	2/8/18	TO15	N	1,3,5-Trimethylbenzene	1.2	ug/m3	J	0.61	2.0	J	sp	Detect < PQL
320-35962-1	VER-01D-C-60-AIR	N	2/8/18	TO15	N	2-Hexanone	0.79	ug/m3	J	0.36	1.6	J	sp	Detect < PQL
320-35962-1	VER-01D-C-60-AIR	N	2/8/18	TO15	N	4-Ethyltoluene	1.1	ug/m3	J	0.92	2.0	J	sp	Detect < PQL
320-35962-1	VER-01D-C-60-AIR	N	2/8/18	TO15	N	4-Methyl-2-pentanone [MIBK]	0.71	ug/m3	J	0.55	1.6	J	sp	Detect < PQL
320-35962-1	VER-01D-C-60-AIR	N	2/8/18	TO15	N	Carbon disulfide	0.59	ug/m3	J	0.24	2.5	J	sp	Detect < PQL
320-35962-1	VER-01D-C-60-AIR	N	2/8/18	TO15	N	Carbon tetrachloride	0.72	ug/m3	J	0.40	5.0	J	sp	Detect < PQL
320-35962-1	VER-01D-C-60-AIR	N	2/8/18	TO15	N	Dichloromethane [Methylene chloride]	1.0	ug/m3	J	0.25	1.4	J	sp	Detect < PQL
320-35962-1	VER-01D-C-60-AIR	N	2/8/18	TO15	N	Ethylbenzene	0.64	ug/m3	J	0.27	1.7	J	sp	Detect < PQL
320-35962-1	VER-01D-C-60-AIR	N	2/8/18	TO15	N	Freon-11 [Trichlorofluoromethane]	1.5	ug/m3	J	1.1	2.2	J	sp	Detect < PQL
320-35962-1	VER-01D-C-60-AIR	N	2/8/18	TO15	N	Freon-12 [Dichlorodifluoromethane]	1.3	ug/m3	J	0.72	2.0	J	sp	Detect < PQL
320-35962-1	VER-01D-C-60-AIR	N	2/8/18	TO15	N	Styrene	0.75	ug/m3	J	0.25	1.7	J	sp	Detect < PQL
320-35962-1	VER-01D-C-72-AIR	N	2/8/18	TO15	N	1,2,4-Trimethylbenzene	5.5	ug/m3	J	1.3	6.4	J	sp	Detect < PQL
320-35962-1	VER-01D-C-72-AIR	N	2/8/18	TO15	N	1,3,5-Trimethylbenzene	2.6	ug/m3	J	1.0	3.2	J	sp	Detect < PQL
320-35962-1	VER-01D-C-72-AIR	N	2/8/18	TO15	N	2-Hexanone	1.4	ug/m3	J	0.58	2.7	J	sp	Detect < PQL
320-35962-1	VER-01D-C-72-AIR	N	2/8/18	TO15	N	4-Ethyltoluene	1.6	ug/m3	J	1.5	3.2	J	sp	Detect < PQL
320-35962-1	VER-01D-C-72-AIR	N	2/8/18	TO15	N	4-Methyl-2-pentanone [MIBK]	1.8	ug/m3	J	0.90	2.7	J	sp	Detect < PQL
320-35962-1	VER-01D-C-72-AIR	N	2/8/18	TO15	N	Carbon disulfide	1.7	ug/m3	J	0.39	4.0	J	sp	Detect < PQL
320-35962-1	VER-01D-C-72-AIR	N	2/8/18	TO15	N	Chloromethane	1.9	ug/m3	J	0.66	2.7	J	sp	Detect < PQL
320-35962-1	VER-01D-C-72-AIR	N	2/8/18	TO15	N	Dichloromethane [Methylene chloride]	1.2	ug/m3	J	0.41	2.3	J	sp	Detect < PQL
320-35962-1	VER-01D-C-72-AIR	N	2/8/18	TO15	N	Ethylbenzene	1.7	ug/m3	J	0.44	2.8	J	sp	Detect < PQL
320-35962-1	VER-01D-C-72-AIR	N	2/8/18	TO15	N	Freon-12 [Dichlorodifluoromethane]	1.3	ug/m3	J	1.2	3.2	J	sp	Detect < PQL
320-35962-1	VER-01D-C-72-AIR	N	2/8/18	TO15	N	Styrene	2.0	ug/m3	J	0.41	2.8	J	sp	Detect < PQL

Table 6 Results Qualified During Validation

SDG	Sample ID	Sample Type	Sample Date	Method	Filtered	Analyte	Result	Units	Lab Qualifier	SQL	PQL	Validation Qualifier	Reason Code	Reason-Code Description
320-35962-1	VER-01D-C-84-AIR	N	2/9/18	TO15	N	Carbon disulfide	0.33	ug/m3	J	0.24	2.5	J	sp	Detect < PQL
320-35962-1	VER-01D-C-84-AIR	N	2/9/18	TO15	N	Dichloromethane [Methylene chloride]	0.84	ug/m3	J	0.25	1.4	J	sp	Detect < PQL
320-35962-1	VER-01D-C-84-AIR	N	2/9/18	TO15	N	Freon-12 [Dichlorodifluoromethane]	1.3	ug/m3	J	0.72	2.0	J	sp	Detect < PQL
320-35962-1	VER-01D-C-BL-AIR	N	2/5/18	TO15	N	1,2,4-Trimethylbenzene	13	ug/m3	J	10	52	J	sp	Detect < PQL
320-35962-1	VER-01D-C-BL-AIR	N	2/5/18	TO15	N	2-Hexanone	6.2	ug/m3	J	4.7	21	J	sp	Detect < PQL
320-35962-1	VER-01D-C-BL-AIR	N	2/5/18	TO15	N	Carbon disulfide	4.3	ug/m3	J	3.2	33	J	sp	Detect < PQL
320-35962-1	VER-01D-C-BL-AIR	N	2/5/18	TO15	N	Chloromethane	7.8	ug/m3	J	5.3	22	J	sp	Detect < PQL
320-35962-1	VER-01D-C-BL-AIR	N	2/5/18	TO15	N	m,p-Xylene	9.3	ug/m3	J	5.7	46	J	sp	Detect < PQL
320-35962-1	VER-01D-C-BL-AIR	N	2/5/18	TO15	N	o-Xylene	4.7	ug/m3	J	3.1	23	J	sp	Detect < PQL
320-35962-1	VER-01D-C-BL-AIR	N	2/5/18	TO15	N	Styrene	3.3	ug/m3	J	3.3	22	J	sp	Detect < PQL
320-35962-1	VER-01D-C-BL-AIR	N	2/5/18	TO15	N	Tetrachloroethene	12	ug/m3	J	4.5	36	J	sp	Detect < PQL
320-35962-1	VER-01D-C-BL-AIR	N	2/5/18	TO15	N	Toluene	7.2	ug/m3	J	2.5	20	J	sp	Detect < PQL
320-35962-1	VER-01D-C-BL-AIR	N	2/5/18	TO15	N	Trichloroethene	9.0	ug/m3	J	7.4	28	J	sp	Detect < PQL
440-193156-1	TRIPBLANK-09282017	TB	9/28/17	SW-8260B	N	Bromoform	0.40	ug/L	U	0.40	1.0	UJ	c	Calibration
440-193156-1	VMW-01D-10.0-20170928	N	9/28/17	EPA 300.1B	N	Chlorate	100	ug/kg	J	55	220	J	sp	Detect < PQL
440-193156-1	VMW-01D-25.0-20170928	N	9/28/17	SW-7199	N	Chromium [VI]	0.26	mg/kg	J	0.18	0.36	J	sp	Detect < PQL
440-193156-1	VMW-01D-34.0-20170928	N	9/28/17	SW-8260B	N	2,2-Dichloropropane	4.0	ug/L	U	4.0	10	UJ	c	Calibration
440-193156-1	VMW-01D-34.0-20170928	N	9/28/17	SW-8260B	N	Bromoform	4.0	ug/L	U	4.0	10	UJ	c	Calibration
440-193156-1	VMW-01D-34.0-20170928	N	9/28/17	SW-8260B	N	Bromomethane	2.5	ug/L	U	2.5	5.0	UJ	c	Calibration
440-193156-1	VMW-01D-34.0-20170928	N	9/28/17	SW-8260B	N	Dibromochloromethane	2.5	ug/L	U	2.5	5.0	UJ	c	Calibration
440-193156-1	VMW-01D-34.0-20170928	N	9/28/17	SW-8260B	N	Freon-12 [Dichlorodifluoromethane]	4.0	ug/L	U	4.0	10	UJ	c	Calibration
440-193156-1	VMW-01D-34.0-20170928	N	9/28/17	SW-8260B	N	Hexachlorobutadiene	2.5	ug/L	U	2.5	5.0	UJ	c	Calibration
440-193156-1	VMW-01D-5.0-20170928	N	9/28/17	EPA 300.1B	N	Chlorate	1500	ug/kg	F1	54	220	J-	m	MS Recovery
440-193156-1	VMW-01D-90.0-20170928-EB	EB	9/28/17	SW-8260B	N	Acetone	15	ug/L	J	10	20	J	sp	Detect < PQL
440-193156-1	VMW-01D-90.0-20170928-EB	EB	9/28/17	SW-8260B	N	Bromoform	0.40	ug/L	U	0.40	1.0	UJ	c	Calibration
440-193156-1	VMW-01D-90.0-20170928-EB	EB	9/28/17	SW-8260B	N	tert-Butyl alcohol	9.7	ug/L	J	5.0	10	J	sp	Detect < PQL
440-193224-1	VMW-01D-110.0-20170929	N	9/29/17	SW-7199	N	Chromium [VI]	0.31	mg/kg	J	0.24	0.48	J	sp	Detect < PQL
440-193224-1	VMW-01D-110-0-20170929-EB	EB	9/29/17	SW-6010B	N	Chromium	0.0044	mg/L	J	0.0025	0.0050	J	sp	Detect < PQL
440-193224-1	VMW-01D-110-0-20170929-EB	EB	9/29/17	SW-7199	N	Chromium [VI]	1.0	ug/L	J	0.25	2.0	J	sp	Detect < PQL
440-193224-1	VMW-01D-110-0-20170929-EB	EB	9/29/17	SW-8260B	N	Acetone	13	ug/L	J	10	20	J	sp	Detect < PQL
440-193224-1	VMW-01D-110-0-20170929-EB	EB	9/29/17	SW-8260B	N	Methyl ethyl ketone [2-Butanone]	3.9	ug/L	J	2.5	5.0	J	sp	Detect < PQL
440-193224-1	VMW-01D-110-0-20170929-EB	EB	9/29/17	SW-8260B	N	tert-Butyl alcohol	11	ug/L	ID	5.0	10	NJ	o	Other
440-194571-1	VMW-02D-100.0-20171018	N	10/18/17	EPA 300.1B	N	Chlorate	150	ug/kg	J	66	260	J	sp	Detect < PQL
440-194571-1	VMW-02D-100.0-20171018	N	10/18/17	EPA 314.0	N	Perchlorate	0.032	mg/kg	J	0.012	0.053	J	sp	Detect < PQL
440-194571-1	VMW-02D-110.0-20171018	N	10/18/17	EPA 314.0	N	Perchlorate	0.027	mg/kg	J	0.016	0.069	J	sp	Detect < PQL
440-194571-1	VMW-02D-15.0-20171018	N	10/18/17	EPA 300.1B	N	Chlorate	190	ug/kg	J	55	220	J	sp	Detect < PQL
440-194571-1	VMW-02D-20.0-20171018	N	10/18/17	EPA 314.0	N	Perchlorate	26	mg/kg	F2	0.51	2.2	J	ld	Lab Duplicate
440-194571-1	VMW-02D-20.0-20171018	N	10/18/17	SW-7199	N	Chromium [VI]	0.16	mg/kg	U F1	0.16	0.33	UJ	m	MS Recovery
440-194571-1	VMW-02D-35.0-20171018	N	10/18/17	SW-8260B	N	1,2-Dichlorobenzene	3.2	ug/L	J	2.5	5.0	J	sp	Detect < PQL
440-194571-1	VMW-02D-5.0-20171018	N	10/18/17	EPA 300.1B	N	Chlorate	68	ug/kg	J	54	210	J	sp	Detect < PQL
440-194571-1	VMW-02D-5.0-20171018	N	10/18/17	EPA 314.0	N	Perchlorate	0.31	mg/kg		0.010	0.043	J	fd	Field Duplicate
440-194571-1	VMW-02D-5.0-20171018-FD	FD	10/18/17	EPA 300.1B	N	Chlorate	87	ug/kg	J	54	220	J	sp	Detect < PQL
440-194571-1	VMW-02D-5.0-20171018-FD	FD	10/18/17	EPA 314.0	N	Perchlorate	1.8	mg/kg		0.051	0.22	J	fd	Field Duplicate
440-194623-1	VER-01I-10.0-20171019	N	10/19/17	EPA 300.1B	N	Chlorate	69	ug/kg	J	55	220	J	sp	Detect < PQL
440-194623-1	VER-01I-10.0-20171019	N	10/19/17	EPA 314.0	N	Perchlorate	0.21	mg/kg	F1	0.011	0.044	J-	m	MS Recovery
440-194623-1	VER-01I-25.0-20171019	N	10/19/17	SW-7199	N	Chromium [VI]	0.19	mg/kg	J	0.16	0.33	J	sp	Detect < PQL

Table 6 Results Qualified During Validation

SDG	Sample ID	Sample Type	Sample Date	Method	Filtered	Analyte	Result	Units	Lab Qualifier	SQL	PQL	Validation Qualifier	Reason Code	Reason-Code Description
440-194623-1	VER-01I-35.0-20171019	N	10/19/17	SW-8260B	N	Trichloroethene	3.3	ug/L	J	2.5	5.0	J	sp	Detect < PQL
440-194623-1	VER-01I-5.0-20171019	N	10/19/17	EPA 314.0	N	Perchlorate	37	mg/kg		0.51	2.1	J	fd	Field Duplicate
440-194623-1	VER-01I-5.0-20171019-FD	FD	10/19/17	EPA 314.0	N	Perchlorate	21	mg/kg		0.51	2.1	J	fd	Field Duplicate
440-194623-1	VER-01I-5.0-20171019-FD	FD	10/19/17	SW-7199	N	Chromium [VI]	0.30	mg/kg	J	0.16	0.32	J	sp	Detect < PQL
440-194623-1	VER-01I-70.0-20171019	N	10/19/17	EPA 314.0	N	Perchlorate	5.6	mg/kg		0.79	3.3	J	fd	Field Duplicate
440-194623-1	VER-01I-70.0-20171019-FD	FD	10/19/17	EPA 314.0	N	Perchlorate	13	mg/kg		0.77	3.3	J	fd	Field Duplicate
440-194641-1	VER-01I-60.0-20171019	N	10/19/17	EPA 300.1B	N	Chlorite	55	ug/L	U F1	55	280	UJ	m	MS Recovery
440-194754-1	VER-01D-110.0-20171020	N	10/20/17	EPA 314.0	N	Perchlorate	0.15	mg/kg		0.016	0.068	J	fd	Field Duplicate
440-194754-1	VER-01D-110.0-20171020	N	10/20/17	SW-6010B	N	Chromium	52	mg/kg		0.85	1.7	J	fd	Field Duplicate
440-194754-1	VER-01D-110.0-20171020-FD	FD	10/20/17	EPA 314.0	N	Perchlorate	0.22	mg/kg		0.018	0.075	J	fd	Field Duplicate
440-194754-1	VER-01D-110.0-20171020-FD	FD	10/20/17	SW-6010B	N	Chromium	110	mg/kg		0.93	1.9	J	fd	Field Duplicate
440-194754-1	VER-01D-20.0-20171020	N	10/20/17	EPA 300.1B	N	Chlorate	960	ug/kg	F1	56	230	J+	m	MS Recovery
440-194754-1	VER-01D-35.0-20171020	N	10/20/17	SW-8260B	N	1,1,1,2-Tetrachloroethane	2.5	ug/L	U	2.5	5.0	R	h	Holding Time
440-194754-1	VER-01D-35.0-20171020	N	10/20/17	SW-8260B	N	1,1,1-Trichloroethane	2.5	ug/L	U	2.5	5.0	R	h	Holding Time
440-194754-1	VER-01D-35.0-20171020	N	10/20/17	SW-8260B	N	1,1,2,2-Tetrachloroethane	2.5	ug/L	U	2.5	5.0	R	h	Holding Time
440-194754-1	VER-01D-35.0-20171020	N	10/20/17	SW-8260B	N	1,1,2-Trichloroethane	2.5	ug/L	U	2.5	5.0	R	h	Holding Time
440-194754-1	VER-01D-35.0-20171020	N	10/20/17	SW-8260B	N	1,1-Dichloroethane	2.5	ug/L	U	2.5	5.0	R	h	Holding Time
440-194754-1	VER-01D-35.0-20171020	N	10/20/17	SW-8260B	N	1,1-Dichloroethene	2.5	ug/L	U	2.5	5.0	R	h	Holding Time
440-194754-1	VER-01D-35.0-20171020	N	10/20/17	SW-8260B	N	1,1-Dichloropropene	2.5	ug/L	U	2.5	5.0	R	h	Holding Time
440-194754-1	VER-01D-35.0-20171020	N	10/20/17	SW-8260B	N	1,2,3-Trichlorobenzene	4.0	ug/L	U	4.0	10	R	h	Holding Time
440-194754-1	VER-01D-35.0-20171020	N	10/20/17	SW-8260B	N	1,2,3-Trichloropropane	4.0	ug/L	U	4.0	10	R	h	Holding Time
440-194754-1	VER-01D-35.0-20171020	N	10/20/17	SW-8260B	N	1,2,4-Trichlorobenzene	4.0	ug/L	U	4.0	10	R	h	Holding Time
440-194754-1	VER-01D-35.0-20171020	N	10/20/17	SW-8260B	N	1,2,4-Trimethylbenzene	2.5	ug/L	U	2.5	5.0	R	h	Holding Time
440-194754-1	VER-01D-35.0-20171020	N	10/20/17	SW-8260B	N	1,2-Dichlorobenzene	2.5	ug/L	U	2.5	5.0	R	h	Holding Time
440-194754-1	VER-01D-35.0-20171020	N	10/20/17	SW-8260B	N	1,2-Dichloroethane	2.5	ug/L	U	2.5	5.0	R	h	Holding Time
440-194754-1	VER-01D-35.0-20171020	N	10/20/17	SW-8260B	N	1,2-Dichloropropane	2.5	ug/L	U	2.5	5.0	R	h	Holding Time
440-194754-1	VER-01D-35.0-20171020	N	10/20/17	SW-8260B	N	1,3,5-Trimethylbenzene	2.5	ug/L	U	2.5	5.0	R	h	Holding Time
440-194754-1	VER-01D-35.0-20171020	N	10/20/17	SW-8260B	N	1,3-Dichlorobenzene	2.5	ug/L	U	2.5	5.0	R	h	Holding Time
440-194754-1	VER-01D-35.0-20171020	N	10/20/17	SW-8260B	N	1,3-Dichloropropane	2.5	ug/L	U	2.5	5.0	R	h	Holding Time
440-194754-1	VER-01D-35.0-20171020	N	10/20/17	SW-8260B	N	1,4-Dichlorobenzene	2.5	ug/L	U	2.5	5.0	R	h	Holding Time
440-194754-1	VER-01D-35.0-20171020	N	10/20/17	SW-8260B	N	2,2-Dichloropropane	4.0	ug/L	U	4.0	10	R	h	Holding Time
440-194754-1	VER-01D-35.0-20171020	N	10/20/17	SW-8260B	N	2-Chlorotoluene	2.5	ug/L	U	2.5	5.0	R	h	Holding Time
440-194754-1	VER-01D-35.0-20171020	N	10/20/17	SW-8260B	N	2-Hexanone	25	ug/L	U	25	50	R	h	Holding Time
440-194754-1	VER-01D-35.0-20171020	N	10/20/17	SW-8260B	N	2-Methoxy-2-methyl-butane	2.5	ug/L	U	2.5	5.0	R	h	Holding Time
440-194754-1	VER-01D-35.0-20171020	N	10/20/17	SW-8260B	N	4-Chlorotoluene	2.5	ug/L	U	2.5	5.0	R	h	Holding Time
440-194754-1	VER-01D-35.0-20171020	N	10/20/17	SW-8260B	N	4-Methyl-2-pentanone [MIBK]	25	ug/L	U	25	50	R	h	Holding Time
440-194754-1	VER-01D-35.0-20171020	N	10/20/17	SW-8260B	N	Acetone	100	ug/L	U	100	200	R	h	Holding Time
440-194754-1	VER-01D-35.0-20171020	N	10/20/17	SW-8260B	N	Benzene	2.5	ug/L	U	2.5	5.0	R	h	Holding Time
440-194754-1	VER-01D-35.0-20171020	N	10/20/17	SW-8260B	N	Bromobenzene	2.5	ug/L	U	2.5	5.0	R	h	Holding Time
440-194754-1	VER-01D-35.0-20171020	N	10/20/17	SW-8260B	N	Bromodichloromethane	2.5	ug/L	U	2.5	5.0	R	h	Holding Time
440-194754-1	VER-01D-35.0-20171020	N	10/20/17	SW-8260B	N	Bromoform	4.0	ug/L	U	4.0	10	R	h	Holding Time
440-194754-1	VER-01D-35.0-20171020	N	10/20/17	SW-8260B	N	Bromomethane	2.5	ug/L	U	2.5	5.0	R	h	Holding Time
440-194754-1	VER-01D-35.0-20171020	N	10/20/17	SW-8260B	N	Carbon tetrachloride	2.5	ug/L	U	2.5	5.0	R	h	Holding Time
440-194754-1	VER-01D-35.0-20171020	N	10/20/17	SW-8260B	N	Chlorobenzene	2.5	ug/L	U	2.5	5.0	R	h	Holding Time
440-194754-1	VER-01D-35.0-20171020	N	10/20/17	SW-8260B	N	Chlorobromomethane	2.5	ug/L	U	2.5	5.0	R	h	Holding Time
440-194754-1	VER-01D-35.0-20171020	N	10/20/17	SW-8260B	N	Chloroethane	4.0	ug/L	U	4.0	10	R	h	Holding Time

Table 6 Results Qualified During Validation

SDG	Sample ID	Sample Type	Sample Date	Method	Filtered	Analyte	Result	Units	Lab Qualifier	SQL	PQL	Validation Qualifier	Reason Code	Reason-Code Description
440-194754-1	VER-01D-35.0-20171020	N	10/20/17	SW-8260B	N	Chloroform	630	ug/L		2.5	5.0	J	h	Holding Time
440-194754-1	VER-01D-35.0-20171020	N	10/20/17	SW-8260B	N	Chloromethane	2.5	ug/L	U	2.5	5.0	R	h	Holding Time
440-194754-1	VER-01D-35.0-20171020	N	10/20/17	SW-8260B	N	cis-1,2-Dichloroethene	2.5	ug/L	U	2.5	5.0	R	h	Holding Time
440-194754-1	VER-01D-35.0-20171020	N	10/20/17	SW-8260B	N	cis-1,3-Dichloropropene	2.5	ug/L	U	2.5	5.0	R	h	Holding Time
440-194754-1	VER-01D-35.0-20171020	N	10/20/17	SW-8260B	N	Cymene [Isopropyltoluene]	2.5	ug/L	U	2.5	5.0	R	h	Holding Time
440-194754-1	VER-01D-35.0-20171020	N	10/20/17	SW-8260B	N	Dibromochloromethane	2.5	ug/L	U	2.5	5.0	R	h	Holding Time
440-194754-1	VER-01D-35.0-20171020	N	10/20/17	SW-8260B	N	Dibromochloropropane	5.0	ug/L	U	5.0	10	R	h	Holding Time
440-194754-1	VER-01D-35.0-20171020	N	10/20/17	SW-8260B	N	Dibromomethane	2.5	ug/L	U	2.5	5.0	R	h	Holding Time
440-194754-1	VER-01D-35.0-20171020	N	10/20/17	SW-8260B	N	Dichloromethane [Methylene chloride]	8.8	ug/L	U	8.8	20	R	h	Holding Time
440-194754-1	VER-01D-35.0-20171020	N	10/20/17	SW-8260B	N	Diisopropyl ether	2.5	ug/L	U	2.5	5.0	R	h	Holding Time
440-194754-1	VER-01D-35.0-20171020	N	10/20/17	SW-8260B	N	Ethane, 1,2-dibromo-	2.5	ug/L	U	2.5	5.0	R	h	Holding Time
440-194754-1	VER-01D-35.0-20171020	N	10/20/17	SW-8260B	N	Ethyl tert-butyl ether	2.5	ug/L	U	2.5	5.0	R	h	Holding Time
440-194754-1	VER-01D-35.0-20171020	N	10/20/17	SW-8260B	N	Ethylbenzene	2.5	ug/L	U	2.5	5.0	R	h	Holding Time
440-194754-1	VER-01D-35.0-20171020	N	10/20/17	SW-8260B	N	Freon-11 [Trichlorofluoromethane]	2.5	ug/L	U	2.5	5.0	R	h	Holding Time
440-194754-1	VER-01D-35.0-20171020	N	10/20/17	SW-8260B	N	Freon-12 [Dichlorodifluoromethane]	4.0	ug/L	U	4.0	10	R	h	Holding Time
440-194754-1	VER-01D-35.0-20171020	N	10/20/17	SW-8260B	N	Hexachlorobutadiene	2.5	ug/L	U	2.5	5.0	R	h	Holding Time
440-194754-1	VER-01D-35.0-20171020	N	10/20/17	SW-8260B	N	Isopropylbenzene	2.5	ug/L	U	2.5	5.0	R	h	Holding Time
440-194754-1	VER-01D-35.0-20171020	N	10/20/17	SW-8260B	N	m,p-Xylene	5.0	ug/L	U	5.0	10	R	h	Holding Time
440-194754-1	VER-01D-35.0-20171020	N	10/20/17	SW-8260B	N	Methyl ethyl ketone [2-Butanone]	25	ug/L	U	25	50	R	h	Holding Time
440-194754-1	VER-01D-35.0-20171020	N	10/20/17	SW-8260B	N	MTBE [Methyl tert-butyl ether]	2.5	ug/L	U	2.5	5.0	R	h	Holding Time
440-194754-1	VER-01D-35.0-20171020	N	10/20/17	SW-8260B	N	Naphthalene	4.0	ug/L	U	4.0	10	R	h	Holding Time
440-194754-1	VER-01D-35.0-20171020	N	10/20/17	SW-8260B	N	n-Butyl benzene	4.0	ug/L	U	4.0	10	R	h	Holding Time
440-194754-1	VER-01D-35.0-20171020	N	10/20/17	SW-8260B	N	n-Propylbenzene	2.5	ug/L	U	2.5	5.0	R	h	Holding Time
440-194754-1	VER-01D-35.0-20171020	N	10/20/17	SW-8260B	N	o-Xylene	2.5	ug/L	U	2.5	5.0	R	h	Holding Time
440-194754-1	VER-01D-35.0-20171020	N	10/20/17	SW-8260B	N	sec-Butylbenzene	2.5	ug/L	U	2.5	5.0	R	h	Holding Time
440-194754-1	VER-01D-35.0-20171020	N	10/20/17	SW-8260B	N	Styrene	2.5	ug/L	U	2.5	5.0	R	h	Holding Time
440-194754-1	VER-01D-35.0-20171020	N	10/20/17	SW-8260B	N	tert-Butyl alcohol	50	ug/L	U	50	100	R	h	Holding Time
440-194754-1	VER-01D-35.0-20171020	N	10/20/17	SW-8260B	N	tert-Butyl benzene	2.5	ug/L	U	2.5	5.0	R	h	Holding Time
440-194754-1	VER-01D-35.0-20171020	N	10/20/17	SW-8260B	N	Tetrachloroethene	2.5	ug/L	U	2.5	5.0	R	h	Holding Time
440-194754-1	VER-01D-35.0-20171020	N	10/20/17	SW-8260B	N	Toluene	2.5	ug/L	U	2.5	5.0	R	h	Holding Time
440-194754-1	VER-01D-35.0-20171020	N	10/20/17	SW-8260B	N	trans-1,2-Dichloroethene	2.5	ug/L	U	2.5	5.0	R	h	Holding Time
440-194754-1	VER-01D-35.0-20171020	N	10/20/17	SW-8260B	N	trans-1,3-Dichloropropene	2.5	ug/L	U	2.5	5.0	R	h	Holding Time
440-194754-1	VER-01D-35.0-20171020	N	10/20/17	SW-8260B	N	Trichloroethene	2.5	ug/L	U	2.5	5.0	R	h	Holding Time
440-194754-1	VER-01D-35.0-20171020	N	10/20/17	SW-8260B	N	Vinyl chloride	2.5	ug/L	U	2.5	5.0	R	h	Holding Time
440-194754-1	VER-01D-35.0-20171020	N	10/20/17	SW-8260B	N	Xylenes [total]	5.0	ug/L	U	5.0	10	R	h	Holding Time
440-195909-1	VER-01D-20171107-EB	EB	11/7/17	SW-8260B	N	Acetone	17	ug/L	J	10	20	J	sp	Detect < PQL
440-195909-1	VER-01D-20171107-EB	EB	11/7/17	SW-8260B	N	tert-Butyl alcohol	9.8	ug/L	J ID	5.0	10	NJ	o,sp	Other, Detect < PQL
440-195909-1	VMW-01I-20171107	N	11/7/17	SW-8260B	N	Dibromochloromethane	0.31	ug/L	J	0.25	0.50	J	sp	Detect < PQL
440-195909-1	VMW-01I-20171107	N	11/7/17	SW-8260B	N	Trichloroethene	0.43	ug/L	J	0.25	0.50	J	sp	Detect < PQL
440-196039-1	VMW-02D-20171108	N	11/8/17	SW-8260B	N	Chloroform	0.45	ug/L	J	0.25	0.50	J	sp	Detect < PQL
440-196039-1	VMW-02I-20171108	N	11/8/17	SW-8260B	N	Carbon tetrachloride	0.31	ug/L	J	0.25	0.50	J	sp	Detect < PQL
440-200466-1	VER-01I-B-12	N	1/11/18	SW-8260B	N	1,2-Dichlorobenzene	4.9	ug/L	J	2.5	5.0	J	sp	Detect < PQL
440-200466-1	VER-01I-B-BL	N	1/11/18	SW-8260B	N	Acetone	140	ug/L	J	100	200	J	sp	Detect < PQL
440-200815-1	VER-01I-B-36	N	1/12/18	SW-8260B	N	1,2-Dichlorobenzene	5.6	ug/L	J	5.0	10	J	sp	Detect < PQL
440-200988-1	VER-01I-C-BL	N	1/15/18	SW-8260B	N	1,2-Dichlorobenzene	2.8	ug/L	J	2.5	5.0	J	sp	Detect < PQL
440-201049-1	TB-011618	TB	1/16/18	SW-8260B	N	2,2-Dichloropropane	0.40	ug/L	U	0.40	1.0	UJ	c	Calibration

Table 6 Results Qualified During Validation

SDG	Sample ID	Sample Type	Sample Date	Method	Filtered	Analyte	Result	Units	Lab Qualifier	SQL	PQL	Validation Qualifier	Reason Code	Reason-Code Description
440-201049-1	VER-01I-C-24	N	1/16/18	SW-8260B	N	Trichloroethene	1.3	ug/L	J	1.3	2.5	J	sp	Detect < PQL
440-201049-1	VER-01I-C-36	N	1/16/18	SW-8260B	N	2,2-Dichloropropane	4.0	ug/L	U F1	4.0	10	UJ	c	Calibration
440-201313-1	VER-01I-C-48	N	1/17/18	SW-8260B	N	Bromoform	0.82	ug/L	J	0.40	1.0	J	sp	Detect < PQL
440-201313-1	VER-01I-C-60	N	1/17/18	SW-8260B	N	1,3-Dichlorobenzene	0.28	ug/L	J	0.25	0.50	J	sp	Detect < PQL
440-201313-1	VER-01I-C-60	N	1/17/18	SW-8260B	N	Dibromochloromethane	0.34	ug/L	J	0.25	0.50	J	sp	Detect < PQL
440-201437-1	VER-01I-C-72	N	1/18/18	SW-6010B	N	Chromium	13	mg/L	B	0.0025	0.0050	J	sd	Serial Dilution
440-201437-1	VER-01I-C-72	N	1/18/18	SW-8260B	N	1,3-Dichlorobenzene	0.30	ug/L	J	0.25	0.50	J	sp	Detect < PQL
440-201437-1	VER-01I-C-72	N	1/18/18	SW-8260B	N	Bromoform	0.86	ug/L	J	0.40	1.0	J	sp	Detect < PQL
440-201437-1	VER-01I-C-77.5	N	1/18/18	EPA 365.3	N	Phosphorus	0.025	mg/L	U F1	0.025	0.050	R	m	MS Recovery
440-201437-1	VER-01I-C-77.5	N	1/18/18	SW-6020	Y	Copper	7.0	ug/L	F1 B	1.0	4.0	J-	m	MS Recovery
440-201437-1	VER-01I-C-77.5	N	1/18/18	SW-6020	Y	Iron	24	ug/L	J B	16	40	J	bl,sp	Lab Blank, Detect < PQL
440-201437-1	VER-01I-C-77.5	N	1/18/18	SW-6020	Y	Manganese	3.8	ug/L	J	2.5	5.0	J	sp	Detect < PQL
440-201437-1	VER-01I-C-77.5	N	1/18/18	SW-6020	Y	Selenium	3.4	ug/L	J	1.0	4.0	J	sp	Detect < PQL
440-201437-1	VER-01I-C-77.5	N	1/18/18	SW-6020	Y	Zinc	11	ug/L	J B	5.0	40	J	bl,sp	Lab Blank, Detect < PQL
440-201437-1	VER-01I-C-77.5	N	1/18/18	SW-8260B	N	1,3-Dichlorobenzene	0.28	ug/L	J	0.25	0.50	J	sp	Detect < PQL
440-201437-1	VER-01I-C-77.5	N	1/18/18	SW-8260B	N	Bromoform	0.66	ug/L	J	0.40	1.0	J	sp	Detect < PQL
440-201437-1	VER-01I-C-77.5	N	1/18/18	SW-8260B	N	Dibromochloromethane	0.26	ug/L	J	0.25	0.50	J	sp	Detect < PQL
440-201739-1	M16-20180123-TB	TB	1/23/18	SW-8260B	N	Dichloromethane [Methylene chloride]	1.0	ug/L	J	0.88	2.0	J	sp	Detect < PQL
440-201843-1	M16-20180124-TB	TB	1/24/18	SW-8260B	N	Naphthalene	0.45	ug/L	J	0.40	1.0	J	sp	Detect < PQL
440-201923-1	M16-20180125-TB	TB	1/25/18	SW-8260B	N	Dichloromethane [Methylene chloride]	1.2	ug/L	J	0.88	2.0	J	sp	Detect < PQL
440-201923-1	VER-01D-B-48	N	1/25/18	SW-8260B	N	Chloroform	0.41	ug/L	J	0.25	0.50	J	sp	Detect < PQL
440-202628-1	VER-01D-C-12	N	2/5/18	SW-8260B	N	Naphthalene	0.40	ug/L	J	0.40	1.0	J	sp	Detect < PQL
440-202628-1	VER-01D-C-BL	N	2/5/18	SW-8260B	N	Naphthalene	0.43	ug/L	J	0.40	1.0	J	sp	Detect < PQL
440-202782-1	VER-01D-C-24	N	2/6/18	SW-8260B	N	Chloroform	0.46	ug/L	J	0.25	0.50	J	sp	Detect < PQL
440-202782-1	VER-01D-C-36	N	2/6/18	SW-8260B	N	Chloroform	0.44	ug/L	J	0.25	0.50	J	sp	Detect < PQL
440-202847-1	VER-01D-C-48	N	2/7/18	SW-8260B	N	Chloroform	0.33	ug/L	J	0.25	0.50	J	sp	Detect < PQL
440-202847-1	VER-01D-C-60	N	2/7/18	SW-8260B	N	Chloroform	0.30	ug/L	J	0.25	0.50	J	sp	Detect < PQL
440-202979-1	VER-01D-C-72	N	2/8/18	SW-8260B	N	Chloroform	0.29	ug/L	J	0.25	0.50	J	sp	Detect < PQL
440-202979-1	VER-01D-C-84	N	2/8/18	SW-8260B	N	Chloroform	0.27	ug/L	J	0.25	0.50	J	sp	Detect < PQL
440-203119-1	VER-01D-C-96	N	2/9/18	EPA 351.2	N	Total Kjeldahl Nitrogen [TKN]	0.10	mg/L	U F1	0.10	0.20	UJ	m	MS Recovery
440-203119-1	VER-01D-C-96	N	2/9/18	SM5310B	N	Total Organic Carbon	0.90	mg/L	J	0.65	1.0	J	sp	Detect < PQL
440-203119-1	VER-01D-C-96	N	2/9/18	SW-6020	Y	Copper	0.81	ug/L	J	0.50	2.0	J	sp	Detect < PQL
440-203119-1	VER-01D-C-96	N	2/9/18	SW-6020	Y	Nickel	0.83	ug/L	J	0.50	2.0	J	sp	Detect < PQL
440-203119-1	VER-01D-C-96	N	2/9/18	SW-6020	Y	Zinc	10	ug/L	J	2.5	20	J	sp	Detect < PQL
440-203119-1	VER-01D-C-96	N	2/9/18	SW-8260B	N	Chloroform	0.26	ug/L	J	0.25	0.50	J	sp	Detect < PQL

Table 7 Field Duplicate Exceedances

SDG	Parent Sample ID	Field Duplicate	Method	Analyte	Filtered	Units	Result	FD Result	RPD (%)	Difference	Criteria
440-194571-1	VMW-02D-5.0-20171018	VMW-02D-5.0-20171018-FD	EPA 314.0	Perchlorate	N/A	mg/kg	0.31	1.8	141	---	50
440-194623-1	VER-01I-5.0-20171019	VER-01I-5.0-20171019-FD	EPA 314.0	Perchlorate	N/A	mg/kg	37	21	55	---	50
440-194623-1	VER-01I-70.0-20171019	VER-01I-70.0-20171019-FD	EPA 314.0	Perchlorate	N/A	mg/kg	5.6	13	---	7.4	<3.3
440-194754-1	VER-01D-110.0-20171020	VER-01D-110.0-20171020-FD	EPA 314.0	Perchlorate	N/A	mg/kg	0.15	0.22	---	0.07	<0.068
440-194754-1	VER-01D-110.0-20171020	VER-01D-110.0-20171020-FD	SW-6010B	Chromium	N/A	mg/kg	52	110	72	---	50

Table 8 Calibration Exceedances

SDG	Method	Calibration	Calibration ID	Parameter	Outlier	Value	Allowed	Associated Sample
440-193156-1	SW-8260B	Continuing	CCVIS 440-434323/2	Bromoform	Percent Difference	42.4	≤40%	TRIPBLANK
440-193156-1	SW-8260B	Continuing	CCVIS 440-434323/2	Bromoform	Percent Difference	42.4	≤40%	VMW-01D-90.0-20170928-EB
440-193156-1	SW-8260B	Continuing	CCVIS 440-434567/2	2,2-Dichloropropane	Percent Difference	34.0	≤30%	VMW-01D-34.0-20170928
440-193156-1	SW-8260B	Continuing	CCVIS 440-434567/2	Bromoform	Percent Difference	45.1	≤40%	VMW-01D-34.0-20170928
440-193156-1	SW-8260B	Continuing	CCVIS 440-434567/2	Bromomethane	Percent Difference	30.6	≤30%	VMW-01D-34.0-20170928
440-193156-1	SW-8260B	Continuing	CCVIS 440-434567/2	Dibromochloromethane	Percent Difference	32.4	≤30%	VMW-01D-34.0-20170928
440-193156-1	SW-8260B	Continuing	CCVIS 440-434567/2	Freon-12 [Dichlorodifluoromethane]	Percent Difference	47.8	≤40%	VMW-01D-34.0-20170928
440-193156-1	SW-8260B	Continuing	CCVIS 440-434567/2	Hexachlorobutadiene	Percent Difference	40.6	≤40%	VMW-01D-34.0-20170928
440-201049-1	SW-8260B	Continuing	CCVIS 440-452744/2	2,2-Dichloropropane	Percent Difference	33.7	≤30%	TB-011618
440-201049-1	SW-8260B	Continuing	CCVIS 440-452744/2	2,2-Dichloropropane	Percent Difference	33.7	≤30%	VER-01I-C-36

Table 9 MS/MSI/MSD Recovery Exceedances

SDG	Lab Sample ID	Spiked Sample	Matrix	Method	Analyte	MS/MSI Recovery (%)	MSD Recovery (%)	Acceptance Range (%)
440-193156-1	440-193156-2	VMW-01D-5.0-20170928-MS/MSD	SO	EPA 300.1B	Chlorate	70	78	75 -125
440-194571-1	440-194571-6	VMW-02D-20.0-20171018-MSI	SO	SW-7199	Chromium [VI]	36	N/A	55 -110
440-194623-1	440-194623-4	VER-01I-10.0-20171019-MS/MSD	WG	EPA 314.0	Perchlorate	76	82	80 -120
440-194641-1	440-194641-1	VER-01I-60.0-20171019-MS/MSD	SO	EPA 300.1B	Chlorite	74	84	75 -125
440-194754-1	440-194754-6	VER-01D-20.0-20171020-MS/MSD	SO	EPA 300.1B	Chlorate	133	155	75 -125
440-201437-1	440-201437-3	VER-01I-C-77.5-MS/MSD	WG	EPA 365.3	Phosphorus	16	16	80 -120
440-201437-1	440-201437-3	VER-01I-C-77.5-MS/MSD	WG	SW-6020	Copper	68	68	80 -120
440-203119-1	440-203119-1	VER-01D-C-96-MS/MSD	WG	EPA 351.2	Total Kjeldahl Nitrogen [TKN]	79	77	90 -110

Table 10 Method Blank Detections

SDG	Method Blank	Method	Analyte	Result	Units	Affected Sample
320-35247-1	MB320-206119/21	TO15	Carbon disulfide	0.418	ug/m3	EFFLUENT-01152018
320-35247-1	MB320-206119/21	TO15	Carbon disulfide	0.418	ug/m3	EFFLUENT-01162018
320-35247-1	MB320-206119/21	TO15	Carbon disulfide	0.418	ug/m3	VER-01I-C-04-AIR
320-35247-1	MB320-206119/21	TO15	Carbon disulfide	0.418	ug/m3	VER-01I-C-08-AIR
320-35247-1	MB320-206119/21	TO15	Carbon disulfide	0.418	ug/m3	VER-01I-C-24-AIR
320-35247-1	MB320-206119/21	TO15	Carbon disulfide	0.418	ug/m3	VER-01I-C-BL-AIR
320-35247-1	MB320-206335/21	TO15	Carbon disulfide	0.412	ug/m3	EFFLUENT-01182018
320-35247-1	MB320-206335/21	TO15	Carbon disulfide	0.412	ug/m3	VER-01I-C-60-AIR
320-35247-1	MB320-206335/21	TO15	Carbon disulfide	0.412	ug/m3	VER-01I-C-70.5-AIR
440-201437-1	MB440-453455/1-A	SW-6020	Iron	15.4	ug/L	VER-01I-C-77.5
440-201437-1	MB440-453455/1-A	SW-6020	Zinc	4	ug/L	VER-01I-C-77.5

Table 11 Completeness Summary

Method	Total Number of Validated Results	Number of Rejected Results	Percent Completeness
EPA 200.7	4	0	100.00%
EPA 300.0	5	0	100.00%
EPA 300.1B	204	0	100.00%
EPA 314.0	102	0	100.00%
EPA 351.2	2	0	100.00%
EPA 365.3	2	1	50.00%
SM2320B	8	0	100.00%
SM2340C	1	0	100.00%
SM2540C	2	0	100.00%
SM2540D	2	0	100.00%
SM5310B	2	0	100.00%
SW-6010B	103	0	100.00%
SW-6020	38	0	100.00%
SW-7199	102	0	100.00%
SW-8260B	4554	68	98.51%
TO15	1350	0	100.00%

Appendix B.1
Automated Data Review Qualifier Reports

Data Qualifier Summary

Lab Reporting Batch ID: 320-35247-1 **Laboratory: TA SAC**

EDD Filename: 320-35247-1 **eQAPP Name: TetraTechInc_NERT_02282018**

Method Category: **VOA**

Method: **TO-15_ppbv** ***Matrix:*** **AIR**

Sample ID: **Effluent-01152018** ***Collected:*** **1/15/2018 6:54:00 PM** ***Analysis Type:*** **RES** ***Dilution:*** **2.54**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
1,2,4-TRIMETHYLBENZENE	1.5	J	0.41	MDL	2.0	MRL	ppb v/v	J	sp
4-ETHYLTOLUENE	0.76	J	0.47	MDL	1.0	MRL	ppb v/v	J	sp
BENZENE	0.27	J	0.20	MDL	1.0	MRL	ppb v/v	J	sp
CARBON DISULFIDE	0.54	J B	0.20	MDL	2.0	MRL	ppb v/v	J+	bl
CHLOROMETHANE	0.88	J	0.50	MDL	2.0	MRL	ppb v/v	J	sp
ETHYLBENZENE	0.46	J	0.16	MDL	1.0	MRL	ppb v/v	J	sp
METHYLENE CHLORIDE	0.21	J	0.18	MDL	1.0	MRL	ppb v/v	J	sp
O-XYLENE	0.87	J	0.14	MDL	1.0	MRL	ppb v/v	J	sp
TOLUENE	0.58	J	0.13	MDL	1.0	MRL	ppb v/v	J	sp
1,3,5-TRIMETHYLBENZENE	0.60	J	0.32	MDL	1.0	MRL	ppb v/v	J	sp

Sample ID: **Effluent-01162018** ***Collected:*** **1/16/2018 11:00:00 AM** ***Analysis Type:*** **RES** ***Dilution:*** **1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
1,3,5-TRIMETHYLBENZENE	0.34	J	0.13	MDL	0.40	MRL	ppb v/v	J	sp
4-ETHYLTOLUENE	0.28	J	0.19	MDL	0.40	MRL	ppb v/v	J	sp
BENZENE	0.087	J	0.079	MDL	0.40	MRL	ppb v/v	J	sp
CARBON DISULFIDE	0.27	J B	0.078	MDL	0.80	MRL	ppb v/v	J+	bl
CHLOROBENZENE	0.092	J	0.064	MDL	0.30	MRL	ppb v/v	J	sp
ETHYLBENZENE	0.13	J	0.063	MDL	0.40	MRL	ppb v/v	J	sp
m,p-Xylene	0.65	J	0.10	MDL	0.80	MRL	ppb v/v	J	sp
METHYLENE CHLORIDE	0.12	J	0.072	MDL	0.40	MRL	ppb v/v	J	sp
O-XYLENE	0.26	J	0.054	MDL	0.40	MRL	ppb v/v	J	sp

Sample ID: **Effluent-01172018** ***Collected:*** **1/17/2018 8:15:00 AM** ***Analysis Type:*** **RES** ***Dilution:*** **1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
2-BUTANONE (MEK)	0.49	J	0.20	MDL	0.80	MRL	ppb v/v	J	sp
ACETONE	6.2	*	0.18	MDL	5.0	MRL	ppb v/v	J	ld
CARBON DISULFIDE	0.42	J	0.078	MDL	0.80	MRL	ppb v/v	J	sp
CHLOROMETHANE	0.48	J	0.20	MDL	0.80	MRL	ppb v/v	J	sp
METHYLENE CHLORIDE	0.096	J	0.072	MDL	0.40	MRL	ppb v/v	J	sp

* denotes a non-reportable result

Project Name and Number: M16 - VER Treatability Study 117-7502018-M16

Data Qualifier Summary

Lab Reporting Batch ID: 320-35247-1 **Laboratory: TA SAC**

EDD Filename: 320-35247-1 **eQAPP Name: TetraTechInc_NERT_02282018**

Method Category: **VOA**

Method: **TO-15_ppbv** ***Matrix:*** **AIR**

Sample ID: **Effluent-01182018** ***Collected:*** **1/18/2018 8:45:00 AM** ***Analysis Type:*** **RES** ***Dilution:*** **1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
1,3,5-TRIMETHYLBENZENE	0.18	J	0.13	MDL	0.40	MRL	ppb v/v	J	sp
BENZENE	0.15	J	0.079	MDL	0.40	MRL	ppb v/v	J	sp
CARBON DISULFIDE	0.29	J B	0.078	MDL	0.80	MRL	ppb v/v	J+	bl
CHLOROBENZENE	0.080	J	0.064	MDL	0.30	MRL	ppb v/v	J	sp
CHLOROMETHANE	0.71	J	0.20	MDL	0.80	MRL	ppb v/v	J	sp
ETHYLBENZENE	0.16	J	0.063	MDL	0.40	MRL	ppb v/v	J	sp
m,p-Xylene	0.62	J	0.10	MDL	0.80	MRL	ppb v/v	J	sp
METHYLENE CHLORIDE	0.11	J	0.072	MDL	0.40	MRL	ppb v/v	J	sp
O-XYLENE	0.23	J	0.054	MDL	0.40	MRL	ppb v/v	J	sp

Sample ID: **VER-01I-C-04-AIR** ***Collected:*** **1/15/2018 2:43:00 PM** ***Analysis Type:*** **RES** ***Dilution:*** **108**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
BENZENE	19	J	8.5	MDL	43	MRL	ppb v/v	J	sp
CARBON DISULFIDE	23	J B	8.4	MDL	86	MRL	ppb v/v	J+	bl

Sample ID: **VER-01I-C-08-AIR** ***Collected:*** **1/15/2018 6:31:00 PM** ***Analysis Type:*** **RES** ***Dilution:*** **12.8**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
2-BUTANONE (MEK)	6.6	J	2.5	MDL	10	MRL	ppb v/v	J	sp
ACETONE	47	J	2.3	MDL	64	MRL	ppb v/v	J	sp
BENZENE	3.5	J	1.0	MDL	5.1	MRL	ppb v/v	J	sp
CARBON DISULFIDE	2.8	J B	1.0	MDL	10	MRL	ppb v/v	J+	bl
TETRACHLOROETHENE	1.2	J	0.65	MDL	5.1	MRL	ppb v/v	J	sp
TRICHLOROETHENE	3.0	J	1.3	MDL	5.1	MRL	ppb v/v	J	sp

Sample ID: **VER-01I-C-12-AIR** ***Collected:*** **1/15/2018 10:31:00 PM** ***Analysis Type:*** **RES** ***Dilution:*** **3.3**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
2-BUTANONE (MEK)	1.8	J	0.66	MDL	2.6	MRL	ppb v/v	J	sp
CHLOROBENZENE	0.28	J	0.21	MDL	0.99	MRL	ppb v/v	J	sp
CHLOROFORM	0.36	J	0.31	MDL	0.99	MRL	ppb v/v	J	sp
CHLOROMETHANE	0.85	J	0.65	MDL	2.6	MRL	ppb v/v	J	sp
METHYLENE CHLORIDE	0.45	J	0.24	MDL	1.3	MRL	ppb v/v	J	sp

* denotes a non-reportable result

Project Name and Number: M16 - VER Treatability Study 117-7502018-M16

Data Qualifier Summary

Lab Reporting Batch ID: 320-35247-1 **Laboratory: TA SAC**

EDD Filename: 320-35247-1 **eQAPP Name: TetraTechInc_NERT_02282018**

Method Category: **VOA**

Method: **TO-15_ppbv** ***Matrix:*** **AIR**

Sample ID: **VER-01I-C-24-AIR** ***Collected:*** **1/16/2018 10:30:00 AM** ***Analysis Type:*** **RES** ***Dilution:*** **1.82**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
CARBON DISULFIDE	0.57	J B	0.14	MDL	1.5	MRL	ppb v/v	J+	bl
CHLOROBENZENE	0.37	J	0.12	MDL	0.55	MRL	ppb v/v	J	sp
CHLOROMETHANE	0.79	J	0.36	MDL	1.5	MRL	ppb v/v	J	sp
DICHLORODIFLUOROMETHANE	0.39	J	0.26	MDL	0.73	MRL	ppb v/v	J	sp
METHYLENE CHLORIDE	0.40	J	0.13	MDL	0.73	MRL	ppb v/v	J	sp
TRICHLOROETHENE	0.45	J	0.19	MDL	0.73	MRL	ppb v/v	J	sp

Sample ID: **VER-01I-C-36-AIR** ***Collected:*** **1/16/2018 10:34:00 PM** ***Analysis Type:*** **RES** ***Dilution:*** **1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
ACETONE	88	*	0.18	MDL	5.0	MRL	ppb v/v	J	ld
CARBON DISULFIDE	0.28	J	0.078	MDL	0.80	MRL	ppb v/v	J	sp
CARBON TETRACHLORIDE	0.11	J	0.064	MDL	0.80	MRL	ppb v/v	J	sp
CHLOROBENZENE	0.23	J	0.064	MDL	0.30	MRL	ppb v/v	J	sp
CHLOROMETHANE	0.70	J	0.20	MDL	0.80	MRL	ppb v/v	J	sp
DICHLORODIFLUOROMETHANE	0.39	J	0.15	MDL	0.40	MRL	ppb v/v	J	sp
METHYLENE CHLORIDE	0.33	J	0.072	MDL	0.40	MRL	ppb v/v	J	sp
TETRACHLOROETHENE	0.074	J	0.051	MDL	0.40	MRL	ppb v/v	J	sp
TRICHLOROFLUOROMETHANE	0.20	J	0.20	MDL	0.40	MRL	ppb v/v	J	sp

Sample ID: **VER-01I-C-48-AIR** ***Collected:*** **1/17/2018 10:30:00 AM** ***Analysis Type:*** **RES** ***Dilution:*** **1.72**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
1,1,2,2-TETRACHLOROETHANE	0.14	J	0.12	MDL	0.69	MRL	ppb v/v	J	sp
ACETONE	38	*	0.31	MDL	8.6	MRL	ppb v/v	J	ld
CARBON DISULFIDE	0.30	J	0.13	MDL	1.4	MRL	ppb v/v	J	sp
CHLOROBENZENE	0.19	J	0.11	MDL	0.52	MRL	ppb v/v	J	sp
CHLOROMETHANE	0.67	J	0.34	MDL	1.4	MRL	ppb v/v	J	sp
DICHLORODIFLUOROMETHANE	0.47	J	0.25	MDL	0.69	MRL	ppb v/v	J	sp
TETRACHLOROETHENE	0.097	J	0.088	MDL	0.69	MRL	ppb v/v	J	sp

Sample ID: **VER-01I-C-60** ***Collected:*** **1/17/2018 10:36:00 PM** ***Analysis Type:*** **RES** ***Dilution:*** **1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
CARBON DISULFIDE	0.40	J B	0.078	MDL	0.80	MRL	ppb v/v	J+	bl

* denotes a non-reportable result

Project Name and Number: M16 - VER Treatability Study 117-7502018-M16

Data Qualifier Summary

Lab Reporting Batch ID: 320-35247-1 **Laboratory: TA SAC**

EDD Filename: 320-35247-1 **eQAPP Name: TetraTechInc_NERT_02282018**

Method Category: **VOA**

Method: **TO-15_ppbv** ***Matrix:*** **AIR**

Sample ID: **VER-01I-C-60** ***Collected:*** **1/17/2018 10:36:00 PM** ***Analysis Type:*** **RES** ***Dilution:*** **1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
CARBON TETRACHLORIDE	0.30	J	0.064	MDL	0.80	MRL	ppb v/v	J	sp
CHLOROMETHANE	0.77	J	0.20	MDL	0.80	MRL	ppb v/v	J	sp
DICHLORODIFLUOROMETHANE	0.30	J	0.15	MDL	0.40	MRL	ppb v/v	J	sp
METHYLENE CHLORIDE	0.39	J	0.072	MDL	0.40	MRL	ppb v/v	J	sp
TETRACHLOROETHENE	0.15	J	0.051	MDL	0.40	MRL	ppb v/v	J	sp
TRICHLOROETHENE	0.23	J	0.11	MDL	0.40	MRL	ppb v/v	J	sp

Sample ID: **VER-01I-C-70.5-AIR** ***Collected:*** **1/18/2018 8:55:00 AM** ***Analysis Type:*** **RES** ***Dilution:*** **3**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
2-BUTANONE (MEK)	1.5	J	0.60	MDL	2.4	MRL	ppb v/v	J	sp
BENZENE	0.93	J	0.24	MDL	1.2	MRL	ppb v/v	J	sp
CARBON DISULFIDE	0.55	J B	0.23	MDL	2.4	MRL	ppb v/v	J+	bl
CARBON TETRACHLORIDE	0.22	J	0.19	MDL	2.4	MRL	ppb v/v	J	sp
CHLOROBENZENE	0.22	J	0.19	MDL	0.90	MRL	ppb v/v	J	sp
CHLOROMETHANE	0.90	J	0.59	MDL	2.4	MRL	ppb v/v	J	sp
METHYLENE CHLORIDE	0.45	J	0.22	MDL	1.2	MRL	ppb v/v	J	sp
TETRACHLOROETHENE	0.24	J	0.15	MDL	1.2	MRL	ppb v/v	J	sp

Sample ID: **VER-01I-C-BL-AIR** ***Collected:*** **1/15/2018 1:25:00 PM** ***Analysis Type:*** **RES** ***Dilution:*** **3.68**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
1,3-DICHLOROBENZENE	0.47	J	0.40	MDL	1.5	MRL	ppb v/v	J	sp
BENZENE	1.3	J	0.29	MDL	1.5	MRL	ppb v/v	J	sp
CARBON DISULFIDE	2.1	J B	0.29	MDL	2.9	MRL	ppb v/v	J+	bl
CHLOROMETHANE	0.88	J	0.72	MDL	2.9	MRL	ppb v/v	J	sp
METHYLENE CHLORIDE	0.41	J	0.26	MDL	1.5	MRL	ppb v/v	J	sp

Method Category: **VOA**

Method: **TO-15_ugm3** ***Matrix:*** **AIR**

Sample ID: **Effluent-01152018** ***Collected:*** **1/15/2018 6:54:00 PM** ***Analysis Type:*** **RES** ***Dilution:*** **2.54**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
1,2,4-TRIMETHYLBENZENE	7.2	J	2.0	MDL	10	MRL	ug/m3	J	sp

* denotes a non-reportable result

Project Name and Number: M16 - VER Treatability Study 117-7502018-M16

Data Qualifier Summary

Lab Reporting Batch ID: 320-35247-1 **Laboratory: TA SAC**

EDD Filename: 320-35247-1 **eQAPP Name: TetraTechInc_NERT_02282018**

Method Category: **VOA**

Method: **TO-15_ugm3** ***Matrix:*** **AIR**

Sample ID: **Effluent-01152018** ***Collected:*** **1/15/2018 6:54:00 PM** ***Analysis Type:*** **RES** ***Dilution:*** **2.54**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
1,3,5-TRIMETHYLBENZENE	3.0	J	1.6	MDL	5.0	MRL	ug/m3	J	sp
4-ETHYLTOLUENE	3.8	J	2.3	MDL	5.0	MRL	ug/m3	J	sp
BENZENE	0.87	J	0.64	MDL	3.2	MRL	ug/m3	J	sp
CARBON DISULFIDE	1.7	J B	0.62	MDL	6.3	MRL	ug/m3	J+	bl
CHLOROMETHANE	1.8	J	1.0	MDL	4.2	MRL	ug/m3	J	sp
ETHYLBENZENE	2.0	J	0.69	MDL	4.4	MRL	ug/m3	J	sp
METHYLENE CHLORIDE	0.74	J	0.64	MDL	3.5	MRL	ug/m3	J	sp
O-XYLENE	3.8	J	0.60	MDL	4.4	MRL	ug/m3	J	sp
TOLUENE	2.2	J	0.49	MDL	3.8	MRL	ug/m3	J	sp

Sample ID: **Effluent-01162018** ***Collected:*** **1/16/2018 11:00:00 AM** ***Analysis Type:*** **RES** ***Dilution:*** **1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
1,3,5-TRIMETHYLBENZENE	1.7	J	0.61	MDL	2.0	MRL	ug/m3	J	sp
4-ETHYLTOLUENE	1.4	J	0.92	MDL	2.0	MRL	ug/m3	J	sp
BENZENE	0.28	J	0.25	MDL	1.3	MRL	ug/m3	J	sp
CARBON DISULFIDE	0.85	J B	0.24	MDL	2.5	MRL	ug/m3	J+	bl
CHLOROBENZENE	0.42	J	0.29	MDL	1.4	MRL	ug/m3	J	sp
ETHYLBENZENE	0.56	J	0.27	MDL	1.7	MRL	ug/m3	J	sp
m,p-Xylene	2.8	J	0.43	MDL	3.5	MRL	ug/m3	J	sp
METHYLENE CHLORIDE	0.43	J	0.25	MDL	1.4	MRL	ug/m3	J	sp
O-XYLENE	1.1	J	0.23	MDL	1.7	MRL	ug/m3	J	sp

Sample ID: **Effluent-01172018** ***Collected:*** **1/17/2018 8:15:00 AM** ***Analysis Type:*** **RES** ***Dilution:*** **1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
2-BUTANONE (MEK)	1.4	J	0.59	MDL	2.4	MRL	ug/m3	J	sp
ACETONE	15	*	0.42	MDL	12	MRL	ug/m3	J	ld
CARBON DISULFIDE	1.3	J	0.24	MDL	2.5	MRL	ug/m3	J	sp
CHLOROMETHANE	0.99	J	0.41	MDL	1.7	MRL	ug/m3	J	sp
METHYLENE CHLORIDE	0.33	J	0.25	MDL	1.4	MRL	ug/m3	J	sp

* denotes a non-reportable result

Project Name and Number: M16 - VER Treatability Study 117-7502018-M16

Data Qualifier Summary

Lab Reporting Batch ID: 320-35247-1 **Laboratory: TA SAC**

EDD Filename: 320-35247-1 **eQAPP Name: TetraTechInc_NERT_02282018**

Method Category: **VOA**

Method: **TO-15_ugm3** ***Matrix:*** **AIR**

Sample ID: **Effluent-01182018** ***Collected:*** **1/18/2018 8:45:00 AM** ***Analysis Type:*** **RES** ***Dilution:*** **1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
1,3,5-TRIMETHYLBENZENE	0.89	J	0.61	MDL	2.0	MRL	ug/m3	J	sp
BENZENE	0.48	J	0.25	MDL	1.3	MRL	ug/m3	J	sp
CARBON DISULFIDE	0.91	J B	0.24	MDL	2.5	MRL	ug/m3	J+	bl
CHLOROBENZENE	0.37	J	0.29	MDL	1.4	MRL	ug/m3	J	sp
CHLOROMETHANE	1.5	J	0.41	MDL	1.7	MRL	ug/m3	J	sp
ETHYLBENZENE	0.68	J	0.27	MDL	1.7	MRL	ug/m3	J	sp
m,p-Xylene	2.7	J	0.43	MDL	3.5	MRL	ug/m3	J	sp
METHYLENE CHLORIDE	0.40	J	0.25	MDL	1.4	MRL	ug/m3	J	sp
O-XYLENE	0.98	J	0.23	MDL	1.7	MRL	ug/m3	J	sp

Sample ID: **VER-01I-C-04-AIR** ***Collected:*** **1/15/2018 2:43:00 PM** ***Analysis Type:*** **RES** ***Dilution:*** **108**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
BENZENE	62	J	27	MDL	140	MRL	ug/m3	J	sp
CARBON DISULFIDE	71	J B	26	MDL	270	MRL	ug/m3	J+	bl

Sample ID: **VER-01I-C-08-AIR** ***Collected:*** **1/15/2018 6:31:00 PM** ***Analysis Type:*** **RES** ***Dilution:*** **12.8**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
2-BUTANONE (MEK)	19	J	7.5	MDL	30	MRL	ug/m3	J	sp
ACETONE	110	J	5.4	MDL	150	MRL	ug/m3	J	sp
BENZENE	11	J	3.2	MDL	16	MRL	ug/m3	J	sp
CARBON DISULFIDE	8.7	J B	3.1	MDL	32	MRL	ug/m3	J+	bl
TETRACHLOROETHENE	8.0	J	4.4	MDL	35	MRL	ug/m3	J	sp
TRICHLOROETHENE	16	J	7.2	MDL	28	MRL	ug/m3	J	sp

Sample ID: **VER-01I-C-12-AIR** ***Collected:*** **1/15/2018 10:31:00 PM** ***Analysis Type:*** **RES** ***Dilution:*** **3.3**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
2-BUTANONE (MEK)	5.2	J	1.9	MDL	7.8	MRL	ug/m3	J	sp
CHLOROBENZENE	1.3	J	0.97	MDL	4.6	MRL	ug/m3	J	sp
CHLOROFORM	1.8	J	1.5	MDL	4.8	MRL	ug/m3	J	sp
CHLOROMETHANE	1.8	J	1.3	MDL	5.5	MRL	ug/m3	J	sp
METHYLENE CHLORIDE	1.5	J	0.83	MDL	4.6	MRL	ug/m3	J	sp

* denotes a non-reportable result

Project Name and Number: M16 - VER Treatability Study 117-7502018-M16

Data Qualifier Summary

Lab Reporting Batch ID: 320-35247-1 **Laboratory: TA SAC**

EDD Filename: 320-35247-1 **eQAPP Name: TetraTechInc_NERT_02282018**

Method Category: **VOA**

Method: **TO-15_ugm3** ***Matrix:*** **AIR**

Sample ID: **VER-01I-C-24-AIR** ***Collected:*** **1/16/2018 10:30:00 AM** ***Analysis Type:*** **RES** ***Dilution:*** **1.82**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
CARBON DISULFIDE	1.8	J B	0.44	MDL	4.5	MRL	ug/m3	J+	bl
CHLOROBENZENE	1.7	J	0.54	MDL	2.5	MRL	ug/m3	J	sp
CHLOROMETHANE	1.6	J	0.74	MDL	3.0	MRL	ug/m3	J	sp
DICHLORODIFLUOROMETHANE	1.9	J	1.3	MDL	3.6	MRL	ug/m3	J	sp
METHYLENE CHLORIDE	1.4	J	0.46	MDL	2.5	MRL	ug/m3	J	sp
TRICHLOROETHENE	2.4	J	1.0	MDL	3.9	MRL	ug/m3	J	sp

Sample ID: **VER-01I-C-36-AIR** ***Collected:*** **1/16/2018 10:34:00 PM** ***Analysis Type:*** **RES** ***Dilution:*** **1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
ACETONE	210	*	0.42	MDL	12	MRL	ug/m3	J	ld
CARBON DISULFIDE	0.86	J	0.24	MDL	2.5	MRL	ug/m3	J	sp
CARBON TETRACHLORIDE	0.70	J	0.40	MDL	5.0	MRL	ug/m3	J	sp
CHLOROBENZENE	1.1	J	0.29	MDL	1.4	MRL	ug/m3	J	sp
CHLOROMETHANE	1.4	J	0.41	MDL	1.7	MRL	ug/m3	J	sp
DICHLORODIFLUOROMETHANE	1.9	J	0.72	MDL	2.0	MRL	ug/m3	J	sp
METHYLENE CHLORIDE	1.1	J	0.25	MDL	1.4	MRL	ug/m3	J	sp
TETRACHLOROETHENE	0.50	J	0.35	MDL	2.7	MRL	ug/m3	J	sp
TRICHLOROFLUOROMETHANE	1.1	J	1.1	MDL	2.2	MRL	ug/m3	J	sp

Sample ID: **VER-01I-C-48-AIR** ***Collected:*** **1/17/2018 10:30:00 AM** ***Analysis Type:*** **RES** ***Dilution:*** **1.72**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
1,1,2,2-TETRACHLOROETHANE	0.93	J	0.81	MDL	4.7	MRL	ug/m3	J	sp
ACETONE	91	*	0.73	MDL	20	MRL	ug/m3	J	ld
CARBON DISULFIDE	0.94	J	0.42	MDL	4.3	MRL	ug/m3	J	sp
CHLOROBENZENE	0.87	J	0.51	MDL	2.4	MRL	ug/m3	J	sp
CHLOROMETHANE	1.4	J	0.70	MDL	2.8	MRL	ug/m3	J	sp
DICHLORODIFLUOROMETHANE	2.3	J	1.2	MDL	3.4	MRL	ug/m3	J	sp
TETRACHLOROETHENE	0.66	J	0.59	MDL	4.7	MRL	ug/m3	J	sp

Sample ID: **VER-01I-C-60** ***Collected:*** **1/17/2018 10:36:00 PM** ***Analysis Type:*** **RES** ***Dilution:*** **1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
CARBON DISULFIDE	1.2	J B	0.24	MDL	2.5	MRL	ug/m3	J+	bl

* denotes a non-reportable result

Project Name and Number: M16 - VER Treatability Study 117-7502018-M16

Data Qualifier Summary

Lab Reporting Batch ID: 320-35247-1 **Laboratory: TA SAC**

EDD Filename: 320-35247-1 **eQAPP Name: TetraTechInc_NERT_02282018**

Method Category: **VOA**

Method: **TO-15_ugm3** ***Matrix:*** **AIR**

Sample ID: **VER-01I-C-60** ***Collected:*** **1/17/2018 10:36:00 PM** ***Analysis Type:*** **RES** ***Dilution:*** **1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
CARBON TETRACHLORIDE	1.9	J	0.40	MDL	5.0	MRL	ug/m3	J	sp
CHLOROMETHANE	1.6	J	0.41	MDL	1.7	MRL	ug/m3	J	sp
DICHLORODIFLUOROMETHANE	1.5	J	0.72	MDL	2.0	MRL	ug/m3	J	sp
TETRACHLOROETHENE	1.0	J	0.35	MDL	2.7	MRL	ug/m3	J	sp
TRICHLOROETHENE	1.2	J	0.56	MDL	2.1	MRL	ug/m3	J	sp

Sample ID: **VER-01I-C-70.5-AIR** ***Collected:*** **1/18/2018 8:55:00 AM** ***Analysis Type:*** **RES** ***Dilution:*** **3**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
2-BUTANONE (MEK)	4.3	J	1.8	MDL	7.1	MRL	ug/m3	J	sp
BENZENE	3.0	J	0.76	MDL	3.8	MRL	ug/m3	J	sp
CARBON DISULFIDE	1.7	J B	0.73	MDL	7.5	MRL	ug/m3	J+	bl
CARBON TETRACHLORIDE	1.4	J	1.2	MDL	15	MRL	ug/m3	J	sp
CHLOROBENZENE	1.0	J	0.88	MDL	4.1	MRL	ug/m3	J	sp
CHLOROMETHANE	1.9	J	1.2	MDL	5.0	MRL	ug/m3	J	sp
METHYLENE CHLORIDE	1.6	J	0.75	MDL	4.2	MRL	ug/m3	J	sp
TETRACHLOROETHENE	1.6	J	1.0	MDL	8.1	MRL	ug/m3	J	sp

Sample ID: **VER-01I-C-BL-AIR** ***Collected:*** **1/15/2018 1:25:00 PM** ***Analysis Type:*** **RES** ***Dilution:*** **3.68**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
1,3-DICHLOROBENZENE	2.9	J	2.4	MDL	8.9	MRL	ug/m3	J	sp
BENZENE	4.1	J	0.93	MDL	4.7	MRL	ug/m3	J	sp
CARBON DISULFIDE	6.5	J B	0.89	MDL	9.2	MRL	ug/m3	J+	bl
CHLOROMETHANE	1.8	J	1.5	MDL	6.1	MRL	ug/m3	J	sp
METHYLENE CHLORIDE	1.4	J	0.92	MDL	5.1	MRL	ug/m3	J	sp

* denotes a non-reportable result

Project Name and Number: M16 - VER Treatability Study 117-7502018-M16

Data Qualifier Summary

Lab Reporting Batch ID: 320-35247-1

Laboratory: TA SAC

EDD Filename: 320-35247-1

eQAPP Name: TetraTechInc_NERT_02282018

Reason Code Legend

Reason Code	*Description*
bl	Method Blank Contamination
ld	Laboratory Control Precision
sp	Reporting Limit Trace Value

* denotes a non-reportable result

Project Name and Number: M16 - VER Treatability Study 117-7502018-M16

Data Qualifier Summary

Lab Reporting Batch ID: 320-35962-1 **Laboratory: TA SAC**

EDD Filename: 320-35962-1 **eQAPP Name: TetraTechInc_NERT_02282018**

Method Category: **VOA**

Method: **TO-15_ppbv** ***Matrix:*** **AIR**

Sample ID: **VER-01D-C-04-AIR** ***Collected:*** **2/5/2018 7:30:00 PM** ***Analysis Type:*** **RES** ***Dilution:*** **1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
CARBON DISULFIDE	0.15	J	0.078	MDL	0.80	MRL	ppb v/v	J	sp
DICHLORODIFLUOROMETHANE	0.23	J	0.15	MDL	0.40	MRL	ppb v/v	J	sp
METHYLENE CHLORIDE	0.12	J	0.072	MDL	0.40	MRL	ppb v/v	J	sp

Sample ID: **VER-01D-C-08-AIR** ***Collected:*** **2/5/2018 11:30:00 PM** ***Analysis Type:*** **RES** ***Dilution:*** **1.9**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
CARBON DISULFIDE	0.26	J	0.15	MDL	1.5	MRL	ppb v/v	J	sp
CARBON TETRACHLORIDE	0.16	J	0.12	MDL	1.5	MRL	ppb v/v	J	sp
CHLOROMETHANE	0.98	J	0.37	MDL	1.5	MRL	ppb v/v	J	sp
DICHLORODIFLUOROMETHANE	0.35	J	0.28	MDL	0.76	MRL	ppb v/v	J	sp
ETHYLBENZENE	0.16	J	0.12	MDL	0.76	MRL	ppb v/v	J	sp
m,p-Xylene	0.81	J	0.19	MDL	1.5	MRL	ppb v/v	J	sp
METHYLENE CHLORIDE	0.31	J	0.14	MDL	0.76	MRL	ppb v/v	J	sp
O-XYLENE	0.38	J	0.10	MDL	0.76	MRL	ppb v/v	J	sp
STYRENE	0.11	J	0.11	MDL	0.76	MRL	ppb v/v	J	sp

Sample ID: **VER-01D-C-12-AIR** ***Collected:*** **2/6/2018 3:30:00 AM** ***Analysis Type:*** **RES** ***Dilution:*** **3.5**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
1,2,4-TRIMETHYLBENZENE	0.85	J	0.57	MDL	2.8	MRL	ppb v/v	J	sp
2-HEXANONE	0.30	J	0.30	MDL	1.4	MRL	ppb v/v	J	sp
BENZENE	0.76	J	0.28	MDL	1.4	MRL	ppb v/v	J	sp
CARBON DISULFIDE	0.27	J	0.27	MDL	2.8	MRL	ppb v/v	J	sp
CHLOROMETHANE	1.1	J	0.69	MDL	2.8	MRL	ppb v/v	J	sp
m,p-Xylene	1.1	J	0.35	MDL	2.8	MRL	ppb v/v	J	sp
METHYLENE CHLORIDE	0.47	J	0.25	MDL	1.4	MRL	ppb v/v	J	sp
O-XYLENE	0.51	J	0.19	MDL	1.4	MRL	ppb v/v	J	sp
TRICHLOROETHENE	0.77	J	0.37	MDL	1.4	MRL	ppb v/v	J	sp

Sample ID: **VER-01D-C-20180205-EFFLUE** ***Collected:*** **2/5/2018 6:30:00 PM** ***Analysis Type:*** **RES** ***Dilution:*** **1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
ACETONE	0.52	J	0.18	MDL	5.0	MRL	ppb v/v	J	sp
CARBON DISULFIDE	0.39	J	0.078	MDL	0.80	MRL	ppb v/v	J	sp

* denotes a non-reportable result

Project Name and Number: M16 - VER Treatability Study 117-7502018-M16

Data Qualifier Summary

Lab Reporting Batch ID: 320-35962-1 **Laboratory: TA SAC**

EDD Filename: 320-35962-1 **eQAPP Name: TetraTechInc_NERT_02282018**

Method Category: **VOA**

Method: **TO-15_ppbv** ***Matrix:*** **AIR**

Sample ID: **VER-01D-C-20180206-EFFLUE** ***Collected:*** **2/6/2018 10:30:00 AM** ***Analysis Type:*** **RES** ***Dilution:*** **1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
1,2,4-TRIMETHYLBENZENE	0.31	J	0.16	MDL	0.80	MRL	ppb v/v	J	sp
1,3,5-TRIMETHYLBENZENE	0.15	J	0.13	MDL	0.40	MRL	ppb v/v	J	sp
2-HEXANONE	0.14	J	0.087	MDL	0.40	MRL	ppb v/v	J	sp
4-ETHYLTOLUENE	0.24	J	0.19	MDL	0.40	MRL	ppb v/v	J	sp
4-METHYL-2-PENTANONE (MIBK)	0.16	J	0.14	MDL	0.40	MRL	ppb v/v	J	sp
BENZENE	0.15	J	0.079	MDL	0.40	MRL	ppb v/v	J	sp
ETHYLBENZENE	0.27	J	0.063	MDL	0.40	MRL	ppb v/v	J	sp
METHYLENE CHLORIDE	0.096	J	0.072	MDL	0.40	MRL	ppb v/v	J	sp
TETRACHLOROETHENE	0.057	J	0.051	MDL	0.40	MRL	ppb v/v	J	sp

Sample ID: **VER-01D-C-20180207-EFFLUE** ***Collected:*** **2/7/2018 10:10:00 AM** ***Analysis Type:*** **RES** ***Dilution:*** **1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
2-BUTANONE (MEK)	0.59	J	0.20	MDL	0.80	MRL	ppb v/v	J	sp
ACETONE	3.9	J	0.18	MDL	5.0	MRL	ppb v/v	J	sp
BENZENE	0.13	J	0.079	MDL	0.40	MRL	ppb v/v	J	sp
CARBON DISULFIDE	0.099	J	0.078	MDL	0.80	MRL	ppb v/v	J	sp
CHLOROMETHANE	0.78	J	0.20	MDL	0.80	MRL	ppb v/v	J	sp
m,p-Xylene	0.42	J	0.10	MDL	0.80	MRL	ppb v/v	J	sp
METHYLENE CHLORIDE	0.10	J	0.072	MDL	0.40	MRL	ppb v/v	J	sp
O-XYLENE	0.16	J	0.054	MDL	0.40	MRL	ppb v/v	J	sp
TOLUENE	0.31	J	0.051	MDL	0.40	MRL	ppb v/v	J	sp

Sample ID: **VER-01D-C-20180208-EFFLUE** ***Collected:*** **2/8/2018 10:45:00 AM** ***Analysis Type:*** **RES** ***Dilution:*** **1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
CARBON DISULFIDE	0.28	J	0.078	MDL	0.80	MRL	ppb v/v	J	sp
CHLOROMETHANE	0.69	J	0.20	MDL	0.80	MRL	ppb v/v	J	sp
METHYLENE CHLORIDE	0.10	J	0.072	MDL	0.40	MRL	ppb v/v	J	sp

Sample ID: **VER-01D-C-24-AIR** ***Collected:*** **2/6/2018 3:30:00 PM** ***Analysis Type:*** **RES** ***Dilution:*** **1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
1,2,4-TRIMETHYLBENZENE	0.41	J	0.16	MDL	0.80	MRL	ppb v/v	J	sp
1,3,5-TRIMETHYLBENZENE	0.14	J	0.13	MDL	0.40	MRL	ppb v/v	J	sp

* denotes a non-reportable result

Project Name and Number: M16 - VER Treatability Study 117-7502018-M16

Data Qualifier Summary

Lab Reporting Batch ID: 320-35962-1 **Laboratory: TA SAC**

EDD Filename: 320-35962-1 **eQAPP Name: TetraTechInc_NERT_02282018**

Method Category: **VOA**

Method: **TO-15_ppbv** ***Matrix:*** **AIR**

Sample ID: **VER-01D-C-24-AIR** ***Collected:*** **2/6/2018 3:30:00 PM** ***Analysis Type:*** **RES** ***Dilution:*** **1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
2-BUTANONE (MEK)	0.77	J	0.20	MDL	0.80	MRL	ppb v/v	J	sp
BENZENE	0.17	J	0.079	MDL	0.40	MRL	ppb v/v	J	sp
CARBON DISULFIDE	0.17	J	0.078	MDL	0.80	MRL	ppb v/v	J	sp
CHLOROMETHANE	0.72	J	0.20	MDL	0.80	MRL	ppb v/v	J	sp
DICHLORODIFLUOROMETHANE	0.26	J	0.15	MDL	0.40	MRL	ppb v/v	J	sp
m,p-Xylene	0.55	J	0.10	MDL	0.80	MRL	ppb v/v	J	sp
METHYLENE CHLORIDE	0.17	J	0.072	MDL	0.40	MRL	ppb v/v	J	sp
O-XYLENE	0.25	J	0.054	MDL	0.40	MRL	ppb v/v	J	sp
TETRACHLOROETHENE	0.12	J	0.051	MDL	0.40	MRL	ppb v/v	J	sp
TOLUENE	0.37	J	0.051	MDL	0.40	MRL	ppb v/v	J	sp
TRICHLOROFLUOROMETHANE	0.22	J	0.20	MDL	0.40	MRL	ppb v/v	J	sp

Sample ID: **VER-01D-C-36-AIR** ***Collected:*** **2/7/2018 3:30:00 AM** ***Analysis Type:*** **RES** ***Dilution:*** **1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
BENZENE	0.20	J	0.079	MDL	0.40	MRL	ppb v/v	J	sp
CARBON DISULFIDE	0.24	J	0.078	MDL	0.80	MRL	ppb v/v	J	sp
CHLOROFORM	0.11	J	0.095	MDL	0.30	MRL	ppb v/v	J	sp
CHLOROMETHANE	0.62	J	0.20	MDL	0.80	MRL	ppb v/v	J	sp
DICHLORODIFLUOROMETHANE	0.28	J	0.15	MDL	0.40	MRL	ppb v/v	J	sp
METHYLENE CHLORIDE	0.22	J	0.072	MDL	0.40	MRL	ppb v/v	J	sp
TETRACHLOROETHENE	0.13	J	0.051	MDL	0.40	MRL	ppb v/v	J	sp
TOLUENE	0.21	J	0.051	MDL	0.40	MRL	ppb v/v	J	sp
TRICHLOROETHENE	0.13	J	0.11	MDL	0.40	MRL	ppb v/v	J	sp
TRICHLOROFLUOROMETHANE	0.21	J	0.20	MDL	0.40	MRL	ppb v/v	J	sp

Sample ID: **VER-01D-C-48-AIR** ***Collected:*** **2/7/2018 3:30:00 PM** ***Analysis Type:*** **RES** ***Dilution:*** **3**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
2-HEXANONE	0.39	J	0.26	MDL	1.2	MRL	ppb v/v	J	sp
4-ETHYLTOLUENE	0.78	J	0.56	MDL	1.2	MRL	ppb v/v	J	sp
CARBON DISULFIDE	0.88	J	0.23	MDL	2.4	MRL	ppb v/v	J	sp
CHLOROMETHANE	0.89	J	0.59	MDL	2.4	MRL	ppb v/v	J	sp
ETHYLBENZENE	0.52	J	0.19	MDL	1.2	MRL	ppb v/v	J	sp
METHYLENE CHLORIDE	0.26	J	0.22	MDL	1.2	MRL	ppb v/v	J	sp

* denotes a non-reportable result

Project Name and Number: M16 - VER Treatability Study 117-7502018-M16

Data Qualifier Summary

Lab Reporting Batch ID: 320-35962-1 **Laboratory: TA SAC**

EDD Filename: 320-35962-1 **eQAPP Name: TetraTechInc_NERT_02282018**

Method Category: **VOA**

Method: **TO-15_ppbv** ***Matrix:*** **AIR**

Sample ID: **VER-01D-C-48-AIR** ***Collected:*** **2/7/2018 3:30:00 PM** ***Analysis Type:*** **RES** ***Dilution:*** **3**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
STYRENE	0.59	J	0.18	MDL	1.2	MRL	ppb v/v	J	sp
TRICHLOROETHENE	0.70	J	0.32	MDL	1.2	MRL	ppb v/v	J	sp

Sample ID: **VER-01D-C-60-AIR** ***Collected:*** **2/8/2018 3:30:00 AM** ***Analysis Type:*** **RES** ***Dilution:*** **1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
1,2,4-TRIMETHYLBENZENE	0.74	J	0.16	MDL	0.80	MRL	ppb v/v	J	sp
1,3,5-TRIMETHYLBENZENE	0.24	J	0.13	MDL	0.40	MRL	ppb v/v	J	sp
2-HEXANONE	0.19	J	0.087	MDL	0.40	MRL	ppb v/v	J	sp
4-ETHYLTOLUENE	0.22	J	0.19	MDL	0.40	MRL	ppb v/v	J	sp
4-METHYL-2-PENTANONE (MIBK)	0.17	J	0.14	MDL	0.40	MRL	ppb v/v	J	sp
CARBON DISULFIDE	0.19	J	0.078	MDL	0.80	MRL	ppb v/v	J	sp
CARBON TETRACHLORIDE	0.12	J	0.064	MDL	0.80	MRL	ppb v/v	J	sp
DICHLORODIFLUOROMETHANE	0.25	J	0.15	MDL	0.40	MRL	ppb v/v	J	sp
ETHYLBENZENE	0.15	J	0.063	MDL	0.40	MRL	ppb v/v	J	sp
METHYLENE CHLORIDE	0.29	J	0.072	MDL	0.40	MRL	ppb v/v	J	sp
STYRENE	0.18	J	0.059	MDL	0.40	MRL	ppb v/v	J	sp
TRICHLOROFLUOROMETHANE	0.27	J	0.20	MDL	0.40	MRL	ppb v/v	J	sp

Sample ID: **VER-01D-C-72-AIR** ***Collected:*** **2/8/2018 3:30:00 PM** ***Analysis Type:*** **RES** ***Dilution:*** **1.62**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
1,2,4-TRIMETHYLBENZENE	1.1	J	0.26	MDL	1.3	MRL	ppb v/v	J	sp
1,3,5-TRIMETHYLBENZENE	0.53	J	0.20	MDL	0.65	MRL	ppb v/v	J	sp
2-HEXANONE	0.35	J	0.14	MDL	0.65	MRL	ppb v/v	J	sp
4-ETHYLTOLUENE	0.33	J	0.30	MDL	0.65	MRL	ppb v/v	J	sp
4-METHYL-2-PENTANONE (MIBK)	0.44	J	0.22	MDL	0.65	MRL	ppb v/v	J	sp
CARBON DISULFIDE	0.53	J	0.13	MDL	1.3	MRL	ppb v/v	J	sp
CHLOROMETHANE	0.92	J	0.32	MDL	1.3	MRL	ppb v/v	J	sp
DICHLORODIFLUOROMETHANE	0.27	J	0.23	MDL	0.65	MRL	ppb v/v	J	sp
ETHYLBENZENE	0.39	J	0.10	MDL	0.65	MRL	ppb v/v	J	sp
METHYLENE CHLORIDE	0.36	J	0.12	MDL	0.65	MRL	ppb v/v	J	sp
STYRENE	0.47	J	0.096	MDL	0.65	MRL	ppb v/v	J	sp

* denotes a non-reportable result

Project Name and Number: M16 - VER Treatability Study 117-7502018-M16

Data Qualifier Summary

Lab Reporting Batch ID: 320-35962-1 **Laboratory: TA SAC**

EDD Filename: 320-35962-1 **eQAPP Name: TetraTechInc_NERT_02282018**

Method Category: **VOA**

Method: **TO-15_ppbv** ***Matrix:*** **AIR**

Sample ID: **VER-01D-C-84-AIR** ***Collected:*** **2/9/2018 3:30:00 AM** ***Analysis Type:*** **RES** ***Dilution:*** **1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
CARBON DISULFIDE	0.11	J	0.078	MDL	0.80	MRL	ppb v/v	J	sp
DICHLORODIFLUOROMETHANE	0.27	J	0.15	MDL	0.40	MRL	ppb v/v	J	sp
METHYLENE CHLORIDE	0.24	J	0.072	MDL	0.40	MRL	ppb v/v	J	sp

Sample ID: **VER-01D-C-BL-AIR** ***Collected:*** **2/5/2018 4:30:00 PM** ***Analysis Type:*** **RES** ***Dilution:*** **13.1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
1,2,4-TRIMETHYLBENZENE	2.7	J	2.1	MDL	10	MRL	ppb v/v	J	sp
2-HEXANONE	1.5	J	1.1	MDL	5.2	MRL	ppb v/v	J	sp
CARBON DISULFIDE	1.4	J	1.0	MDL	10	MRL	ppb v/v	J	sp
CHLOROMETHANE	3.8	J	2.6	MDL	10	MRL	ppb v/v	J	sp
m,p-Xylene	2.1	J	1.3	MDL	10	MRL	ppb v/v	J	sp
O-XYLENE	1.1	J	0.71	MDL	5.2	MRL	ppb v/v	J	sp
STYRENE	0.78	J	0.77	MDL	5.2	MRL	ppb v/v	J	sp
TETRACHLOROETHENE	1.8	J	0.67	MDL	5.2	MRL	ppb v/v	J	sp
TOLUENE	1.9	J	0.67	MDL	5.2	MRL	ppb v/v	J	sp
TRICHLOROETHENE	1.7	J	1.4	MDL	5.2	MRL	ppb v/v	J	sp

Method Category: **VOA**

Method: **TO-15_ugm3** ***Matrix:*** **AIR**

Sample ID: **VER-01D-C-04-AIR** ***Collected:*** **2/5/2018 7:30:00 PM** ***Analysis Type:*** **RES** ***Dilution:*** **1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
CARBON DISULFIDE	0.48	J	0.24	MDL	2.5	MRL	ug/m3	J	sp
DICHLORODIFLUOROMETHANE	1.1	J	0.72	MDL	2.0	MRL	ug/m3	J	sp
METHYLENE CHLORIDE	0.42	J	0.25	MDL	1.4	MRL	ug/m3	J	sp

Sample ID: **VER-01D-C-08-AIR** ***Collected:*** **2/5/2018 11:30:00 PM** ***Analysis Type:*** **RES** ***Dilution:*** **1.9**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
CARBON DISULFIDE	0.80	J	0.46	MDL	4.7	MRL	ug/m3	J	sp
CARBON TETRACHLORIDE	1.0	J	0.76	MDL	9.6	MRL	ug/m3	J	sp
CHLOROMETHANE	2.0	J	0.77	MDL	3.1	MRL	ug/m3	J	sp
DICHLORODIFLUOROMETHANE	1.7	J	1.4	MDL	3.8	MRL	ug/m3	J	sp

* denotes a non-reportable result

Project Name and Number: M16 - VER Treatability Study 117-7502018-M16

Data Qualifier Summary

Lab Reporting Batch ID: 320-35962-1 **Laboratory: TA SAC**

EDD Filename: 320-35962-1 **eQAPP Name: TetraTechInc_NERT_02282018**

Method Category: **VOA**

Method: **TO-15_ugm3** ***Matrix:*** **AIR**

Sample ID: **VER-01D-C-08-AIR** ***Collected:*** **2/5/2018 11:30:00 PM** ***Analysis Type:*** **RES** ***Dilution:*** **1.9**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
ETHYLBENZENE	0.68	J	0.52	MDL	3.3	MRL	ug/m3	J	sp
m,p-Xylene	3.5	J	0.83	MDL	6.6	MRL	ug/m3	J	sp
METHYLENE CHLORIDE	1.1	J	0.48	MDL	2.6	MRL	ug/m3	J	sp
O-XYLENE	1.6	J	0.45	MDL	3.3	MRL	ug/m3	J	sp
STYRENE	0.47	J	0.48	MDL	3.2	MRL	ug/m3	J	sp

Sample ID: **VER-01D-C-12-AIR** ***Collected:*** **2/6/2018 3:30:00 AM** ***Analysis Type:*** **RES** ***Dilution:*** **3.5**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
1,2,4-TRIMETHYLBENZENE	4.2	J	2.8	MDL	14	MRL	ug/m3	J	sp
2-HEXANONE	1.2	J	1.2	MDL	5.7	MRL	ug/m3	J	sp
BENZENE	2.4	J	0.88	MDL	4.5	MRL	ug/m3	J	sp
CARBON DISULFIDE	0.83	J	0.85	MDL	8.7	MRL	ug/m3	J	sp
CHLOROMETHANE	2.4	J	1.4	MDL	5.8	MRL	ug/m3	J	sp
m,p-Xylene	4.8	J	1.5	MDL	12	MRL	ug/m3	J	sp
METHYLENE CHLORIDE	1.6	J	0.88	MDL	4.9	MRL	ug/m3	J	sp
O-XYLENE	2.2	J	0.82	MDL	6.1	MRL	ug/m3	J	sp
TRICHLOROETHENE	4.1	J	2.0	MDL	7.5	MRL	ug/m3	J	sp

Sample ID: **VER-01D-C-20180205-EFFLUE** ***Collected:*** **2/5/2018 6:30:00 PM** ***Analysis Type:*** **RES** ***Dilution:*** **1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
ACETONE	1.2	J	0.42	MDL	12	MRL	ug/m3	J	sp
CARBON DISULFIDE	1.2	J	0.24	MDL	2.5	MRL	ug/m3	J	sp

Sample ID: **VER-01D-C-20180206-EFFLUE** ***Collected:*** **2/6/2018 10:30:00 AM** ***Analysis Type:*** **RES** ***Dilution:*** **1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
1,2,4-TRIMETHYLBENZENE	1.5	J	0.80	MDL	3.9	MRL	ug/m3	J	sp
1,3,5-TRIMETHYLBENZENE	0.73	J	0.61	MDL	2.0	MRL	ug/m3	J	sp
2-HEXANONE	0.57	J	0.36	MDL	1.6	MRL	ug/m3	J	sp
4-ETHYLTOLUENE	1.2	J	0.92	MDL	2.0	MRL	ug/m3	J	sp
4-METHYL-2-PENTANONE (MIBK)	0.67	J	0.55	MDL	1.6	MRL	ug/m3	J	sp
BENZENE	0.49	J	0.25	MDL	1.3	MRL	ug/m3	J	sp
ETHYLBENZENE	1.2	J	0.27	MDL	1.7	MRL	ug/m3	J	sp

* denotes a non-reportable result

Project Name and Number: M16 - VER Treatability Study 117-7502018-M16

Data Qualifier Summary

Lab Reporting Batch ID: 320-35962-1 **Laboratory: TA SAC**

EDD Filename: 320-35962-1 **eQAPP Name: TetraTechInc_NERT_02282018**

Method Category: **VOA**

Method: **TO-15_ugm3** ***Matrix:*** **AIR**

Sample ID: **VER-01D-C-20180206-EFFLUE** ***Collected:*** **2/6/2018 10:30:00 AM** ***Analysis Type:*** **RES** ***Dilution:*** **1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
METHYLENE CHLORIDE	0.33	J	0.25	MDL	1.4	MRL	ug/m3	J	sp
TETRACHLOROETHENE	0.38	J	0.35	MDL	2.7	MRL	ug/m3	J	sp

Sample ID: **VER-01D-C-20180207-EFFLUE** ***Collected:*** **2/7/2018 10:10:00 AM** ***Analysis Type:*** **RES** ***Dilution:*** **1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
2-BUTANONE (MEK)	1.7	J	0.59	MDL	2.4	MRL	ug/m3	J	sp
ACETONE	9.2	J	0.42	MDL	12	MRL	ug/m3	J	sp
BENZENE	0.42	J	0.25	MDL	1.3	MRL	ug/m3	J	sp
CARBON DISULFIDE	0.31	J	0.24	MDL	2.5	MRL	ug/m3	J	sp
CHLOROMETHANE	1.6	J	0.41	MDL	1.7	MRL	ug/m3	J	sp
m,p-Xylene	1.8	J	0.43	MDL	3.5	MRL	ug/m3	J	sp
METHYLENE CHLORIDE	0.36	J	0.25	MDL	1.4	MRL	ug/m3	J	sp
O-XYLENE	0.69	J	0.23	MDL	1.7	MRL	ug/m3	J	sp
TOLUENE	1.2	J	0.19	MDL	1.5	MRL	ug/m3	J	sp

Sample ID: **VER-01D-C-20180208-EFFLUE** ***Collected:*** **2/8/2018 10:45:00 AM** ***Analysis Type:*** **RES** ***Dilution:*** **1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
CARBON DISULFIDE	0.86	J	0.24	MDL	2.5	MRL	ug/m3	J	sp
CHLOROMETHANE	1.4	J	0.41	MDL	1.7	MRL	ug/m3	J	sp
METHYLENE CHLORIDE	0.35	J	0.25	MDL	1.4	MRL	ug/m3	J	sp

Sample ID: **VER-01D-C-24-AIR** ***Collected:*** **2/6/2018 3:30:00 PM** ***Analysis Type:*** **RES** ***Dilution:*** **1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
1,2,4-TRIMETHYLBENZENE	2.0	J	0.80	MDL	3.9	MRL	ug/m3	J	sp
1,3,5-TRIMETHYLBENZENE	0.70	J	0.61	MDL	2.0	MRL	ug/m3	J	sp
2-BUTANONE (MEK)	2.3	J	0.59	MDL	2.4	MRL	ug/m3	J	sp
BENZENE	0.54	J	0.25	MDL	1.3	MRL	ug/m3	J	sp
CARBON DISULFIDE	0.52	J	0.24	MDL	2.5	MRL	ug/m3	J	sp
CHLOROMETHANE	1.5	J	0.41	MDL	1.7	MRL	ug/m3	J	sp
DICHLORODIFLUOROMETHANE	1.3	J	0.72	MDL	2.0	MRL	ug/m3	J	sp
m,p-Xylene	2.4	J	0.43	MDL	3.5	MRL	ug/m3	J	sp
METHYLENE CHLORIDE	0.58	J	0.25	MDL	1.4	MRL	ug/m3	J	sp

* denotes a non-reportable result

Project Name and Number: M16 - VER Treatability Study 117-7502018-M16

Data Qualifier Summary

Lab Reporting Batch ID: 320-35962-1 **Laboratory: TA SAC**

EDD Filename: 320-35962-1 **eQAPP Name: TetraTechInc_NERT_02282018**

Method Category: **VOA**

Method: **TO-15_ugm3** ***Matrix:*** **AIR**

Sample ID: **VER-01D-C-24-AIR** ***Collected:*** **2/6/2018 3:30:00 PM** ***Analysis Type:*** **RES** ***Dilution:*** **1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
O-XYLENE	1.1	J	0.23	MDL	1.7	MRL	ug/m3	J	sp
TETRACHLOROETHENE	0.84	J	0.35	MDL	2.7	MRL	ug/m3	J	sp
TOLUENE	1.4	J	0.19	MDL	1.5	MRL	ug/m3	J	sp
TRICHLOROFLUOROMETHANE	1.2	J	1.1	MDL	2.2	MRL	ug/m3	J	sp

Sample ID: **VER-01D-C-36-AIR** ***Collected:*** **2/7/2018 3:30:00 AM** ***Analysis Type:*** **RES** ***Dilution:*** **1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
BENZENE	0.64	J	0.25	MDL	1.3	MRL	ug/m3	J	sp
CARBON DISULFIDE	0.76	J	0.24	MDL	2.5	MRL	ug/m3	J	sp
CHLOROFORM	0.52	J	0.46	MDL	1.5	MRL	ug/m3	J	sp
CHLOROMETHANE	1.3	J	0.41	MDL	1.7	MRL	ug/m3	J	sp
DICHLORODIFLUOROMETHANE	1.4	J	0.72	MDL	2.0	MRL	ug/m3	J	sp
METHYLENE CHLORIDE	0.75	J	0.25	MDL	1.4	MRL	ug/m3	J	sp
TETRACHLOROETHENE	0.87	J	0.35	MDL	2.7	MRL	ug/m3	J	sp
TOLUENE	0.78	J	0.19	MDL	1.5	MRL	ug/m3	J	sp
TRICHLOROETHENE	0.69	J	0.56	MDL	2.1	MRL	ug/m3	J	sp
TRICHLOROFLUOROMETHANE	1.2	J	1.1	MDL	2.2	MRL	ug/m3	J	sp

Sample ID: **VER-01D-C-48-AIR** ***Collected:*** **2/7/2018 3:30:00 PM** ***Analysis Type:*** **RES** ***Dilution:*** **3**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
2-HEXANONE	1.6	J	1.1	MDL	4.9	MRL	ug/m3	J	sp
4-ETHYLTOLUENE	3.8	J	2.8	MDL	5.9	MRL	ug/m3	J	sp
CARBON DISULFIDE	2.7	J	0.73	MDL	7.5	MRL	ug/m3	J	sp
CHLOROMETHANE	1.8	J	1.2	MDL	5.0	MRL	ug/m3	J	sp
ETHYLBENZENE	2.3	J	0.82	MDL	5.2	MRL	ug/m3	J	sp
METHYLENE CHLORIDE	0.89	J	0.75	MDL	4.2	MRL	ug/m3	J	sp
STYRENE	2.5	J	0.75	MDL	5.1	MRL	ug/m3	J	sp
TRICHLOROETHENE	3.8	J	1.7	MDL	6.4	MRL	ug/m3	J	sp

Sample ID: **VER-01D-C-60-AIR** ***Collected:*** **2/8/2018 3:30:00 AM** ***Analysis Type:*** **RES** ***Dilution:*** **1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
1,2,4-TRIMETHYLBENZENE	3.6	J	0.80	MDL	3.9	MRL	ug/m3	J	sp

* denotes a non-reportable result

Project Name and Number: M16 - VER Treatability Study 117-7502018-M16

Data Qualifier Summary

Lab Reporting Batch ID: 320-35962-1 **Laboratory: TA SAC**

EDD Filename: 320-35962-1 **eQAPP Name: TetraTechInc_NERT_02282018**

Method Category: **VOA**

Method: **TO-15_ugm3** ***Matrix:*** **AIR**

Sample ID: **VER-01D-C-60-AIR** ***Collected:*** **2/8/2018 3:30:00 AM** ***Analysis Type:*** **RES** ***Dilution:*** **1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
1,3,5-TRIMETHYLBENZENE	1.2	J	0.61	MDL	2.0	MRL	ug/m3	J	sp
2-HEXANONE	0.79	J	0.36	MDL	1.6	MRL	ug/m3	J	sp
4-ETHYLTOLUENE	1.1	J	0.92	MDL	2.0	MRL	ug/m3	J	sp
4-METHYL-2-PENTANONE (MIBK)	0.71	J	0.55	MDL	1.6	MRL	ug/m3	J	sp
CARBON DISULFIDE	0.59	J	0.24	MDL	2.5	MRL	ug/m3	J	sp
CARBON TETRACHLORIDE	0.72	J	0.40	MDL	5.0	MRL	ug/m3	J	sp
DICHLORODIFLUOROMETHANE	1.3	J	0.72	MDL	2.0	MRL	ug/m3	J	sp
ETHYLBENZENE	0.64	J	0.27	MDL	1.7	MRL	ug/m3	J	sp
METHYLENE CHLORIDE	1.0	J	0.25	MDL	1.4	MRL	ug/m3	J	sp
STYRENE	0.75	J	0.25	MDL	1.7	MRL	ug/m3	J	sp
TRICHLOROFLUOROMETHANE	1.5	J	1.1	MDL	2.2	MRL	ug/m3	J	sp

Sample ID: **VER-01D-C-72-AIR** ***Collected:*** **2/8/2018 3:30:00 PM** ***Analysis Type:*** **RES** ***Dilution:*** **1.62**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
1,2,4-TRIMETHYLBENZENE	5.5	J	1.3	MDL	6.4	MRL	ug/m3	J	sp
1,3,5-TRIMETHYLBENZENE	2.6	J	1.0	MDL	3.2	MRL	ug/m3	J	sp
2-HEXANONE	1.4	J	0.58	MDL	2.7	MRL	ug/m3	J	sp
4-ETHYLTOLUENE	1.6	J	1.5	MDL	3.2	MRL	ug/m3	J	sp
4-METHYL-2-PENTANONE (MIBK)	1.8	J	0.90	MDL	2.7	MRL	ug/m3	J	sp
CARBON DISULFIDE	1.7	J	0.39	MDL	4.0	MRL	ug/m3	J	sp
CHLOROMETHANE	1.9	J	0.66	MDL	2.7	MRL	ug/m3	J	sp
DICHLORODIFLUOROMETHANE	1.3	J	1.2	MDL	3.2	MRL	ug/m3	J	sp
ETHYLBENZENE	1.7	J	0.44	MDL	2.8	MRL	ug/m3	J	sp
METHYLENE CHLORIDE	1.2	J	0.41	MDL	2.3	MRL	ug/m3	J	sp
STYRENE	2.0	J	0.41	MDL	2.8	MRL	ug/m3	J	sp

Sample ID: **VER-01D-C-84-AIR** ***Collected:*** **2/9/2018 3:30:00 AM** ***Analysis Type:*** **RES** ***Dilution:*** **1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
CARBON DISULFIDE	0.33	J	0.24	MDL	2.5	MRL	ug/m3	J	sp
DICHLORODIFLUOROMETHANE	1.3	J	0.72	MDL	2.0	MRL	ug/m3	J	sp
METHYLENE CHLORIDE	0.84	J	0.25	MDL	1.4	MRL	ug/m3	J	sp

* denotes a non-reportable result

Project Name and Number: M16 - VER Treatability Study 117-7502018-M16

Data Qualifier Summary

Lab Reporting Batch ID: 320-35962-1 **Laboratory: TA SAC**

EDD Filename: 320-35962-1 **eQAPP Name: TetraTechInc_NERT_02282018**

Method Category: **VOA**

Method: **TO-15_ugm3** ***Matrix:*** **AIR**

Sample ID: **VER-01D-C-BL-AIR** ***Collected:*** **2/5/2018 4:30:00 PM** ***Analysis Type:*** **RES** ***Dilution:*** **13.1**

Analyte	*Lab Result*	*Lab Qual*	*DL*	*DL Type*	*RL*	*RL Type*	*Units*	*Data Review Qual*	*Reason Code*
1,2,4-TRIMETHYLBENZENE	13	J	10	MDL	52	MRL	ug/m3	J	sp
2-HEXANONE	6.2	J	4.7	MDL	21	MRL	ug/m3	J	sp
CARBON DISULFIDE	4.3	J	3.2	MDL	33	MRL	ug/m3	J	sp
CHLOROMETHANE	7.8	J	5.3	MDL	22	MRL	ug/m3	J	sp
m,p-Xylene	9.3	J	5.7	MDL	46	MRL	ug/m3	J	sp
O-XYLENE	4.7	J	3.1	MDL	23	MRL	ug/m3	J	sp
STYRENE	3.3	J	3.3	MDL	22	MRL	ug/m3	J	sp
TETRACHLOROETHENE	12	J	4.5	MDL	36	MRL	ug/m3	J	sp
TOLUENE	7.2	J	2.5	MDL	20	MRL	ug/m3	J	sp
TRICHLOROETHENE	9.0	J	7.4	MDL	28	MRL	ug/m3	J	sp

* denotes a non-reportable result

Project Name and Number: M16 - VER Treatability Study 117-7502018-M16

Data Qualifier Summary

Lab Reporting Batch ID: 320-35962-1

Laboratory: TA SAC

EDD Filename: 320-35962-1

eQAPP Name: TetraTechInc_NERT_02282018

Reason Code Legend

Reason Code	*Description*
sp	Reporting Limit Trace Value

* denotes a non-reportable result

Project Name and Number: M16 - VER Treatability Study 117-7502018-M16

Data Qualifier Summary

Lab Reporting Batch ID: 440-193156-1 **Laboratory: TA IRV**

EDD Filename: 440-193156-1 **eQAPP Name: TetraTechInc_NERT_12142017**

Method Category: **GENCHEM**

Method: **300.1B_Leach** ***Matrix:*** **SO**

Sample ID: **VMW-01D-10.0-20170928** ***Collected:*** **9/28/2017 7:25:00 AM** ***Analysis Type:*** **RE2/DIS** ***Dilution:*** **1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
Chlorate	100	J	55	MDL	220	MRL	ug/Kg	J	sp

Sample ID: **VMW-01D-30.0-20170928** ***Collected:*** **9/28/2017 8:15:00 AM** ***Analysis Type:*** **RE2/DIS** ***Dilution:*** **500**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
Chlorate	660000		31000	MDL	130000	MRL	ug/Kg	J-	s

Sample ID: **VMW-01D-40.0-20170928** ***Collected:*** **9/28/2017 9:30:00 AM** ***Analysis Type:*** **RE2/DIS** ***Dilution:*** **500**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
Chlorate	2700000		41000	MDL	160000	MRL	ug/Kg	J-	s

Sample ID: **VMW-01D-5.0-20170928** ***Collected:*** **9/28/2017 7:15:00 AM** ***Analysis Type:*** **RE2/DIS** ***Dilution:*** **1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
Chlorate	1500	F1	54	MDL	220	MRL	ug/Kg	J-	m

Sample ID: **VMW-01D-50.0-20170928** ***Collected:*** **9/28/2017 9:50:00 AM** ***Analysis Type:*** **RE2/DIS** ***Dilution:*** **1000**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
Chlorate	3600000		93000	MDL	370000	MRL	ug/Kg	J-	s

Sample ID: **VMW-01D-60.0-20170928** ***Collected:*** **9/28/2017 10:00:00 AM** ***Analysis Type:*** **RE2/DIS** ***Dilution:*** **1000**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
Chlorate	1000000		69000	MDL	270000	MRL	ug/Kg	J-	s

Sample ID: **VMW-01D-70.0-20170928** ***Collected:*** **9/28/2017 10:30:00 AM** ***Analysis Type:*** **RE2/DIS** ***Dilution:*** **10**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
Chlorate	40000		820	MDL	3300	MRL	ug/Kg	J-	m

* denotes a non-reportable result

Project Name and Number: M16 - VER Treatability Study 117-7502018-M16

Data Qualifier Summary

Lab Reporting Batch ID: 440-193156-1 **Laboratory: TA IRV**

EDD Filename: 440-193156-1 **eQAPP Name: TetraTechInc_NERT_12142017**

Method Category: GENCHEM

Method: 314.0 **Matrix: SO**

Sample ID: VMW-01D-70.0-20170928 **Collected:** 9/28/2017 10:30:00 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	7.1		0.78	MDL	3.3	MRL	mg/Kg	J+	m

Method Category: METALS

Method: 7199 **Matrix: SO**

Sample ID: VMW-01D-25.0-20170928 **Collected:** 9/28/2017 8:00:00 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	0.26	J	0.18	MDL	0.36	MRL	mg/Kg	J	sp

Method Category: VOA

Method: 8260B LL **Matrix: AQ**

Sample ID: VMW-01D-90.0-20170928-EB **Collected:** 9/28/2017 12:45:00 PM **Analysis Type:** RES **Dilution:** 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
ACETONE	15	J	10	MDL	20	MRL	ug/L	J	sp
Tert-Butyl Alcohol (TBA)	9.7	J	5.0	MDL	10	MRL	ug/L	J	sp

* denotes a non-reportable result

Project Name and Number: M16 - VER Treatability Study 117-7502018-M16

Data Qualifier Summary

Lab Reporting Batch ID: 440-193156-1

Laboratory: TA IRV

EDD Filename: 440-193156-1

eQAPP Name: TetraTechInc_NERT_12142017

Reason Code Legend

Reason Code	*Description*
m	Matrix Spike Lower Estimation
m	Matrix Spike Upper Estimation
s	Surrogate/Tracer Recovery Lower Rejection
sp	Reporting Limit Trace Value

* denotes a non-reportable result

Project Name and Number: M16 - VER Treatability Study 117-7502018-M16

Data Qualifier Summary

Lab Reporting Batch ID: 440-193224-1 **Laboratory: TA IRV**

EDD Filename: 440-193224-1 **eQAPP Name: TetraTechInc_NERT_12142017**

Method Category: **METALS**

Method: **6010B-Cr** ***Matrix:*** **AQ**

Sample ID: **VMW-01D-110-0-20170929-EB** ***Collected:*** **9/29/2017 8:00:00 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	0.0044	J	0.0025	MDL	0.0050	MRL	mg/L	J	sp

Method Category: **METALS**

Method: **7199** ***Matrix:*** **AQ**

Sample ID: **VMW-01D-110-0-20170929-EB** ***Collected:*** **9/29/2017 8:00:00 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	1.0	J	0.25	MDL	2.0	MRL	ug/L	J	sp

Method Category: **METALS**

Method: **7199** ***Matrix:*** **SO**

Sample ID: **VMW-01D-110.0-20170929** ***Collected:*** **9/29/2017 7:30:00 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	0.31	J	0.24	MDL	0.48	MRL	mg/Kg	J	sp, fd

Sample ID: **VMW-01D-110.0-20170929-FD** ***Collected:*** **9/29/2017 7:30:00 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	0.24	U	0.24	MDL	0.48	MRL	mg/Kg	UJ	fd

Method Category: **VOA**

Method: **8260B LL** ***Matrix:*** **AQ**

Sample ID: **VMW-01D-110-0-20170929-EB** ***Collected:*** **9/29/2017 8:00:00 AM** ***Analysis Type:*** **RES** ***Dilution:*** **1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
2-BUTANONE (MEK)	3.9	J	2.5	MDL	5.0	MRL	ug/L	J	sp
ACETONE	13	J	10	MDL	20	MRL	ug/L	J	sp

* denotes a non-reportable result

Project Name and Number: M16 - VER Treatability Study 117-7502018-M16

Data Qualifier Summary

Lab Reporting Batch ID: 440-193224-1

Laboratory: TA IRV

EDD Filename: 440-193224-1

eQAPP Name: TetraTechInc_NERT_12142017

Reason Code Legend

Reason Code	*Description*
fd	Field Duplicate Precision
sp	Reporting Limit Trace Value

* denotes a non-reportable result

Project Name and Number: M16 - VER Treatability Study 117-7502018-M16

Data Qualifier Summary

Lab Reporting Batch ID: 440-194571-1 **Laboratory: TA IRV**

EDD Filename: 440-194571-1 **eQAPP Name: TetraTechInc_NERT_12142017**

Method Category: **GENCHEM**

Method: **300.1B_Leach** ***Matrix:*** **SO**

Sample ID: **VMW-02D-100.0-20171018** ***Collected:*** **10/18/2017 12:50:00 PM** ***Analysis Type:*** **RE2/DIS** ***Dilution:*** **1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
Chlorate	150	J	66	MDL	260	MRL	ug/Kg	J	sp

Sample ID: **VMW-02D-15.0-20171018** ***Collected:*** **10/18/2017 8:25:00 AM** ***Analysis Type:*** **RE2/DIS** ***Dilution:*** **1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
Chlorate	190	J	55	MDL	220	MRL	ug/Kg	J	sp

Sample ID: **VMW-02D-30.0-20171018** ***Collected:*** **10/18/2017 8:50:00 AM** ***Analysis Type:*** **RE2/DIS** ***Dilution:*** **500**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
Chlorate	860000		30000	MDL	120000	MRL	ug/Kg	J-	s

Sample ID: **VMW-02D-40.0-20171018** ***Collected:*** **10/18/2017 10:05:00 AM** ***Analysis Type:*** **RE2/DIS** ***Dilution:*** **1000**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
Chlorate	1900000		78000	MDL	310000	MRL	ug/Kg	J-	s

Sample ID: **VMW-02D-5.0-20171018** ***Collected:*** **10/18/2017 8:05:00 AM** ***Analysis Type:*** **RE2/DIS** ***Dilution:*** **1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
Chlorate	68	J	54	MDL	210	MRL	ug/Kg	J	sp

Sample ID: **VMW-02D-5.0-20171018-FD** ***Collected:*** **10/18/2017 8:05:00 AM** ***Analysis Type:*** **RE2/DIS** ***Dilution:*** **1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
Chlorate	87	J	54	MDL	220	MRL	ug/Kg	J	sp

Sample ID: **VMW-02D-50.0-20171018** ***Collected:*** **10/18/2017 10:20:00 AM** ***Analysis Type:*** **RE2/DIS** ***Dilution:*** **500**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
Chlorate	1200000		47000	MDL	190000	MRL	ug/Kg	J-	s

* denotes a non-reportable result

Project Name and Number: M16 - VER Treatability Study 117-7502018-M16

Data Qualifier Summary

Lab Reporting Batch ID: 440-194571-1 **Laboratory: TA IRV**

EDD Filename: 440-194571-1 **eQAPP Name: TetraTechInc_NERT_12142017**

Method Category: GENCHEM

Method: 314.0 **Matrix: SO**

Sample ID: VMW-02D-100.0-20171018 **Collected:** 10/18/2017 12:50:00 PM **Analysis Type:** RES/DIS **Dilution:** 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
PERCHLORATE	0.032	J	0.012	MDL	0.053	MRL	mg/Kg	J	sp

Sample ID: VMW-02D-110.0-20171018 **Collected:** 10/18/2017 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
PERCHLORATE	0.027	J	0.016	MDL	0.069	MRL	mg/Kg	J	sp

Sample ID: VMW-02D-20.0-20171018 **Collected:** 10/18/2017 8:30:00 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	26	F2	0.51	MDL	2.2	MRL	mg/Kg	J	m, m, ld

Sample ID: VMW-02D-5.0-20171018 **Collected:** 10/18/2017 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
PERCHLORATE	0.31		0.010	MDL	0.043	MRL	mg/Kg	J	fd

Sample ID: VMW-02D-5.0-20171018-FD **Collected:** 10/18/2017 8:05:00 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	1.8		0.051	MDL	0.22	MRL	mg/Kg	J	fd

Method Category: METALS

Method: 6010B-Cr **Matrix: AQ**

Sample ID: VMW-02D-35.0-20171018 **Collected:** 10/18/2017 9:50:00 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	19		0.013	MDL	0.025	MRL	mg/L	J-	m, m

* denotes a non-reportable result

Project Name and Number: M16 - VER Treatability Study 117-7502018-M16

Data Qualifier Summary

Lab Reporting Batch ID: 440-194571-1 **Laboratory: TA IRV**

EDD Filename: 440-194571-1 **eQAPP Name: TetraTechInc_NERT_12142017**

Method Category: METALS

Method: 7199 **Matrix:** SO

Sample ID: VMW-02D-20.0-20171018 **Collected:** 10/18/2017 8:30:00 AM **Analysis Type:** RES/TOT **Dilution:** 3

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
Chromium, hexavalent	0.16	U F1	0.16	MDL	0.33	MRL	mg/Kg	UJ	m

Method Category: VOA

Method: 8260B LL **Matrix:** AQ

Sample ID: VMW-02D-35.0-20171018 **Collected:** 10/18/2017 9:50:00 AM **Analysis Type:** RES **Dilution:** 10

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
1,2-DICHLOROBENZENE	3.2	J	2.5	MDL	5.0	MRL	ug/L	J	sp

* denotes a non-reportable result

Project Name and Number: M16 - VER Treatability Study 117-7502018-M16

Data Qualifier Summary

Lab Reporting Batch ID: 440-194571-1

Laboratory: TA IRV

EDD Filename: 440-194571-1

eQAPP Name: TetraTechInc_NERT_12142017

Reason Code Legend

Reason Code	*Description*
fd	Field Duplicate Precision
ld	Matrix Spike Precision
m	Matrix Spike Lower Estimation
m	Matrix Spike Lower Rejection
m	Matrix Spike Upper Estimation
s	Surrogate/Tracer Recovery Lower Rejection
sp	Reporting Limit Trace Value

* denotes a non-reportable result

Project Name and Number: M16 - VER Treatability Study 117-7502018-M16

Data Qualifier Summary

Lab Reporting Batch ID: 440-194623-1 **Laboratory: TA IRV**

EDD Filename: 440-194623-1 **eQAPP Name: TetraTechInc_NERT_12142017**

Method Category: GENCHEM

Method: 300.1B_Leach **Matrix:** SO

Sample ID: VER-01I-10.0-20171019 **Collected:** 10/19/2017 8:35:00 AM **Analysis Type:** RES/DIS2 **Dilution:** 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
Chlorate	69	J	55	MDL	220	MRL	ug/Kg	J	sp

Sample ID: VER-01I-30.0-20171019 **Collected:** 10/19/2017 9:10:00 AM **Analysis Type:** RES/DIS2 **Dilution:** 500

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
Chlorate	1800000		40000	MDL	160000	MRL	ug/Kg	J-	s

Sample ID: VER-01I-40.0-20171019 **Collected:** 10/19/2017 10:15:00 AM **Analysis Type:** RES/DIS2 **Dilution:** 500

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
Chlorate	980000		36000	MDL	140000	MRL	ug/Kg	J-	s

Sample ID: VER-01I-50.0-20171019 **Collected:** 10/19/2017 10:30:00 AM **Analysis Type:** RES/DIS2 **Dilution:** 500

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
Chlorate	1800000		33000	MDL	130000	MRL	ug/Kg	J-	s

Method Category: GENCHEM

Method: 314.0 **Matrix:** SO

Sample ID: VER-01I-10.0-20171019 **Collected:** 10/19/2017 8:35:00 AM **Analysis Type:** RES/DIS **Dilution:** 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
PERCHLORATE	0.21	F1	0.011	MDL	0.044	MRL	mg/Kg	J-	m

Sample ID: VER-01I-5.0-20171019 **Collected:** 10/19/2017 8:25:00 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	37		0.51	MDL	2.1	MRL	mg/Kg	J	fd

Sample ID: VER-01I-5.0-20171019-FD **Collected:** 10/19/2017 8:25:00 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	21		0.51	MDL	2.1	MRL	mg/Kg	J	fd

* denotes a non-reportable result

Project Name and Number: M16 - VER Treatability Study 117-7502018-M16

Data Qualifier Summary

Lab Reporting Batch ID: 440-194623-1 **Laboratory: TA IRV**

EDD Filename: 440-194623-1 **eQAPP Name: TetraTechInc_NERT_12142017**

Method Category: GENCHEM

Method: 314.0 **Matrix: SO**

Sample ID: VER-01I-70.0-20171019 **Collected:** 10/19/2017 11:30:00 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	5.6		0.79	MDL	3.3	MRL	mg/Kg	J	fd

Sample ID: VER-01I-70.0-20171019-FD **Collected:** 10/19/2017 11:30:00 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	13		0.77	MDL	3.3	MRL	mg/Kg	J	fd

Method Category: METALS

Method: 7199 **Matrix: SO**

Sample ID: VER-01I-25.0-20171019 **Collected:** 10/19/2017 9:00:00 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	0.19	J	0.16	MDL	0.33	MRL	mg/Kg	J	sp

Sample ID: VER-01I-5.0-20171019 **Collected:** 10/19/2017 8:25:00 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	0.16	U	0.16	MDL	0.32	MRL	mg/Kg	UJ	fd

Sample ID: VER-01I-5.0-20171019-FD **Collected:** 10/19/2017 8:25:00 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	0.30	J	0.16	MDL	0.32	MRL	mg/Kg	J	sp, fd

Method Category: VOA

Method: 8260B LL **Matrix: AQ**

Sample ID: VER-01I-35.0-20171019 **Collected:** 10/19/2017 10:05:00 AM **Analysis Type:** RES **Dilution:** 10

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
TRICHLOROETHENE	3.3	J	2.5	MDL	5.0	MRL	ug/L	J	sp

* denotes a non-reportable result

Project Name and Number: M16 - VER Treatability Study 117-7502018-M16

Data Qualifier Summary

Lab Reporting Batch ID: 440-194623-1

Laboratory: TA IRV

EDD Filename: 440-194623-1

eQAPP Name: TetraTechInc_NERT_12142017

Reason Code Legend

Reason Code	*Description*
fd	Field Duplicate Precision
m	Matrix Spike Lower Estimation
s	Surrogate/Tracer Recovery Lower Rejection
sp	Reporting Limit Trace Value

* denotes a non-reportable result

Project Name and Number: M16 - VER Treatability Study 117-7502018-M16

Data Qualifier Summary

Lab Reporting Batch ID: 440-194641-1 **Laboratory: TA IRV**

EDD Filename: 440-194641-1 **eQAPP Name: TetraTechInc_NERT_12142017**

Method Category: **GENCHEM**

Method: **300.1B_Leach** ***Matrix:*** **SO**

Sample ID: **VER-01I-60.0-20171019** ***Collected:*** **10/19/2017 10:55:00 AM** ***Analysis Type:*** **RES/DIS2** ***Dilution:*** **50**

Analyte	*Lab Result*	*Lab Qual*	*DL*	*DL Type*	*RL*	*RL Type*	*Units*	*Data Review Qual*	*Reason Code*
Chlorate	77000		3500	MDL	14000	MRL	ug/Kg	J+	m

* denotes a non-reportable result

Project Name and Number: M16 - VER Treatability Study 117-7502018-M16

Data Qualifier Summary

Lab Reporting Batch ID: 440-194641-1

Laboratory: TA IRV

EDD Filename: 440-194641-1

eQAPP Name: TetraTechInc_NERT_12142017

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: M16 - VER Treatability Study 117-7502018-M16

Data Qualifier Summary

Lab Reporting Batch ID: 440-194754-1 **Laboratory: TA IRV**

EDD Filename: 440-194754-1 **eQAPP Name: TetraTechInc_NERT_12142017**

Method Category: GENCHEM

Method: 300.1B_Leach **Matrix:** SO

Sample ID: VER-01D-20.0-20171020 **Collected:** 10/20/2017 7:55:00 AM **Analysis Type:** RE2/DIS **Dilution:** 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
Chlorate	960	F1	56	MDL	230	MRL	ug/Kg	J+	m

Sample ID: VER-01D-30.0-20171020 **Collected:** 10/20/2017 8:15:00 AM **Analysis Type:** RE2/DIS **Dilution:** 500

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
Chlorate	1700000		39000	MDL	160000	MRL	ug/Kg	J-	s

Sample ID: VER-01D-40.0-20171020 **Collected:** 10/20/2017 9:50:00 AM **Analysis Type:** RE2/DIS **Dilution:** 500

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
Chlorate	2300000		42000	MDL	170000	MRL	ug/Kg	J-	s

Sample ID: VER-01D-50.0-20171020 **Collected:** 10/20/2017 10:15:00 AM **Analysis Type:** RE2/DIS **Dilution:** 1000

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
Chlorate	2400000		100000	MDL	410000	MRL	ug/Kg	J-	s

Sample ID: VER-01D-60.0-20171020 **Collected:** 10/20/2017 10:35:00 AM **Analysis Type:** RE2/DIS **Dilution:** 1000

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
Chlorate	1100000		63000	MDL	250000	MRL	ug/Kg	J-	s

Method Category: GENCHEM

Method: 314.0 **Matrix:** SO

Sample ID: VER-01D-110.0-20171020 **Collected:** 10/20/2017 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
PERCHLORATE	0.15		0.016	MDL	0.068	MRL	mg/Kg	J	fd

Sample ID: VER-01D-110.0-20171020-FD **Collected:** 10/20/2017 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
PERCHLORATE	0.22		0.018	MDL	0.075	MRL	mg/Kg	J	fd

* denotes a non-reportable result

Project Name and Number: M16 - VER Treatability Study 117-7502018-M16

Data Qualifier Summary

Lab Reporting Batch ID: 440-194754-1 **Laboratory: TA IRV**

EDD Filename: 440-194754-1 **eQAPP Name: TetraTechInc_NERT_12142017**

Method Category: GENCHEM
Method: 314.0 **Matrix:** SO

Sample ID: VER-01D-20.0-20171020 **Collected:** 10/20/2017 7:55:00 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	24		0.54	MDL	2.3	MRL	mg/Kg	J+	m

Method Category: METALS
Method: 6010B-Cr **Matrix:** SO

Sample ID: VER-01D-10.0-20171020 **Collected:** 10/20/2017 7:40:00 AM **Analysis Type:** RES/TOT **Dilution:** 5

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
CHROMIUM	35		0.56	MDL	1.1	MRL	mg/Kg	J	fd

Sample ID: VER-01D-10.0-20171020-FD **Collected:** 10/20/2017 7:40:00 AM **Analysis Type:** RES/TOT **Dilution:** 5

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
CHROMIUM	21		0.54	MDL	1.1	MRL	mg/Kg	J	fd

Sample ID: VER-01D-110.0-20171020 **Collected:** 10/20/2017 1:00:00 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	52		0.85	MDL	1.7	MRL	mg/Kg	J	fd

Sample ID: VER-01D-110.0-20171020-FD **Collected:** 10/20/2017 1:00:00 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	110		0.93	MDL	1.9	MRL	mg/Kg	J	fd

* denotes a non-reportable result

Project Name and Number: M16 - VER Treatability Study 117-7502018-M16

Data Qualifier Summary

Lab Reporting Batch ID: 440-194754-1

Laboratory: TA IRV

EDD Filename: 440-194754-1

eQAPP Name: TetraTechInc_NERT_12142017

Reason Code Legend

Reason Code	*Description*
fd	Field Duplicate Precision
m	Matrix Spike Upper Estimation
s	Surrogate/Tracer Recovery Lower Rejection

* denotes a non-reportable result

Project Name and Number: M16 - VER Treatability Study 117-7502018-M16

Data Qualifier Summary

Lab Reporting Batch ID: 440-194764-1

Laboratory: TA IRV

EDD Filename: 440-194764-1

eQAPP Name: TetraTechInc_NERT_12142017

No Data Review Qualifiers Applied.

Data Qualifier Summary

Lab Reporting Batch ID: 440-195909-1 **Laboratory: TA IRV**

EDD Filename: 440-195909-1 **eQAPP Name: TetraTechInc_NERT_12142017**

Method Category: **VOA**

Method: **8260B LL** ***Matrix:*** **AQ**

Sample ID: **VER-01D-20171107-EB** ***Collected:*** **11/7/2017 1:20:00 PM** ***Analysis Type:*** **RES** ***Dilution:*** **1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
Tert-Butyl Alcohol (TBA)	9.8	J ID	5.0	MDL	10	MRL	ug/L	J	sp
ACETONE	17	J	10	MDL	20	MRL	ug/L	J	sp

Sample ID: **VMW-01I-20171107** ***Collected:*** **11/7/2017 11:40:00 AM** ***Analysis Type:*** **RES** ***Dilution:*** **1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
DIBROMOCHLOROMETHANE	0.31	J	0.25	MDL	0.50	MRL	ug/L	J	sp
TRICHLOROETHENE	0.43	J	0.25	MDL	0.50	MRL	ug/L	J	sp

* denotes a non-reportable result

Project Name and Number: M16 - VER Treatability Study 117-7502018-M16

Data Qualifier Summary

Lab Reporting Batch ID: 440-195909-1

Laboratory: TA IRV

EDD Filename: 440-195909-1

eQAPP Name: TetraTechInc_NERT_12142017

Reason Code Legend

Reason Code	*Description*
sp	Reporting Limit Trace Value

* denotes a non-reportable result

Project Name and Number: M16 - VER Treatability Study 117-7502018-M16

Data Qualifier Summary

Lab Reporting Batch ID: 440-196039-1 **Laboratory: TA IRV**

EDD Filename: 440-196039-1 **eQAPP Name: TetraTechInc_NERT_12142017**

Method Category: **VOA**

Method: **8260B LL** ***Matrix:*** **AQ**

Sample ID: **VMW-02D-20171108** ***Collected:*** **11/8/2017 9:55:00 AM** ***Analysis Type:*** **RES** ***Dilution:*** **1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
CHLOROFORM	0.45	J	0.25	MDL	0.50	MRL	ug/L	J	sp

Sample ID: **VMW-02I-20171108** ***Collected:*** **11/8/2017 11:30:00 AM** ***Analysis Type:*** **RES** ***Dilution:*** **1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
CARBON TETRACHLORIDE	0.31	J	0.25	MDL	0.50	MRL	ug/L	J	sp

* denotes a non-reportable result

Project Name and Number: M16 - VER Treatability Study 117-7502018-M16

Data Qualifier Summary

Lab Reporting Batch ID: 440-196039-1

Laboratory: TA IRV

EDD Filename: 440-196039-1

eQAPP Name: TetraTechInc_NERT_12142017

Reason Code Legend

Reason Code	*Description*
sp	Reporting Limit Trace Value

* denotes a non-reportable result

Project Name and Number: M16 - VER Treatability Study 117-7502018-M16

Data Qualifier Summary

Lab Reporting Batch ID: 440-200466-1 **Laboratory: TA IRV**

EDD Filename: 440-200466-1 **eQAPP Name: TetraTechInc_NERT_01312018**

Method Category: **METALS**

Method: **6010B** ***Matrix:*** **AQ**

Sample ID: **VER-01I-B-BL** ***Collected:*** **1/11/2018 3:30:00 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	8.8		0.013	MDL	0.025	MRL	mg/L	J+	m

Method Category: **VOA**

Method: **8260B LL** ***Matrix:*** **AQ**

Sample ID: **VER-01I-B-12** ***Collected:*** **1/11/2018 3:30:00 PM** ***Analysis Type:*** **RES** ***Dilution:*** **10**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
1,2-DICHLOROBENZENE	4.9	J	2.5	MDL	5.0	MRL	ug/L	J	sp

Sample ID: **VER-01I-B-BL** ***Collected:*** **1/11/2018 3:30:00 AM** ***Analysis Type:*** **RES** ***Dilution:*** **10**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
ACETONE	140	J	100	MDL	200	MRL	ug/L	J	sp

* denotes a non-reportable result

Project Name and Number: M16 - VER Treatability Study 117-7502018-M16

Data Qualifier Summary

Lab Reporting Batch ID: 440-200466-1

Laboratory: TA IRV

EDD Filename: 440-200466-1

eQAPP Name: TetraTechInc_NERT_01312018

Reason Code Legend

Reason Code	*Description*
bl	Method Blank Contamination
m	Matrix Spike Upper Estimation
sp	Reporting Limit Trace Value

* denotes a non-reportable result

Project Name and Number: M16 - VER Treatability Study 117-7502018-M16

Data Qualifier Summary

Lab Reporting Batch ID: 440-200815-1 **Laboratory: TA IRV**

EDD Filename: 440-200815-1 **eQAPP Name: TetraTechInc_NERT_01312018**

Method Category: GENCHEM
Method: 300.1B **Matrix:** AQ

Sample ID: VER-01I-B-36 **Collected:** 1/12/2018 3:30:00 PM **Analysis Type:** RES **Dilution:** 1000

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
Chlorite	10000	U	10000	MDL	20000	MRL	ug/L	R	m

Sample ID: VER-01I-B-36 **Collected:** 1/12/2018 3:30:00 PM **Analysis Type:** RES2 **Dilution:** 10000

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
Chlorate	3800000		100000	MDL	200000	MRL	ug/L	J	m, m

Method Category: GENCHEM
Method: 314.0 **Matrix:** AQ

Sample ID: VER-01I-B-36 **Collected:** 1/12/2018 3:30:00 PM **Analysis Type:** RES **Dilution:** 100000

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
PERCHLORATE	1200000		50000	MDL	100000	MRL	ug/L	J	m, m

Method Category: METALS
Method: 6010B **Matrix:** AQ

Sample ID: VER-01I-B-36 **Collected:** 1/12/2018 3:30:00 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	14		0.013	MDL	0.025	MRL	mg/L	J+	m

Method Category: METALS
Method: 7199 **Matrix:** AQ

Sample ID: VER-01I-B-36 **Collected:** 1/12/2018 3:30:00 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	13000		130	MDL	1000	MRL	ug/L	J-	m

* denotes a non-reportable result

Project Name and Number: M16 - VER Treatability Study 117-7502018-M16

Data Qualifier Summary

Lab Reporting Batch ID: 440-200815-1 **Laboratory: TA IRV**

EDD Filename: 440-200815-1 **eQAPP Name: TetraTechInc_NERT_01312018**

Method Category: **VOA**

Method: **8260B LL** ***Matrix:*** **AQ**

Sample ID: **VER-01I-B-36** ***Collected:*** **1/12/2018 3:30:00 PM** ***Analysis Type:*** **RES** ***Dilution:*** **20**

Analyte	*Lab Result*	*Lab Qual*	*DL*	*DL Type*	*RL*	*RL Type*	*Units*	*Data Review Qual*	*Reason Code*
1,2-DICHLOROBENZENE	5.6	J	5.0	MDL	10	MRL	ug/L	J	sp

* denotes a non-reportable result

Project Name and Number: M16 - VER Treatability Study 117-7502018-M16

Data Qualifier Summary

Lab Reporting Batch ID: 440-200815-1

Laboratory: TA IRV

EDD Filename: 440-200815-1

eQAPP Name: TetraTechInc_NERT_01312018

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: M16 - VER Treatability Study 117-7502018-M16

Data Qualifier Summary

Lab Reporting Batch ID: 440-200988-1 **Laboratory: TA IRV**

EDD Filename: 440-200988-1 **eQAPP Name: TetraTechInc_NERT_01312018**

Method Category: **METALS**

Method: **6010B** ***Matrix:*** **AQ**

Sample ID: **VER-01I-C-BL** ***Collected:*** **1/15/2018 3:30:00 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	8.7		0.013	MDL	0.025	MRL	mg/L	J-	m

Method Category: **VOA**

Method: **8260B LL** ***Matrix:*** **AQ**

Sample ID: **VER-01I-C-BL** ***Collected:*** **1/15/2018 3:30:00 AM** ***Analysis Type:*** **RES** ***Dilution:*** **10**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
1,2-DICHLOROBENZENE	2.8	J	2.5	MDL	5.0	MRL	ug/L	J	sp

* denotes a non-reportable result

Project Name and Number: M16 - VER Treatability Study 117-7502018-M16

Data Qualifier Summary

Lab Reporting Batch ID: 440-200988-1

Laboratory: TA IRV

EDD Filename: 440-200988-1

eQAPP Name: TetraTechInc_NERT_01312018

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: M16 - VER Treatability Study 117-7502018-M16

Data Qualifier Summary

Lab Reporting Batch ID: 440-201049-1 **Laboratory: TA IRV**

EDD Filename: 440-201049-1 **eQAPP Name: TetraTechInc_NERT_01312018**

Method Category: GENCHEM

Method: 300.1B **Matrix: AQ**

Sample ID: VER-01I-C-36 **Collected:** 1/16/2018 3:30:00 PM **Analysis Type:** RES **Dilution:** 1000

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
Chlorite	10000	U	10000	MDL	20000	MRL	ug/L	R	m

Sample ID: VER-01I-C-36 **Collected:** 1/16/2018 3:30:00 PM **Analysis Type:** RES2 **Dilution:** 10000

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
Chlorate	3300000		100000	MDL	200000	MRL	ug/L	J	m, m

Method Category: GENCHEM

Method: 314.0 **Matrix: AQ**

Sample ID: VER-01I-C-36 **Collected:** 1/16/2018 3:30:00 PM **Analysis Type:** RES **Dilution:** 100000

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
PERCHLORATE	1100000		50000	MDL	100000	MRL	ug/L	J+	m

Method Category: METALS

Method: 6010B **Matrix: AQ**

Sample ID: VER-01I-C-36 **Collected:** 1/16/2018 3:30:00 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	12		0.013	MDL	0.025	MRL	mg/L	J-	m

Method Category: METALS

Method: 7199 **Matrix: AQ**

Sample ID: VER-01I-C-36 **Collected:** 1/16/2018 3:30:00 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	13000		130	MDL	1000	MRL	ug/L	J-	m

* denotes a non-reportable result

Project Name and Number: M16 - VER Treatability Study 117-7502018-M16

Data Qualifier Summary

Lab Reporting Batch ID: 440-201049-1 **Laboratory: TA IRV**

EDD Filename: 440-201049-1 **eQAPP Name: TetraTechInc_NERT_01312018**

Method Category: **VOA**

Method: **8260B LL** ***Matrix:*** **AQ**

Sample ID: **VER-01I-C-24** ***Collected:*** **1/16/2018 3:30:00 AM** ***Analysis Type:*** **RES** ***Dilution:*** **5**

Analyte	*Lab Result*	*Lab Qual*	*DL*	*DL Type*	*RL*	*RL Type*	*Units*	*Data Review Qual*	*Reason Code*
TRICHLOROETHENE	1.3	J	1.3	MDL	2.5	MRL	ug/L	J	sp

* denotes a non-reportable result

Project Name and Number: M16 - VER Treatability Study 117-7502018-M16

Data Qualifier Summary

Lab Reporting Batch ID: 440-201049-1

Laboratory: TA IRV

EDD Filename: 440-201049-1

eQAPP Name: TetraTechInc_NERT_01312018

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: M16 - VER Treatability Study 117-7502018-M16

Data Qualifier Summary

Lab Reporting Batch ID: 440-201313-1 **Laboratory: TA IRV**

EDD Filename: 440-201313-1 **eQAPP Name: TetraTechInc_NERT_01312018**

Method Category: METALS
Method: 6010B **Matrix:** AQ

Sample ID: VER-01I-C-48 **Collected:** 1/17/2018 3:31:00 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	11		0.013	MDL	0.025	MRL	mg/L	J-	m

Method Category: METALS
Method: 7199 **Matrix:** AQ

Sample ID: VER-01I-C-60 **Collected:** 1/17/2018 3:30:00 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	13000		130	MDL	1000	MRL	ug/L	J-	m

Method Category: VOA
Method: 8260B LL **Matrix:** AQ

Sample ID: VER-01I-C-48 **Collected:** 1/17/2018 3:31:00 AM **Analysis Type:** RES **Dilution:** 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
BROMOFORM	0.82	J	0.40	MDL	1.0	MRL	ug/L	J	sp

Sample ID: VER-01I-C-60 **Collected:** 1/17/2018 3:30:00 PM **Analysis Type:** RES **Dilution:** 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
1,3-DICHLOROBENZENE	0.28	J	0.25	MDL	0.50	MRL	ug/L	J	sp
DIBROMOCHLOROMETHANE	0.34	J	0.25	MDL	0.50	MRL	ug/L	J	sp

* denotes a non-reportable result

Project Name and Number: M16 - VER Treatability Study 117-7502018-M16

Data Qualifier Summary

Lab Reporting Batch ID: 440-201313-1

Laboratory: TA IRV

EDD Filename: 440-201313-1

eQAPP Name: TetraTechInc_NERT_01312018

Reason Code Legend

Reason Code	*Description*
m	Matrix Spike Lower Estimation
sp	Reporting Limit Trace Value

* denotes a non-reportable result

Project Name and Number: M16 - VER Treatability Study 117-7502018-M16

Data Qualifier Summary

Lab Reporting Batch ID: 440-201437-1 **Laboratory: TA IRV**

EDD Filename: 440-201437-1 **eQAPP Name: TetraTechInc_NERT_01312018**

Method Category: GENCHEM
Method: 300.1B **Matrix:** AQ

Sample ID: VER-01I-C-77.5 **Collected:** 1/18/2018 9:00:00 AM **Analysis Type:** RES **Dilution:** 1000

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
Chlorite	10000	U	10000	MDL	20000	MRL	ug/L	R	m

Sample ID: VER-01I-C-77.5 **Collected:** 1/18/2018 9:00:00 AM **Analysis Type:** RES2 **Dilution:** 10000

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
Chlorate	3100000		100000	MDL	200000	MRL	ug/L	J	m, m

Method Category: GENCHEM
Method: 314.0 **Matrix:** AQ

Sample ID: VER-01I-C-77.5 **Collected:** 1/18/2018 9:00:00 AM **Analysis Type:** RES **Dilution:** 5000

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
PERCHLORATE	1200000		25000	MDL	50000	MRL	ug/L	J	m, m

Method Category: GENCHEM
Method: 365.3 **Matrix:** AQ

Sample ID: VER-01I-C-77.5 **Collected:** 1/18/2018 9:00:00 AM **Analysis Type:** RES **Dilution:** 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
Phosphorus, Total	0.025	U F1	0.025	MDL	0.050	MRL	mg/L	R	m

Method Category: METALS
Method: 200.7 **Matrix:** AQ

Sample ID: VER-01I-C-77.5 **Collected:** 1/18/2018 9:00:00 AM **Analysis Type:** RES/TOT **Dilution:** 2

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
CALCIUM	610		0.10	MDL	0.20	MRL	mg/L	J+	m
MAGNESIUM	300		0.020	MDL	0.040	MRL	mg/L	J+	m

* denotes a non-reportable result

Project Name and Number: M16 - VER Treatability Study 117-7502018-M16

Data Qualifier Summary

Lab Reporting Batch ID: 440-201437-1 **Laboratory: TA IRV**

EDD Filename: 440-201437-1 **eQAPP Name: TetraTechInc_NERT_01312018**

Method Category: METALS
Method: 6010B **Matrix:** AQ

Sample ID: VER-01I-C-77.5 **Collected:** 1/18/2018 9:00:00 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	12	B	0.0025	MDL	0.0050	MRL	mg/L	J+	m

Method Category: METALS
Method: 6020 **Matrix:** AQ

Sample ID: VER-01I-C-77.5 **Collected:** 1/18/2018 9:00:00 AM **Analysis Type:** RE2/DIS **Dilution:** 10

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
CHROMIUM	11000	B	5.0	MDL	20	MRL	ug/L	J-	m

Sample ID: VER-01I-C-77.5 **Collected:** 1/18/2018 9:00:00 AM **Analysis Type:** RE3/DIS **Dilution:** 5

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
MANGANESE	3.8	J	2.5	MDL	5.0	MRL	ug/L	J	sp

Sample ID: VER-01I-C-77.5 **Collected:** 1/18/2018 9:00:00 AM **Analysis Type:** RES/DIS **Dilution:** 2

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
COPPER	7.0	F1 B	1.0	MDL	4.0	MRL	ug/L	J-	m
IRON	24	J B	16	MDL	40	MRL	ug/L	J+	bl
SELENIUM	3.4	J	1.0	MDL	4.0	MRL	ug/L	J	sp
ZINC	11	J B	5.0	MDL	40	MRL	ug/L	J+	bl

Method Category: METALS
Method: 7199 **Matrix:** AQ

Sample ID: VER-01I-C-77.5 **Collected:** 1/18/2018 9:00:00 AM **Analysis Type:** RES/DIS **Dilution:** 500

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
Chromium, hexavalent	12000		130	MDL	1000	MRL	ug/L	J-	m, m

* denotes a non-reportable result

Project Name and Number: M16 - VER Treatability Study 117-7502018-M16

Data Qualifier Summary

Lab Reporting Batch ID: 440-201437-1 **Laboratory: TA IRV**

EDD Filename: 440-201437-1 **eQAPP Name: TetraTechInc_NERT_01312018**

Method Category: **VOA**

Method: **8260B LL** ***Matrix:*** **AQ**

Sample ID: **VER-01I-C-72** ***Collected:*** **1/18/2018 3:30:00 AM** ***Analysis Type:*** **RES** ***Dilution:*** **1**

Analyte	*Lab Result*	*Lab Qual*	*DL*	*DL Type*	*RL*	*RL Type*	*Units*	*Data Review Qual*	*Reason Code*
1,3-DICHLOROBENZENE	0.30	J	0.25	MDL	0.50	MRL	ug/L	J	sp
BROMOFORM	0.86	J	0.40	MDL	1.0	MRL	ug/L	J	sp

Sample ID: **VER-01I-C-77.5** ***Collected:*** **1/18/2018 9:00:00 AM** ***Analysis Type:*** **RES** ***Dilution:*** **1**

Analyte	*Lab Result*	*Lab Qual*	*DL*	*DL Type*	*RL*	*RL Type*	*Units*	*Data Review Qual*	*Reason Code*
1,3-DICHLOROBENZENE	0.28	J	0.25	MDL	0.50	MRL	ug/L	J	sp
BROMOFORM	0.66	J	0.40	MDL	1.0	MRL	ug/L	J	sp
DIBROMOCHLOROMETHANE	0.26	J	0.25	MDL	0.50	MRL	ug/L	J	sp

* denotes a non-reportable result

Project Name and Number: M16 - VER Treatability Study 117-7502018-M16

Data Qualifier Summary

Lab Reporting Batch ID: 440-201437-1

Laboratory: TA IRV

EDD Filename: 440-201437-1

eQAPP Name: TetraTechInc_NERT_01312018

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: M16 - VER Treatability Study 117-7502018-M16

Data Qualifier Summary

Lab Reporting Batch ID: 440-201739-1 **Laboratory: TA IRV**

EDD Filename: 440-201739-1 **eQAPP Name: TetraTechInc_NERT_01312018**

Method Category: GENCHEM

Method: 300.1B **Matrix:** AQ

Sample ID: VER-01D-B-12 **Collected:** 1/23/2018 3:30:00 PM **Analysis Type:** RES2 **Dilution:** 100

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
Chlorate	4800		1000	MDL	2000	MRL	ug/L	J-	m

Sample ID: VER-01D-B-BL **Collected:** 1/23/2018 3:30:00 AM **Analysis Type:** RES2 **Dilution:** 100

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
Chlorate	21000		1000	MDL	2000	MRL	ug/L	J-	m

Method Category: VOA

Method: 8260B LL **Matrix:** AQ

Sample ID: M16-20180123-TB **Collected:** 1/23/2018 3:30:00 AM **Analysis Type:** RES **Dilution:** 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
METHYLENE CHLORIDE	1.0	J	0.88	MDL	2.0	MRL	ug/L	J	sp

* denotes a non-reportable result

Project Name and Number: M16 - VER Treatability Study 117-7502018-M16

Data Qualifier Summary

Lab Reporting Batch ID: 440-201739-1

Laboratory: TA IRV

EDD Filename: 440-201739-1

eQAPP Name: TetraTechInc_NERT_01312018

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: M16 - VER Treatability Study 117-7502018-M16

Data Qualifier Summary

Lab Reporting Batch ID: 440-201843-1 **Laboratory: TA IRV**

EDD Filename: 440-201843-1 **eQAPP Name: TetraTechInc_NERT_01312018**

Method Category: **VOA**

Method: **8260B LL** ***Matrix:*** **AQ**

Sample ID: **M16-20180124-TB** ***Collected:*** **1/24/2018 3:30:00 AM** ***Analysis Type:*** **RES** ***Dilution:*** **1**

Analyte	*Lab Result*	*Lab Qual*	*DL*	*DL Type*	*RL*	*RL Type*	*Units*	*Data Review Qual*	*Reason Code*
NAPHTHALENE	0.45	J	0.40	MDL	1.0	MRL	ug/L	J	sp

* denotes a non-reportable result

Project Name and Number: M16 - VER Treatability Study 117-7502018-M16

Data Qualifier Summary

Lab Reporting Batch ID: 440-201843-1

Laboratory: TA IRV

EDD Filename: 440-201843-1

eQAPP Name: TetraTechInc_NERT_01312018

Reason Code Legend

Reason Code	*Description*
sp	Reporting Limit Trace Value

* denotes a non-reportable result

Project Name and Number: M16 - VER Treatability Study 117-7502018-M16

Data Qualifier Summary

Lab Reporting Batch ID: 440-201923-1 **Laboratory: TA IRV**

EDD Filename: 440-201923-1 **eQAPP Name: TetraTechInc_NERT_01312018**

Method Category: **GENCHEM**

Method: **300.1B** ***Matrix:*** **AQ**

Sample ID: **VER-01D-B-48** ***Collected:*** **1/25/2018 3:30:00 AM** ***Analysis Type:*** **RES2** ***Dilution:*** **10**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
Chlorate	3200		100	MDL	200	MRL	ug/L	J-	m

Method Category: **VOA**

Method: **8260B LL** ***Matrix:*** **AQ**

Sample ID: **M16-20180125-TB** ***Collected:*** **1/25/2018 3:30:00 AM** ***Analysis Type:*** **RES** ***Dilution:*** **1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
METHYLENE CHLORIDE	1.2	J	0.88	MDL	2.0	MRL	ug/L	J	sp

Sample ID: **VER-01D-B-48** ***Collected:*** **1/25/2018 3:30:00 AM** ***Analysis Type:*** **RES** ***Dilution:*** **1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
CHLOROFORM	0.41	J	0.25	MDL	0.50	MRL	ug/L	J	sp

* denotes a non-reportable result

Project Name and Number: M16 - VER Treatability Study 117-7502018-M16

Data Qualifier Summary

Lab Reporting Batch ID: 440-201923-1

Laboratory: TA IRV

EDD Filename: 440-201923-1

eQAPP Name: TetraTechInc_NERT_01312018

Reason Code Legend

Reason Code	*Description*
m	Matrix Spike Lower Estimation
m	Matrix Spike Upper Estimation
sp	Reporting Limit Trace Value

* denotes a non-reportable result

Project Name and Number: M16 - VER Treatability Study 117-7502018-M16

Data Qualifier Summary

Lab Reporting Batch ID: 440-202628-1 **Laboratory: TA IRV**

EDD Filename: 440-202628-1 **eQAPP Name: TetraTechInc_NERT_01312018**

Method Category: **VOA**

Method: **8260B LL** ***Matrix:*** **AQ**

Sample ID: **VER-01D-C-12** ***Collected:*** **2/5/2018 3:30:00 PM** ***Analysis Type:*** **RES** ***Dilution:*** **1**

Analyte	*Lab Result*	*Lab Qual*	*DL*	*DL Type*	*RL*	*RL Type*	*Units*	*Data Review Qual*	*Reason Code*
NAPHTHALENE	0.40	J	0.40	MDL	1.0	MRL	ug/L	J	sp

Sample ID: **VER-01D-C-BL** ***Collected:*** **2/5/2018 3:30:00 AM** ***Analysis Type:*** **RES** ***Dilution:*** **1**

Analyte	*Lab Result*	*Lab Qual*	*DL*	*DL Type*	*RL*	*RL Type*	*Units*	*Data Review Qual*	*Reason Code*
NAPHTHALENE	0.43	J	0.40	MDL	1.0	MRL	ug/L	J	sp

* denotes a non-reportable result

Project Name and Number: M16 - VER Treatability Study 117-7502018-M16

Data Qualifier Summary

Lab Reporting Batch ID: 440-202628-1

Laboratory: TA IRV

EDD Filename: 440-202628-1

eQAPP Name: TetraTechInc_NERT_01312018

Reason Code Legend

Reason Code	*Description*
sp	Reporting Limit Trace Value

* denotes a non-reportable result

Project Name and Number: M16 - VER Treatability Study 117-7502018-M16

Data Qualifier Summary

Lab Reporting Batch ID: 440-202782-1 **Laboratory: TA IRV**

EDD Filename: 440-202782-1 **eQAPP Name: TetraTechInc_NERT_01312018**

Method Category: **GENCHEM**

Method: **300.1B** ***Matrix:*** **AQ**

Sample ID: **VER-01D-C-36** ***Collected:*** **2/6/2018 3:30:00 PM** ***Analysis Type:*** **RES2** ***Dilution:*** **50**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
Chlorate	2400		500	MDL	1000	MRL	ug/L	J-	m, m

Method Category: **VOA**

Method: **8260B LL** ***Matrix:*** **AQ**

Sample ID: **VER-01D-C-24** ***Collected:*** **2/6/2018 3:30:00 AM** ***Analysis Type:*** **RES** ***Dilution:*** **1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
CHLOROFORM	0.46	J	0.25	MDL	0.50	MRL	ug/L	J	sp

Sample ID: **VER-01D-C-36** ***Collected:*** **2/6/2018 3:30:00 PM** ***Analysis Type:*** **RES** ***Dilution:*** **1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
CHLOROFORM	0.44	J	0.25	MDL	0.50	MRL	ug/L	J	sp

* denotes a non-reportable result

Project Name and Number: M16 - VER Treatability Study 117-7502018-M16

Data Qualifier Summary

Lab Reporting Batch ID: 440-202782-1

Laboratory: TA IRV

EDD Filename: 440-202782-1

eQAPP Name: TetraTechInc_NERT_01312018

Reason Code Legend

Reason Code	*Description*
bl	Method Blank Contamination
m	Matrix Spike Lower Estimation
m	Matrix Spike Lower Rejection
sp	Reporting Limit Trace Value

* denotes a non-reportable result

Project Name and Number: M16 - VER Treatability Study 117-7502018-M16

Data Qualifier Summary

Lab Reporting Batch ID: 440-202847-1 **Laboratory: TA IRV**

EDD Filename: 440-202847-1 **eQAPP Name: TetraTechInc_NERT_01312018**

Method Category: **VOA**

Method: **8260B LL** ***Matrix:*** **AQ**

Sample ID: **VER-01D-C-48** ***Collected:*** **2/7/2018 3:30:00 AM** ***Analysis Type:*** **RES** ***Dilution:*** **1**

Analyte	*Lab Result*	*Lab Qual*	*DL*	*DL Type*	*RL*	*RL Type*	*Units*	*Data Review Qual*	*Reason Code*
CHLOROFORM	0.33	J	0.25	MDL	0.50	MRL	ug/L	J	sp

Sample ID: **VER-01D-C-60** ***Collected:*** **2/7/2018 3:30:00 PM** ***Analysis Type:*** **RES** ***Dilution:*** **1**

Analyte	*Lab Result*	*Lab Qual*	*DL*	*DL Type*	*RL*	*RL Type*	*Units*	*Data Review Qual*	*Reason Code*
CHLOROFORM	0.30	J	0.25	MDL	0.50	MRL	ug/L	J	sp

* denotes a non-reportable result

Project Name and Number: M16 - VER Treatability Study 117-7502018-M16

Data Qualifier Summary

Lab Reporting Batch ID: 440-202847-1

Laboratory: TA IRV

EDD Filename: 440-202847-1

eQAPP Name: TetraTechInc_NERT_01312018

Reason Code Legend

Reason Code	*Description*
bl	Method Blank Contamination
sp	Reporting Limit Trace Value

* denotes a non-reportable result

Project Name and Number: M16 - VER Treatability Study 117-7502018-M16

Data Qualifier Summary

Lab Reporting Batch ID: 440-202979-1 **Laboratory: TA IRV**

EDD Filename: 440-202979-1 **eQAPP Name: TetraTechInc_NERT_01312018**

Method Category: **GENCHEM**

Method: **300.1B** ***Matrix:*** **AQ**

Sample ID: **VER-01D-C-72** ***Collected:*** **2/8/2018 3:30:00 AM** ***Analysis Type:*** **RES2** ***Dilution:*** **50**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
Chlorate	1800		500	MDL	1000	MRL	ug/L	J-	m

Sample ID: **VER-01D-C-84** ***Collected:*** **2/8/2018 3:30:00 PM** ***Analysis Type:*** **RES2** ***Dilution:*** **50**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
Chlorate	1800		500	MDL	1000	MRL	ug/L	J-	m, m

Method Category: **VOA**

Method: **8260B LL** ***Matrix:*** **AQ**

Sample ID: **VER-01D-C-72** ***Collected:*** **2/8/2018 3:30:00 AM** ***Analysis Type:*** **RES** ***Dilution:*** **1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
CHLOROFORM	0.29	J	0.25	MDL	0.50	MRL	ug/L	J	sp

Sample ID: **VER-01D-C-84** ***Collected:*** **2/8/2018 3:30:00 PM** ***Analysis Type:*** **RES** ***Dilution:*** **1**

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
CHLOROFORM	0.27	J	0.25	MDL	0.50	MRL	ug/L	J	sp

* denotes a non-reportable result

Project Name and Number: M16 - VER Treatability Study 117-7502018-M16

Data Qualifier Summary

Lab Reporting Batch ID: 440-202979-1

Laboratory: TA IRV

EDD Filename: 440-202979-1

eQAPP Name: TetraTechInc_NERT_01312018

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: M16 - VER Treatability Study 117-7502018-M16

Data Qualifier Summary

Lab Reporting Batch ID: 440-203119-1 **Laboratory: TA IRV**

EDD Filename: 440-203119-1 **eQAPP Name: TetraTechInc_NERT_01312018**

Method Category: GENCHEM
Method: 300.1B **Matrix: AQ**

Sample ID: VER-01D-C-96 **Collected:** 2/9/2018 3:30:00 AM **Analysis Type:** RES2 **Dilution:** 20

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
Chlorate	1700		200	MDL	400	MRL	ug/L	J-	m

Method Category: GENCHEM
Method: 351.2 **Matrix: AQ**

Sample ID: VER-01D-C-96 **Collected:** 2/9/2018 3:30:00 AM **Analysis Type:** RES **Dilution:** 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
Total Kjeldahl Nitrogen	0.10	U F1	0.10	MDL	0.20	MRL	mg/L	UJ	m

Method Category: GENCHEM
Method: SM5310B **Matrix: AQ**

Sample ID: VER-01D-C-96 **Collected:** 2/9/2018 3:30:00 AM **Analysis Type:** RES **Dilution:** 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
Total organic carbon	0.90	J	0.65	MDL	1.0	MRL	mg/L	J	sp

Method Category: METALS
Method: 200.7 **Matrix: AQ**

Sample ID: VER-01D-C-96 **Collected:** 2/9/2018 3:30:00 AM **Analysis Type:** RES/TOT **Dilution:** 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
CALCIUM	25		0.050	MDL	0.10	MRL	mg/L	J+	m
MAGNESIUM	15		0.010	MDL	0.020	MRL	mg/L	J+	m

Method Category: METALS
Method: 6020 **Matrix: AQ**

Sample ID: VER-01D-C-96 **Collected:** 2/9/2018 3:30:00 AM **Analysis Type:** RES/DIS **Dilution:** 1

Analyte	Lab Result	Lab Qual	DL	DL Type	RL	RL Type	Units	Data Review Qual	Reason Code
COPPER	0.81	J	0.50	MDL	2.0	MRL	ug/L	J	sp

* denotes a non-reportable result

Project Name and Number: M16 - VER Treatability Study 117-7502018-M16

Data Qualifier Summary

Lab Reporting Batch ID: 440-203119-1 **Laboratory: TA IRV**

EDD Filename: 440-203119-1 **eQAPP Name: TetraTechInc_NERT_01312018**

Method Category: **METALS**

Method: **6020** ***Matrix:*** **AQ**

Sample ID: **VER-01D-C-96** ***Collected:*** **2/9/2018 3:30:00 AM** ***Analysis Type:*** **RES/DIS** ***Dilution:*** **1**

Analyte	*Lab Result*	*Lab Qual*	*DL*	*DL Type*	*RL*	*RL Type*	*Units*	*Data Review Qual*	*Reason Code*
NICKEL	0.83	J	0.50	MDL	2.0	MRL	ug/L	J	sp
ZINC	10	J	2.5	MDL	20	MRL	ug/L	J	sp

Method Category: **VOA**

Method: **8260B LL** ***Matrix:*** **AQ**

Sample ID: **VER-01D-C-96** ***Collected:*** **2/9/2018 3:30:00 AM** ***Analysis Type:*** **RES** ***Dilution:*** **1**

Analyte	*Lab Result*	*Lab Qual*	*DL*	*DL Type*	*RL*	*RL Type*	*Units*	*Data Review Qual*	*Reason Code*
CHLOROFORM	0.26	J	0.25	MDL	0.50	MRL	ug/L	J	sp

* denotes a non-reportable result

Project Name and Number: M16 - VER Treatability Study 117-7502018-M16

Data Qualifier Summary

Lab Reporting Batch ID: 440-203119-1

Laboratory: TA IRV

EDD Filename: 440-203119-1

eQAPP Name: TetraTechInc_NERT_01312018

Reason Code Legend

Reason Code	*Description*
m	Matrix Spike Lower Estimation
m	Matrix Spike Upper Estimation
sp	Reporting Limit Trace Value

* denotes a non-reportable result

Project Name and Number: M16 - VER Treatability Study 117-7502018-M16

Appendix B.2
Validation Checklists

Data Verification and Validation Summary

Project Name: VER Treatability Study
Project No.: M16
No. of Samples: 14
SDG/Report No.: 320-35962-1
Lab ID: Test America
Matrix: Air

Area Reviewed	Anomalies		Qualification Required	Action Required
	Yes	No	Yes or No	
1. Sample Preservation, Handling, and Transport		X	No	None
2. Chain-of-Custody		X	No	None
3. Holding Times		X	No	None
4. Instrument Performance		X	No	None
5. Initial Calibration		X	No	None
6. Continuing Calibration Verification		X	No	None
7. Blanks		X	No	None
8. Surrogates/Monitoring Compounds		X	No	None
9. Matrix Spike/Matrix Spike Duplicate/MSI	---	---	---	---
10. Serial Dilution	---	---	---	---
11. Laboratory Control Samples		X	No	None
12. Interference Check Samples		X	No	None
13. Internal Standards		X	No	None
14. Duplicates	---	---	---	---
15. Compound Quantitation and Reporting Limits		X	Yes	Qualify all results detected between the MDL and RL "J".
16. Calculations and Raw Data		X	No	None
17. Data Package/EDD comparison (10%)		X	No	None

Verification and Validation Label	Stage_2B_Validation_Electronic_and_Manual and Stage_4_Validation_Electronic_and_Manual
Verification and Validation Label Code	S2BVEM and S4VEM

Overall Assessment: Acceptable as qualified.
Usability: Sample results qualified as estimated (J) are useable for limited purposes only. All other results are considered valid and useable for all purposes.
Revision to ADR results: None

Data Verification and Validation Summary

Sample Information:
Cooler Temperature(s): N/A

Field Sample Number	Lab Sample ID	Date Collected	Validation Stage
VER-01D-C-BL-AIR	320-35962-1	2/5/2018	Stage 2B
VER-01D-C-04-AIR	320-35962-2	2/5/2018	Stage 2B
VER-01D-C-20180205-EFFLUENT	320-35962-3	2/5/2018	Stage 2B
VER-01D-C-08-AIR	320-35962-4	2/5/2018	Stage 2B
VER-01D-C-12-AIR	320-35962-5	2/6/2018	Stage 2B
VER-01D-C-20180206-EFFLUENT	320-35962-6	2/6/2018	Stage 2B
VER-01D-C-24-AIR	320-35962-7	2/6/2018	Stage 2B
VER-01D-C-36-AIR	320-35962-8	2/7/2018	Stage 2B
VER-01D-C-20180207-EFFLUENT	320-35962-9	2/7/2018	Stage 2B
VER-01D-C-48-AIR	320-35962-10	2/7/2018	Stage 4
VER-01D-C-60-AIR	320-35962-11	2/8/2018	Stage 2B
VER-01D-C-20180208-EFFLUENT	320-35962-12	2/8/2018	Stage 4
VER-01D-C-72-AIR	320-35962-13	2/8/2018	Stage 2B
VER-01D-C-84-AIR	320-35962-14	2/9/2018	Stage 2B

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/N/A/Yes
Samples are sent at ambient temperature.	

2. Chain-of-Custody (COC)	
Were samples recorded on the COCs? Were correct analyses performed on the samples?	Yes/Yes

3. Holding Times	
Were samples analyzed within acceptable holding times?	Yes

4. Instrument Performance	
Was BFB analyzed before and within 12 (24 for TO-15) hours of sample analysis? Were mass assignments correct and normalized to m/z 95? Were ion abundance criteria met?	Yes/Yes/Yes

5. Initial Calibration (ICAL)	
Were the correct number of standards analyzed to establish the calibration curve for each analyte? Were Percent Relative Standard Deviations (%RSDs) of the Response Factors (RFs) ≤ method or national functional guideline (NFG) requirements or Coefficient of Correlation or Coefficient of Determination ≥ method or NFG requirements? Were Relative Response Factors (RRFs) and average RRFs ≥ method or NFG requirements?	Yes/Yes/Yes

6. Continuing Calibration Verification (CCV)	
Were CCVs analyzed at the beginning and end of sample analysis, if applicable? Were calibrations compared to the correct initial calibrations? Were Percent Differences (%D) ≤ method or NFG requirements? Did RRFs and average RRFs meet method or NFG requirements?	Yes/Yes/Yes/Yes

7. Blanks	
Does data package include a summary of blank results? Was a method blank extracted and/or analyzed for each batch? Were calibration blanks analyzed at appropriate intervals? Were analytes detected in any blanks?	Yes/Yes/Yes/No

8. Surrogates/Monitoring Compounds	
Were samples spiked with the correct surrogate compounds? Were surrogate recoveries reported correctly on data forms? Were recoveries within laboratory limits?	Yes/Yes/No
300.1B: Surrogate recovery was 0% in VER-01D-30.0-20171020 because of dilution. No qualification needed.	

9. Matrix Spike/Matrix Spike Duplicate/MSI	
Was a MS/MSD pair or MSI extracted and/or analyzed with each batch? Were recoveries/RPDs reported correctly on data forms? Were recoveries/RPDs within laboratory established limits?	No/N/A/N/A

10. Serial Dilution	
Were serial dilutions analyzed at appropriate intervals? For results > 50x the MDL, were %Ds within acceptable limits of the true value?	N/A

11. Laboratory Control Samples (LCS)	
Was a LCS analyzed with each analytical batch? Were LCS recoveries reported correctly on data forms? Were LCS recoveries within laboratory established limits?	Yes/Yes/Yes

12. Interference Check Sample (ICS)	
Were interference check samples (ICS) analyzed at appropriate intervals? Were ICS recoveries within acceptable limits of the true value? Were ICSA samples non-detect for analytes not in the solution?	N/A

13. Internal Standards (IS)	
Were ISs added to each sample in the run including calibrations, samples, and QC samples? Were area counts of the ISs for all samples within 50% and 200% of its response in the CCV? Was the Retention Time of the IS within ±30 seconds from the RT of the IS in the associated CCV or mid-point standard from ICAL?	Yes/Yes/Yes

14. Duplicates	
Were any duplicate pairs analyzed in this SDG? For results > 5x the RL, were RPDs between parent sample and duplicates ≤ lab limits or ≤ 30% (water)/50% (soil) for field duplicates? For REG/FD results < 5x the RL, were differences between the two values < RL.	No/N/A/N/A

15. Compound Quantitation and Reporting Limits	
Were quantitation limits (RLs) adjusted to reflect dilutions, cleanup, and other factors? If applicable, were reporting limit check recoveries within acceptable limits?	Yes/Yes
All: Results detected above the MDL but below the reporting limit are estimated and qualified "J".	

16. Calculations and Raw Data	
Did calculated results and raw data match the reported data?	Yes
There were slight differences that could be attributed to rounding.	

17. Data Package/EDD comparison (10%)	
Were 10% of the data package results compared to the electronic data? Did results match?	Yes/Yes

Validated by: Michael Wilson

Data Verification and Validation Summary

Project Name: VER Treatability Study
Project No.: M16
No. of Samples: 18
SDG/Report No.: 440-194754-1
Lab ID: Test America
Matrix: Soil/Water

Area Reviewed	Anomalies		Qualification Required	Action Required
	Yes	No	Yes or No	
1. Sample Preservation, Handling, and Transport	X		No	None
2. Chain-of-Custody	X		No	None
3. Holding Times	X		Yes	VER-01D-35.0-20171020: Qualify chloroform "J" and all non-detected VOCs "R".
4. Instrument Performance		X	No	None
5. Initial Calibration		X	No	None
6. Continuing Calibration Verification	X		No	None
7. Blanks		X	No	None
8. Surrogates/Monitoring Compounds	X		No	None
9. Matrix Spike/Matrix Spike Duplicate/MSI	X		Yes	VER-01D-20.0-20171020: Qualify chlorate "J+".
10. Serial Dilution		X	No	None
11. Laboratory Control Samples		X	No	None
12. Interference Check Samples		X	No	None
13. Internal Standards		X	No	None
14. Duplicates	X		Yes	VER-01D-110.0-20171020 and VER-01D-110.0-20171020-FD: Qualify chromium and perchlorate "J".
15. Compound Quantitation and Reporting Limits		X	Yes	Qualify all results detected between the MDL and RL "J".
16. Calculations and Raw Data		X	No	None
17. Data Package/EDD comparison (10%)		X	No	None

Verification and Validation Label	Stage_4_Validation_Electronic_and_Manual
Verification and Validation Label Code	S4VEM

Overall Assessment: Except for rejected results, acceptable as qualified.
Usability: Rejected results are not useable. Sample results qualified as estimated (UJ, J, or J+) are useable for limited purposes only. All other results are considered valid and useable for all purposes.
Revision to ADR results: MS, surrogate. See below.

Data Verification and Validation Summary

Sample Information:
Cooler Temperature(s): 2.4º C and 2.4º C

Field Sample Number	Lab Sample ID	Date Collected
TRIPBLANK-10202017	440-194754-1	10/20/2017
VER-01D-5.0-20171020	440-194754-2	10/20/2017
VER-01D-10.0-20171020	440-194754-3	10/20/2017
VER-01D-10.0-20171020-FD	440-194754-4	10/20/2017
VER-01D-15.0-20171020	440-194754-5	10/20/2017
VER-01D-20.0-20171020	440-194754-6	10/20/2017
VER-01D-25.0-20171020	440-194754-7	10/20/2017
VER-01D-30.0-20171020	440-194754-8	10/20/2017
VER-01D-35.0-20171020	440-194754-9	10/20/2017
VER-01D-40.0-20171020	440-194754-10	10/20/2017
VER-01D-50.0-20171020	440-194754-11	10/20/2017
VER-01D-60.0-20171020	440-194754-12	10/20/2017
VER-01D-70.0-20171020	440-194754-13	10/20/2017
VER-01D-70.0-20171020-EB	440-194754-14	10/20/2017
VER-01D-80.0-20171020	440-194754-15	10/20/2017
VER-01D-100.0-20171020	440-194754-16	10/20/2017
VER-01D-110.0-20171020	440-194754-17	10/20/2017
VER-01D-110.0-20171020-FD	440-194754-18	10/20/2017

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?	No/Yes/Yes
8260B: Sample VER-01D-35.0-20171020 was collected in a preserved bottle, but sample pH was >2. Unpreserved samples are allowed by the method.	

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
8260B: Sample VER-01D-35.0-20171020 was analyzed outside of holding time for unpreserved samples.	

4. Instrument Performance	
Was BFB analyzed before and within 12 hours of sample analysis? Were mass assignments correct and normalized to m/z 95? Were ion abundance criteria met?	Yes/Yes/Yes

5. Initial Calibration (ICAL)	
Were the correct number of standards analyzed to establish the calibration curve for each analyte? Were Percent Relative Standard Deviations (%RSDs) of the Response Factors (RFs) ≤ method or national functional guideline (NFG) requirements or Coefficient of Correlation or Coefficient of Determination ≥ method or NFG requirements? Were Relative Response Factors (RRFs) and average RRFs ≥ method or NFG requirements?	Yes/Yes/Yes

6. Continuing Calibration Verification (CCV)	
Were CCVs analyzed at the beginning and end of sample analysis, if applicable? Were calibrations compared to the correct initial calibrations? Were Percent Differences (%D) ≤ method or NFG requirements? Did RRFs and average RRFs meet method or NFG requirements?	Yes/Yes/No/Yes
8260B: Acetone %D was high (46.0%) in CCVIS 440-438456/4. The CCV is associated with sample VER-01D-35.0-20171020. Acetone was rejected in that sample, so there can be no qualification for CCV.	

7. Blanks	
Does data package include a summary of blank results? Was a method blank extracted and/or analyzed for each batch? Were calibration blanks analyzed at appropriate intervals? Were analytes detected in any blanks?	Yes/Yes/Yes/No

8. Surrogates/Monitoring Compounds	
Were samples spiked with the correct surrogate compounds? Were surrogate recoveries reported correctly on data forms? Were recoveries within laboratory limits?	Yes/Yes/No
300.1B: Surrogate recovery was 0% in VER-01D-30.0-20171020 because of dilution. No qualification needed.	

9. Matrix Spike/Matrix Spike Duplicate/MSI	
Was a MS/MSD pair or MSI extracted and/or analyzed with each batch? Were recoveries/RPDs reported correctly on data forms? Were recoveries/RPDs within laboratory established limits?	No/Yes/No
Qualifiers were applied to parent samples only.	
300.1B: Chlorate recoveries were high in the MS/MSD of VER-01D-20.0-20171020.	
314.0: Perchlorate recoveries were outside limits in the MS/MSD of VER-01D-20.0-20171020. The concentration in the parent sample was 4x the amount spiked, so recovery criteria do not apply.	

10. Serial Dilution	
Were serial dilutions analyzed at appropriate intervals? For results > 50x the MDL, were %Ds within acceptable limits of the true value?	Yes/N/A

11. Laboratory Control Samples (LCS)	
Was a LCS analyzed with each analytical batch? Were LCS recoveries reported correctly on data forms? Were LCS recoveries within laboratory established limits?	Yes/Yes/Yes

12. Interference Check Sample (ICS)	
Were interference check samples (ICS) analyzed at appropriate intervals? Were ICS recoveries within acceptable limits of the true value? Were ICSA samples non-detect for analytes not in the solution?	Yes/Yes/No

13. Internal Standards (IS)	
Were ISs added to each sample in the run including calibrations, samples, and QC samples? Were area counts of the ISs for all samples within 50% and 200% of its response in the CCV? Was the Retention Time of the IS within ±30 seconds from the RT of the IS in the associated CCV or mid-point standard from ICAL?	Yes/Yes/Yes

14. Duplicates	
Were any duplicate pairs analyzed in this SDG? For results > 5x the RL, were RPDs between parent sample and duplicates ≤ lab limits or ≤ 30% (water)/50% (soil) for field duplicates? For REG/FD results < 5x the RL, were differences between the two values < RL.	Yes/No/No
REG/FD pairs: VER-01D-10.0-20171020 and VER-01D-10.0-20171020-FD: All OK. VER-01D-110.0-20171020 and VER-01D-110.0-20171020-FD: Perchlorate results <5x RL: Difference >RL. Chromium RPD = 72%.	

15. Compound Quantitation and Reporting Limits	
Were quantitation limits (RLs) adjusted to reflect dilutions, cleanup, and other factors? If applicable, were reporting limit check recoveries within acceptable limits?	Yes/Yes
All: Results detected above the MDL but below the reporting limit are estimated and qualified "J".	

16. Calculations and Raw Data	
Did calculated results and raw data match the reported data?	Yes
There were slight differences that could be attributed to rounding.	

17. Data Package/EDD comparison (10%)	
Were 10% of the data package results compared to the electronic data? Did results match?	Yes/Yes

Validated by: Michael Wilson